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MICRO PHOTO DIVISION
BELL & HOWELL COMPANY

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
April 4, 1967 Volume 837 Number 1

PATENTS
NOTICES

Board of Appeals Decisions Rendered in the Month of
February 1967

Examiner affirmed	204
Examiner affirmed in part	44
Examiner reversed	64
Total	312

Disclaimer

3,207,795.—Walter H. Prahl, Buffalo, and Sol Joseph Lederman, and Ellis I. Lichtblau, Kenmore, N.Y. PRODUCTION AND PURIFICATION OF DIPHENYLOLALKANES. Patent dated Sept. 21, 1965. Disclaimer filed Oct. 7, 1965, by the assignee, Hooker Chemical Corporation.

Hereby enters this disclaimer to the terminal portion of the term of said patent subsequent to Jan. 15, 1980.

Patents Available for Licensing or Sale

2,562,286. TEMPERATURE AND PRESSURE RESPONSIVE SWITCH. M. R. Wall, P.O. Box 6851, Tulsa, Okla., 74156.

3,000,015. HOSPITAL APPLIANCE. Honey E. Hart, 2000 16th St. NW. (36), Washington, D.C., 20009.

3,028,931. SUPERMARKET CHECKOUT. B. J. Donovan. Correspondence to: James E. Hawes, 233 Harvard St., Brookline, Mass. 02146.

3,042,136. ELECTRONIC SPEED CONTROL SYSTEM FOR MOTOR VEHICLES AND ROADS. E. Havnen. Correspondence to: Ultima Havnen, 1181 W. Deerpath, Lake Forest, Ill., 60045.

3,225,761. FATIGUE SUPPORT FOR MEN NO LEG STRAPS. Robert Swensen, 120 Polinciana Drive, P.O. Box 4026, Martinez, Ga., 30907.

3,288,426. ADJUSTABLE FORM DEVICE. Alex L. Simpson, 514 S. Broadway, Stockton, Calif., 95205.

3,292,409. HYDRAULICALLY OPERATED DRAW BENCH. Th. Kieserling & Albrecht, Solingen, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,292,414. APPARATUS FOR LOCALIZED SWAGING OF PIPES. Th. Kieserling & Albrecht, Solingen, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

General Electric Company is prepared to grant nonexclusive licenses under the following 118 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following patent may be addressed to: Division Patent Counsel, Power Transmission Division, General Electric Company, 6901 Elmwood Ave., Philadelphia, Pa., 19142.

3,042,918. ANTENNA ICE CLEARING SYSTEM.

Applications for license under the following 7 patents may be addressed to: General Electric Company, Component Products Division, 1635 Broadway, Fort Wayne, Ind., Attn: Patent Counsel.

3,201,055. FILAMENT WINDING APPARATUS.

3,266,461. WIRE COATING APPARATUS.

3,283,399. METHOD OF FORMING ELECTROMAGNETIC CORES.

3,293,388. PLUNGER OPERATED SWITCH UNIT FOR USE IN A DYNAMOELECTRIC MACHINE.

3,293,458. DYNAMOELECTRIC MACHINE WITH A MAGNESIUM HYDROXIDE COATED SHAFT.

3,293,471. LAMINATED CORE CONSTRUCTION FOR ELECTRIC INDUCTIVE DEVICE.

3,299,304. LAMINATED CORE HAVING LOW COMPRESSIBILITY CHARACTERISTICS FOR AN ELECTRICAL INDUCTIVE DEVICE.

Applications for license under the following 38 patents may be addressed to: Manager-Patent and Technology Marketing, Advanced Technology Services, General Electric Company, 1 River Road, Schenectady, N.Y., 12305.

2,961,277. FUNCTIONAL BEARINGS.

3,110,525. COMBINED JOURNAL AND THRUST BEARING.

3,110,526. BEARING SUPPORT.

3,110,527. HYDROSTATIC BEARING.

3,110,828. DYNAMOELECTRIC MACHINE PROVIDED WITH GAS LUBRICATED BEARINGS.

3,124,395. METHOD AND APPARATUS FOR BYPASSING CRITICAL SPEEDS OF ROTORS.

3,131,004. YIELDABLE SHOE BEARING.

3,132,906. HYDRODYNAMIC DEVICES.

3,020,486. CATHODE FOLLOWER CIRCUIT HAVING TRANSISTOR FEEDBACK STABILIZATION.

3,094,392. GAS DETECTION.

3,098,666. SEAL.

3,114,877. PARTICLE DETECTOR HAVING IMPROVED UNIPOLAR CHARGING STRUCTURE.

3,149,251. ELECTRIC POWER GENERATION.

3,158,495. SOLID LUBRICANT COATING COMPOSITION.

3,158,792. SUPERCONDUCTIVE DEVICE.

3,158,793. SUPERCONDUCTIVE DEVICE.

3,158,794. SUPERCONDUCTIVE DEVICE.

3,163,528. METHOD FOR PRODUCING COPPER ARTICLES.

3,167,143. ANALYTICAL BALANCE.

New Application Received During February 1967

Patents	6366
Designs	359
Plant Patents	12
Reissues	21
Total	6758

Issue—April 4, 1967

Patents.....	1060—No. 3,311,921 to No. 3,312,980, incl.
Designs.....	92—No. 207,298 to No. 207,389, incl.
Plant Patents...	3—No. 2,730 to No. 2,732, incl.
Reissues	8—No. 26,180 to No. 26,187, incl.
Total.....	1163

3,167,159.	INSULATING STRUCTURES WITH VARIABLE THERMAL CONDUCTIVITY AND METHOD OF EVACUATION.	3,270,237.	ELECTRIC LAMP WITH SINGLE ENDED PINCH SEAL.
3,179,549.	THERMAL INSULATED PANEL.	3,295,007.	DIFFERENTIAL OUTPUT TUBULAR INCANDESCENT LAMP.
3,183,379.	ELECTRIC GENERATION.	2,871,196.	CATHODES AND EMISSIVE MATERIAL THEREFOR.
3,183,380.	ELECTRODE STRUCTURE FOR MAGNETO HYDRODYNAMIC DEVICE.	3,117,248.	LOW PRESSURE MERCURY VAPOR DISCHARGE LAMP FOR DC OPERATION.
3,183,403.	MAGNETO HYDRODYNAMIC FLUID ACCELERATOR AND COMPRESSOR.	3,148,300.	LAMP HAVING ENVELOPE OF GLASS OPAQUE TO ULTRAVIOLET RADIATION.
3,190,842.	OPEN CELL POLYURETHANE FOAM.	3,219,867.	CATHODIC GLOW DISCHARGE LAMP.
3,192,042.	METHOD OF FORMING A CERMET.	3,219,869.	CESIUM VAPOR DISCHARGE LAMP.
3,198,945.	RADIATION DOSIMETER PROVIDING VISUAL REPRESENTATION OF TOTAL DOSE.	3,219,870.	HIGH PRESSURE DISCHARGE LAMPS SEAL AND BASE.
3,203,628.	CRYOGENIC FLUID.	3,233,148.	DISCHARGE LAMP BALLASTING CIRCUIT.
3,206,385.	DISPERSION HARDENING.	3,237,041.	CATHODIC GLOW GASEOUS DISCHARGE DEVICE.
3,206,603.	FLAW DETECTOR METHOD AND APPARATUS.	3,243,632.	THERMIONIC ARC DISCHARGE CATHODE GLOW LAMP.
3,213,177.	RESISTANCE FURNACE.	3,243,633.	CERAMIC LAMP CONSTRUCTION.
3,214,751.	DIGITAL TRANSDUCERS USING RONCHI RULINGS.	3,248,590.	HIGH PRESSURE SODIUM VAPOR LAMP.
3,215,938.	TEMPERATURE MEASUREMENT OF A FLAME INCLUDING INTRODUCING RADIOACTIVITY INTO A FLAME AND MEASURING THE RADIOACTIVITY THEREOF.	3,250,941.	DISCHARGE LAMP MANUFACTURE.
3,234,388.	RADIOACTIVE APPARATUS FOR MEASURING TEMPERATURE.	3,275,875.	SPARK TUBE HAVING ACTIVATED THERMIONIC ELECTRODES.
3,238,756.	MATERIAL FORMING METHOD AND APPARATUS.	3,293,493.	LIGHT SOURCE FOR COLOR SYNTHESIS.
3,242,530.	ROLLING MILL.	2,915,664.	TUBULAR ELECTRIC LAMP.
3,260,867.	METHOD OF ELECTRIC POWER GENERATION.	2,916,645.	TUBULAR LAMP ENVELOPES.
3,265,027.	PROPULSOR.	2,950,410.	MULTIPLE GROOVE DISCHARGE LAMP.
Applications for license under the following 72 patents may be addressed to: Patent Counsel, Lamp Division, General Electric Company, Nela Park, Cleveland, Ohio, 44112.		2,961,585.	LOW-PRESSURE DISCHARGE LAMP.
3,124,231.	TRANSFER MECHANISM.	2,965,789.	VAPOR PRESSURE CONTROL IN DISCHARGE LAMPS.
3,148,435.	ROUND PANEL LAMP PHOSPHOR COATING.	D.194,990.	ROUND PANEL LAMP.
3,160,454.	METHOD OF MANUFACTURE OF IODINE CYCLE INCANDESCENT LAMPS.	D.196,601.	ROUND PANEL LAMP.
3,183,051.	ALKALI METAL VAPOR LAMP MANUFACTURE.	2,973,447.	GROOVED LAMP VAPOR PRESSURE CONTROL.
3,188,064.	LAMP BASING OVEN.	3,121,184.	DISCHARGE LAMP WITH CATHODE SHIELDS.
3,188,236.	CATHODES AND METHOD OF MANUFACTURE.	3,143,274.	FLUORESCENT LAMP CARTON.
3,194,110.	METHOD OF DETECTING OXYGEN CONTAMINANT IN SEALED ENVELOPES.	3,152,277.	FLUORESCENT PANEL LAMP LOUVER.
3,211,511.	ELECTRIC LAMP MANUFACTURE.	3,169,205.	FLUORESCENT LAMP MOUNT.
3,240,239.	LAMP FILAMENT TRANSFER DEVICE.	3,226,590.	FLUORESCENT PANEL LAMP.
3,249,859.	METHOD AND APPARATUS FOR MEASURING THE STARTING CHARACTERISTICS OF GAS FILLED DISCHARGE LAMPS.	3,237,042.	PANEL LAMP INLEAD STRUCTURE HAVING A NOTCHED EDGE FOR LEAD-IN CONDUCTORS.
3,252,588.	LAMP TURNOVER AND TRANSFER DEVICE.	3,240,861.	PANEL LAMP SEAL.
3,252,781.	APPARATUS FOR PANEL LAMP MANUFACTURE.	3,243,630.	FLUORESCENT PANEL LAMP FACEPLATE WITH OPAQUE STRIPING.
3,132,278.	IODINE CYCLE INCANDESCENT LAMPS.	3,247,415.	FLUORESCENT PANEL LAMP COATING.
3,148,305.	ELECTRIC INCANDESCENT LAMP WITH A RECTIFYING DIODE MOUNTED WITHIN THE LAMP BASE.	3,253,175.	FLUORESCENT PANEL LAMP STRUCTURE.
3,168,670.	FILAMENT SUPPORTS FOR ELECTRIC INCANDESCENT LAMPS.	3,253,176.	PANEL LAMP WITH TERMINAL BASES.
3,181,694.	SHIPPING AND DISPLAY CARTON.	3,275,872.	REFLECTOR FLUORESCENT LAMP.
3,188,513.	OPTICAL FILTERS AND LAMPS EMBODYING THE SAME.	3,295,003.	GROOVED REFLECTOR LAMP.
3,194,625.	ELECTRIC LAMP WITH UNITARY INNER ENVELOPE AND STEM ASSEMBLY AND MANUFACTURE THEREOF.	3,226,597.	HIGH PRESSURE METAL VAPOR DISCHARGE LAMP.
3,194,999.	FILAMENT SUPPORT FOR TUBULAR LAMPS.	3,234,421.	METALLIC HALIDE ELECTRIC DISCHARGE LAMP.
3,195,000.	TUBULAR LAMP FILAMENT SUPPORT.	3,249,781.	SINGLE-ENDED JACKETED ARC LAMP MOUNTING.
3,211,938.	INTEGRAL REFLECTOR TUBULAR LAMP.	3,275,885.	HIGH PRESSURE DISCHARGE LAMP WITH ELECTROLYSIS PREVENTING MEANS.
3,219,872.	RADIANT ENERGY DEVICE.	3,294,998.	ARC TUBE MOUNTING FOR HIGH PRESSURE METAL VAPOR LAMPS.
3,240,975.	IODINE CYCLE INCANDESCENT ELECTRIC LAMP.	3,160,777.	FILAMENT AND REFLECTOR SUPPORT FOR AN ELONGATED TUBE.
3,243,634.	ELECTRIC LAMP AND SUPPORT WEB.	3,195,001.	TUBULAR INCANDESCENT LAMP.
3,253,179.	ELECTRIC INCANDESCENT LAMP AND MANUFACTURE THEREOF.	3,195,002.	FILAMENT SUPPORTS FOR ELECTRIC LAMPS.
		3,211,826.	QUARTZ TO METAL SEAL.
		3,237,045.	BENT END ELECTRIC LAMP HAVING LEAD WIRES ANCHORED AT ENDS OF BEND AND PROVIDED WITH EXPANSION PORTION.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF FEBRUARY 27, 1967

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager..... Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	9-16-63	11-30-61
GENERAL ORGANIC CHEMISTRY, GROUP 120—G. D. MITCHELL, Manager..... Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	7-25-63	9-12-61
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—M. STERMAN, Manager..... Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	11-18-63	1-16-62
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager..... Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	10-7-63	3-27-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager..... Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	7-2-63	10-23-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—M. L. LEVY, Manager..... Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	9-6-63	8-26-63
SECURITY, GROUP 220—S. BOYD, Manager..... Ordinance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	9-15-64	6-5-63
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—E. J. SAX, Manager..... Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	7-26-63	7-3-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—F. M. STRADER, Manager..... Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	7-19-63	11-3-61
PHYSICS, GROUP 280—R. L. EVANS, Manager..... Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	1-13-64	6-24-63
DESIGNS, GROUP 290—S. BOYD, Manager..... Industrial Arts; Household, Personal and Fine Arts.	10-22-65	4-20-65
Total number of pending applications (excluding Designs).....		191,346
Total number of Design applications pending.....		4,094
Total number of applications awaiting action (excluding Designs).....		140,448
Total number of Design applications awaiting action.....		2,484
Date of oldest new application awaiting action.....		July 2, 1963
Date of oldest amended application awaiting action.....		July 3, 1961

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during April 1967, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*.

Patents..... Numbers 2,502,406 to 2,505,747, inclusive

Plant Patents..... Numbers 930 to 937, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager..... Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid, Flexible and Special Receptacles and Packages.	4-6-65	9-16-63
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager..... Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	1-3-65	10-25-62
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager..... Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, Etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletary; Printing; Typewriters; Stationery; Information Dissemination.	10-23-64	7-16-62
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager..... Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	7-1-65	2-28-64
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager..... Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	4-5-65	4-26-63
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager..... Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	2-5-65	7-25-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE HANS KOCH AND HANS-PETER ACKERMANN

No. 7635. Decided August 4, 1966

[53 CCPA —; 363 F.2d 899; 150 USPQ 673]

1. PATENTABILITY—OBVIOUSNESS—PLURAL CONSECUTIVE STEPS.

"In our view, one of ordinary skill would be expected to utilize as many stages of pneumatic separation as necessary to achieve the desired degree of separation of light and heavy particles * * *."

2. SAME—PARTICULAR SUBJECT MATTER—"METHOD AND MEANS FOR SEPARATING RIBS, 'BIRDS' EYES' AND OTHER HEAVY INGREDIENTS FROM CUT TOBACCO."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Method and Means for Separating Ribs, 'Birds' Eyes' and Other Heavy Ingredients From Cut Tobacco," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 96,601.

AFFIRMED.

Michael S. Striker for appellants.

Joseph Schimmel (*George C. Roeming* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

KIRKPATRICK, J., delivered the opinion of the court.

This is an appeal from the decision of the Board of Appeals which affirmed the Examiner's rejection of apparatus claims 24, 26-28 and 33 and process claims 29, 31 and 32 in appellants' application¹ entitled "Method and Means for Separating Ribs, 'Birds' Eyes' and Other Heavy Ingredients From Cut Tobacco."

As its title suggests, the application relates to separation of various undesirable heavy ingredients from light cut tobacco used in the production of cigarettes and the like. Appellants first subject a mixture of light and heavy particles to a mechanical separating action and thereafter to one or more pneumatic separating actions, the classification being on the basis of weight. Claim 24, with appropriate reference numerals to FIGURE 1 of appellants' drawings, is illustrative:

24. In a tobacco distributor, an apparatus for separating small and large heavier particles from a mixture of lighter and heavier tobacco particles, comprising feeding means [rollers 4, 5, 6] arranged to form a shower containing a mixture of lighter and heavier particles; mechanical separator means [winnowing roll 7] disposed in the path of the shower for projecting the particles fanwise so that the lighter particles form a first stream having a shorter flight span and free of heavier particles [the lighter particles accumulate on conveyor belt 8], and the small and large heavier particles form a second stream having a longer flight span [which stream enters channel 11 containing screw feed 12]; and pneumatic separator means ["sifting" shafts 14 and/or 216 receive the predominantly heavy particle mix which is transported from channel 11 by means of conveyor 13] sufficiently spaced from said mechanical separator means to permit settling of heavier particles in said second stream and arranged to remove from the second stream at least some lighter particles which might have been entrained with the heavier particles [an ascending stream of air

¹ Serial No. 96,601, filed March 17, 1961.

carries lighter particles which may have been entrained in the heavy particle mix to conduit 20].

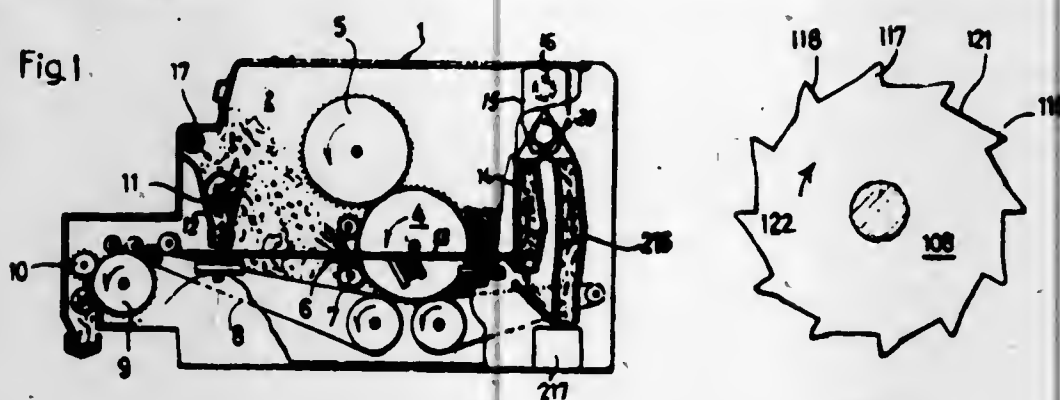


Fig. 2

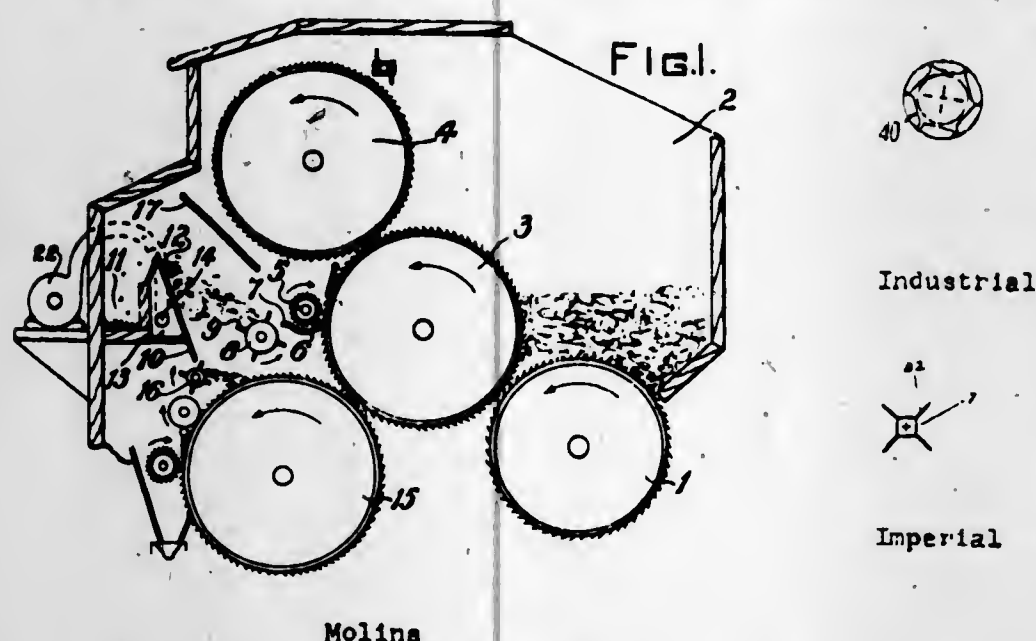
Appellants also assert that their particular mechanical separator means (the winnow roll illustrated above in FIG. 2) is new. Its nature is reflected in claim 28:

28. As a novel article of manufacture, particularly for separating small and large heavier particles from a mixture containing lighter and heavier tobacco particles, a winnow roll comprising a plurality of adjacent axially parallel peripheral projections each including a substantially radial tobacco projecting surface and a concave guide surface extending from the outer end of its tobacco projecting surface to the inner end of the tobacco projecting surface on an adjacent projection.

The references are:

- Patterson, 1,164,114, December 14, 1915.
- Molins et al., 1,903,931, April 18, 1933.
- Universelle (Germany), 687,409, January 29, 1940.
- Imperial (Great Britain), 789,026, January 15, 1958.
- Korber (Germany), 1,041,844, October 23, 1958.
- Industrial (France), 1,205,864, August 24, 1959.

The pertinent drawings of the references are reproduced below:



In applying the references, the Examiner was of the view that claims 24, 29 and 32 "read fairly" on Molins, stating:

Claims 24, 29 and 32 stand finally rejected as being unpatentable over Molins et al., with or without Patterson. Paraphrasing claim 24, Molins et al. show in * * * [FIG. 1] feeding means 3, 4, 5, arranged to form a shower dropping onto wheel 8 and containing a mixture of lighter and heavier particles; mechanical separator means 8 disposed in the path of the shower for projecting the particles fanwise so that the lighter particles form a first stream (dropping onto drum 15 in FIG. 1 * * *) and having a shorter flight span and free of heavier particles, and the heavier particles (which inherently include small and large

heavier particles) form a second stream (above the first stream) and having a longer flight span; and pneumatic separator means at 14, 12, FIG. 1, sufficiently spaced from mechanical separator means 8 to permit heavier particles in said second stream to settle into channel 11 and arranged to remove from the second stream, by blowing back, at least some lighter particles which might have been entrained with the heavier particles in said second stream.

With respect to those claims, the Examiner was also of the view that it would be obvious to one of ordinary skill that the particles in channel 11 of Molins, containing light material entrained by the heavier particles, could be further separated into streams of lighter and heavier particles by pneumatic means, as suggested by Patterson. The Examiner noted that Patterson discloses separation of lighter particles from heavier particles in tobacco by stages—an initial pneumatic separation to remove light, small, dust particles; a screening operation to separate large and small sized particles without regard to weight; and a final pneumatic separation to further remove large, light tobacco particles from the heavier stems.

As to claims 27, 31 and 33, which are directed to series pneumatic separation of light and heavy particles, the Examiner further relied on Universelle or Korber to show that "it is well known in this art to provide a plurality of serially connected sifting shafts" to achieve two consecutive pneumatic separating actions.

The Examiner rejected claim 28 as "fully met by either Industrial or Imperial," relying on the above drawings of the tobacco winnow or thrower rolls in each reference. Claim 26, which is similar in most respects to claim 24 other than further describing the mechanical separator means in the language employed in claim 28, was rejected on the references applied against claim 24 in view of Industrial or Imperial. The Examiner found it obvious to employ the winnow rolls of the secondary reference for that shown by Molins.

The Board agreed with the Examiner's full discussion of the applicability of the references to the claims in all respects, and so do we. Appellants argue that Molins discloses *simultaneous* mechanical separation employing winnow roll 8 and pneumatic separation employing blower 22 and nozzle 12; that Molins does not suggest separating by weight in *consecutive* steps; and that the pneumatic separation proposed by Molins interferes with the patentees' mechanical separation because nozzle 12, Molins' pneumatic separator means, might cause undesirable heavier particles to enter the stream of lighter particles.

We think those contentions are inconsistent with the actual teachings of the Molins reference. Contrary to appellants' arguments, we think Molins does disclose separation by weight in consecutive steps, it being evident that the winnow roll of Molins first mechanically separates the feed mixture by creating two streams of material—one composed of light particles and the other of heavy particles with entrained light particles—and that thereafter the latter stream is subjected to a pneumatic separation. Nor does it seem to us that Molins' pneumatic separation necessarily interferes with the mechanical separation step in the manner alleged by appellants, it being quite evident that blower means 22 necessarily is so adjusted as to allow, in Molins' words, "the heavy stalks [to] pass over into the waste trough" and "the lighter particles of tobacco to be blown back." In that regard, we also observe that appellants disclose blower means 17 in FIGURE 1 of their drawings similar in all respects to that of

Molins. The language of claim 33 is directed in part to that blower means. Any allegation that Molins' pneumatic separator means interferes with the mechanical separation performed by the winnowing roll would appear equally applicable to appellants' own structure.

We also think the Patent Office is correct in its conclusion that Patterson "would render it obvious to workers of ordinary skill in the art that pneumatic separation could be further applied to the product rejected to trough 11 of Molin." [1] In our view, one of ordinary skill would be expected to utilize as many stages of pneumatic separation as necessary to achieve the desired degree of separation of light and heavy particles, as Patterson, Korber and Universelle demonstrate.

As for claims 28 and 26, appellants argue that the claim language defining "a concave guide surface [121] extending from the outer end [119] of its tobacco projecting surface [118] to the inner end of the tobacco projecting surface [118] on an adjacent projection [117]" is not suggested by the references. We share the view of the Board that "The vane contour required by claims 26 and 28 appears to be as well illustrated in the references as in appellants' structure and to fully satisfy the claim language," and that the use of the winnowing roll of Industrial or Imperial in the apparatus of Molins, in the manner specified in claim 26, would be obvious. [2] The decision is affirmed.

AFFIRMED.

SMITH, J., concurs in the result.

U.S. Court of Customs and Patent Appeals

IN RE DOLOR N. ADAMS AND DONALD L. FAUSER

No. 7591. Decided August 4, 1966

[53 CCPA—; 364 F.2d 473; 150 USPQ 646]

1. PATENTABILITY—ANTICIPATION—FIELD OF INVENTION.

"If a claimed invention lacks novelty, we are unable to see that it is of any significance in what art it is old."

2. SAME—SAME—SAME.

"We agree with the Solicitor's contention—and we believe appellants agree with it too—that in considering what the disclosure of Niles is, that is to say what it conveys to one skilled in the art, it is the man skilled in the paper coating art, rather than the electrophotographic art, who is involved since the Niles patent relates to printing papers and not to electrophotography."

3. SAME—AFFIDAVIT—AFFIANT WITH AN INTEREST NOT DISQUALIFIED.

"They [appellants] produce an affidavit from one who is skilled in this art, James V. Robinson, who has impressive qualifications in the field. He has an interest in the case in that he is employed by The Mead Corporation which has a license under the application at bar, but that is not unusual for affiants and does not disqualify him."

4. SAME—PARTICULAR SUBJECT MATTER—"ELECTROPHOTOGRAPHIC COATING."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Electrophotographic Coating," as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 640,353.

REVERSED.

Lawrence B. Biebel (Mario A. Martella of counsel) for appellants.
Clarence W. Moore (Raymond E. Martin of counsel) for the Commissioner of Patents.

Before RICH, Acting Chief Judge, and MARTIN, SMITH, and ALMOND, Jr., Associate Judges, and Judge WILLIAM H. KIRKPATRICK, United States Senior District Judge for the Eastern District of Pennsylvania

RICH, Acting Chief Judge, delivered the opinion of the Court.

This appeal is from the decision of the Patent Office Board of Appeals¹ affirming the rejection of claims 68-70 and 72-74 of application Serial No. 640,353, filed February 15, 1957, entitled "Electrophotographic Coating." Claims 57-67, 71 and 75 stand allowed.

The invention is in the field of electrophotographic or electrostatic reproduction. The key to this process is the phenomenon of photoconductivity which is the property of some substances to be electrically nonconductive in the dark but to become electrically conductive when exposed to light. Such substances as listed in the application are "zinc oxide, titanium dioxide, zinc or cadmium sulfide, zinc selenide, and the like." The appealed claims are directed to a process of preparing an electrophotographic image carrier and processes of making it. Such an image carrier consists of a base member such as paper or sheet metal coated with a resinous polymeric binder which is electrically nonconductive, i.e., is a dielectric, in which is dispersed, in finely powdered form, the photoconductive material.

To make an image, the thus coated sheet is given a uniform electrostatic charge in the dark, is then exposed to a light image, as for example projecting an image thereon through a photographic transparency, and developed to produce a permanent visible image by applying to the sheet a positively charged powder which will cling to those areas of the sheet which retain the original negative charge, i.e., those areas which were not struck by light and thus rendered conductive so that the charge was removed. After application of the developing agent, the image is fixed by fusing it to the sheet by heat or spraying it with a clear lacquer, etc.

Exemplary of the process claims is claim 68 and of the product claims is 72 (all emphasis ours):

68. A process of preparing an electrophotographic image carrier comprising a base having thereon an electrically insulating photoconductive coating layer including finely divided solid photoconductor particles in an electrically insulating film-forming polymeric binder covering a substantial portion of at least one side thereof, comprising the steps of: providing an aqueous solution of an organic film-forming addition polymer of an ethylenically unsaturated monomer, said polymer having functional groups ionizable in an aqueous solution containing an electrolyte and wherein said functional groups comprise carboxyl groups, said solution containing a sufficient amount of a volatilizable neutralizing reactant to maintain said film-forming polymer soluble therein, uniformly dispersing in said aqueous solution particles of finely divided photoconductor material in an amount at least twice the amount by weight of said film-forming polymer to form a dispersion wherein the photoconductor material constitutes a dominant proportion by weight of the solids therein, applying said dispersion as a coating over a substantial portion of at least one side of a carrier base to provide a substantially uniform layer thereon, and drying said applied layer with substantial removal of said neutralizing reactant and evaporation of water to form said electrophotographic image carrier.

72. An electrophotographic image carrier comprising a base member having a layer thereon covering a substantial portion of at least one side thereof and forming a substantially non-hygroscopic photoconductive electrically insulating layer, said layer comprising: a synthetic organic film-forming addition polymer of an ethylenically unsaturated monomer, wherein said polymer includes func-

¹ Examiners-in-Chief Duncombe and Liddoff, the latter writing the opinion, and Acting Examiner-in-Chief Wyman.

tional groups imparting aqueous solubility to said polymer, said functional groups being ionizable in an aqueous solvent containing an electrolyte and comprising carboxyl groups; and particles of finely divided photoconductor material uniformly dispersed in said polymer, said photoconductor material constituting a dominant proportion by weight of the solids in said layer and being present therein in at least two parts by weight to each part by weight of polymer, said polymer being present in a sufficient amount to bind said particles to said base, and said layer having a high electrical resistance in the absence of light.

The following references are of record and relied on:

Ball, 2,287,161, June 23, 1942.

Hayden, 2,287,348, June 23, 1942.

Niles, 2,577,624, December 4, 1951.

McLaughlin, 2,790,735, April 30, 1957 (filed Jan. 31, 1955).

The Examiner said in his answer, "of the above references, only Niles is applied against the claims. The other references are retained only as showing the state of the art in the ensuing discussion."

The Examiner thus stated his position in his answer:

It is the Examiner's position here that, from a consideration of the reference applied against the claims [Niles], the claimed subject matter lacks novelty (35 U.S.C. 102) and/or obviousness (35 U.S.C. 103) in the paper coating art.

[1] If a claimed invention lacks novelty, we are unable to see that it is of any significance in what art it is old. It is not here contended that that which is old in one art can be repatented in another. We believe what the Examiner had in mind was that obviousness is to be considered relative to the skill of those in the paper coating art generally rather than in the art of electrophotography specifically.

The Board thus stated its position:

We . . . agree fully with the Examiner's position as expressed in his answer in rejecting the appealed claims as unpatentable over Niles (35 U.S.C. 102 and 103).

Since it agreed fully with the complete anticipation aspect of the rejection, to which it limited discussion, the Board had nothing to say about the obviousness or section 103 aspect.

This case presents but one very specific issue for decision: does the Niles patent disclose to one skilled in the art a paper coating in which the mineral constituent is 100% titanium dioxide (TiO_2)? The position of the Examiner, the Board, and the Solicitor rests on the proposition that it does and appellants' case is that it does not. We agree with appellants.

To elucidate the issue further, it will be noted from the claims that the invention, whether claimed as the electrophotographic image carrier or as the process for making it, comprises a coating on a base member, such as a sheet of paper, which coating is an initially water-soluble film-forming polymeric material in which the powdered photoconductor material is dispersed. As above stated, one of appellants' broadly claimed "photoconductor materials" is titanium dioxide.² Niles shows a printing paper coating comprising the same binder that appellants claim, that not being disputed, a mineral component, and also the proportion limitations of the claims. Niles refers to titanium dioxide but in a particular way which has given rise to this controversy, as hereinafter explained.

It is true, as appellants point out, that their invention is in the field

² Hackh's Chemical Dictionary, 3d ed., defines titanium dioxide as follows: $\text{TiO}_2=80.1$. Titania. Colorless to black tetragonal or rhombic crystals, d. 3.70-4.26, m. 1560; insoluble in water, soluble in alkalis or concentrated sulfuric acid. In its pure state it is used as a white pigment for paint, water colors, inks, shoe polish, soap, rubber goods and for ceramic glazes, and as a filler for paper.

of electrophotography and that their coated paper must have the insulating and photoconductive properties essential thereto, as required by the claims, while Niles' invention is printing paper for ordinary use in printing presses which need not have such properties. We do not overlook these facts and the potential issues related to them but our disposition of the case makes it unnecessary for us to discuss them further.

[2] We agree with the Solicitor's contention—and we believe appellants agree with it too—that in considering what the disclosure of Niles is, that is to say what it conveys to one skilled in the art, it is the man skilled in the paper coating art, rather than the electrophotographic art, who is involved since the Niles patent relates to printing papers and not to electrophotography. We will so judge the Niles disclosure. The Patent Office position is that Niles teaches an all-titanium-dioxide coating in appellants' water-soluble polymeric binder and if the same coating is produced it inherently has the same properties.

The Niles patent is entitled "Mineral-Coated Paper and Process of Producing Same." It is written, as are most patent specifications, with a broad statement of the field to which the invention relates, a couple of paragraphs about the prior art and its problems, an indication of the general nature of the invention, some objects, and then a detailed description of the invention with six specific examples. The invention is "a new binder for pigmented or mineral-coated papers, by the application of which, paper having improved characteristics is obtained." (This art seems to use the terms pigment and mineral coating interchangeably.) The invention "in particular relates to paper having high brightness, high gloss and good affinity for printing inks."

At the end of the first paragraph on the state and requirements of the known art Niles makes this statement which is at the heart of the controversy:

Commonly employed pigments are clay, calcium carbonate, blanc fixe, talc, titanium dioxide and the like.³

That reference to titanium dioxide is the only one in the patent. The discussion then moves to a consideration of binders, what is wrong with them, and how Niles has improved them. There then follows this paragraph about the use of Niles' new binders:

The resinous compounds so obtained are suitably incorporated together with a pigment such as clay, talc, blanc fixe and the like in a medium such as water and applied to a coating raw stock by suitable means such as for example, by means of an air knife or roll coating coater.

Next is a discussion of the preparation of the binder, for a half column, and then the six specific examples of the coating of paper for printing in each of which the same pigment or mineral is used. It is described simply as "A clay slip at 70% solids * * *." Hackh's Chemical Dictionary defines "slip" as "a fluid suspension of clay, fluxing material and water, used to coat ceramics before final heating; e.g., ZnO and clay, which gives a glaze." Webster's New International Dictionary, 2d ed., gives as the most nearly appropriate definition, "Potter's clay in a liquid state, used in the casting process and for the decoration of ceramic ware, or as a cement for handles and

³ Believing that the only one of these terms which may be obscure to those not familiar with the art is "blanc fixe," we quote the definition thereof in Hackh's Chemical Dictionary, 3d ed. "Synthetic barium sulfate produced by the action of barium chloride on aluminum sulfate; used as a pigment for coating paper."

other applied parts." The record contains various references to "clay slip" but we do not find a definition of the term in its relation to paper coating. However, it is clear that "slip" may contain ingredients other than clay and water in this art as is shown by a paper of record published by the Technical Association of the Pulp and Paper Industry, known as TAPPI Monograph No. 25, "Paper Coating Additives," wherein it is shown at page 53 that a "clay slip" contains as a dispersing agent "commercial sodium hexametaphosphate (Calgon)." Since Niles does not disclose the composition of the "clay slip," used in all of his examples, we are left to speculate as to just what it is.

Based on Niles' disclosure of using his new binder with "a pigment such as clay, talc, blanc fixe and the like," exemplified only by the use of "A clay slip," plus his introductory reference to titanium dioxide as one of several named "commonly employed pigments" of the prior art, the Patent Office is insistent that the reference would be taken by one skilled in the paper coating art as disclosing the use of a paper coating consisting of Niles' binder and 100% titanium dioxide as the pigment. It says Niles discloses "that TiO_2 may be used as the pigment in lieu of the clay slip specifically set forth," to quote the Solicitor's brief. This he thinks is "the reasonable meaning thereof to one of ordinary skill in the art." In the Board's words:

Niles clearly and unequivocally discloses titanium dioxide to be a commonly employed pigment in a class with and as an apparent full substitute for clay, blanc fixe and talc (column 1, lines 28-30). [Emphasis ours.]

The reference is to the passage we quoted above which contains the only reference to titanium dioxide in the Niles patent.

On the other side, appellants say this is not what the patent would convey to one skilled in the art, that titanium dioxide is not in the class with clay, and that one skilled in the art would not substitute 100% TiO_2 in place of clay because it is not so used and those skilled in the art would not think that was what Niles meant or so read the Niles disclosure. [3] They produce an affidavit from one who is skilled in this art, James V. Robinson, who has impressive qualifications in the field. He has an interest in the case in that he is employed by The Mead Corporation which has a license under the application at bar, but that is not unusual for affiants and does not disqualify him. The most relevant of his qualifications are:

* * * for the past 17 years [I] have been employed in the Research Division of The Mead Corporation. Since 1950 I have been: Group Leader of the Fundamental Research Group of the Research Division; Research Consultant; Research Coordinator; Associate Director of Research; and recently I have been appointed a Fellow of the Research Department. I am a graduate of Pomona College and received my Doctor of Philosophy degree in Chemistry from the University of Illinois in 1940.

I am the co-author of the chapter entitled "Dispersants" appearing in TAPPI Monograph No. 25 entitled "Paper Coating Additives" published in 1963 by the Technical Association of the Pulp and Paper Industry, and I am the author of the chapter entitled "Dispersion of Pigments: Concept and Theory" to appear in a TAPPI Monograph soon to be released. In addition, I have published several papers dealing with theoretical physical chemistry.

Robinson's affidavit was filed at a time when the claims were being rejected on primary references no longer of record, and Niles and the McLaughlin patent were cited only as secondary references, some time after the final rejection and after appeal had been taken to the Board. Robinson directed his affidavit to the Niles and McLaughlin disclos-

ures. It was only after that that the Examiner filed his answer wherein, for the first time, he rejected the claims as fully met by Niles or obvious in view of Niles alone.

Robinson explains that titanium dioxide has a higher refractive index than any other white pigment and therefore possesses an unusually high opacifying and brightening effect when used in mineral coated papers, that it is a relatively expensive pigment, that its opacifying and brightening effect falls off as it is used in amounts above 10% of the total pigment and that the customary range to use is from 2% to 10%. Referring to McLaughlin's use of 20% TiO_2 with 80% clay (kaolin) he said that was higher than the percentage normally used. He explained that it is undesirable to use more than is needed for whiteness because TiO_2 in printing papers produces a lack of smoothness and is excessively abrasive against printing plates, wherefore its excessive use is avoided for reasons of paper quality as well as reasons of economy. Speaking specifically of Niles, he said:

Referring to the Niles disclosure, there is no specific description of the amount of titanium dioxide used to produce the high brightness and high gloss mineral or pigmented coated printing paper. Each of the examples of Niles discloses the use of a clay slip at 70% solids. Since the product being made is a paper sheet having high brightness, high gloss and good affinity for printing ink wherein the coating is deposited as a clay slip, it is clear to me from my knowledge and experience in the paper coating field that even if titanium dioxide were used, it would be used in combination with clay and would be present only in a minor proportion as needed to bring about the desired high brightness and opacity. I find no disclosure in Niles which indicates to me that titanium dioxide should be used in any amount beyond the customary small percentage and certainly there is no suggestion of use of titanium dioxide approaching 100% of the pigment, a procedure which would be contrary to the coating procedures commonly utilized to make a mineral coated printing paper.

I find no disclosure either in McLaughlin et al. or Niles of the use of titanium dioxide with a binder wherein the titanium dioxide constitutes a dominant proportion by weight of the solids in the coatings. Thus, the coatings of McLaughlin et al. and Niles, when prepared following the respective teachings of the patents and the procedures commonly employed in the paper coating industry, would not produce an electrically insulating photoconductive coating since the coatings of each patent are predominantly non-photoconductive, clay being the principal component and titanium dioxide being present in a minor amount, if at all.

We find corroboration for what Robinson says in other matter of record including TAPPI Monographs, McLaughlin, and Ball. Monograph No. 20, "Paper Coating Pigments," p. 206, points to several kinds and grades of "titanium dioxide," which appears not to be a simple single thing, and says, "it should be remembered that they rarely form a major proportion of the coating mineral, since relatively small amounts are usually needed to produce opacity, brightness, and whiteness. * * * the remainder of the coating mineral, * * * may be clay, chalk, or some other 'extender' pigment * * *." On p. 207 it is stated, "titanium pigments usually form a relatively small portion of the mineral constituent, the balance being an extender pigment." The Ball patent says:

Mineral materials which are usually employed in paper coating processes comprise extenders having indices of refraction less than about 1.65, such as clay, satin white, calcium carbonate and barium sulfate, and/or various types of high strength pigments having indices of refraction greater than about 2.0, such as titanium oxide, zinc sulfide, zinc oxide, etc.

The Solicitor asks us to read "titanium oxide" in that quotation as titanium dioxide. We do, as Ball does later on. ("Satin white," ac-

according to Hackh, is a mixture of calcium sulfate and aluminum hydroxide and this is essentially confirmed by a TAPPI Monograph.) Ball continues:

Said clay, satin white, calcium carbonate, barium sulfate, etc., extenders are relatively cheap and are widely employed, particularly in the manufacture of coated paper. * * * High strength pigments, such as mentioned, produce coated, surface-pigmented papers possessing relatively high opacity and brightness. In most instances, however, their excessive cost renders use of such pigments for the purpose prohibitive. It has been proposed to employ extended forms of these pigments, utilizing such extenders as those mentioned * * *.

Both sides place some reliance on those statements by Ball.

The Patent Office urges in support of its theory that Niles teaches 100% titanium dioxide as pigment in printing paper coating, which is the only kind of paper Niles discusses, some admittedly "uncommon" situations shown in the record where a major proportion or even as much as 100% titanium dioxide may be used. Both of these uses are mentioned in TAPPI Monograph No. 20 at p. 221. One is the coating of opaque waxing stock in making waxed paper where it says "titanium dioxide may constitute the major component of the coating mineral." The other is in making wallpaper. In this use it is stated that titanium pigments "When used in the ground coat, * * * usually form from 5 to 15% of the mineral constituent, expressed as titanium dioxide but, when used in the mixes for top colors and highlights, as much as 100% may be used to secure effective covering and contrast." The preceding two paragraphs of this same paper state, however, that "In printing papers" the amount of titanium pigments is "generally from 5 to 20% of titanium dioxide * * *." In "paperboards of all types" they "will generally be in the neighborhood of from 10% to 25% titanium dioxide * * *."

We are not skilled in the paper coating art. Yet we must determine what meaning Niles conveys to such a person. To that end we necessarily look to the evidence supplied to us, generally surveyed above, rather than to our own inner consciousness. On the basis of that evidence, it does not seem to us that one familiar with the facts of paper coating would combine with Niles' disclosure the facts that in making waxed paper or printing wallpaper highlights a high percentage, even 100%, of titanium dioxide is used and assume that Niles would or intended to do the same in making *printing paper*. We believe the contrary would be the case in view of the common practices in coating printing paper. In describing his own invention Niles does not indicate in any way that he uses any titanium dioxide at all. It is interesting to note that Robinson seems to assume, as an expert, that Niles may have the usual small percentage of TiO_2 in his "clay slip" because Niles refers to his printing papers as of "high brightness," and that seems probable. But even this must be left to surmise. From what we have been able to see of the situation in the art, and surely it is relatively little, the Patent Office contention appears to fly in the face of reason and to rest on a mere playing with phrases, excised from their context to support a thesis without regard to the general picture. It is clear that the normal practices involve the use of less than about 20% of titanium dioxide in printing and most other papers and this is quite enough to justify Niles' solitary statement about titanium dioxide, that it is "commonly employed" as a pigment. So it is. He never elaborated on *how* it was used and he did not expressly suggest using it at all in practicing his own inven-

tion. It is too much to make of this disclosure a teaching of a printing paper coated even with a dominant portion of TiO_2 , and certainly not 100%, *instead of* clay.

This is decisive of the issue for it is not in dispute that unless a paper coating contains at least a dominant portion of titanium dioxide it will not meet the appealed claims and will not be photoconductive.

There is another major argument in the case about the use of dispersants in coatings containing titanium dioxide and the common practice of the suppliers of titanium dioxide in adding dispersants to water soluble grades, the point being that their presence would destroy the electrophotographic value of the coating because of the conductivity of ionic dispersants used with titanium dioxide. The McLaughlin patent's eight examples all employ such dispersant in a pigment portion consisting of 80% clay, 20% TiO_2 , and 0.2% sodium hexametaphosphate. We find it unnecessary to reach this technical question, merely noting that it has not been overlooked.

We are unable to see any real distinction here between the rejection based on section 102 and the rejection on section 103. If Niles does not *disclose* a printing paper coating with 100% or at least a dominant portion of TiO_2 , neither does he *suggest* it so as to make obvious that which is not disclosed. The two rejections, resting as they do on the same foundation, fall together when that foundation is removed.

[4] The decision of the Board as to all appealed claims is reversed.
REVERSED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,799,346, Baker and Conrad, RETRIEVABLE BRIDGE PLUG; 2,806,532, same, METHOD AND APPARATUS FOR PRESSURING WELL BORES, filed Nov. 1, 1966, D.C., N.D. Tex. (Wichita Falls), Doc. 7-231, *Kiva Corporation v. Baker Oil Tools, Inc.*

2,806,532. (See 2,799,346.)

2,883,255, R. A. Anderson, AUTOMATIC PROCESS LOGGING SYSTEM; 2,922,999, same, DATA REDUCTION SYSTEM, 2,987,704, Gimpel and Daniels, VARIABLE MONITORING AND RECORDING APPARATUS, filed Feb. 6, 1967, D.C., N.D. Ill. (Chicago), Doc. 67-C-200, *Scam Instrument Corp. v. International Business Machines Corp.*

2,896,284, M. Bischof, SAFETY BELT AND BUCKLE, filed Jan. 24, 1967, D.C., N.D. Ill. (Chicago), Doc. 67-C-122, *Pontotter, Inc. v. The Greenfield Co.*

2,922,999. (See 2,883,255.)

2,987,704. (See 2,883,255.)

3,006,510, P. H. Sagarin, AEROSOL CAP CONSTRUCTION; 3,198,399, same, HAND-HELD AEROSOL DEVICE; 3,227,321, same, HAND-HELD AEROSOL DEVICE, filed Jan. 31, 1967, D.C., N.D. Ill. (Chicago), Doc. 67-C-164, *Valve Corporation of America v. Union Carbide Corporation.*

3,009,801, H. E. Mills, FISHING LURE, filed Oct. 31, 1966, D.C., M.D. Fla. (Tampa), Doc. 66-360-C, *T. Gudebrod Industries, Inc. v. L & S Bait Company, Inc.* Ordered, dismissed with prejudice Jan. 28, 1967.

3,198,399. (See 3,006,510.)

3,227,321. (See 3,006,510.)

3,243,916, J. W. Ryan, WALKING TOY, filed Apr. 15, 1966, D.C., E.D.N.Y. (Brooklyn), Doc. 66C-336, *Mattel, Inc. v. Ideal Toy Corp.* Consent judgment for injunction, Jan. 31, 1967.

3,303,593, Moe and Nielsen, CLIP-LOADING CAP GUN, filed Feb. 14, 1967, D.C., S.D.N.Y., Doc. 67-C-599, *Ideal Toy Corporation v. Multiple Products, Inc. et al.*

REISSUES

APRIL 4, 1967

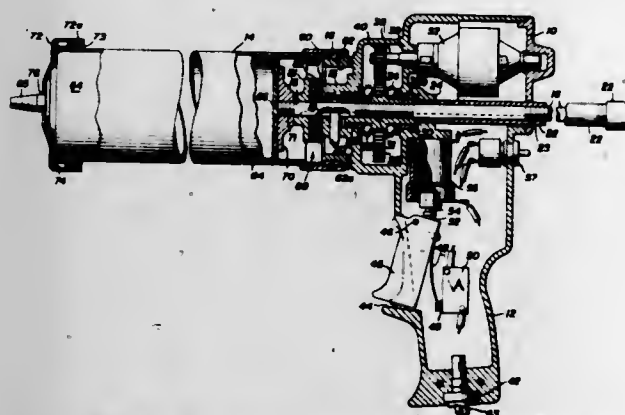
Matter enclosed in heavy brackets **[]** appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,180

DISPENSING GUN

Carl J. Frenzel, Chicago, and James C. Green, Glen Ellyn, Ill., assignors to Skill Corporation, Chicago, Ill., a corporation of Delaware
Original No. 3,208,638, dated Sept. 28, 1965, Ser. No. 268,679, Mar. 28, 1963. Application for reissue Jan. 24, 1966, Ser. No. 538,110

13 Claims. (Cl. 222-39)



12. A dispensing gun comprising, a housing enclosing a reversible electric motor, speed control means in said housing connected with said motor for operating the latter in at least one direction thereof at various speeds, which speed control means include an operating trigger supported by said housing, a pinion gear driven by said motor, a drive gear mounted for rotation about its central axis, said drive gear being engaged by said pinion gear for forward rotation in response to operation of said motor in said one direction, said drive gear including a central bore coaxial with its axis of rotation, an externally threaded rod coaxial with said drive gear and received within said bore, said drive gear including means engaged with said rod for imparting forward and reverse axial movement to the latter upon corresponding forward and reverse rotation of the former, elongated support means carried by said housing and adapted to contain a supply of material to be dispensed, a member on one end of said rod and positioned for forward and reverse movement along said support means upon corresponding movement of said rod, said member being adapted to discharge material from said support means upon forward movement of the member.

26,181

CAMERA LOCKING DEVICE

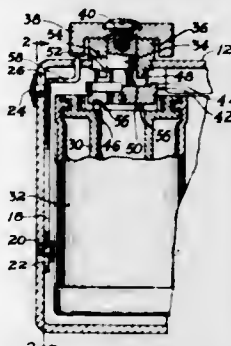
Douglas C. Harvey and Hubert Nerwin, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Original No. 3,096,699, dated July 9, 1963, Ser. No. 167,791, Jan. 22, 1962. Application for reissue July 7, 1965, Ser. No. 470,305

7 Claims. (Cl. 95-31)

1. In a camera [adapted to accommodate a rotatable film winding member, and having] the combination comprising:

- a housing having means to accommodate within the housing a removable light sealed roll film magazine containing a rotatable film take-up spool,
- a cover movable into [and out of] a closed position closing said housing and out of the closed position to radially load and unload said magazine directly into and from said housing accommodating means while the cover is out of the closed position,
- locking means movable between

- a first position locking said cover in said closed position, and
- a second position releasing said cover for movement out of said closed position, [and]
- [d] release means for moving said locking means from said first position to said second position, [the improvement comprising:]



[e] (d) winding mechanism on said housing remote from said release means, and including a driving member on said housing movable axially into and out of direct driving engagement with said [winding member] spool when said [winding member] magazine is accommodated in [the camera, and] said housing,

[f] (e) means for moving said driving member out of driving engagement with said [winding member] spool in response to movement of said locking means to said second position [and]

(f) means for moving said driving member into direct driving engagement with said spool only in response to movement of said cover into the closed position.

26,182

METHOD OF PREPARING AN EDIBLE MEAT PRODUCT

David Torr, Oyster Bay, N.Y., assignor to Ralston Purina Company, St. Louis, Mo.
No Drawing. Original No. 3,173,795, dated Mar. 16, 1965, Ser. No. 372,704, June 4, 1964. Application for reissue Oct. 8, 1965, Ser. No. 496,250

10 Claims. (Cl. 99-100)

1. The method of preparing a food product comprising the steps of comminuting raw poultry skin to fibriform consistency to form a fibrous binder matrix, cooling the poultry skin during the comminution thereof, mixing pieces of meat with said matrix, packing the mixture in a casing, cooking the encased mixture, and cooling the encased mixture to form a product which retains its integrity at normal and cooking temperatures and which is capable of being sliced into integral slices at normal and heated temperatures.

26,183

[INFLATABLE POULTRY HOUSE] VENTILATED POULTRY HOUSE

Donald E. Morrell, 414 N. 85th St., Birmingham, Ala. 35206
Original No. 3,148,662, dated Sept. 15, 1964, Ser. No. 238,362, Nov. 19, 1962. Application for reissue Feb. 21, 1966, Ser. No. 534,277

1 Claim. (Cl. 119-15)

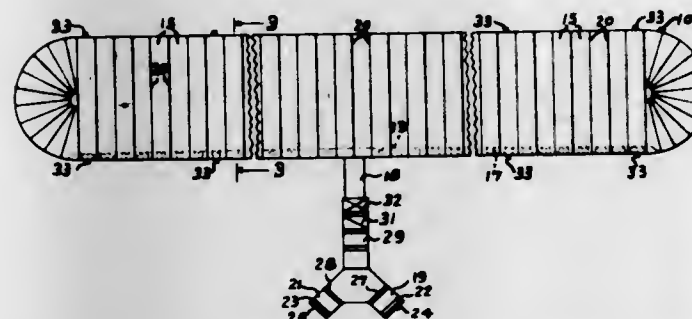
A ventilated poultry house comprising,
(a) an elongated [inflatable] shelter having a continu-

APRIL 4, 1967

U. S. PATENT OFFICE

17

- ous arcuate inner surface as viewed in transverse cross section [and adapted to be supported by positive air pressure within said shelter],
- (b) an elongated conduit adjacent a side of said shelter and extending substantially the length thereof,
- (c) means to supply air under pressure to said conduit,



(d) there being a plurality of upwardly opening air discharge passageways throughout the length of said conduit of a size and positioned to force air uniformly in an upward direction subjacent said arcuate inner surface and thence downwardly whereupon it moves across the poultry house adjacent the floor thereof whereby [said shelter is supported by] air is supplied under positive [air] pressure within said shelter and air is supplied continuously to the poultry within said shelter,

(e) and there being air discharge passageways adjacent lower portions of said shelter side below said conduit in position to remove air continuously from said shelter after it has moved upwardly and then downwardly subjacent said arcuate inner surface.

26,184

RARE EARTH ORTHOVANADATE FLUORESCENT [OPTICAL MASER] MATERIALS

Albert A. Ballman, Woodbridge, N.J., Robert C. Linares, Jr., Ridgefield, Conn., and Le Grand G. Van Ultert, Morris Township, Morris County, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Original No. 3,152,085, dated Oct. 6, 1964, Ser. No. 129,795, Aug. 7, 1961. Application for reissue Dec. 17, 1964, Ser. No. 432,914

3 Claims. (Cl. 252-301.4)

1. A composition of matter consisting essentially of a [single crystal vanadate] [material] mutual solid solution having the empirical formula:



where A is an ion selected from the group consisting of lutetium, gadolinium and yttrium, B is a trivalent rare-earth ion selected from the group consisting of europium and dysprosium, and x has a value of from 0.00001 to 0.25.

26,185

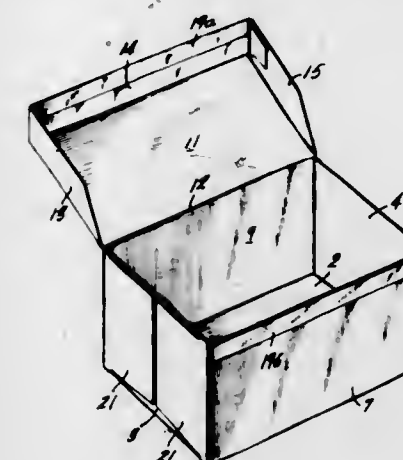
CARTON HAVING HINGED COVER

James W. Henry, Clarksville, Ind., assignor, by mesne assignments, to American Can Company, New York, N.Y., a corporation of New Jersey
Original No. 3,125,280, dated Mar. 17, 1964, Ser. No. 106,298, Apr. 28, 1961. Application for reissue Mar. 15, 1966, Ser. No. 539,246

6 Claims. (Cl. 229-51)

1. A carton made from a cut and scored blank which can be partially set up for end filling and then closed or partially set up for top filling and then closed comprising a front wall panel, a bottom wall panel joined to the front wall panel by a scored line, a rear wall panel joined to the bottom wall panel by a scored line, means forming side wall panels at both sides of the carton joined to at

least one of the aforementioned panels by scored lines, a flap joined by a scored line to a panel adjacent a panel to which a side wall panel is connected, said side wall panel being affixed to said flap, a cover panel joined to the rear wall panel by a scored line, a pair of panels in side-by-side relation joining the cover panel and the front wall panel, one connected by a scored line to the front edge of the cover panel and the other sandwiched between said last-mentioned panel and said front wall panel, said sandwiched panel being divided into upper and lower portions by an unbroken, weakened line, the upper portion being



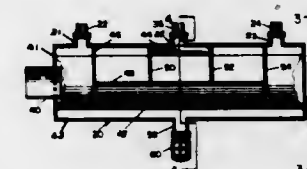
affixed in contact with the front face of the front wall panel, and the lower portion being affixed in contact with the rear face of the panel which is connected to the cover panel, depending side panels connected by scored lines to each side of the cover panel, and flaps joining said depending side panels at right angles to said depending front panel, the carton being opened by breaking the weakened line to provide a recloseable cover having three connected downwardly depending panels which telescope over the side and front wall panels, with the opposite edges of the broken line forming interlocking edges when the cover is closed.

26,186

FUEL HEATER AND SEPARATOR

John L. McQuerry, Bethany, Okla., assignor of forty-five percent to Wiley W. Lowrey, Oklahoma City, Okla.
Original No. 3,209,816, dated Oct. 5, 1965, Ser. No. 276,008, Apr. 26, 1963. Application for reissue Dec. 6, 1965, Ser. No. 521,231

7 Claims. (Cl. 165-71)



6. A heat exchanger and separator for use in a fluid system to remove materials of higher specific gravity from the fluid flowing through the heat exchanger and separator, and for heating the fluids flowing therethrough, said heat exchanger and separator comprising:
an elongated, inner hollow member having opposed first and second ends;
an elongated, outer hollow member coaxially surrounding said inner hollow member and also having opposed first and second ends;
a first end plate attached to adjacent ends of the inner and outer hollow members to form a closure of said inner and outer hollow members, said first end plate

having an opening therethrough in communication with the interior of said inner hollow member;

a ported second end plate attached to the adjacent second ends of said inner and outer hollow members and having a plurality of ports therethrough in communication with the interior of said inner hollow member, the arrangement of said end plates and inner and outer hollow members being such that an annular chamber is formed therebetween;

a pair of fluid inlet means each defining a fluid inlet opening through said outer hollow member into said annular chamber, said pair of inlet means being spaced from each other axially along said outer hollow member and positioned on the opposite end portions of said outer hollow member for admitting fluid into said annular chamber;

fluid outlet means defining a fluid outlet opening through said outer hollow member into said annular chamber, said fluid outlet means being disposed between, and in generally coplanar alignment with said pair of fluid inlet means;

a pair of spaced, longitudinal baffle members extending parallel to the coincident axes of said inner and outer hollow members in the annular chamber between said inner and outer hollow members, said longitudinal baffle members each having a pair of ends and each being positioned generally between said pair of fluid inlet means and disposed on opposite sides of a plane extending through the coincident axes of said inner and outer hollow members and through said pair of fluid inlet means and said fluid outlet means;

a pair of spaced, transverse baffle members in said annular chamber extending circumferentially a portion of the way around said inner hollow member and each lying in a plane extending substantially normal with respect to the coincident axes of said inner and outer hollow members, said spaced, transverse baffle members being positioned in said annular chamber between said pair of fluid inlet means and on opposite sides of said fluid outlet means, the transverse baffle members each being axially spaced from an end of each of said longitudinal baffle members;

means forming a fluid discharge opening extending through said outer hollow member into communication with said annular chamber and disposed on the opposite side of said outer hollow member from said fluid outlet and fluid inlet means; and

valve means operably disposed in said fluid discharge opening forming means, said valve means being

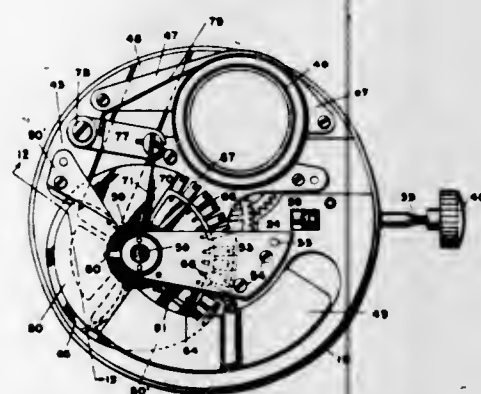
moveable between opened and closed positions to permit the removal of the higher specific gravity material from said annular chamber when in the open position, and, when in a closed position to prevent flow through said fluid discharge opening.

26,187 ELECTRIC WATCH

John A. Van Horn and Philip E. Blemmer, both of Lancaster, Pa., and James H. Reese, Manheim, Pa., by Hamilton Watch Company, Lancaster, Pa., a corporation of Pennsylvania, assignee

Original No. 2,888,797, dated June 2, 1959, Ser. No. 409,934, Feb. 12, 1954. Application for reissue Aug. 10, 1966, Ser. No. 579,444

8 Claims. (Cl. 58—28)



1. In a battery operated watch, a balance wheel and staff assembly, means establishing a permanent magnetic field having two spaced intensified regions, a substantially planar coil carried by said assembly and arranged to have separate parts thereof simultaneously pass through said intensified regions, the plane of said coil being substantially perpendicular to said staff, and means for periodically connecting said coil with the watch battery to create a magnetic flux about said coil, said intensified regions being so arranged that the reaction between said flux and the magnetic field in said intensified regions simultaneously impulses said coil in each intensified region, the impulse in one region urging the portion of the coil therein in a first direction while said impulse in the other region urges the portion of the coil therein in a second direction which differs from said first direction by some angle other than 180°.

PLANT PATENTS

GRANTED APRIL 4, 1967

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,730

ROSE PLANT

Arthur P. Howard, Sierra Madre, Calif., assignor to Great Western Rose Company, Inc., Pomona, Calif., a corporation of California

Filed Feb. 1, 1966, Ser. No. 526,960

1 Claim. (Cl. Plt.—18)

The new and distinct variety of rose plant of the class designated as hybrid tea roses, substantially as herein shown and described, characterized particularly as to novelty by the globular, medium-sized French Rose blooms borne as single flowers on medium length stems, the delicate, sweet fragrance of the flowers, the longevity of the flowers after they have been cut, the small number of prickles, the vigorous, tall upright growth habit of the plant, and the abundance of large sized leaflets.

2,731

POINSETTIA PLANT

James C. Mikkelsen, 1803 W. 13th St., Ashtabula, Ohio 44004

Filed Feb. 25, 1966, Ser. No. 530,238

1 Claim. (Cl. Plt.—86)

A new and distinct variety of poinsettia plant, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a semi-dwarf habit of growth, rigid and upright stems which do not require staking and which are ideal for short, compact and long-lasting plants which are particularly suitable for home decorations, relatively small flower buds which do not drop excessive pollen or nectar, a distinctive and attractive light cream-white coloration of the bracts which make the plants especially desirable for decorative

2,732

POINSETTIA PLANT

James C. Mikkelsen, 1803 W. 13th St., Ashtabula, Ohio 44004

Filed Feb. 25, 1966, Ser. No. 530,239

1 Claim. (Cl. Plt.—86)

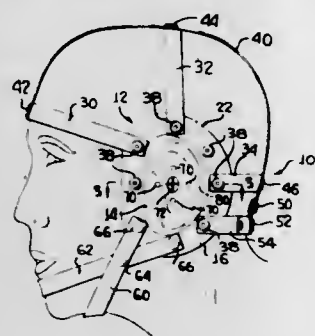
A new and distinct variety of poinsettia plant, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a semi-dwarf habit of growth, rigid and upright stems which do not require staking and which are ideal for short, compact and long-lasting plants which are particularly suitable for home decorations, relatively small flower buds which do not drop excessive pollen or nectar, highly decorative, attractive and distinctively colored bracts which have a light cream-white background color overlaid with two shades of pink coloration in irregular areas of varying widths, a non-drooping habit of the bracts with age, excellent keeping qualities without exacting growing techniques to prevent early flowering, and good shipping qualities attributable to the semi-dwarf habit, rigid stems and short leaves and bracts which are less susceptible to damage or injury during shipping than most other commercial varieties.

PATENTS

GRANTED APRIL 4, 1967

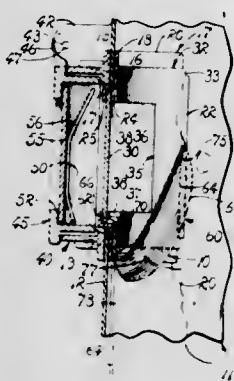
GENERAL AND MECHANICAL

3,311,921
WRESTLING HEADGEAR
Lee Helm, 21 E. Cheyenne Road,
Colorado Springs, Colo. 80906
Filed Jan. 19, 1965, Ser. No. 426,557
1 Claim. (Cl. 2-3)



Wrestling headgear comprising an ear covering guard formed of flexible material and including a main part and a marginal flange portion integral therewith, a network of positioning and retaining bands secured to the marginal portion of said guard, said network of bands being adapted to traverse the head of a wearer to hold the guard in place over the ear of the wearer, said main part of the guard being of generally concavo-convex configuration and having a first plurality of substantially uniform size holes formed therein, said main part also having formed therein an enlarged hole of generally oval configuration and centrally located within said first plurality of holes, said enlarged hole being guarded by a single pair of integral members crossing one another at right angles and at their mid point, and dividing said enlarged hole into four openings of right angular sector shape, said members also being integral with said main part, said enlarged hole in operative position being disposed over the entrance to the auditory canal of the wearer to enhance ventilation of the ear of the wearer, to provide better hearing to the wearer and to improve the equilibrium of the wearer.

3,311,922
BREATH DEFLECTOR FOR WELDERS' HELMETS AND THE LIKE
Paul A. Bezzerides, P.O. Box 211, Orosi, Calif. 93647
Filed Feb. 16, 1965, Ser. No. 433,046
5 Claims. (Cl. 2-8)



1. A breath deflector in combination with a welder's helmet having a front wall providing a window and window constraining means comprising a unitary body of flexible sheet material having a mounting portion and

a masking portion, said mounting portion including means engaging said constraining means holding the deflector in a retracted position in substantial conforming relation to said front wall of the helmet below the window and said masking portion being adapted to be manually raised to a position automatically forming a nose receiving trough with the masking portion dependably retaining such configuration in partially blocking relation to the window until manually lowered to said retracted position.

3,311,923
DOUBLE DRESS CONSTRUCTION AND METHOD FOR ITS MANUFACTURE
Romaine J. Ausman, 815 Miles Road,
Socorro, N. Mex. 87841
Filed Dec. 24, 1964, Ser. No. 420,922
8 Claims. (Cl. 2-74)



1. In a reversible dress construction including front and back bodice portions and skirt portions, the improvement wherein one of said bodice portions comprises pieces of material secured in back-to-back relationship with the outer surfaces thereof adapted to be alternately exposed, wherein the other of said bodice portions comprises pieces of material situated in substantially side-by-side relationship on opposite sides of the dress and being folded along the center about substantially adjacent vertical center lines thereby forming separate double ply bodice portions, and wherein said skirt portion comprises four pieces of material with two pieces joined along their vertical side edges to form a first skirt portion and with the other two pieces joined along their vertical side edges to form a second skirt portion positioned concentrically therewith, each of the skirt portions being joined along the lower edges of the bodice portions of said dress.

3,311,924
WEARING APPAREL
Howard Roark, 503 Bedford Drive,
Richardson, Tex. 75080
Filed Sept. 1, 1965, Ser. No. 484,231
6 Claims. (Cl. 2-87)

1. The combination comprising: a coat-type overgarment having a pair of front quarter panels adapted to be fastened together to cover the front of the body of the wearer; a protective leg enclosure detachably supported from the inside face of each front quarter panel of said

APRIL 4, 1967

GENERAL AND MECHANICAL

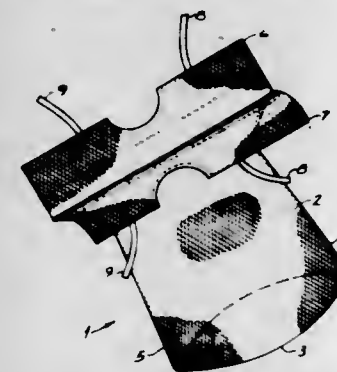
21

overgarment at the medial portion transversely of said quarter panel of said overgarment, whereby said leg enclosure is supported from said overgarment at a point in front of the leg of the wearer; the upper end of each of said protective leg enclosures extending substantially



above the bottom edge of said overgarment; and the bottom edge of each of said leg enclosures extending substantially below said bottom edge of said overgarment to enclose the lower edge of a trouser leg within said enclosure when said combination is worn.

3,311,925
DISPOSABLE INFANT SHIRT
John A. Lilla, 23-35 29th Ave., Astoria, N.Y. 11102,
and Helena R. Scicchitano, 620 Webster St., Shamokin,
Pa. 17872
Filed Feb. 20, 1964, Ser. No. 346,329
1 Claim. (Cl. 2-111)



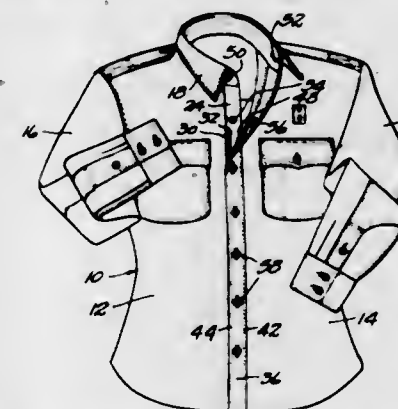
An infant's disposable shirt comprising:

- a pair of separate opposing fine gauge mesh linen sides, each having side edges and opening forming portions at upper and lower extremities, and each comprising a singular unitary sheet having no weft or warp weave;
- a sleeve portion extending outward from each side edge, each sleeve portion including a string attached thereto and disposed to permit the sleeve portions to close when tied to a corresponding one of the strings, and
- adhesive securing means attached to said side edges and adhering the edges of one sheet to the corresponding edges of the other sheet.

3,311,926
FRONT CLOSURE FOR GARMENTS
Curtis E. Gerber, 1227 E. Irvington St.,
South Bend, Ind. 46614
Filed Oct. 29, 1964, Ser. No. 407,443
5 Claims. (Cl. 2-128)

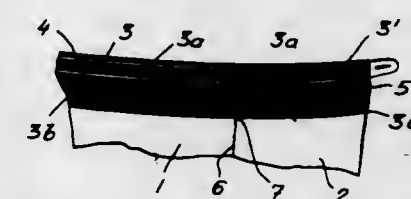
2. A front closure for interconnecting front garment panels comprising

a marginal underfacing on one fabric garment panel formed of multiple folded parts of said fabric stitched together, a slide fastener including a tape and gripper elements carried by one margin of said tape, the major portion of the width of said tape being interposed between folded parts of said underfacing and stitched thereto, whereby said gripper elements overlie said underfacing spaced from the free edge of said underfacing,



a marginal overfacing on the other fabric garment panel formed of multiple folded parts of said fabric stitched together, a slide fastener member complementary to said first fastener member and including a tape and gripper elements carried by one margin of said tape, the major portion of the width of said last named tape being interposed between folded parts of said marginal overfacing and stitched thereto whereby said last named gripper elements underlie said marginal overfacing spaced from the free edge thereof.

3,311,927
ELASTIC WAISTBAND FOR GARMENTS
Franz Gabler and Eric George Selzer, both of Vienna, Austria, assignors of fifty percent to Franz Gabler, and fifty percent to "EXT" Modellbekleidung Aktiengesellschaft, both of Vienna, Austria
Filed May 19, 1964, Ser. No. 368,530
Claims priority, application Austria, Nov. 22, 1963,
A 9,373/63
3 Claims. (Cl. 2-221)



1. A garment having an elastic waistband, said elastic waistband comprising upper and lower longitudinally extending elastic waistband sections merging at a transition zone, the upper section being elastic only in a longitudinal direction and the lower section being elastic in both longitudinal and transverse directions; the upper edge of said garment being joined to said waistband along said transition zone.

3,311,928
PROCESS OF BASTING AND REMOVAL OF BASTING
Peter J. Werth, Jr., Lexington, and Walter W. King, Winchester, Ky., assignors, by mesne assignments, to Solvex Corporation, Winchester, Ky., a corporation of Delaware
No Drawing. Filed June 17, 1964, Ser. No. 375,931
3 Claims. (Cl. 2-243)

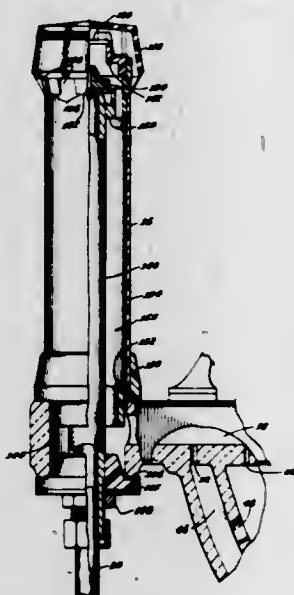
1. The process of treating a garment having sewn therein a plastic basting thread characterized by its ready

solubility in dry cleaning solvents and its lack of solubility in steam and water and comprising, immersing said garment in a dry cleaning solvent for a sufficient time to dissolve said thread and simultaneously to dry clean said garment, and thereafter removing said garment from contact with said solvent and from the plastic material dissolved in said solvent.

3,311,929

TOILET BOWL ASSEMBLY

Robert F. O'Brien, Monterey Park, Calif., assignor to Mission-West Manufacturing Company, Los Angeles, Calif., a corporation of Delaware.
Original application Dec. 19, 1961, Ser. No. 160,603, now Patent No. 3,217,337, dated Nov. 16, 1965. Divided and this application Oct. 6, 1965, Ser. No. 534,549
4 Claims. (Cl. 4-69)



1. Passage means to supply water to a receptacle from a source and to prevent backflow in the event a vacuum occurs at the source, comprising:

an upright outer tube positioned above the level of said receptacle and having an outlet port at its lower end in communication with the receptacle, the upper end of said outer tube being vented to the atmosphere;

an inner riser tube positioned in upright position in said outer tube and, defining therewith an annular passage, said inner tube terminating below the upper end of the outer tube, the lower end of said inner tube being in communication with said source;

a spider projecting downwardly from the top of said outer tube and into the latter in alignment with said inner tube;

valve means for the upper end of said inner tube, said valve means being responsive to pressure in the inner tube to permit flow from the inner upper end of said tube and downward through said annular passage to said outlet port, and said valve means including a member freely resting on said upper end of said inner tube and having means cooperative with said spider for centralizing said member on said upper end of said inner tube.

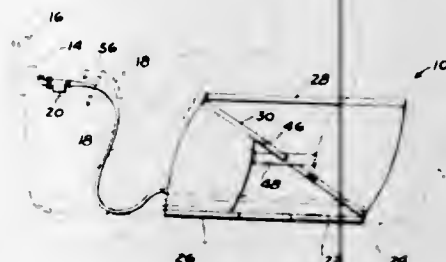
3,311,930

INFLATABLE BATHTUB SEAT

Thomas N. Bourke, 533 Lakeland, Grosse Pointe, Mich. 48230
Filed Mar. 9, 1965, Ser. No. 438,359
18 Claims. (Cl. 4-185)

1. An inflatable bathtub seat comprising, a base member adapted to rest upon a bathtub bottom, a top member defining a seat, and a third interconnecting member,

said members having corresponding first and second end portions in generally vertical alignment, means forming hinged connections between the first end portions of said base and third members and between the second end portions of said top and third members, means providing inflatable chamber means between opposite sides of said third member and said base and top members respectively,

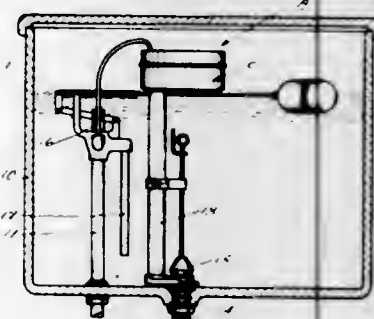


fill and drain tubing in hydraulic communication with said chamber means so that water under pressure can be introduced into and drained from said chamber means for raising and lowering said seat, said members and hinged connections being substantially rigid in directions normal to the plane of swinging of said members about the axes of said connections, whereby to stabilize said seat against lateral tipping when elevated, and means providing restraint to flow of water in said chamber means in an endwise direction, whereby to stabilize said seat against longitudinal tipping when elevated.

3,311,931

TOILET DEODORIZER

Poul Erik Toft Kristensen and George Ralph McKee, Windsor, Ontario, Canada, assignors to Allan J. Ashton, Dorchester, Ontario, Canada
Filed Apr. 9, 1964, Ser. No. 358,545
6 Claims. (Cl. 4-217)

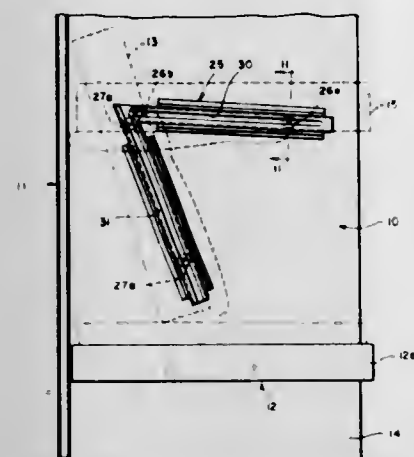


1. A deodorizer for water closet flush tanks of the kind including a water supply pipe and after-fill pipe and flushing valve and overflow pipe arrangement, said deodorizer comprising a container including a lower chamber, and an upper chamber adapted to receive water from the after-fill pipe and having escape apertures for allowing water received thereinto from the after-fill pipe to escape into said lower chamber, said lower chamber including a tubular member extending upwardly from the floor of said chamber and downwardly from said floor to project into the overflow pipe when said container is resting in operative position upon the overflow pipe, said lower chamber being adapted to enclose a deodorizing substance which is immersed in the water within said lower chamber.

3,311,932

BERTH-SETTEE COMBINATION

Elmer E. Ahola, Seattle, Wash.
(5611 208th SW., Lynnwood, Wash. 98036)
Filed Aug. 8, 1963, Ser. No. 300,808
7 Claims. (Cl. 5-9)



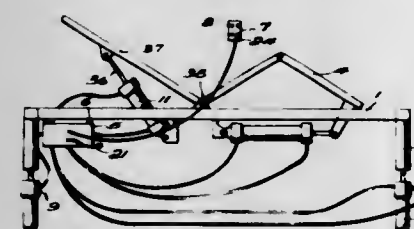
1. In a settee-berth combination of the character described, a housing comprising vertical back and opposite end walls, a lower bunk fixed horizontally in said housing and extending between its opposite end walls, an upper bunk forming frame structure extending between said opposite end walls and equipped at each of its opposite ends with a forwardly disposed supporting roller and with a rearwardly disposed supporting roller, a track fixed to each of said opposite end walls and extending substantially horizontally thereacross and containing the corresponding forwardly disposed roller therein for its support and guided travel, a track fixed to each of said opposite end walls in a vertical direction and containing the corresponding rearwardly disposed supporting roller therein for guided travel; said upper bunk being guided by its end rollers in the travel in said trackways in the adjustment of the upper bunk between its horizontal position of use and that inclined position of use at which it serves with the lower bunk in the formation thereby of a settee.

3,311,933

PATIENT CONTROLLED POWER OPERATED

KIT FOR HOSPITAL BED

James L. Peterson, 1150 1st St., Idaho Falls, Idaho 83401
Filed Aug. 12, 1965, Ser. No. 479,202
1 Claim. (Cl. 5-66)



A patient operated power unit for attachment to hospital beds and capable of selectively raising and lowering the back and leg portions of the mattress frame and also raising, lowering, and tilting the entire bed frame comprising:

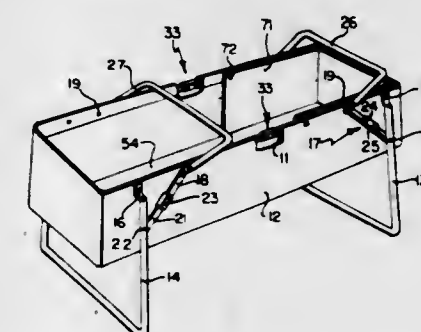
- (a) a low pressure hydraulic reservoir for storage of hydraulic fluid;
- (b) a high pressure hydraulic reservoir for storing said fluid under pressure;

- (c) a hydraulic pump connecting said low and high pressure reservoir for maintaining said fluid under pressure and said high pressure reservoir;
- (d) an electric motor for operating said hydraulic pump;
- (e) hydraulic motors for carrying out the above several operations wherein said hydraulic motors for raising and lowering the mattress frame each comprise a main and idler gear meshed together in a unitary housing with hydraulic ports on either side and a valve having inoperative position and two operative positions; the first operable position connecting the high pressure reservoirs and the first port and further connecting the low pressure reservoir and the second port whereby the main gear in the hydraulic motor revolves in one direction and the second operative position of said valves connecting said reservoirs to the opposite ports whereby the main gear in said hydraulic motors revolves in the opposite direction;
- (f) electrically operated valves for selectively connecting through hydraulic lines said hydraulic motors and said hydraulic reservoirs; and
- (g) manually operable electrical switches for engaging said electric motor and simultaneously opening pre-selected valves to perform the desired operation, whereby said electric motor and high pressure pump runs only in a single direction during all of the above operations.

3,311,934

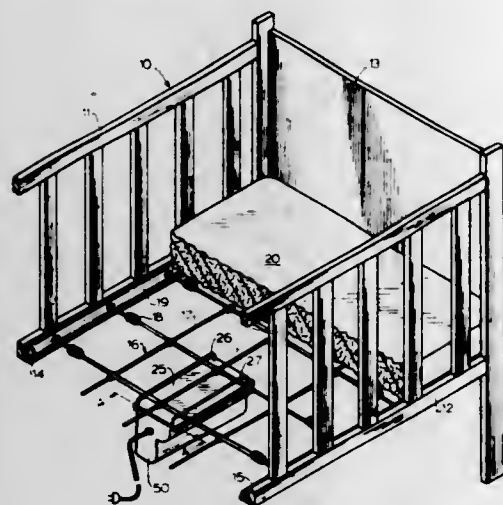
PORTABLE BASSINET

Morris I. Goldberg, 39 Locke Road, Newton, Mass. 02155
Filed Apr. 27, 1965, Ser. No. 451,148
3 Claims. (Cl. 5-102)



1. In an infant's portable bassinet of the type comprising a frame, leg members supporting said frame, a flexible body member supported by said frame, and a pair of carrying handles pivotally mounted on said frame and having a removable mattress element comprising a cover, a resilient padding member and a substantially rigid base portion, said mattress element adapted to cooperate with said body member and normally to lie flat therein forming the bottom thereof, means for positioning the mattress element therein in such manner as to provide a reclining support for an infant said means comprising two transverse hinge means provided in the base portion of said mattress element one said hinge means located approximately midway between the two ends thereof and the other said hinge element located approximately midway between the first said hinge element and the adjacent end of said mattress element, said hinge element being adapted to permit the mattress element to be bent along said hinge portions at least toward said padding member and a pair of fastening means affixed to said base portion, on the side thereof away from said mattress element, one near each end thereof, each said fastening means adapted to cooperate with said carrying handles to retain said mattress element in the bent position.

3,311,935
BED VIBRATING DEVICE
 Robert H. Petty, P.O. Box 2314,
 Sanford, N.C. 27332
 Filed July 20, 1965, Ser. No. 473,280
 1 Claim. (Cl. 5-109)



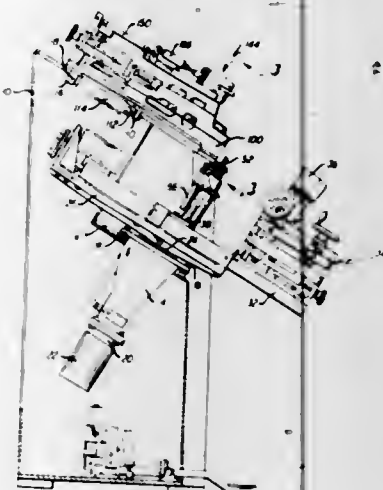
In combination with a baby crib having horizontally aligned, spaced mattress-supporting grid springs, an apparatus comprising:

- a plurality of U-shaped rods each having spaced parallel leg portions terminating in threaded ends and a straight portion connecting said spaced leg portions, said straight portions residing on and above said springs and said spaced leg portions extending downwardly through selected spaces between said springs;
- a base plate located adjacent and immediately beneath said springs and slidably mounted on said leg portions of said U-shaped rods;
- a mounting plate secured to and extending downwardly from said base plate and having a cavity located therein;
- an electric motor residing in said cavity and adjustably secured to said mounting plate, said motor including a drive shaft extending outwardly therefrom and driven thereby;
- a vibration inducing means including a post extending outwardly from said mounting plate and parallel to said shaft, a circular disc concentrically and rotatably mounted on said post and weight means mounted on said disc, said disc having its peripheral surface frictionally engaging a portion of said shaft and partially supporting said electric motor by means of said shaft whereby upon the energization of said motor, said disc is rotated to induce vertical oscillations in said apparatus;
- a housing being effective to enclose said mounting plate, said motor and said vibration inducing means, said housing engaging said base plate and being slidably mounted on said leg portions of said U-shaped rods; and
- clamp means threadably mounted on said ends effective to securely clamp said housing against said base plate and thereby clamp said base plate against said springs.

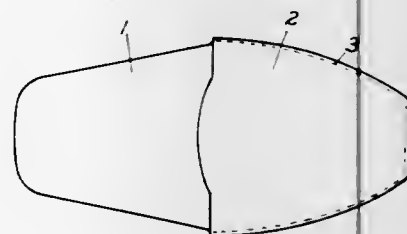
3,311,936
LAST EJECTOR
 Horst M. Leonhardt, Randolph, Mass., assignor to Jacob S. Kamborian, West Newton, Mass.
 Filed Nov. 12, 1964, Ser. No. 410,566
 7 Claims. (Cl. 12-127)

1. A last ejecting mechanism for use with a last support means that includes a heightwise extending last pin adapted to enter a hole in the last to support the last

bottom-up, comprising: a bar, mounted for heightwise movement with respect to said last pin; a ledge normally located below said last; means mounting said ledge to said bar both for heightwise movement in unison therewith and for movement independent of said bar in a direction having a component transverse of said last pin;



3,311,937
METHOD OF MAKING A SCUFF TYPE SLIPPER
 William C. Conroy, 503 Marshall Drive,
 Erie, Pa. 16505
 Filed Mar. 3, 1966, Ser. No. 531,513
 1 Claim. (Cl. 12-142)

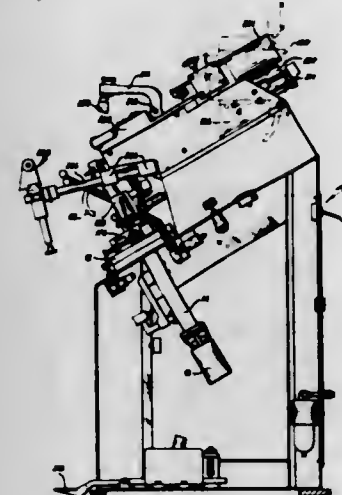


The method of making a one-use, scuff type slipper comprising a sole and a vamp secured to the periphery of the sole which comprises the steps of forming separate sole and vamp portions from a flexible, closed cell, extruded polystyrene film sheet substantially 10 mils thick and of density substantially 7 pounds per cubic foot and having smooth, imperforate, water repellent, upper and lower skins, and attaching outer edge portions of the vamp to outer edge portions of the sole.

3,311,938
APPLICATION OF CEMENT TO AN INSOLE
 Jacob S. Kamborian, 70 Crestwood Road,
 West Newton, Mass. 02165
 Filed May 7, 1964, Ser. No. 365,707
 10 Claims. (Cl. 12-145)

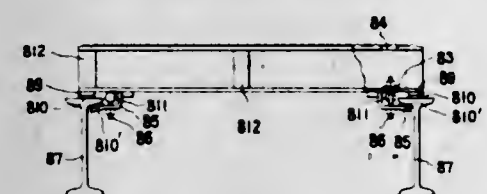
1. A method of applying cement to a selected portion of the margin of a shot insole preparatory to wiping the corresponding portion of the margin of a shoe upper against said insole portion comprising: supporting a shoe

assembly that includes a last having the insole located on its bottom; positioning an applicator against said insole portion; commencing to extrude cement from the appli-



cator against said insole portion; moving the applicator away from the insole portion; and terminating the extrusion of cement during the movement of the applicator away from the insole portion.

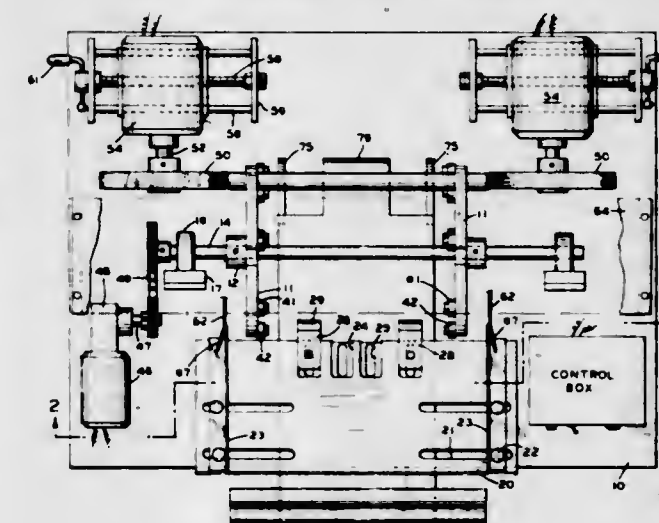
3,311,939
STEEL COVER DECK CONSTRUCTION
 Akira Yamamoto, Hideo Matsuda, and Kenjiro Fujita, Himel-shi, and Hiroyuki Inoue and Zenshiro Sengoku, Tokyo, Japan, assignors to Fuji Iron and Steel Company Limited, Marunouchi, Chiyoda-ku, Tokyo, Japan
 Filed Aug. 25, 1964, Ser. No. 391,927
 Claims priority, application Japan, Sept. 4, 1963, 38/47,253; Oct. 23, 1963, 38/79,470, 38/79,471, 38/79,472, 38/79,473
 1 Claim. (Cl. 14-73)



A steel cover deck construction comprising, in combination, a plurality of substantially identical H-beams arranged in juxtaposed contiguous relation so that the outer surfaces of their upper flanges form a substantially continuous uniplanar surface, and with the side edges of the flanges of adjacent H-beams welded together; the outer surfaces of said upper flanges having anti-skid formations and, except for said anti-skid formations, being uniplanar, the outer surfaces of the lower flanges being uniplanar; tie members extending, in laterally spaced relation with each other, below and transversely of said H-beams in contact with the lower flanges of the latter, and secured to the lower flanges of at least certain of said H-beams; said tie members joining said H-beams to form a substantially rectangular panel; a plurality of main support beams extending, in laterally spaced relation with each other, below and transversely of said H-beams and having top flanges in supporting relation with said H-beams; cushion pads interposed between the top flanges of said main support beams and the lower flanges of said H-beams; said panel being formed with aperture means therethrough adjacent each of its four corners; fastening means adjacent each of said four corners and hooked over the under surfaces of upper flanges of said main support beams; said fastening means including clips hooked over the upper flanges of said main support beams and nut and bolt means securing said clips to the lower flanges of at least certain of said H-beams at said four corners;

said aperture means including relatively small diameter apertures through the lower flanges of said H-beams and receiving the stems of the bolts of said nut and bolt means extending upwardly therethrough and engaged in the polygonal nuts of said nut and bolt means, said nuts being seated on the upper surfaces of said lower flanges of said H-beams; said aperture means further including larger apertures through the upper flanges of said H-beams each aligned with a respective one of said relatively small apertures and the associated lower flanges; the ends of said bolts engaged through said nuts having a reduced quasi-polygonal cross section including a pair of opposite planar side faces; said larger apertures being adapted to admit a tool to engage and hold said polygonal nuts against turning and permit engagement of said quasi-polygonal bolt cross section by a second tool for tightening and loosening of said nut and bolt means.

3,311,940
MACHINE FOR BRUSHING THE ENDS OF CYLINDRICAL WORKPIECES
 Henry A. Spittler, Upper Saddle River, N.J., assignor to Columbia Steel & Brass Corporation, Monroe, N.Y.
 Filed Jan. 17, 1966, Ser. No. 521,076
 7 Claims. (Cl. 15-38)

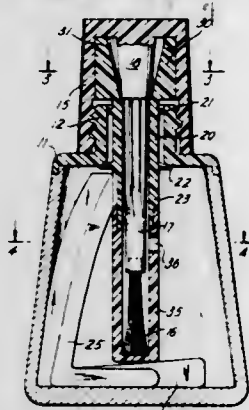


1. A machine for brushing the ends of cylindrical workpieces comprising, in combination, a frame, a pair of spaced circular brushes journaled for rotation on the frame in a plane extending longitudinally thereof, a rotatable feed assembly including a shaft mounted for rotation in an area between the brushes, a pair of spaced feed wheels secured on the shaft and having a plurality of pairs of aligned, generally U-shaped recesses around their peripheries, each pair receiving a cylindrical workpiece for delivery to the brushes during rotation of the assembly, each recess having opposed, leading and trailing edges, both disposed generally radially of the assembly axis, means for rotating the feed assembly at a relatively low speed and the brushes at a relatively high speed, a feed table for the workpieces which is downwardly inclined towards the rear of the machine for delivering said pieces to a pair of slots at a point about midway between the upper and lower edges at the front of said feed wheels, said wheels rotating upwardly and rearwardly from said point, and means comprising a pair of rollers along the leading radial edges of each pair of slots for supporting each workpiece for rotation by the brushes as said brushes engage the ends of each workpiece and operate thereon while it is in a rearward position on the feed assembly, and a plate adjustably mounted adjacent the trailing edge of each slot on the feed wheels to vary the width of said slot to receive workpieces of different diameters.

3,311,941

CONTAINERS FOR FINGERNAIL ENAMEL
Francis F. Buchwalter, New Rochelle, Norman L. Greff, North Woodmere, and Albert Skolnik, Merrick, N.Y., and James J. Baker, Darien, Conn., assignors to Revlon, Inc., New York, N.Y.

Filed Feb. 8, 1965, Ser. No. 430,827
12 Claims. (Cl. 15-510)

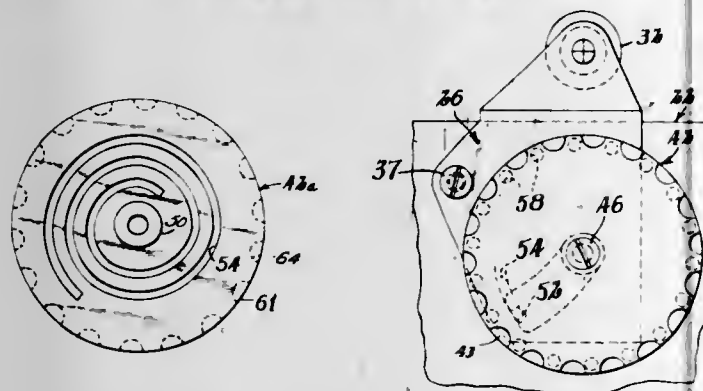


2. In container apparatus of the character described for holding fingernail enamel having a readily settling material suspended therein and for dispensing the correct amount of said enamel in its proper suspended form upon a brush inserted therein, the combination which comprises an open-topped first container for holding said enamel with a neck extending from the opening thereof, and a second tube-like dispensing container disposed therein and rotatably journaled in said neck, said second container extending from just above the bottom of said first container to beyond the end of said neck and having an opening providing flow communication between said containers at a point therealong above the liquid level of said first container, agitator means connected to and extending from said second container to the periphery of said first container for movement therearound upon rotation of said second container thereby agitating said suspended materials in said enamel, means disposed upon said second container adjacent said neck preventing axial movement therebetween, a closure cap for said containers, an applicator brush depending from said cap, and cooperating means on said cap and the top of said second container whereby rotating said cap rotates said second container with said agitating means thereon.

3,311,942

HANGER ASSEMBLY FOR SLIDING DOORS
James A. Edeus, Rock Falls, Ill., assignor to National Manufacturing Co., Sterling, Ill., a corporation of Illinois

Filed Mar. 3, 1965, Ser. No. 439,130
9 Claims. (Cl. 16-105)



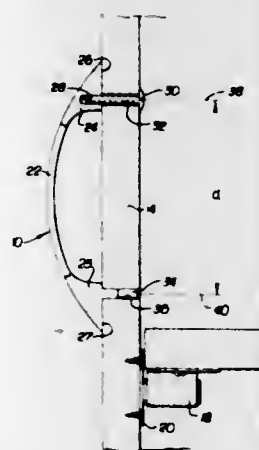
1. An adjustable hanger for a sliding door or panel assembly comprising, a bracket plate having a hole therein for receiving a mounting screw to attach said plate to a door, said bracket having therein an arcuate slot concentric with said hole,

a cam follower extending from one face of said bracket,
a cam wheel having a central hole therethrough for receiving a mounting screw extending through said slot,
said cam wheel overlying said plate and having a spiral cam track thereon facing said one face and receiving said cam follower, and
means on said bracket for cooperatively engaging a hanger member to mount said door thereon.

3,311,943

DRAWER PULL
Andrew J. Budai, La Crescenta, Calif., assignor to Jaybee Manufacturing Corporation, Los Angeles, Calif., a corporation of California

Filed Jan. 24, 1966, Ser. No. 522,593
2 Claims. (Cl. 16-125)



1. A cabinet pull having a handle portion and a pair of leg portions joined to the handle portion, said leg portions together defining a cabinet contacting plane; one of said legs having an extent terminating on the handle side of said contact plane, and having an interiorly threaded recess opening toward said contact plane, the axis of said recess being substantially perpendicular to said contact plane; the other of said legs having a substantially cylindrical projection integrally joined to the corresponding leg and extending substantially perpendicular to said contact plane and at least partially on the opposite side of said contact plane; the center-to-center distance of the projection and the recess being controlled for alignment with holes drilled in a cabinet to a corresponding standard; that part of said projection extending on the opposite side of said contact plane having a diameter substantially matching the size of a hole for closely receiving a screw cooperable with said threaded recess whereby the said extension may closely fit a hole of corresponding size, said projection part having a length sufficient to produce binding between the extension and the hole upon attempted angular movement of the extension in its hole thus to provide attachment of said pull by the aid of a single screw.

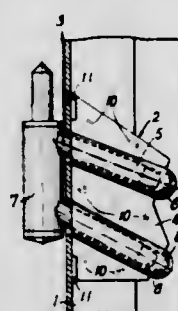
3,311,944

CARRIER FOR PIN BANDS ON DOOR-OR WINDOW-FRAMES OF STEEL

Paul Dufek, Kalsdorf, near Graz, Austria, assignor to Lapp-Flanze Eisenwarenfabriken Aktiengesellschaft, Kalsdorf, near Graz, Austria, a corporation of Austria
Filed July 28, 1964, Ser. No. 385,596
Claims priority, application Austria, Oct. 30, 1963, A 8,709/63; Dec. 6, 1963, A 9,797/63
9 Claims. (Cl. 16-128)

1. A pin-band and carrier for said pin-bands on a closure frame of steel, comprising two strip-shaped members adapted to be secured to a frame,

oppositely disposed bulges formed jointly by said two strip-shaped members and defining jointly sleeves, a band having pins extending therefrom, said pins being received in said sleeves, and

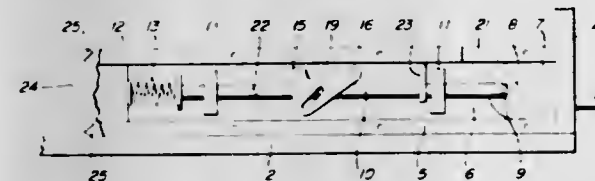


said strip-shaped members being welded together along areas spaced apart from said bulges, in order to obtain a clamping effect by said sleeves.

3,311,945

MECHANICAL APPARATUS
Robert D. Kluge, Westminster, Colo., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

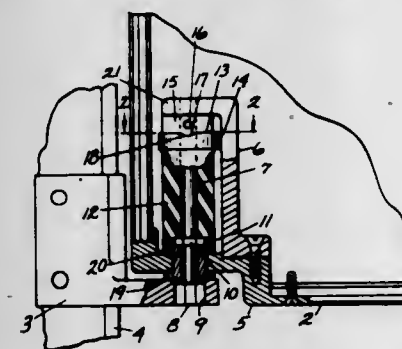
Filed July 20, 1964, Ser. No. 383,613
5 Claims. (Cl. 16-179)



1. A lock for an integral hinge and slide comprising slide means operative to provide linear motion for an apparatus mounted thereon, hinge means mounted on said slide means and arranged to provide rotation of said apparatus carried by said slide means, slidable rod means mounted on said slide means, said slidable rod means arranged in normal engagement with said hinge means for preventing rotation thereof, and stop means operative to disengage said slidable rod means from said hinge means for allowing rotation of said hinge means only when said slide means and said hinge means are in a predetermined spatial relationship.

3,311,946

SPRING HINGE
John H. Crankshaw, Erie, Pa., assignor to General-Erie Corp., Erie, Pa., a corporation of Pennsylvania
Filed June 19, 1964, Ser. No. 376,444
5 Claims. (Cl. 16-180)

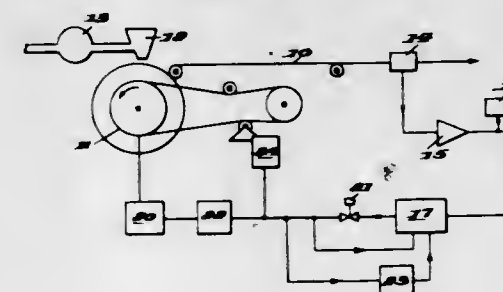


1. In a spring hinge, a hinge bracket having upper and lower flanges, a hinge pin having its upper end journaled in the upper flange and having upper and lower non-circular sections respectively above and below the lower flange, a bearing for the hinge pin in the lower flange between said non-circular sections, a tubular body of elastomer, said elastomer having its lower end bonded

to a bottom ring having a non-circular opening receiving the non-circular section of the hinge pin above the lower flange, said elastomer having its upper end bonded to a washer non-rotatably engaging the hinge bracket, a top ring between the upper flange and the washer and fixed to the pin, interengaging cam faced projections and depressions in the top ring and washer releasably holding the top ring in fixed relation to the washer, and another hinge bracket having a socket non-rotatably holding the lower non-circular section of the hinge pin.

3,311,947

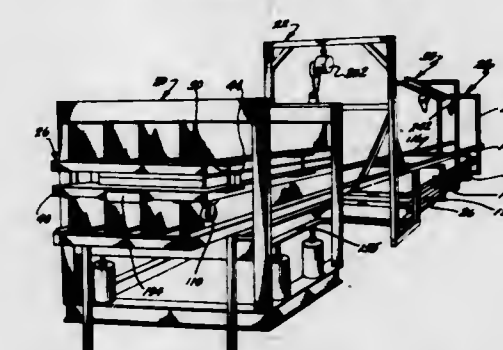
CONTROL DEVICE FOR PREPARING A CONTINUOUS PRODUCT
Thomas D. Fenley, Hightstown, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed May 20, 1964, Ser. No. 368,814
9 Claims. (Cl. 18-2)



1. In an apparatus for preparing web material composed of a hopper adapted to contain said material, an extrusion orifice joined to said hopper for passage of said material, a rotatable casting roll to receive said extruded material and a windup roll to receive said cast web material the improvement which comprises a control system for governing the rotational speed of circumferential segments of said casting roll past said orifice said system having sensing means for measuring and signalling web thickness; correction signalling means for creating a corrective signal by measuring said web thickness signal against a reference signal and adding a third signal representing said corrective signal issued during the last rotation of said roll for the same circumferential segment now being measured and actuating means for adjusting the rotational speed of said casting roll segment corresponding to that upon which said measured portion of said web was formed.

3,311,948

PANEL FORMING APPARATUS
Folke A. Axelsson, Grand Haven, Mich., assignor to Airspace, Inc., Fruitport, Mich., a corporation of Michigan
Filed Sept. 20, 1963, Ser. No. 310,370
8 Claims. (Cl. 18-4)



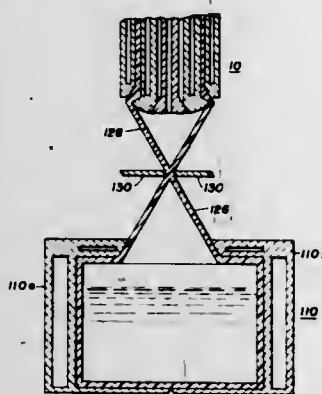
1. Injection molding apparatus for high pressure, expandable foaming polymers comprising: a mold defining a mold cavity; inner and outer parts of mold retaining frames on opposite sides of said mold; said inner pair of frames being in contact with said mold and including clamping means restraining said mold from expansion

under curing pressures after initial foaming reaction; said outer pair of frames overlapping said inner pair of frames, being in contact therewith and being normally retained thereagainst to prevent expansion of said inner pair and said mold against initial high expansion pressures of the foaming polymer; means to shift said outer pair of frames to an expanded condition for release of said inner pair and said mold; said inner pair and mold being removable from said outer pair for retention of the mold against expansion during curing of the foamed polymer; and said clamping means being releasable to free said mold from said inner pair for removal.

3,311,949

APPARATUS FOR BLOW MOLDING HOLLOW ARTICLES WITH CONICAL PROTRUSIONS

Kevin E. Moran, Crystal Lake, Ill., assignor, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Original application Nov. 30, 1961, Ser. No. 155,918, now Patent No. 3,200,179, dated Aug. 10, 1965. Divided and this application June 17, 1965, Ser. No. 464,684
8 Claims. (Cl. 18-5)



1. An apparatus for producing hollow articles with conical protrusions from plastic materials comprising, in combination, an extruding device adapted to extrude moldable plastic material in unconfined tubular form, a mold unit having a cavity corresponding in shape with the hollow article to be made, said mold cavity being adapted to receive the tubular plastic material when said mold is positioned substantially adjacent to the outlet portion of said extruding device, means for closing the end of said tubular plastic material, means for introducing pressure into said tubular plastic material to blow it into molding contact with said mold so as to form a hollow article while said tubular plastic material is integrally joined with plastic material in said extruding device, means for separating said mold unit and said extruding device while said extruding device continues to extrude moldable plastic material to form a cylindrical neck on said article, means to rotate said extruding device and mold unit relative to each other and to thereby decrease the cross-sectional area of said cylindrical neck at a point remote from said article to form a conical neck on said article and means for severing the article with a conical neck from the remainder of said tube.

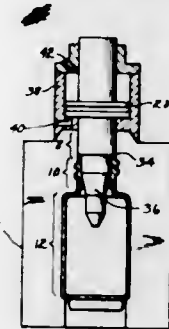
3,311,950

APPARATUS FOR BLOW MOLDING AND FORMING NECK OF HOLLOW ARTICLES

Robert G. Strauss, West Hartford, Conn., assignor to Monsanto Company, a corporation of Delaware
Original application Dec. 3, 1963, Ser. No. 327,789. Divided and this application Aug. 22, 1966, Ser. No. 574,177
6 Claims. (Cl. 18-5)

1. Apparatus for forming hollow articles from plastic material comprising a multiple section mold having a cavity adapted to receive a parison from an extrusion nozzle, said cavity comprising an upper portion, an in-

termediate portion subject said upper portion, and a lower portion subjacent the said intermediate portion, the diameter of said lower portion being greater than the diameter of said upper and intermediate portions, projecting means projecting from said mold into said intermediate portion of said cavity for gripping and indenting the portion of the parison in said intermediate portion of said cavity in a single annular zone with the remainder of the parison in



said intermediate portion being ungripped, an axially movable mandrel adapted to be inserted into said cavity, said mandrel comprising an elongated stem, a collar positioned about said stem remote from the lower end thereof, the diameter of said collar being substantially equal to the diameter of said upper portion of said cavity, and means for moving said collar through said upper portion to axially compress the portion of the parison therein and move the same into said intermediate portion.

3,311,951

RELEASE MEANS

Heinz Borchard and Eggert Herrmann, both of Nortorf, Holstein, Germany, assignors to Teldec-Telefunken-Decca-Schallplatten G.m.b.H., Hamburg, Germany
Filed Mar. 15, 1965, Ser. No. 439,691
Claims priority, application Germany, Mar. 16, 1964, T 25,826
3 Claims. (Cl. 18-53)



1. A record press including a record mold having two impression surfaces formed by stampers, and means provided at the edge of the mold and about the outer perimeter of said stampers for releasing a pressed record from a predetermined one of said stampers when the mold is opened, said means comprising an arrangement for directing pressurized gas laterally between said predetermined stamper and the pressed record for releasing the pressed record therefrom, two mold halves each including a respective one of said stampers, said releasing means including a retaining ring for fastening one of said stampers to its respective mold half, said retaining ring being formed with a channel for directing said pressurized gas between said stamper and the surface of the pressed record.

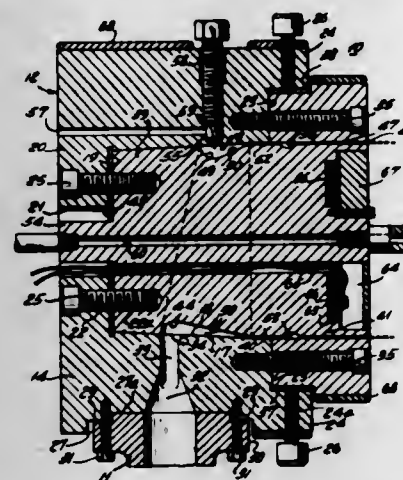
3,311,952

EXTRUSION DIE FOR BLOWN FILM

Leslie J. Kovach, Rockway, and Bruno V. Menegus, Wayne, N.J., assignors to Modern Plastic Machinery Corporation, Clifton, N.J., a corporation of Delaware
Filed July 16, 1963, Ser. No. 472,569
12 Claims. (Cl. 18-14)

1. An extrusion die comprising a body member of non-circular symmetry having a well formed therein provided with a first peripheral conical surface at its inner section, a core member of non-circular symmetry nesting in said well and having a second conical peripheral sur-

face at its inner section engaging said first surface and limited against axial movement into said well solely by said conical surfaces, at least one of said members having a peripheral groove formed therein, said members having radially-spaced confronting peripheral faces extending to

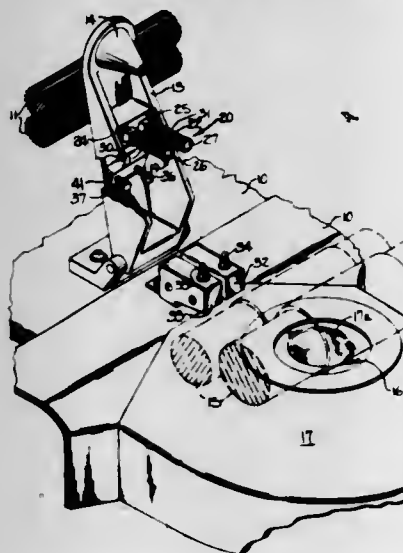


the outer ends thereof to delineate an extrusion opening having a feed passage formed therein communicating with said groove to permit the feed of a plastic fluid thereto and separable securing means extending between said body and core members for axially urging said core into said well.

3,311,953

STOP MOTION APPARATUS FOR TEXTILE MACHINES

Allen B. Nivens, Gastonia, and James Arthur F. Rayfield, Stanley, N.C., assignors to Ideal Industries, Inc., Bessemer City, N.C., a corporation of North Carolina
Filed June 12, 1964, Ser. No. 374,738
12 Claims. (Cl. 19-23)



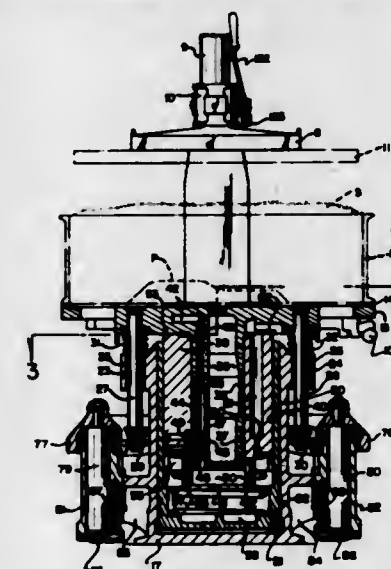
1. In a textile machine having a stationary frame, a trumpet arm having one end mounted on said frame for pivotal movement about a horizontal axis, a trumpet carried by said trumpet arm and movable therewith and adapted to receive and pass therethrough a continuous flow of textile material; the combination of first spring means carried by said trumpet arm for normally maintaining said trumpet arm in normal operating position when the textile material moving through said trumpet is of a predetermined standard of weight per unit length, said trumpet arm being movable to a raised position upon a predetermined decrease in the weight per unit length of the textile material moving through the trumpet and movable to a lowered position upon a predetermined increase in the weight per unit length of textile material moving through the trumpet, second spring means carried by said trumpet arm and biasing said trumpet arm toward said raised position, first and second switch means

mounted on said frame and adapted to stop operation of the textile machine, first switch actuating means carried by said trumpet arm and operatively engaging said first switch means to maintain operation of the textile machine when the trumpet arm is in the normal operating position and to actuate said first switch means to stop the textile machine when said trumpet arm moves to the raised position, second switch actuating means carried by said trumpet arm and operatively associated with said second switch means to actuate said second switch means to stop operation of the textile machine when said trumpet arm moves to said lowered position, and said first and second spring means and said first and second switch actuating means being adjustably carried by said trumpet arm and so positioned relative thereto that when the trumpet arm is manually moved to raised position the same are readily accessible for adjustment thereof.

3,311,954

SHOCKLESS JOLT MOLDING MACHINE

Robert W. Ellms, North Olmsted, Ohio, assignor to The Osborn Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed Nov. 8, 1963, Ser. No. 322,405
6 Claims. (Cl. 22-45)



1. A foundry molding machine comprising a table including a vertical jolt piston extending therebeneath, a ram piston having a cylindrical recess receiving said jolt piston, a squeeze piston having a cylindrical recess receiving said ram piston, operating spring means supporting said ram piston in said squeeze piston, means operative to supply air under pressure between said jolt and ram pistons to move said jolt piston upwardly and said ram piston downwardly compressing said operating spring means, means operative to exhaust such air under pressure to cause said jolt piston to drop and said spring means to move said ram piston upwardly to provide a shockless jolt impact, and compensating spring means substantially smaller than said operating spring means supporting said table in its lowermost position operative to relieve a portion of the load on said operating spring, said table in such lowermost position being supported solely by said compensating and operating springs.

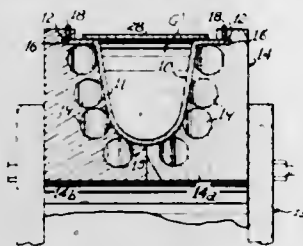
3,311,955

DISPOSABLE MOLD MEMBER FOR CASTING MACHINE

Roy Richards, Carrollton, Ga., assignor to Southwire Company, Carrollton, Ga., a corporation of Georgia
Filed Jan. 6, 1965, Ser. No. 423,727
7 Claims. (Cl. 22-57.4)

1. In a casting machine wherein metal is cast in a peripheral groove around a rotating wheel enclosed by

an endless belt, a removable mold portion for said casting wheel, said mold portion including a plurality of layers of different metals bonded together to form a single member, said mold portion being shaped to define said casting

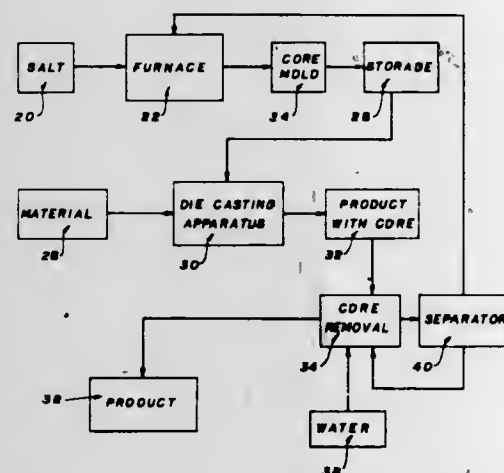


ing groove, means for supporting said mold portion on said wheel, and means for cooling said mold portion, said means for supporting said mold portion being cast with said cooling means cast integrally therein.

3,311,956

CASTING PROCESS EMPLOYING SOLUBLE CORES

Merlyn E. Townsend, Concord, Eugene J. Guelde, Oakland, and Donald G. La Rue, Orinda, Calif., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed May 24, 1965, Ser. No. 458,066
3 Claims. (Cl. 22-194)

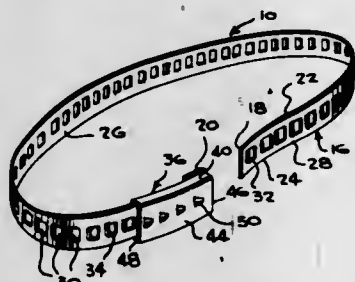


3. In the process of die casting metal around a disposable core element positioned in a mold the improvement comprising employing a disposable core element consisting essentially of a fused cast body of anhydrous calcium chloride.

3,311,957

SELF-LOCKING STRAP

Viktor R. Dunn, P.O. Box 1134, Shreveport, La. 71101
Filed Mar. 24, 1965, Ser. No. 442,437
5 Claims. (Cl. 24-21)



1. An insulation connection strap assembly for securing fibrous insulation about a pipe or the like, the strap assembly comprising:

an elongated, substantially rectangular, flexible metallic strap having a free end and an opposite clip retaining end;

the strap having side edges and having inner and outer faces;

the strap having a plurality of longitudinally aligned, generally rectangular slots formed therein, extending from the inner to the outer face thereof, each slot having a forward leading end wall;

the slot forward end walls being outwardly struck to provide an engagement lip;

an elongated, curved clip, of open, substantially rectangular form, including a bottom wall, side walls, and a top wall;

the clip having a forward and a rear end, and the clip retaining end of the strap being reverted about the forward end and underlying the clip bottom wall; and

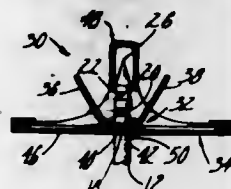
the clip top wall having a plurality of inwardly struck tabs thereon, longitudinally aligned to provide rearwardly facing engagement lips, spaced to engage the lips of the strap and to prevent movement of the strap in one direction with respect to the clip, whereby with the strap encircling the pipe and its insulation the free end of the strap is extended through the clip between the top and bottom walls and is engaged by the clip tabs to prevent retrogressive movement.

3,311,958

FASTENING DEVICE

Robert J. Reeves, Attleboro, Mass., assignor to Reeves Company, Inc., Attleboro, Mass., a corporation of Massachusetts

Filed Mar. 2, 1965, Ser. No. 436,464
2 Claims. (Cl. 24-155)



1. A construction for fastening an object to an article of clothing, comprising:

at least one shaft rigidly attached to and projecting away from the rear surface of said object, said shaft having a pointed end so that said shaft may be inserted through clothing without damage thereto, said shaft having a plurality of circumferential grooves spaced from each other and extending fully around said shaft with side walls that slope downwardly toward each other so that the side walls may pass freely inwardly and outwardly through the clothing without damage thereto, whereby the diameter of said shaft at said grooves is smaller than the diameter of said shaft at points adjacent said grooves,

and a gripper corresponding to each said shaft, comprising:

a clutch portion having a pair of resilient members providing opposing gripping edges, said gripping edges being spaced apart when said resilient members are unflexed a distance no greater than the diameter of said shaft at said grooves, said resilient members adapted to be flexed repeatedly by manual pressure to increase the spacing between said gripping edges to a distance greater than the diameter of said shaft at said points adjacent said grooves, and an enclosure portion having a guard disposed a predetermined distance above said gripping edges, said grooves being located along said shaft in such a manner that the groove closest to said rear surface of said object is spaced from the point of said shaft a distance less than said predetermined distance, so that regardless of the location of the gripper rela-

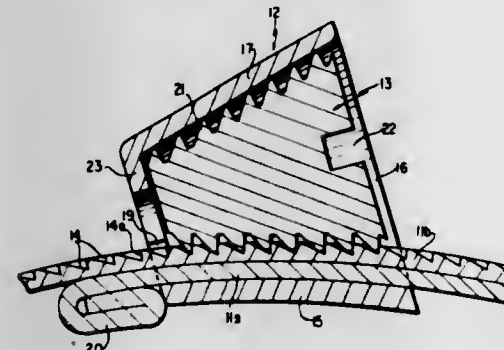
tive to the shaft, the pointed end of the shaft will always be spaced from the guard to prevent damage to the pointed end of the shaft, said gripper being manually removably installed on its shaft with its gripping edges in a selected one of said grooves by counting the number of snaps sensed by the installing hand as the gripping edges snap into each groove above said selected one.

3,311,959

SCREW-OPERATED TIGHTENING DEVICES

Erwin L. Schaub, Middle Village, N.Y., assignor to Ideal Corporation, Brooklyn, N.Y., a corporation of New York

Filed Sept. 21, 1964, Ser. No. 397,922
11 Claims. (Cl. 24-274)

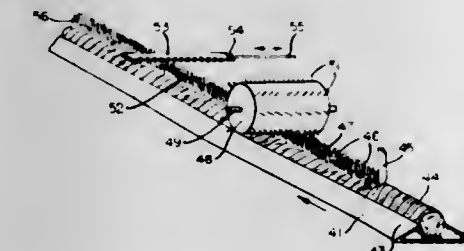


1. In a screw-operated tightening device including a housing having a base, a serrated strap to be drawn over said base, and a screw rotatable in the housing and having a spiral frusto-conical thread to engage in serrations of the strap and draw the strap over the base upon rotation of the screw, mating bearing surfaces respectively on said housing in fixed position relative to said base and on said screw in fixed position relative to said thread, said bearing surface on the screw being positioned to be thrust against said bearing surface on the housing in reaction to the pull of said thread on serrations of said strap, the interface of mutual engagement of said bearing surfaces being sloped relative to the direction of said pull at an acute angle thereto opening in said direction and said screw being free to slide along said bearing surface on said housing, whereby said thread is pressed toward said base by a component of force proportional to said pull.

3,311,960

METHOD OF MAKING PILE WEATHER STRIPPING

Milton Kessler, 4535 Grove Drive, Youngstown, Ohio 44512
Filed July 31, 1964, Ser. No. 386,532
7 Claims. (Cl. 28-72)



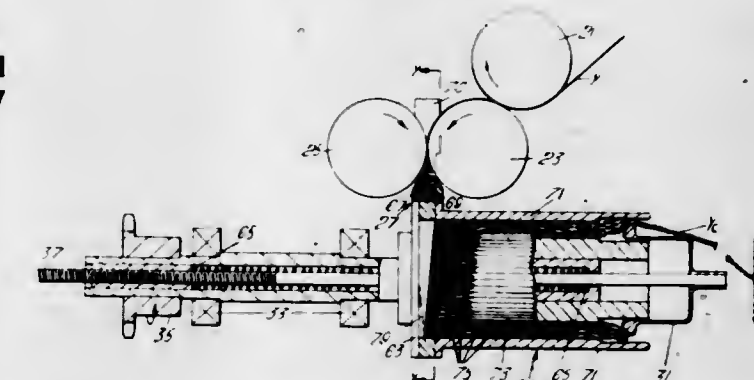
1. The method of making an elongated fiber weather stripping, said method comprising the steps of forming a backing member with at least a single channel, fastening a twisted fiber rope in said channel, and cutting the exposed twisted fibers of said rope to form an exposed operative pile for said weather stripping.

3,311,961

PROCESS FOR TREATING FILAMENTARY MATERIAL

Kurt Iwnicki, Ponthir, and James Frederick Thomas, Newport, England, assignors to British Nylon Spinners Limited, Pontypool, England

Filed Sept. 14, 1964, Ser. No. 396,175
Claims priority, application Great Britain, Sept. 26, 1963, 37,846/63
2 Claims. (Cl. 28-72)



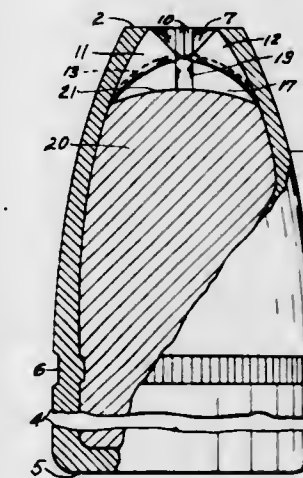
1. A process for treating crimped filamentary material comprising: forming an annular treatment zone by arranging an inner cylindrical member within an outer cylindrical member, at least one of said members being rotatable about its axis in a given direction; positively forwarding said filamentary material continuously and at least substantially tangential to one end of said treatment zone in said given direction at the point of initial contact of said filamentary material with the rotatable member; advancing said filamentary material axially of said members toward the other end of said treatment zone in the form of continuous helical coils between said members; treating said filamentary material to set the crimp therein while it is being advanced and removing said filamentary material from said other end of said treatment zone.

3,311,962

METHOD OF MAKING AN EXPANDING POINT BULLET

Arthur H. Burns, Jr., Cheshire, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

Original application Apr. 1, 1963, Ser. No. 269,280, now Patent No. 3,157,137, dated Nov. 17, 1964. Divided and this application June 30, 1964, Ser. No. 387,259
4 Claims. (Cl. 29-1.23)



1. The process of making a jacketed expanding bullet having a soft metal core comprising the steps of
(a) forming an elongated open mouth relatively hard jacket,
(b) placing a core of relatively soft metal into said jacket so that the mouth of jacket protrudes ahead of said core,

- (c) radially creasing the mouth of said cup partially inward along circumferentially evenly spaced lines which extend longitudinally;
- (d) contracting said creased mouth to an ogival shaped sharp nose and hollow point including folded ribs extending longitudinally and radially into abutment with adjacent ribs in said nose and dividing said point about its center into a plurality of apertures.

3,311,963

PRODUCTION OF SEMICONDUCTOR ELEMENTS BY THE DIFFUSION PROCESS

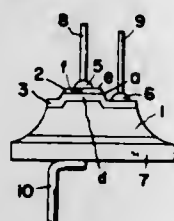
Akira Abe, Hoya-machi, Kitatama-gun, Tokyo-to, Japan, assignor to Kabushiki Kaisha Hitachi Seisakusho, Chiyoda-ku, Tokyo-to, Japan, a joint-stock company of Japan

Filed May 12, 1964, Ser. No. 366,726

Claims priority, application Japan, May 16, 1963,

38/24,313

3 Claims. (Cl. 29—25.3)



1. A method of producing a pnp germanium transistor comprising the successive steps of
 - (a) diffusing indium into a p-type germanium substrate to form a highly doped p-type diffused layer on the surface of said substrate;
 - (b) selectively etching said diffused layer to leave a plurality of islands of said p-type diffused layer and to form an exposed surface of said substrate around said islands;
 - (c) diffusing arsenic through said p-type diffused layer into said substrate and into said exposed surface to form an n-type layer in said substrate beneath said p-type diffused layer and in said exposed surface;
 - (d) coating said islands and at least one part of said n-type layer formed on said exposed surface with an acid resistive wax, said one part extending from said islands;
 - (e) immersing the unit thus obtained in an etching solution to etch the uncoated n-type layer and the substrate therebelow and to separate the several element divisions obtained from each other;
 - (f) removing said wax by means of a solvent; and
 - (g) connecting electrodes to said p-type diffused layer, said n-type diffused layer and said substrate.

3,311,964

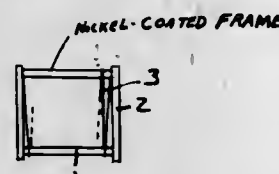
METHOD OF MANUFACTURING A FRAME GRID
Adrianus Anthonius Maria Hendriks and Martinus Antonius Maria Bakker, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed June 24, 1963, Ser. No. 289,842

Claims priority, application Netherlands, July 3, 1962,

280,941

4 Claims. (Cl. 29—25.14)



1. A method of manufacturing a grid comprising a wire wound on a frame, comprising the steps of applying an adherent layer of nickel to said frame, winding

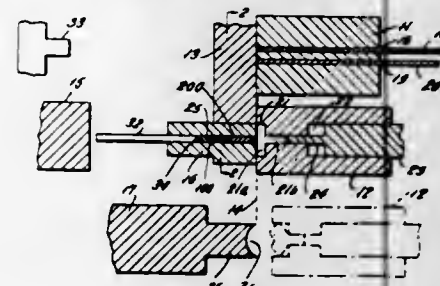
a wire on the so-coated frame, covering the wire where the wire is in contact with the frame with a material selected from the group consisting of nickel powder and nickel oxide powder, and heating between 700° and 800° C. the so-coated frame with the wire wound thereon in an atmosphere in which sintered nickel is formed which fixedly surrounds the grid wires and adheres to the nickel layer covering the frame.

3,311,965

APPARATUS FOR FORMING COMPOSITE ELECTRICAL CONTACT ELEMENTS

Childress B. Gwyn, Jr., Export, Pa., assignor to Talon, Inc., Meadville, Pa., a corporation of Pennsylvania
Original application Feb. 9, 1965, Ser. No. 431,310.
Divided and this application Oct. 11, 1965, Ser. No. 525,269

3 Claims. (Cl. 29—34)



1. A header assembly for forming a composite electrical contact element including a contact working face portion and, integral therewith, a contact body portion, which header assembly comprises:
 - (a) a feed die having a pair of longitudinally extending feed passages formed therein for feeding wire stock materials for forming said working face and body portions, respectively, therethrough, said feed die being disposed adjacent a shear plane with the opening at one end of each of said passages contiguous thereto;
 - (b) a forming die spaced from the feed die and disposed adjacent said shear plane, the forming die having an enlarged recess therein communicating with the shear plane for receiving wire components separated from said wire stock materials to effect mutual upsetting and bonding thereof, said recess having a diameter of at least 1.5 times the diameter of each of said feed die passages;
 - (c) a pivotally mounted cutter bar disposed adjacent said shear plane opposite from said dies and having a bore extending therethrough for receiving said wire components, the opening of one end of said bore being contiguous to the shear plane and being movable through an arc, upon pivoting said cutter bar, between a first position in alignment with a first of the feed passages in said feed die, a second position in alignment with the second of said feed passages, and a third position in alignment with the recess in said forming die;
 - (d) shear means associated with one of said feed die and said cutter bar for shearing said wire components from the wire stock materials fed through the feed passages in said forming die upon pivotal movement of the cutter bar between its positions corresponding to the first, second and third positions of the bore extending therethrough;
 - (e) first forming means movable through the cutter bar bore for driving said wire components into the recess in said forming die, when said bore is disposed in said third position, and for imparting a first forming blow to effect mutual upsetting of the abutting ends of said components in said recess to provide bonding thereof;

- (f) second forming means disposed for alignment with said forming die for imparting a second forming blow to the bonded wire components disposed in the recess in said forming die, said second forming means including means for entering the recess in the forming die to close the die and press said wire components into the shape of the desired contact element; and
- (g) means for ejecting the resulting element from the recess in said forming die.

3,311,966

METHOD OF FABRICATING MULTILAYER PRINTED-WIRING BOARDS

Joseph Michael Shaheen and Henry Franklin Jones, Whittier, Calif., assignors to North American Aviation, Inc.

Filed Sept. 24, 1962, Ser. No. 225,754

18 Claims. (Cl. 29—155.5)



1. A method of fabricating a printed wiring board having first and second interconnected wiring patterns separated by a substrate of electrically insulating material which comprises
 - laminating first and second sheets of electrically conductive material to opposite sides of a substrate of insulating material,
 - producing a pattern of holes through said first sheet and said substrate at points where electrical interconnections between said first and second wiring patterns are desired,
 - providing a conductive path through each of said holes from the inner surface of said second sheet to the outer surface of said first sheet of conductive material to form the desired electrical interconnections,
 - etching said first wiring pattern on said first sheet of conductive material, said first wiring pattern including said desired electrical interconnections, and
 - etching said second wiring pattern on said second sheet of conductive material, said second wiring pattern including pads of conductive material the inner surfaces of which are connected to said desired electrical interconnections.

3,311,967

METHOD OF MANUFACTURING ENCAPSULATED COMPONENTS

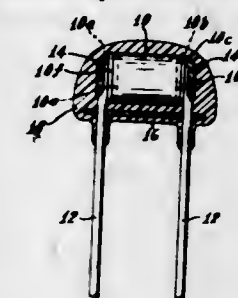
William M. Robinson, Fairhaven, Mass., assignor to Cornell-Dubilier Electric Corporation, a corporation of Delaware

Original application July 30, 1962, Ser. No. 213,305, now Patent No. 3,236,936, dated Feb. 22, 1966. Divided and this application Aug. 23, 1965, Ser. No. 493,953

2 Claims. (Cl. 29—155.5)

1. The method of manufacturing an encapsulated component including the steps of frictionally inserting two individual lead wires into spaced apart lead wire receiving apertures in a wafer of tough, relatively inextensible insulation material so that said lead wires have aligned ends projecting beyond said wafer for receiving and resiliently engaging said component therebetween, said apertures being spaced apart the length of the component to be encapsulated, inserting said component to be resiliently engaged and held between and by said aligned ends of said lead wires with the terminal portions of said component in registration with said projecting ends of said lead wires, mechanically and electrically joining

said projecting ends and said terminal portions of said component, and encapsulating said wafer, said component, and said projecting ends of said lead wires in a



moisture-excluding, hard, relatively brittle insulation coating to rigidize said wafer and form the exterior of said encapsulated component.

3,311,968

METHODS OF MAKING ELECTRICAL RESISTORS
Jean Jules Henri Ardouin, 11 Rue Saint-Senoch, and Alexandre Torossian, 174 Rue de l'Université, both of Paris, France

Filed Dec. 3, 1962, Ser. No. 241,709

Claims priority, application France, June 2, 1962,

899,508

7 Claims. (Cl. 29—155.69)



1. The method of manufacturing an electric resistor which comprises starting from a cylindrical core of an insulating material, providing each of the axial ends of the core with a series of grooves, covering each of said core ends with an electrically conductive film, forming on said core an electrically resistive coating connected electrically with said end conductive films, and force fitting on each of said core ends, in such manner as partially to interfit said grooves, a hollow end cap of a substance having a good electrical conductivity the internal diameter of which cap is slightly less than the maximum diameter of said core end to be capped.

3,311,969

METHODS OF MAKING SHEATHED ELECTRIC HEATING UNITS

Eugene F. Dillon, Oak Park, Ill., assignor to General Electric Company, a corporation of New York
Original application Nov. 1, 1961, Ser. No. 149,381, now Patent No. 3,195,093, dated July 13, 1965. Divided and this application Nov. 23, 1964, Ser. No. 413,228

20 Claims. (Cl. 29—155.69)

1. The method of making a sheathed electric heating unit comprising: providing a first assembly of an elongated tubular metal sheath, an elongated electrical resistance conductor arranged within said sheath and spaced therefrom, an elongated metal terminal arranged at one end of said sheath, the inner end of said terminal being disposed interiorly of said one end of said sheath and spaced therefrom and electrically connected to the adjacent end of said resistance conductor and the outer end of said terminal being disposed exteriorly of said one end of said sheath, a compacted mass of granular heat-conducting and electrical-insulating material arranged within said sheath and embedding both said resistance conductor and the inner end of said terminal and retaining the same in place in spaced relation with said sheath, and a porous plug of ceramic material arranged in the outer end of said sheath and surrounding the adjacent portion of said terminal and respectively bonded there-

to; providing a second assembly of a metal ferrule, a metal tube, the inner end of said tube being disposed interiorly of the outer end of said ferrule and spaced therefrom and the outer end of said tube being disposed exteriorly of the outer end of said ferrule, and a body of gas-imperious and electrical-insulating material arranged within the outer end of said ferrule and surrounding the inner end of said tube and providing an hermetic seal therebetween; placing said first assembly in an enclosure; subjecting said first assembly to reduced pressure in said enclosure in order to extract air from said sheath through said porous plug and thus from permeating relation with said compacted mass of granular material; then subjecting said first assembly to a gauge pressure of an inert gas in said enclosure in order to force the inert gas into said sheath through said porous plug and thus into permeating relation with said compacted mass of granular material; then removing said first assembly from said enclosure, whereby



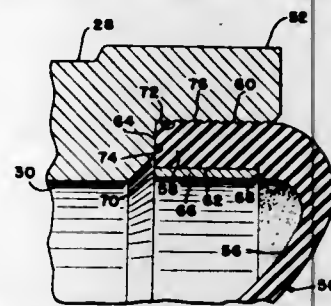
the inert gas in said sheath gradually leaks therefrom through said porous plug; placing said second assembly upon said first assembly so that the inner end of said ferrule is disposed in closely surrounding relation with said one end of said sheath and so that the outer end of said ferrule is disposed outwardly of said one end of said sheath and so that said tube is arranged in closely surrounding relation with the outer end of said terminal; producing a first hermetic seal between the inner end of said ferrule and said one end of said sheath; and producing a second hermetic seal between the outer end of said tube and the outer end of said terminal; wherein said second assembly is placed upon said first assembly and said first and second hermetic seals are produced sufficiently promptly following the removal of said first assembly from said enclosure so that a charge of the inert gas is trapped and hermetically sealed in said sheath and into permeating relation with said compacted mass of granular material.

3,311,970 METHOD OF MAKING A WHEEL CYLINDER ASSEMBLY

Ronald L. Shellhause, Vandalla, and Carl A. Bierlein, Kettering, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Nov. 19, 1962, Ser. No. 238,503, now Patent No. 3,187,848, dated June 8, 1965. Divided and this application Mar. 19, 1964, Ser. No. 353,148
7 Claims. (Cl. 29-451)

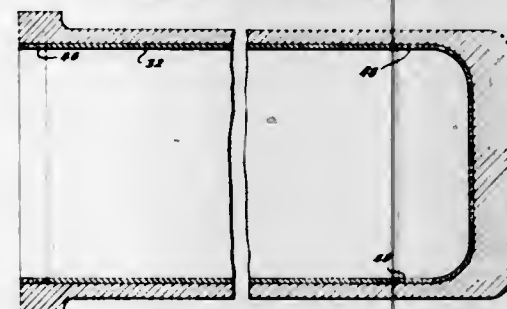
1. The method of sealing the end of a wheel cylinder comprising the steps of providing a controlled roughness inner surface in the end of the wheel cylinder, inserting an elastomeric wheel cylinder boot therein into outer peripheral engagement with the controlled roughness inner surface under an insertion force within a first predetermined range, force removing the insertion force and sub-

sequently flowing the material of the boot into complementary engagement with the controlled roughness surface of the wheel cylinder end to provide a mechanical



lock therewith for retaining the boot in the cylinder end against a removal force substantially greater than the necessary insertion force.

3,311,971
VESSEL LINING METHOD
Harold E. Hicks, Kirkwood, and Charles L. Hibbeler, Lemay, Mo., assignors to Nooter Corporation, St. Louis, Mo., a corporation of Missouri
Filed Jan. 16, 1964, Ser. No. 338,128
3 Claims. (Cl. 29-523)



1. A method of lining vessels including the steps of positioning a liner in a vessel with clearance between the inner surface of the vessel and the outer surface of the liner, forcing the liner outwardly into contacting relation with the vessel inner wall surface, to prestress the liner in a circumferential direction, anchoring the liner with respect to the vessel in a longitudinal direction after forcing the liner into close contacting relation with the vessel inner wall surface, and thereafter applying a force to the liner tending to stress said liner in a longitudinal direction.

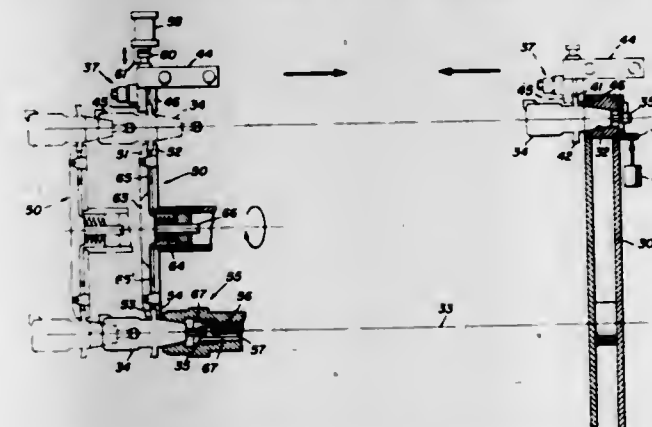
3,311,972
PRODUCTION OF INGOTS FOR WROUGHT METAL PRODUCTS
Harvey D. Burke, Huntington, W. Va., assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 17, 1964, Ser. No. 390,103
9 Claims. (Cl. 29-528)



8. In the process for producing a wrought metal product of a malleable, high melting point alloy by introducing molten metal into a mold to make an ingot and thereafter working the ingot, the improvement which comprises, in combination, introducing molten metal and

molten flux into the ingot mold, said metal being a malleable high melting point alloy and said flux being characterized by a density less than the density of the molten metal, to form a molten metal body having proportions such that the ratio of the minimum transverse dimension of the body to the height of the body is at least 1.2 and to also form a layer of molten flux over the metal, said layer having a depth of at least three-quarter inch and at least 10% of the height of the molten metal body, chilling the molten metal body at the bottom surface thereof to produce a thermal-flux density of heat extraction through the bottom surface of said body that is greater than the thermal-flux density of heat extraction through the side surface of said body, cooling and solidifying said body into an ingot having a vertical axis and a horizontal transverse axis while maintaining the aforesaid flux layer on top of said body to insulate the top surface of the body and to maintain the thermal-flux density through the top surface of the body less than the thermal-flux density of heat extraction through the side surface of the body, removing said ingot from the mold and removing the flux from said ingot and thereafter working said ingot with pressure exerted substantially parallel to the vertical axis of the ingot to flow the metal of said ingot transversely without elongation of the ingot metal along the vertical axis of said ingot.

3,311,973
APPARATUS FOR AUTOMATIC TOOL CHANGING
Myron L. Anthony, La Grange, and Bernard R. Better, Chicago, Ill., assignors to Scully International, Inc., Downers Grove, Ill., a corporation of Illinois
Continuation of application Ser. No. 178,060, Mar. 7, 1962. This application Feb. 18, 1966, Ser. No. 556,247
14 Claims. (Cl. 29-568)



1. For use in an automatic tool changing system, tool handling apparatus comprising, in combination, a tool holder having a body portion, protruding means extending outwardly from said body portion, said protruding means being substantially inclined relative to the axis of the said body portion and having a pair of opposed gripping surfaces adapted to be engaged for transporting said holder, and gripping means for transporting said holder, said gripping means being adapted to grip said protruding means through application of gripping pressure to said opposed gripping surfaces.

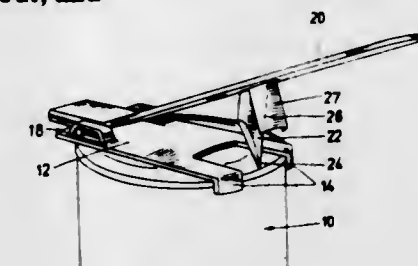
3,311,974
CAN OPENER HAVING SPOUT FORMING MEANS

Oskar Wolf, Frankfurter Landstrasse 43, Hanau am Main, Germany
Filed Oct. 19, 1965, Ser. No. 498,068
Claims priority, application Germany, Oct. 20, 1964, W 37,786
5 Claims. (Cl. 30-6.1)

1. A can opening and spout forming device comprising (a) an elongated base plate having a prick punch

means adjacent one end thereof for penetrating a can top near its rim and a downwardly projecting abutment means at the other end thereof for engaging the portion of a can rim opposite the prick punch means, the prick punch means and the abutment means constituting means for gripping a can top and rim in locked engagement;

(b) a lever means hingedly connected for angular upward and downward movement to the base plate at the end thereof adjacent the prick punch means and having a downwardly extending cutter prong means adjacent said abutment means for cutting the top of a can adjacent its rim, said cutter prong means widening upwardly in cross-section from its lower tip and having a male outer surface with the shape of a spout; and



(c) said device having die means attached thereto with a female shape corresponding to the male shape of the cutter prong means, said cutter prong means having longitudinal movement away from the prick punch means to press the rim and adjacent side wall of a can outward in cooperation with said die means positioned for receiving the outer wall surface of a can as it is pressed outward to form a spout by the cutter prong means, whereby the spout is formed in a can.

3,311,975
BLADE INJECTOR RAZOR HAVING FLEXIBLE MEANS CONNECTING THE HANDLE TO THE RAZOR HEAD

Ernst de Longuyon, Pullach-Munich, Germany, assignor to Climar A.G., Zug, Switzerland
Filed June 24, 1964, Ser. No. 377,621
Claims priority, application Switzerland, July 31, 1963, 9,535/63
3 Claims. (Cl. 30-62)

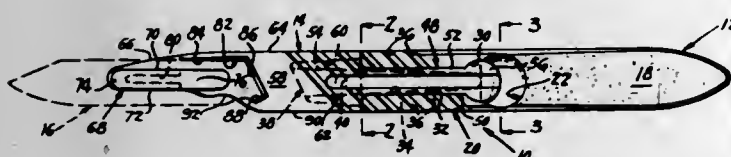


1. An injector-type safety razor of molded synthetic plastic, including: an elongated handle; a longitudinal hollow in said handle communicating with one end thereof; a stiff first member defining at one end a clamping plate for a blade and at the other end an elongated member for removable insertion in said hollow; means defining a blade seat and a flat surface for the seat; first means defining two ends, one end including an extension that is

elastic at least in the directions transverse and perpendicular to said flat surface, for resiliently urging said blade seat against said first member, whereby to hold a blade therebetween, and for permitting insertion of the key of a blade injector magazine, and the other end defining an elongated member for insertion in said hollow; second means associated with said elongated members to ensure their correct orientation with respect to one another in the hollow; third means associated with said handle for orienting said two elongated members with respect to said handle and removably locking them within the hollow; fourth means associated with one of said elongated members for cooperating with said third means; a metal bearing plate on the surface of said means; means for orienting and securing the plate; and means on the plate for holding the blade in place.

3,311,976
SCALPEL HANDLE AND DETACHABLE
BLADE HOLDER

John J. Matwijcow, 31 Charles Terrace,
New Market, N.J.
Filed Sept. 17, 1965, Ser. No. 488,176
3 Claims. (Cl. 30-335)

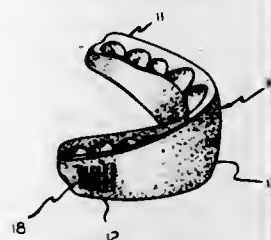


1. In combination a scalpel handle and a detachable blade holder; said scalpel handle comprising an elongated body having a squared end, a tongue extending longitudinally from the center of said squared end defining opposed shoulders, said body having an elongated tapered groove extending from said squared end longitudinally to an intermediate point, said groove terminating in a first recess, said first recess communicating with an aligned concaved second recess, said body having a second groove at the bottom thereof and extending into said tongue, said second groove tapering inwardly towards said intermediate point, said blade holder comprising an elongated tapered member having a squared end defining shoulders abutting said first mentioned shoulder and a socket receiving said tongue, a shank extending from one side of said squared end and seating in said groove, said tongue having an enlarged end seating in said first recess and overlying a portion of said second recess whereby to permit the engagement of a fingernail into the concavity beneath said enlarged portion to lift the same out of said first recess and permit longitudinal disengagement of said blade holder from said handle as said tongue on said handle is removed from its associated socket, said tongue on said blade holder having a raised tapered ridge on the face thereof adjacent said groove, said ridge conforming in configuration to and seating in said second groove, and means on said blade holder for releasably securing a blade thereto.

3,311,977
TOOTH FINISHING APPLIANCE
Daniel H. Drake, 244 Bartram Road,
Riverside, Ill. 60546
Filed Feb. 12, 1964, Ser. No. 344,372
2 Claims. (Cl. 32-14)

1. An orthodontic finishing appliance including a resilient body of mouthpiece form for insertion over the teeth, said body being of a generally U-shaped normal form with toothlike impressions in upper and lower surfaces of said body to thereby enable fitting of the upper and lower teeth into said impressions and application of corrective forces thereto, said body having inner and outer rims on

opposite sides of said impressions and spaced on opposite sides thereof, said outer rim having a greater height than said inner rim to enable a pressure engagement of said outer rim with the surfaces of teeth without a seating engagement of teeth within said impressions, the outer surfaces of the legs of said U-shaped body having a plurality of narrow, spaced, substantially transverse slots adapted to provide therebetween a series of extending spacedly

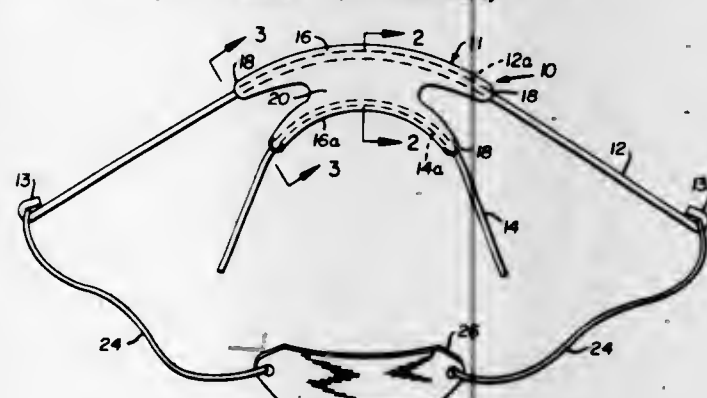


arranged ribs, the outwardly extending planar surfaces of each of which lie coplanar with the outer surface of the leg, the width of each slot, the spacing between slots and the resiliency of the body being such as to maintain essentially smooth surfaces when stroked with pressure insufficient to distort the normal shape of said body, while enabling distortion of the ribs between said slots and presentation of a roughened surface when stroked with pressure sufficient to distort said body from said normal shape.

3,311,978
ORTHODONTIC FACE BOW

Andrew J. Haas, 657 Ecton Road 44303, and Theodore J. Dettling, 574 Castle Blvd. 44313, both of Akron, Ohio

Filed June 8, 1964, Ser. No. 373,190
3 Claims. (Cl. 32-14)



1. A face bow of the character described, comprising:
(A) a pair of arch wires each having central curved portions;
(B) a central unitary casing having a modicum of resiliency and completely encircling said arch wires in the approximate region of their central curved portions, whereby said arch wires are spaced from each other in the area of continuously curved proximity with each other so as to define inner and outer arch wires lying in a common plane;
(C) and connecting means carried by the ends of one said arch wire and adapted to support said face bow with respect to the mouth of a user.

3,311,979
HEM MARKER
Sidney O. Orthwin, 3665 Selber Ave.,
Dayton, Ohio 45405
Filed Apr. 28, 1965, Ser. No. 451,396
10 Claims. (Cl. 33-9)

5. A hem marker which comprises: a stand adapted to be placed on a floor for placing said marker in its effective position, said stand including a ruler occupying an upright position when said hem marker is in its effective position, a first slide slidable on said ruler and

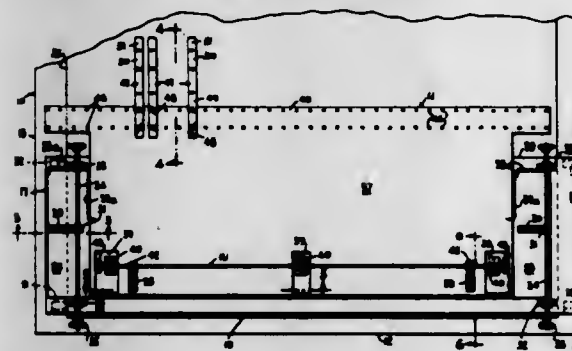
having one and provided with a corrugated anvil, said anvil forming the upper end of said slide when said ruler is in its upright position, lever means having one end pivotally connected to said first slide at a portion thereof which is vertically spaced from and at a lower level than said anvil when said ruler is in its upright position, said lever means having another end and being adapted to clamp a fabric between said corrugated end portion and said anvil while holding said fabric, said anvil being provided with first guiding channel means extending in substantially horizontal direction when said ruler is in its upright position



tion, said corrugated end portion being provided with second guiding channel means substantially parallel to said first guiding channel means and including an oval opening at one side and a notch on the other side, said second channel means being substantially at the same level as said first channel means when said lever means is in its fabric clamping position, a second slide slidably mounted on said lever means and operable to clamp between said lever and said second slide a thread which protrudes from said oval opening, and cutting means supported by said second slide and movable to a position near said notch for cutting off a thread passed through said notch and deflected toward said cutting means.

3,311,980
GRADING DEVICE AND METHOD OF
GRADING AND MARKING

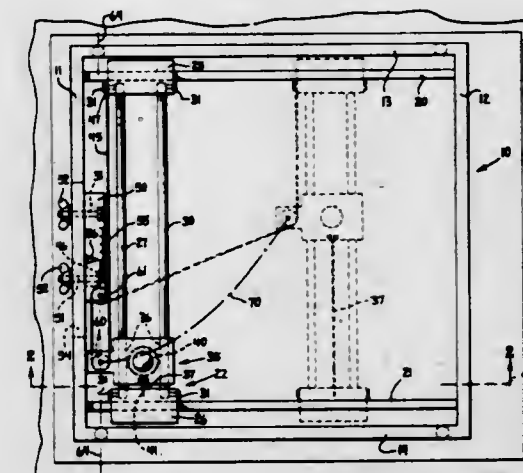
Harold A. Williams, 840 Bronx River Road,
Bronxville, N.Y. 10708
Filed Dec. 9, 1963, Ser. No. 329,023
1 Claim. (Cl. 33-17)



The method of grading and marking garment patterns directly from master patterns without the intermediary of size patterns, which method comprises the steps of pre-positioning upon a marker sheet all of the component parts of a master pattern in proper grain alignment, supporting a grading machine laterally astride and independently of the marker sheet which is to be used as a die, grading and marking at one longitudinal location of said marker sheet all of said component parts lying within the lateral dimensions of said marker sheet, then effecting movement of said grading machine longitudinally of said marker sheet and grading at this other longitudinal loca-

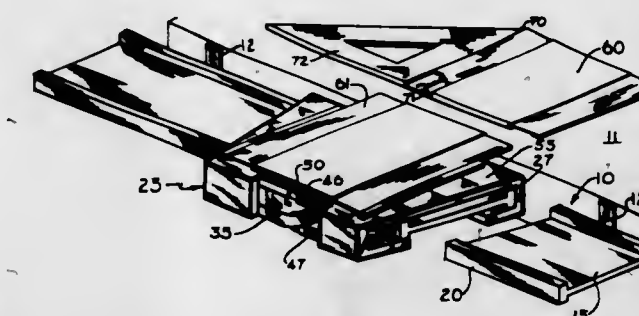
tion all of the component parts within that lateral dimension of the marker sheet, and repeating these steps until every one of said component parts is graded and marked.

3,311,981
PARABOLA TRACING APPARATUS
Warren P. Poslusny, 460 W. 16th St., Apt. H,
Chicago Heights, Ill. 60411
Filed Aug. 19, 1966, Ser. No. 573,596
5 Claims. (Cl. 33-27)



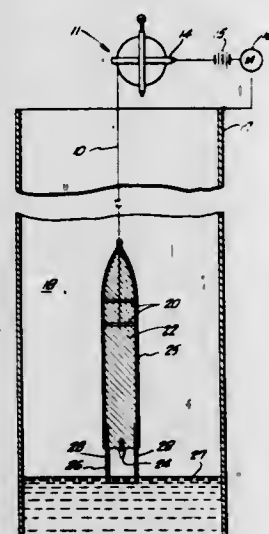
1. A device for tracing a parabola comprising a frame, a first carriage guided on said frame for linear movement in a first direction and opposite to said first direction, a second carriage guided on said first carriage for linear movement in a second direction and opposite to said second direction, said second direction being perpendicular to said first direction, a flexible cord connected at one end to said frame and connected at its other end to said first carriage, said cord extending from said other end in said second direction and around said second carriage thence to its one end connection with said frame, and a marking device mounted on said second carriage for inscribing a parabola when said second carriage is moved and said cord is maintained taut.

3,311,982
DRAWING EQUIPMENT
Guerry M. Dalrymple, 5085 Knollton Road,
Indianapolis, Ind. 46208
Filed Oct. 1, 1965, Ser. No. 492,053
6 Claims. (Cl. 33-76)



1. Drafting apparatus comprising an element, means for mounting said element in spaced relation to a drawing board, a member slidably received on said element, a drawing edge mounted on said member, said member having a surface slidably engaging said element, a roller having oppositely projecting axle portions, and leaf springs fixed to said member and bearing against said axle portions to urge said roller against said element and said surface into engagement with said element.

3,311,983
MEASURING TAPE
 Charles C. Green 841 E. Whitcomb Ave.,
 Glendora, Calif. 91740
 Filed Mar. 2, 1964, Ser. No. 348,583
 1 Claim. (Cl. 33-126.5)



A well sounder comprising a metal tape having marks on it for measuring the level of water in a well, a transparent coating of electrical insulating material on the tape, a source of electrical power having two terminals, means for connecting one terminal of the source to the tape, a portion of the tape near one end being exposed to make electrical contact with water standing in a well as the tape is lowered into the well, means for connecting the other terminal of the power source to the water, an electrically insulating shroud disposed over the exposed portion of the tape to protect it from premature electrical contact before it reaches the level of the water in the well, the shroud having an opening to permit water to reach the exposed portion of the tape as it is lowered into the water, and means for indicating when current flows through the tape.

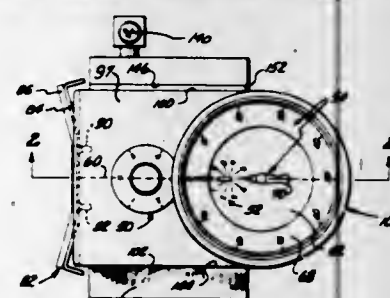
3,311,984
DIPSTICK
 Stefan Stux, 15 Rechov Havradim, Tivon, and Abel A. Aglioni, 7 Rechov Ayalon, Haifa, Israel
 Filed Apr. 20, 1964, Ser. No. 360,835
 5 Claims. (Cl. 33-126.7)



1. A dipstick comprising a narrow, elongated member intended for immersion in a liquid for measuring the level thereof, said member having a plurality of capillary openings spaced in the direction of its longitudinal axis adapted to trap and retain liquid therein when said member is immersed in the liquid for providing an indication

of the liquid level, characterized in that said member is made of springy material so as to be deformable upon the application of tension in the direction of its longitudinal axis to increase the size of said capillary openings sufficient to release the trapped liquid, thereby removing said indication and restoring said dipstick for re-use, said dipstick further including a first and a second member relatively moveable with respect to each other, the deformable member being secured at its top to the bottom of said first member and at its bottom to the bottom of said second member; the top of said first member including finger grips and the top of said second member including a pressure applying element.

3,311,985
FRICITION WHEEL MEASURING APPARATUS
 Merville E. Hodge, Altadena, Calif., assignor to Primus Mfg., Inc., San Lorenzo, Puerto Rico, a corporation of California
 Filed Aug. 2, 1966, Ser. No. 575,209
 18 Claims. (Cl. 33-141)

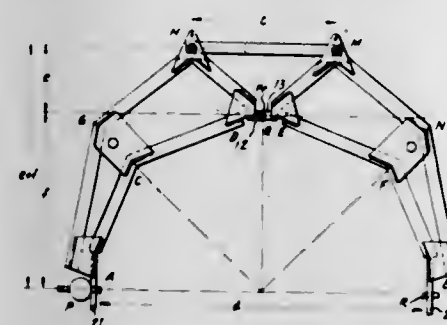


1. In apparatus for measuring the relative travel of a first machine tool member along a surface of a second machine tool member, the combination comprising a friction wheel type measuring instrument which includes a protective housing having an opening through its front face and a contact wheel rotatably mounted in the housing with its rim protruding slightly past the front face of the housing through the opening therein so that it may be engaged in rolling contact with the measurement surface, and cooperating mounting means adapted to be connected to the first machine tool member for releasably mounting the instrument thereon and for orienting and positioning the instrument relative to the measuring surface, said mounting means including a base, a carriage, means engaging the carriage on top of the base so that the carriage is slidable with respect to the base back and forth along a single straight path and without changing its orientation relative to the base, means spring loading the carriage in the forward direction along said path, means including an externally accessible lever arm and a cooperating cam for retracting the carriage against said spring load rearwardly along said path and fixing the carriage in the retracted position, and means for releasably fixing the instrument housing on top of the carriage so that the contact wheel is engageable and disengageable with the measurement surface by operation of the retracting means, the instrument housing and the carriage having mating surfaces which determine a fixed orientation of the instrument relative to the base when the instrument is so fixed on the carriage.

3,311,986
COMPENSATED GAUGES FOR EXTERNAL DIMENSIONS
 Ferdynand Zawistowski, Haifa, Israel, assignor to Technion Research and Development Foundation Ltd., Haifa, Israel, a corporation of Israel
 Filed Aug. 7, 1964, Ser. No. 388,097
 12 Claims. (Cl. 33-147)

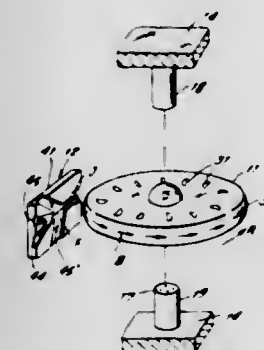
1. A compensated gauge for external dimensions comprising a pair of laterally spaced apart arches, one end of said arches being linked together across said space by

a link, said end being also pivoted together at a point spaced from said link, said arches forming substantially a semi-circle, the other end of said arches defining a line constituting the dimension to be gauged, said arches being relatively about said pivot point, said pivot point being intermediate said linkage and said line, said gauge being



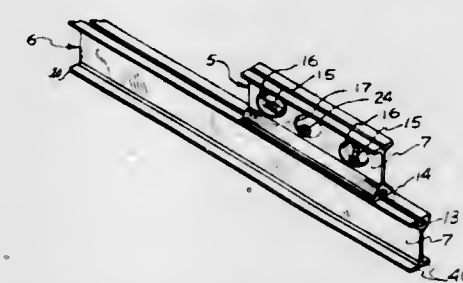
symmetrical with respect to a straight line from the center of said linkage through said pivot point to the midpoint of said line, the coefficients of thermal expansion of said arches and said link being different, the change in length of said line due to thermal changes in said arches being equal and opposite to the change in length of said line due to thermal changes in said link.

3,311,987
PNEUMATIC ATTITUDE SENSOR
 Henry Blazek, Nyack, N.Y., assignor to Sperry Rand Corporation, Ford Instrument Company Division, a corporation of Delaware
 Filed May 19, 1965, Ser. No. 456,946
 20 Claims. (Cl. 33-204)



1. In a sensing device of the class described having a gyro wheel, a frame, and means for rotating said wheel relative to said frame about a spin axis extending through the center of said wheel and perpendicular to the plane thereof, the improvement comprising a fluid angle transducer for measuring relative movement between said wheel and said frame from a null position about a first axis perpendicular to said spin axis and extending there-through; said transducer including a jet forming nozzle, diffusing means, and an open region between said nozzle and said diffusing means; said nozzle constructed to emit a free jet into said open region and direct said jet forward along a null path toward said diffusing means; said wheel positioned with a portion of its peripheral edge on said first axis extending into said open region and grazing said jet; said jet being centered on said null path upon reaching said diffusing means as long as said wheel remains in said null position; said wheel upon moving from said null position causing said jet to be deflected so that upon reaching said diffusing means said jet is off center with respect to said null path; and readout means connected to said diffusing means for producing a signal indicating movement of said wheel from said null position about said first axis.

3,311,988
LEVEL AND STRAIGHT-EDGE COMBINATION
 George Dewey Manville, 35211 Adams Lane, Yucaipa, Calif. 92399
 Filed July 13, 1964, Ser. No. 382,122
 8 Claims. (Cl. 33-207)



2. A level and straight-edge gage combination formed from an elongated extrusion characterized by a web of relatively thin section, one edge of said web being bifurcated to define a pair of divergently extending legs, the space between the inner surfaces of said legs defining a continuous receptacle extending the length of said extrusion, each of said legs terminating in laterally disposed coextensive flanges extending outwardly and inwardly of said legs to partially enclose said receptacle, a relatively narrow space between the inner ends of said flanges defining a continuous slot opening into said receptacle, the opposite edge of said extrusion terminating in a flange extending laterally across said web, said flange being adapted to engage and gage the straightness of a surface, a relatively long length of said extrusion being adapted to gage the straightness of a surface, and a relatively short length of said extrusion being provided with at least one level gaging means, said long length of extrusion and short length of extrusion being placed together with their bifurcated edges placed together in abutting relationship with their edge slots in alignment, connecting means joining said extrusions together comprising:

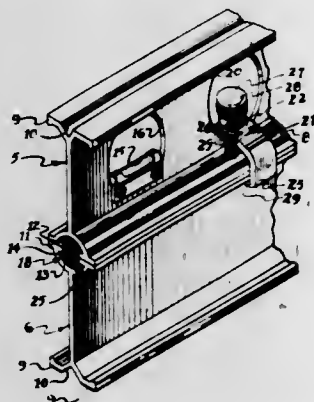
- a bolt positioned with its head slidably retained in said continuous receptacle of said straight-edge gage, the shank of said bolt extending through said aligned slots to connecting means in said level gage, the shank of said bolt adjacent to its head being shaped to prevent turning thereof in said slots and maintaining the edges of said level gage and said straight-edge in alignment along their respective edges, said connecting means being adjustable so that said gages can be locked and unlocked for relative movement of said level gage along the edge of said straight-edge gage, and
- a pair of spring-loaded clamping members, one extending from each side of said straight-edge gage and having terminal flanges to clamp a structural member to be gaged, said clamping members being movable against spring means for engagement and disengagement with said structural member.

3,311,989
LEVEL AND STRAIGHT-EDGE GAGE COMBINATION AND IMPROVED ATTACHMENT THEREFOR

George Dewey Manville, 35211 Adams Lane, Yucaipa, Calif. 92399
 Filed Sept. 24, 1965, Ser. No. 489,990
 7 Claims. (Cl. 33-207)

1. A level and straight-edge gage combination comprising a straight-edge gage and a level gage which are joined together with shock absorbing attachment means, said straight-edge gage and said level gage being formed from an elongated extrusion characterized by a web of uniform thickness and bounded on one edge thereof with a pair of spaced apart curved legs defining between them

a continuous receptacle, each of said legs terminating in normally coextensive flanges partially enclosing said receptacle, a continuous slot formed between said flanges which slot communicates with the interior of said receptacle, flange means on the opposite edge of said web adapted to gage the straightness of a surface engaged thereby, said straightness gage being formed of a relatively long length of said extrusion and said level gage carrying level sensing means and being formed of a relatively short length of said extrusion, said straightness gage and said level gage being placed together edge to



edge with said continuous slots in alignment, said shock absorbing attachment means comprising elongated attachment means of resilient material formed with two enlarged portions dimensioned and shaped to fit in the receptacles of said straightness gage when and said level gage in edge to edge relationship, said enlarged portions being joined by an integral web extending through the aligned continuous slots along the entire extent of said straightness gage, the exposed enlarged portion of said attachment means on each end of said level gage protecting the edge of said straight-edge gage having said continuous slot.

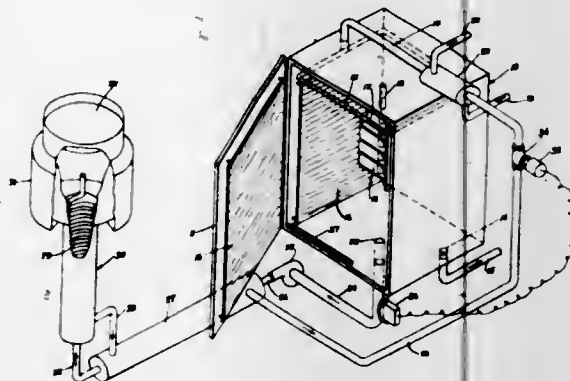
3,311,990 LEVEL

Donald E. Wright, Box 387, Elm Grove, Wis. 53122
Filed June 25, 1964, Ser. No. 377,881
10 Claims. (Cl. 33-211)



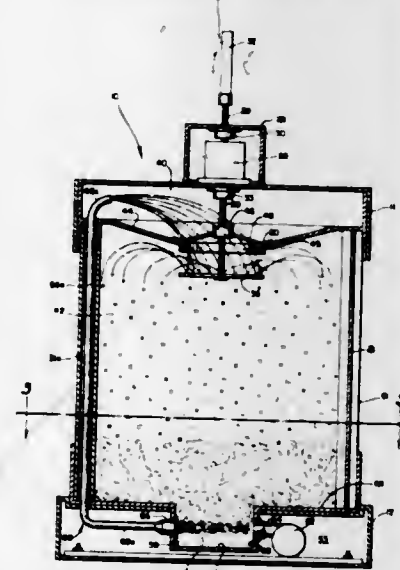
1. A level comprising a frame having a working surface, the frame being provided with an opening for receipt of a level vial, means on the frame bordering the opening and disposed in a predetermined fixed angular relationship with the working surface for engaging and retaining the level vial and for positioning the vial at a predetermined angle with respect to the working surface of the frame without further angular adjustment with respect to the working surface, and a level vial having a symmetrical generally barrel shaped bore disposed in concentric relation with the longitudinal axis of the vial, the outer surface of the vial being in a predetermined registry with respect to the longitudinal axis of the vial, the outer surface of the vial being positioned in close-fitting engagement with the engaging and retaining means on the frame bordering the opening provided therein to produce a vial installation without further angular adjustment of the vial with respect to the working surface of the frame.

**3,311,991
DRYING APPARATUS AND METHOD**
Rolf Gunnar Gidlow, North St. Paul, Minn., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware
Continuation of application Ser. No. 25,640, Apr. 29, 1960. This application Apr. 20, 1965, Ser. No. 450,267
29 Claims. (Cl. 34-5)



15. The method of freeze drying moisture containing material which comprises subjecting the material to a zone of reduced pressure, lowering the temperature of the material by evaporation of moisture therein under effects of said reduced pressure, distributing a refrigerated liquid condensing agent around the periphery of said reduced pressure zone and cascading said condensing agent over surfaces in close proximity to said material to be dried, absorbing moisture vapor freed from said material in said cascading condensing agent, withdrawing said condensing agent and absorbed moisture from said zone of reduced pressure, separating the absorbed moisture from said condensing agent, recirculating said condensing agent for redistribution to said reduced pressure zone and recooling said recirculated condensing agent just prior to introduction to said reduced pressure zone.

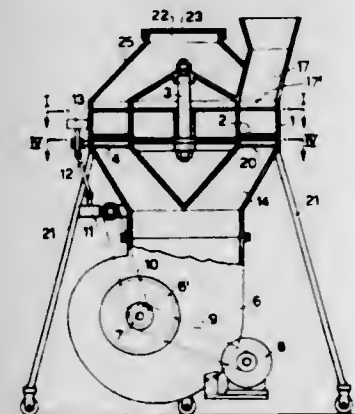
**3,311,992
POPCORN DISPENSER**
Lyman O. Seley, 13 Old Farm Road, Wayland, Mass. 01778
Filed Dec. 21, 1964, Ser. No. 419,631
6 Claims. (Cl. 34-57)



1. A popcorn dispenser, comprising, in combination, a cabinet having a top, a base, and side walls, the side walls being of transparent material, a generally horizontal panel dividing said cabinet into top and bottom compartments, said panel sloping downwardly from the side toward the center, and having an aperture in the center,

a horizontal deflector plate beneath said aperture, said plate mounted on a vertical shaft, said shaft extending downwardly into said bottom compartment, an electrical motor for rotating said shaft and said deflector plate, a well arranged in the floor of said base, a rotary blower in said base having a nozzle extending through one wall of said well for directing a stream of air across said well, and a tube extending from said well to said top compartment, said tube terminating at said well in an orifice located in a wall of said well directly opposite said blower nozzle, said tube conducting popcorn in the stream of air created by said blower from said well to said top compartment.

**3,311,993
APPARATUS FOR THE CONTINUOUS AIR-COOLING, OR HEATING, OF GRANULATED MATERIALS**
Terenzio Bersano, Via San Vito 9, Casciago, Varese, Italy
Filed Jan. 7, 1965, Ser. No. 424,006
Claims priority, application Italy, Jan. 25, 1964, 1,684/64
4 Claims. (Cl. 34-57)



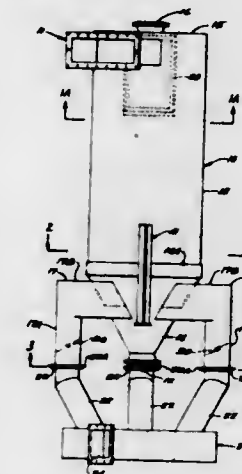
1. Apparatus of the character described comprising, in combination:

a rotatable annular conveying trough, open at the top, and having a foraminous bottom plate, two side walls, and a plurality of partition walls, said partition walls extending radially of the axis of rotation of said trough, and being secured to said bottom plate and said side walls to rotate therewith, said partition walls being disposed in planes radial of the axis of rotation of the trough and being perpendicular both to the side walls and the bottom plate and partitioning the trough into a plurality of equi-angularly spaced, open-topped cells,

means for rotating said trough continuously at an adjustable speed about its axis to convey the granules which come into the trough from a fixed loading port to a fixed discharge port, said loading and discharge ports being spaced angularly from one another and both being disposed above said trough,

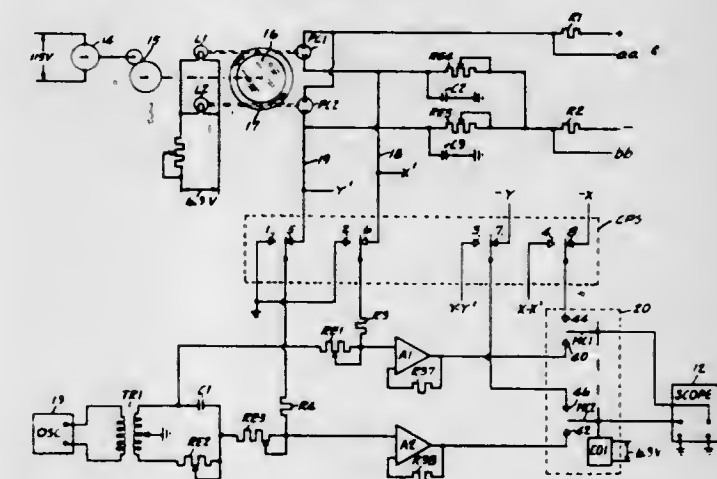
means for blowing air through said foraminous bottom plate from beneath upwardly in a direction substantially perpendicular to the direction of travel of said trough and at a rate of flow and a pressure such as to maintain the granules within said individual compartments throughout their whole travel between loading and discharge ports, so as to impart a continuous shaking motion to said granules whose amplitude is proportional to the load and never exceeds the height of said trough, and to discharge said granules from said trough, when a compartment registers with said discharge port, by pneumatic expulsion by the air blown from beneath the trough.

**3,311,994
HEAT TRANSFER UNIT**
William W. Campbell and Carl E. Rossi, Ludington, Mich., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 4, 1965, Ser. No. 453,134
4 Claims. (Cl. 34-168)



4. Apparatus of the type described including an upright tubular vessel of substantial vertical extent, a closed top through which opens a feed orifice, a bottom which tapers to a discharge orifice to form a substantially truncated conical bottom section, and a gas discharge orifice adjacent an upper portion of the vessel, there being air inlet means adjacent the bottom, said air inlet means being comprised of a plurality of symmetrically arranged air inlets opening through said tapering bottom, space between said air inlets being unobstructed whereby a substantially uniform bed of treatment gas can be formed entirely across said space between said air inlets adjacent the bottom of said vessel, and said gas discharge orifice being of sufficient extent to substantially reduce the velocity of gases exiting from the apparatus to such an extent as to prevent carryover of solid materials being treated in the apparatus.

**3,311,995
ADAPTIVE TRAINING DEVICE**
Edwin M. Hudson, Brooklyn, N.Y., assignor to Otis Elevator Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 18, 1963, Ser. No. 265,729
18 Claims. (Cl. 35-12)

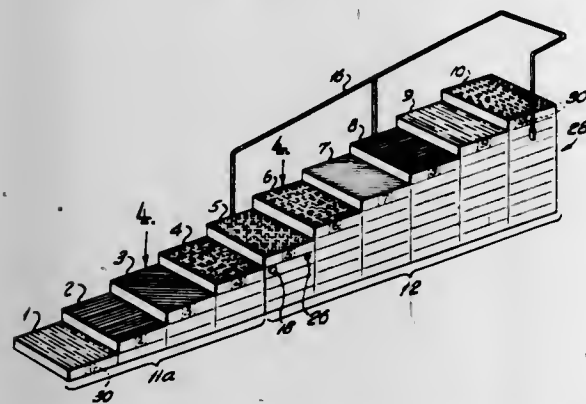


3. Apparatus simulating a machine which operates in response to control actuations imparted thereto by an operator, said apparatus including first means capable of having control actuations imparted thereto of the same character as those which can be imparted to the machine being simulated; second means generating signals in response to control actuations imparted to said first means, said signals being indicative of the response of the ma-

chine being simulated to control actuations imparted to it of the same kind as imparted to said first means; third means generating signals indicative of changes in the desired condition of the machine being simulated, and fourth means responsive to differences between the signals generated by said third means and the response indicating signals generated by said second means as the result of control actuations imparted to said first means, said fourth means modifying the component structure of said second means thereby changing the character of the response indicating signals generated in response to control actuations.

3,311,996 STAIRSTEP DEVICE FOR TEACHING NUMBERS

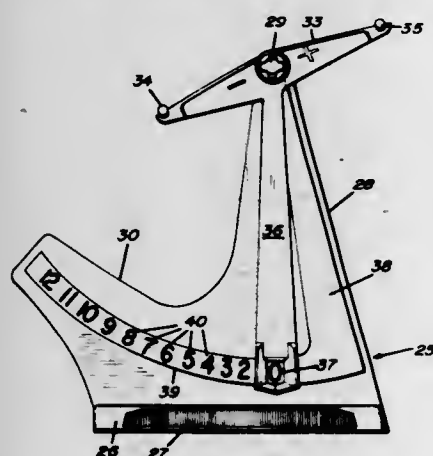
Carol M. Bergener, 15 Douglas Place, Eastchester, N.Y. 10709
Filed Oct. 19, 1964, Ser. No. 404,791
6 Claims. (Cl. 35-31)



1. A teaching device comprising a plurality of joined ascending steps of uniform incremental unit height of from one to ten units said plurality of steps being subdivided into at least two main sections, a suitable removable securing means being provided to connect said two main sections so as to arrange said plurality of steps in a linear alignment, or in a side by side arrangement wherein one main section is arranged in opposite direction of the other main section, each of said adjacent steps being identified with suitable contrasting chromatic indicia, and being sufficiently large and sturdy so that a lower grade school child may position himself on respective steps corresponding in height to their number in the series of steps.

3,311,997 NUMERALS BALANCE SCALE

Carl B. Denny, Vanleer, Tenn., assignor to Kusan, Inc., Nashville, Tenn., a corporation of Kentucky
Filed Jan. 5, 1965, Ser. No. 423,473
10 Claims. (Cl. 35-31)

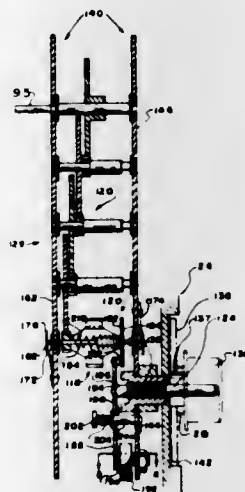


1. The combination with an upstanding supporting frame having a fulcrum and a sum and difference in-

dicating number scale arranged thereon, a balance arm pivotally mounted on the fulcrum and having an indicating arm fixed thereto and movable along the number scale, and numeral receiving means adjacent opposite ends of the balance arm for receiving weighted numerals to be added and subtracted; of a plurality of weighted numerals selectively positionable on said numeral-receiving means to effect movement of said balance arm about said fulcrum and said indicating arm along said number scale to a number indicating the sum and difference of said weighted numbers.

3,311,998 SPEED CONTROL FOR READING PACER

James Keith Macomber, Rockville Centre, N.Y., assignor to Consolidated Lithographing Corporation, Long Island, N.Y.
Filed Feb. 7, 1966, Ser. No. 525,637
22 Claims. (Cl. 35-35)



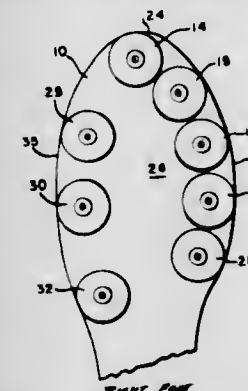
22. A speed control device comprising
(a) a main frame including governor means: comprising
(b) a speed setting member mounted on said main frame connected to said speed indicator means,
(c) means for manually setting said speed indicator means and said speed setting member to selected speed positions,
(d) a speed control member mounted on said main frame including contact means for contacting the said governor means to control the speed of the governor,
(e) calibration means in combination with said frame and in contact with said control member to calibrate the speed indicator means, and
(f) engaging means to coact with the said speed setting member and with said control member.

3,311,999 GOLF SHOES

Arden B. MacNeill, 63 Riverview Ave., Waltham, Mass. 02154
Filed Apr. 5, 1966, Ser. No. 540,302
5 Claims. (Cl. 36-2.5)

1. In a pair of golf shoes for a golfer having two feet with one of the shoes being for one foot and the other of the shoes being for the other foot, and each shoe being with a sole having an area for supporting the ball of the foot, a toe end, and an inner and outer peripheral edges running from said toe end about said area for supporting the ball of the foot, the combination of a plurality of turf gripping spikes extending from the soles of each of said shoe with more of said spikes extending from the sole of the shoe for said one foot being con-

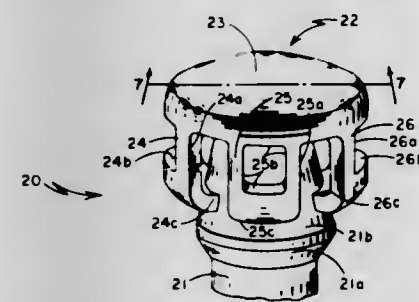
centrated along said inner edge than said outer edge of the sole and more of the spikes extending from the sole



of said other shoe being concentrated along said outer edge than said inner edge of the sole.

3,312,000 DETACHABLE TOP LIFT FOR SHOES

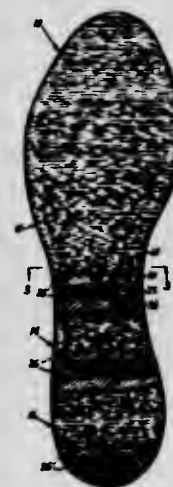
Joseph Freedman, Chelsea, Mass., assignor to Boston Top-lift & Cut Sole Company, Inc., South Boston, Mass., a corporation of Massachusetts
Filed Dec. 21, 1964, Ser. No. 419,759
2 Claims. (Cl. 36-34)



1. A metal member adapted for making a detachable top lift for the heel of a shoe comprising: a shaft section, an enlarged tapering collar portion, said collar portion terminating in a substantially flat head portion secured to the end of the shaft section; said head having a plurality of peripheral spaced flange elements whose ends are bent inward adjacent the tapering portion; said flange elements having aperture therein.

3,312,001 PROCESS FOR MANUFACTURING A DISPOSABLE SHOE INSERT

Douglas G. Tibbitts, Jr., and Mary Tibbitts, both of 1013 McKinley St., Woodland, Calif. 95695
Filed Mar. 31, 1964, Ser. No. 356,092
2 Claims. (Cl. 36-44)

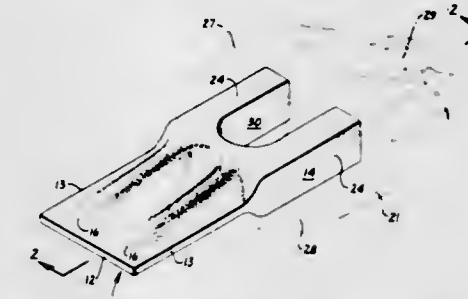


1. A process for manufacturing a disposable shoe insert comprising the steps of forming a plurality of layers of absorbent material, each layer being formed of a

plurality of plies of glue permeable material, securing the plies of each layer to each other by applying spaced spots of glue over the entire surface of one side of alternate plies and permitting the glue to pass through to the opposite side of the ply to which the spots are applied to secure the ply on the opposite side thereof, superposing the layers, and severing the superposed layers under pressure to a shape conforming to the interior sole of a shoe, the pressure of the severing step pressing the layers into securing relation about their peripheral edges and comprising the sole means for securing said layers together.

3,312,002 TOOTH FOR EARTH DIGGING EQUIPMENT

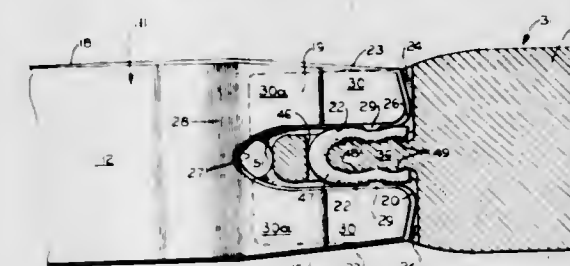
John G. Benetti, Cupertino, Calif., assignor, by direct and mesne assignments, of one-half to Gerald A. Petersen, Santa Clara, Calif., and one-half to Anita E. Petersen, Saratoga, Calif.
Filed Jan. 13, 1964, Ser. No. 337,406
4 Claims. (Cl. 37-142)



1. A replaceable tooth for digging equipment comprising a unitary piece of hard material having a proximal portion formed for attachment to said equipment and a distal portion, said distal portion having a thin cutting edge at its distal end, said cutting edge being rectangular viewed from the distal end of said tooth, the longer sides being as wide as said tooth, and a root at about the juncture of said distal and proximal portions, said root being corrugated in cross-section, the thickness of said distal portion being substantially uniform throughout the amplitude of said corrugations increasing from a position slightly rearward of said cutting edge to a maximum at about said juncture.

3,312,003 TOOTH AND HOLDER HAVING DETENTS AND RESILIENT RETAINING MEANS

William M. Troeppl, Santa Clara, and John G. Benetti, Cupertino, Calif., assignors, by direct and mesne assignments, of one-half to Gerald A. Petersen, Santa Clara, Calif., and one-half to Anita E. Petersen, Saratoga, Calif.
Filed May 25, 1964, Ser. No. 369,780
3 Claims. (Cl. 37-142)



1. In combination in earth-digging equipment, a tooth formed of a unitary piece of hard material having a distal portion formed with a cutting edge and a proximal portion having top and bottom faces formed with a longitudinal slot extending forwardly from the proximal end of said tooth to divide said proximal portions into two prongs, said slot formed with substantially parallel longi-

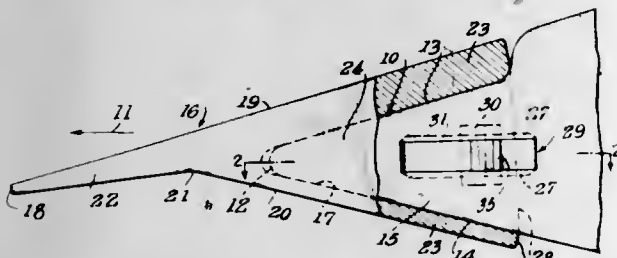
tudinal walls transverse to said top and bottom faces and a first detent on at least one said longitudinal wall; and a holder formed with a recess to receive said prongs, said holder having a web extending through said recess to fill said slot, said web formed with a hole transverse to said walls and with at least one second detent on at least one side of said web; and a resilient insert extending through said hole and jammed between said web and at least one of said prongs, said detents gripping and deforming said resilient insert to restrain unintentional withdrawal of said tooth from said holder, said slot and holder formed and positioned to provide aligned openings for insertion of a tool to force said tooth out of said holder, said opening in said holder formed in the forward edge of said holder and the forward end of said slot located forwardly of the forward edge of said holder.

3,312,004

RIPPER TOOTH ASSEMBLY

Forrest A. Johnson, Anaheim, Calif., assignor, by mesne assignments, to Thys Company, Sacramento, Calif., a corporation of California

Filed June 1, 1964, Ser. No. 371,695
3 Claims. (Cl. 37-142)



1. Means to separably connect a ripper tooth to the toe on the operative end of a shank or the like and in which said tooth and shank have laterally engaged faces, the face in the tooth having a locking abutment recess and the face in the toe having a laterally undercut recess, said means comprising:

- (a) a detent bar loosely fitted in the undercut recess,
- (b) a locking dog having a cam face and extending outwardly from the detent bar,
- (c) a compressible elastic pad bonded to the inner face of said bar and engaged with the bottom of the undercut recess, and
- (d) an edge on the tooth to engage the cam face of the locking dog, as the tooth and toe are being engaged, to depress said dog and the detent bar, to compress the pad against the bottom of the undercut recess, the pad, when compressed, expanding into the undercut portions of the recess to allow the recess in the tooth to achieve registry with the locking dog which, by expansion of the pad, enters the latter recess to lock the tooth to the toe.

3,312,005

LINERLESS PRESSURE-SENSITIVE LABELS

John F. McElroy, Peabody, Mass., assignor to Dennison Manufacturing Company, a corporation of Nevada

Filed Oct. 4, 1962, Ser. No. 228,323
7 Claims. (Cl. 40-2)



1. A label strip comprising a series of labels disposed back to back in two rows, the labels of the two rows being joined together with pressure-sensitive adhesive some of which adheres to each label when the labels of the two rows are peeled apart, and the labels of each row being staggered lengthwise of the strip relatively to the labels

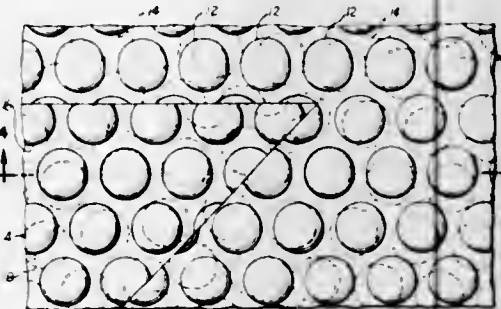
of the other row so that a part of the label at the end of one row projects beyond the label at the corresponding end of the other row, whereby the projecting end of each label may be grasped to peel it from the next succeeding label of the other row.

3,312,006

MOTION DISPLAYS

William P. Rowland, Southington, Conn., assignor to Rowland Products, Incorporated, Kensington, Conn., a corporation of Connecticut

Filed Mar. 11, 1964, Ser. No. 351,111
15 Claims. (Cl. 40-106.51)

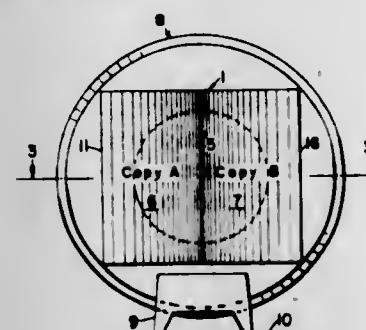


1. A motion display having a display surface with adjacent surface portions of synthetic plastic material for producing optical effects, each of said surface portions having a body portion of substantial length and width dimensions providing front and rear surfaces, said material being of substantially uniform thickness and having a bossments on the front surface thereof, each lens-like multiplicity of closely spaced curvilinear lens-like embossment projecting on an axis perpendicular to said front and rear surfaces, said material also having a multiplicity of closely spaced reflective embossments on said rear surface, each reflective embossment projecting on an axis perpendicular to said front and rear surfaces, each lens-like and reflective embossment diminishing in cross-section along its perpendicular axis outwardly from said body portion to provide side walls tapering inwardly in several planes converging from said body portion toward its perpendicular axis, each lens-like embossment being curvilinear in cross section in all planes each of which includes its perpendicular axis and in all planes which extend both normal to and through each perpendicular axis, said reflective embossments phasing in and out of axial registry with said lens-like embossments in at least one direction to provide a varying visual pattern due to variation in the angle of incidence of light rays focused by said lens-like embossments of said front surface onto the tapering side walls of the reflective embossments of said rear surface, the center-to-center spacing of said lens-like embossments deviating not more than 10 percent from the center-to-center spacing of said reflective embossments, said close spacing of said lens-like and reflective embossments precluding any bands of flat surface therebetween in any direction, said tapering side walls of said reflective embossments reflecting the predominant portion of light rays impinging thereon, said material being of a thickness to effect substantial focusing of light rays passing through said lens-like embossments and impinging upon said reflective embossments for substantial reflection thereof, the phasing of the reflective embossments into and out of axial alignment with the lens-like embossments employing displacement of the patterns of the embossments on the front and rear surfaces, the mode of displacement in one surface portion being distinctive from that in the other surface portion to provide apparent movement of said visual patterns in the two adjacent surface portions at angles to each other.

3,312,007

DISPLAY DEVICE FOR TIRES

John G. Kuhn, Lansdowne, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Jan. 20, 1966, Ser. No. 521,789
6 Claims. (Cl. 40-125)



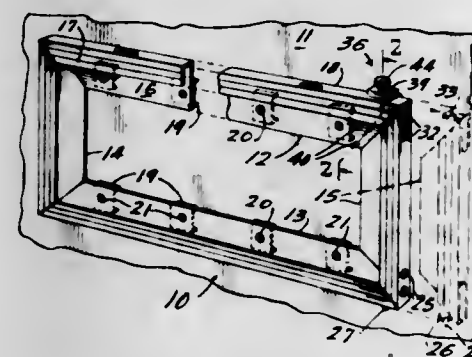
1. A display device for tires comprising a unitary substantially rectangular blank of rigid sheet material which provides two planar advertising panels which extend outwardly at acute angles from one side face of the tire and whose planes intersect each other at a substantial angle, said blank having at each end a respective integral tab formed into a U-shape for embracing both sides of the bead of the tire at said side face.

3,312,008

FRAME FOR SHOW CARDS

Irving R. Yarder, Toledo, Ohio, assignor to The Yarder Manufacturing Co., Toledo, Ohio, a corporation of Ohio

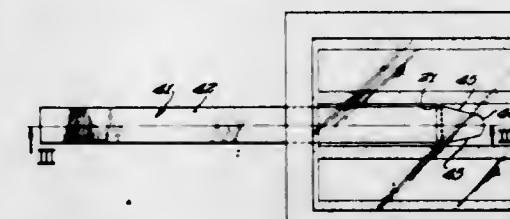
Filed May 19, 1965, Ser. No. 456,926
7 Claims. (Cl. 40-152.1)



1. A frame for show cards and the like comprising in combination, first and second frame members forming opposed sides of an open center frame, a third frame member extending between said first and second frame members forming another side of the open center frame, a fourth removable frame member extending between said first and second frame members in opposed relationship to said third frame member, the ends of said removable frame member and the adjacent ends of said first and second opposed frame members having cooperating retaining means consisting of a retaining pin mounted at one end of said removable frame member, a cooperating pin-receiving hole defined in the associated end of one of said first and second frame members, an arm on the other end of said removable frame member extending inwardly adjacent the associated end of the other of said first and second frame members when said frame is in a closed position, said arm defining a retaining opening, a holding member mounted on the other associated end of said first and second frame members in overlying relationship with said arm when said frame is in the closed position, and a captive member mounted by said holding member in indexing relationship with such arm retaining opening, said captive member being adapted to seat in the arm retaining opening when said frame is in the closed position.

3,312,009
RIGIDIFIED MULTI-OPENING APERTURE CARDS

Robert Beispel, Des Plaines, Ill., assignor to Microseal Corporation, Chicago, Ill., a corporation of Illinois
Filed Apr. 22, 1964, Ser. No. 361,824
7 Claims. (Cl. 40-159)

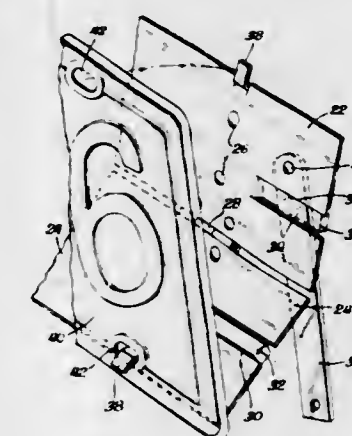


1. In a film record card having a plurality of longitudinally extending and spaced parallel apertures formed therein with a transparent sheet overlying both sides of said apertures and having three edges and the lands between the apertures adhesively secured to the sheets, at least one removable non-jamming rib being integral with and interconnecting the top and bottom walls of each pocket to reinforce said card and substantially prevent the card from jamming in a vertical sorting machine, and said non-jamming ribs having a relatively thin width such that they may be cleanly removed from the pockets.

3,312,010

LICENSE PLATE HOLDER

Steven P. Bartolone, 408 N. Hickory, Arlington Heights, Ill. 60004
Filed Apr. 29, 1964, Ser. No. 363,421
2 Claims. (Cl. 40-209)

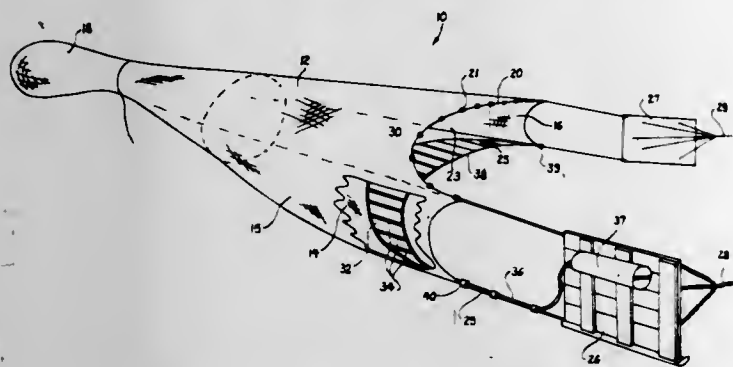


1. A holder for an automobile license plate having two openings adjacent the top thereof and two openings adjacent the bottom thereof, said holder comprising: an upper horizontal member positioned in a plane at the rear of said plate and approximately parallel thereto; a lower horizontal member positioned in said plane and below said upper member; hinge means connecting adjacent edges of said members; a plurality of projections secured to said members, each projection extending through a respective opening in said plate and abutting the front thereof; releasable latch means holding said members in planar relationship; whereby when said latch means is released one of said members may be pivoted toward the other member bringing said projections closer together to permit the plate to be slipped off of the projections and removed with another plate then being replaced on said projections and locked in place by moving said one member into said plane and said latch means reengaged; and means secured to the other of said members to attach said holder to said automobile.

3,312,011

ELECTRICAL TRAWL NET

Fredrick Wathne and John K. Holt, Panama City, Fla., assignors to the United States of America as represented by the Secretary of the Interior
Filed July 28, 1964, Ser. No. 385,810
1 Claim. (Cl. 43-9)



A trawl net, operative upon underwater surfaces, comprising at its rear a bag from the open end of which forwardly extend elongated top and bottom panels joined along their corresponding side edges by separate wing panels, said bag and panels being constituted by a singular net that is substantially uniform throughout, and each said panel having a forward edge substantially wider than its back end at said bag, said bottom panel net being situated beneath substantially all but a short portion of said top panel net such that said top panel comprises a net overhang at its forward edge which extends in front of said bottom panel forward edge, individual line means attached to the respective forward edges of said top and bottom panels and adapted to operatively join said trawl net to a trawler vessel, electrical means fastened to said bottom panel forward edge line means, said electrical means comprising electrodes and electrical conductors connected to said electrodes, said electrical conductors constituting a cable extending between said bottom panel forward edge line means substantially vertically aligned with said forward edge of said top panel, wherefrom said electrodes are spacedly arranged between said bottom panel forward edge and said cable so as to extend spaced apart and substantially parallel to each other such that said electrodes form an open array of parallel electrical conductors located beneath a canopy defined by said net of said top panel overhang and integral net portions of said wing panels adjacent thereto, and situated in the plane of said bottom panel net so as to facilitate placement of said array contiguous to said underwater surfaces, and a power source located apart from said electrical means including electrical connections to said cable completing circuits from said power source to said electrical conductors, whereby said electrodes are supplied with electrical power from said source such that they produce electrical fields in and around said underwater surfaces.

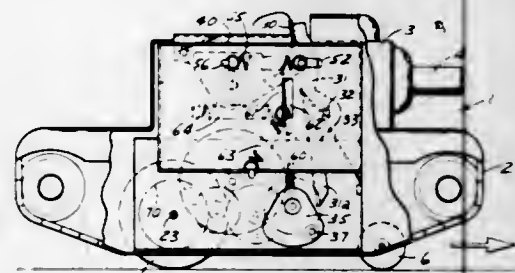
3,312,012

WHEEL-SUPPORTED CAP-FIRING MECHANISM FOR TOYS

Walter L. Strauss, 1107 Broadway,
New York, N.Y. 10010
Filed Feb. 6, 1964, Ser. No. 342,992
3 Claims. (Cl. 46-111)

1. A toy mechanism comprising a frame structure, running wheels mounted on said frame structure, a trigger mechanism supported on said frame structure and including a striker plate and a striker mounted movable into and out of coaction with said plate, a spring urging said striker into coaction with said plate, guide means for guiding a strip of caps between the striker plate and the striker, trigger-actuating means coacting with said striker and when operated alternately cocking the striker against the action of the spring and releasing the striker

for firing a cap placed upon the striker plate, and transmission means coupling said wheels with said trigger-actuating means for operating the latter upon rotation of the wheels, said transmission means comprising a gear train including an input gear drivingly coupled to the wheels, an output gear and intermediate gears, a flywheel, a flywheel shaft rotatably supported by said frame structure, and a flywheel-driving gear mounted on said shaft for spinning said flywheel by rotation of said flywheel gear, said flywheel gear being drivingly coupled with one of the intermediate gears in said gear train, the ratio of transmission between said wheels and said flywheel being such that the rotational speed of the flywheel is higher

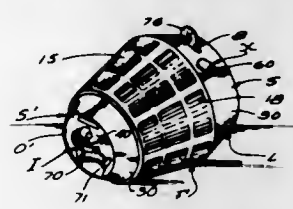


than that of the wheels when a rotational force is applied to the wheels, whereby the kinetic force stored in the flywheel causes the continuous rotation of the wheels and operation of the trigger-actuating means until the total kinetic force is exhausted, said trigger-actuating means including a rotatable disk segment drivingly coupled with said output gear of the transmission means and a pin eccentrically extending from said disk segment substantially parallel to the rotational axis thereof, said striker having an extension extending into the path of said pin during each revolution of said disk segment, engagement of the striker extension with said pin cocking the striker against the action of said spring and disengagement of the striker releasing the same for striking action.

3,312,013

MOTOR DRIVEN ROLLING TOY

Joseph Ross Graves, Long Beach, Calif.
(25615 Narbonne Ave., Lomita, Calif. 90717)
Filed Jan. 15, 1964, Ser. No. 337,885
13 Claims. (Cl. 46-243)

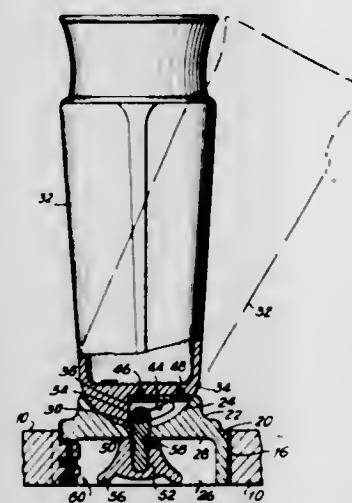


4. A toy of the character referred to including a frame having a pair of axially spaced disc-shaped end plates, a conical ground engaging ring converging axially towards one end and having a pair of axially-spaced radially inwardly projecting annular tracks, said ring being arranged about the frame, an axially outwardly convergent truncated conical shell fixed to each end plate to project axially outwardly therefrom and from within the adjacent end of the ring, each shell having indicating means arranged therein and a window opening in its outer end through which the indicating means can be viewed, and drive means carried by the frame to rotate the ring relative to the frame and across the ground, said drive means including a plurality of circumferentially spaced wheels carried by the end plates of the frame and engaging the tracks, a prime mover carried by the frame between the end plates and below the central longitudinal axis of the frame and coupled with and driving one of the wheels on each end plate.

3,312,014

GRAVE MARKER

Frank Pfister III, Willow Grove, Pa., assignor to
Gorham Corporation, Providence, R.I.
Filed Aug. 11, 1966, Ser. No. 571,838
14 Claims. (Cl. 47-41.1)

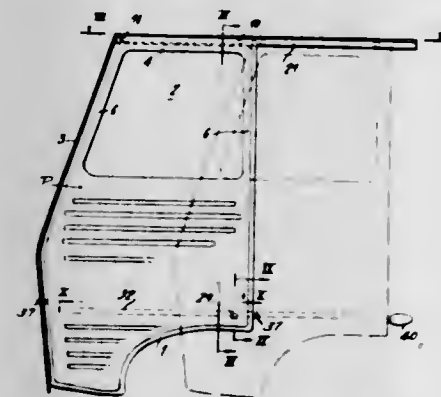


1. A grave marker comprising a receptacle element including a base, a collar on said base and constituting a mount therewith, said mount being provided with an upwardly facing recess within said collar, a vase including a bottom adapted to fit in said recess, means to hold said vase in said recess and to provide for tiltable adjustment of said vase relative to said base, and a burial plaque having thereon information relating to a deceased person, said plaque being provided with an opening, said receptacle element being invertibly located in said opening, said means defining a pivot axis for said vase, which axis is located above said plaque.

3,312,015

SLIDING TYPE LATERAL DOOR, MORE PARTICULARLY FOR MOTOR-CAR BODY

Alain Edouard Plegat, Asnieres, Seine, France, assignor to Societe Anonyme des Usines Chausson, Asnieres, Seine, France, a company of France
Filed Feb. 23, 1965, Ser. No. 434,348
Claims priority, application France Mar. 20, 1964, 968,138, Patent 1,397,470
4 Claims. (Cl. 49-213)



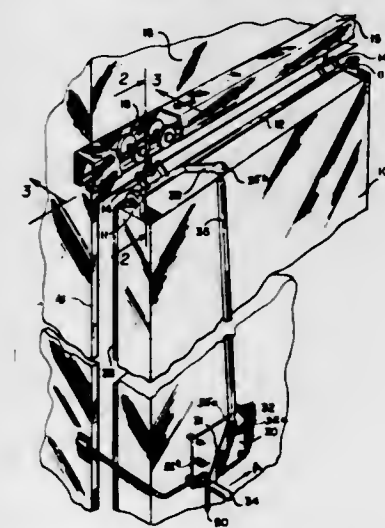
1. In a motor vehicle having a laterally facing door opening, an elongated overhead guide rail extending along the side of said vehicle above said opening, said guide rail having a curvature portion including inwardly curved sections adjacent the rear and front of said door opening and an outwardly curved section at the middle of said door opening, an upwardly extending stationary guide post fixed at the bottom and rear of said door opening in aligned relationship with said rear curved section of said guide rail, a door slidable along said guide rail between a closed position across said opening and an open position along the side of said vehicle to the rear of said door opening, a pair of upper rollers mounted on said door for supporting said door from above on said guide rail,

a U-shaped guideway fixed to the bottom of said door and facing downwardly to guidingly receive said post, said guideway having an intermediate contour section with a curvature away from said door corresponding to said outwardly curved section of said track, whereby said door is transversely shifted away from the side of said vehicle during the opening and closing operations to facilitate the same and shifted toward said side when said open and closed positions are approached.

3,312,016

TROLLEY DOOR COMBINATION

Ernest R. Tillman, 5941 E. Edgemont,
Scottsdale, Ariz. 85057
Filed Aug. 10, 1966, Ser. No. 571,447
1 Claim. (Cl. 49-218)



An improved trolley door adapted to be moved laterally into position to register with a door opening and to then be moved inwardly against the frame thereof to close said opening, comprising:

- a track secured to the frame above the door opening, spaced trolley means slidably supported on the track, each said trolley means having at least one hanger depending therefrom;
- a rotatable support rod and pivot arms, said pivot arms having one end rigidly secured to and extending substantially radially from said support rod and rotatable therewith, the other end of said pivot arms pivotally secured to said hangers;
- a door having spaced support bearing means secured to the upper margin thereof journaling said support rod for rotation relative to the door;
- an actuating lever rigidly secured to and extending substantially radially from said support rod, whereby an upward motion of said actuating lever rotates said support rod and said pivot arms lift said door upwardly and away from said door frame;
- means for automatically closing said door against said frame when said door is positioned in lateral registration with said opening, including

a lever extension having one end pivotally secured to said actuating lever and extending downwardly therefrom, a crank member pivotally mounted intermediate the length thereof on the face of said door, pivotally connected to the other end of the downwardly extending lever extension at one end of said crank and having a crank handle on the other end, stop means on said door limiting the rotation of said crank around its pivotal mounting when said door is spaced away from said door frame, and trigger means secured to the door frame and having an extension operatively engaging said crank handle when said door moves into lateral

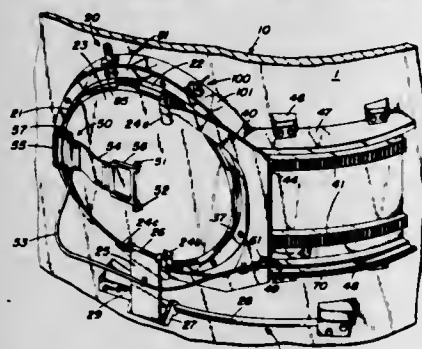
registration with said door frame, thereby to rotate said crank away from said stop means and automatically close said door inwardly against said door frame, the pivotal connection between said crank member and said lever extension being disposed off-center of a line extending from said crank pivot to said pivotal engagement of said actuating lever and said lever extension when said door is spaced away from said frame, thereby urging said crank against said stop means.

3,312,017

TUBE ACCESS DOOR

John F. Witherspoon, Mountain View, and Wallace L. Wardell, Campbell, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Substituted for abandoned application Ser. No. 199,228, May 28, 1962. This application Mar. 15, 1965, Ser. No. 446,768

13 Claims. (Cl. 49-246)



1. A retractable door assembly for closing an aperture in the side of a tubular member comprising a closure member conforming to said aperture; a yoke having spaced arm members affixed to said closure member; a shaft having a pinion affixed to each end thereof journaled to said yoke; plunger means fixedly secured to said yoke and engaging said pinion to prevent rotation thereof; a carriage mounted on said yoke; a support track receiving and supporting said carriage, said track being mounted on the side of said tubular member adjacent said aperture having a circumferentially extending double spur gear track for mesh engagement with said pinion; a circumferentially extending trackway for accommodation of said carriage; said support track being able to sustain said closure member for movement into and out of said aperture and for circumferential retraction movement about said tubular member; and guide means linked to said closure member for governing the movement of said closure member and releasing means for releasing said pinion to permit retraction of said closure member.

3,312,018

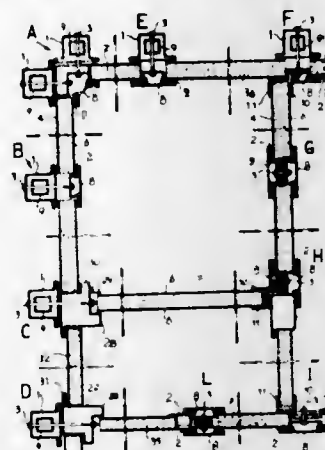
BUILDING CONSTRUCTION

Jean Fourmanoit, Brussels, Belgium, assignor to Eternit Società per Azioni, Genoa, Italy
Filed May 20, 1963, Ser. No. 281,714
Claims priority, application Italy, Aug. 6, 1962, 16,259/62

2 Claims. (Cl. 52-90)

1. A prefabricated building construction comprising a foundation, a plurality of hollow members of substantially rectangular cross section supported by and arranged on the foundation to define the perimeter of the building, a plurality of panels, each of said panels being arranged vertically between a pair of said hollow mem-

bers, a plurality of elongated plate members, each of said plate members having a lengthwise channel and a lengthwise flat flange at each side of said channel and being arranged vertically and adjacent one of said hollow members with said flanges facing a pair of said panels, each

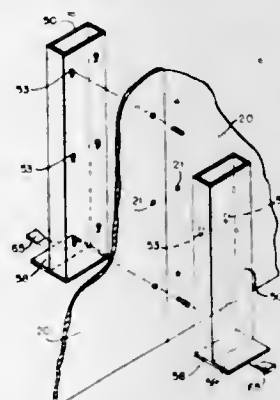


flange thus defining a vertical space enclosing an edge of a respective one of said panels, means for drawing said plate members toward said panels for clamping of said panels, a roof arranged at the top of and supported by said hollow members, and a floor supported by said hollow members at a desired height above the foundation.

3,312,019

DETENTION STRUCTURE OF MODULAR EQUIPMENT

Nelson A. Faerber, 586 9th St. S., Naples, Fla. 33940
Filed Nov. 14, 1963, Ser. No. 323,698
12 Claims. (Cl. 52-106)



1. Modular equipment for formulating detention structures comprised of a multiplicity of interchangeable modules of identical sizes or multiples thereof but of varying characteristics, each provided with a plurality of identically spaced openings about its perimeter, interchangeable connector elements selectively inserted in said openings for connecting adjacent modules, means supporting adjacent connector elements adjacent said modules, means for vertically shifting the position of said supporting means, means precluding access to said means for shifting and locking said supporting means in position, and means locking said modules against vertical movement.

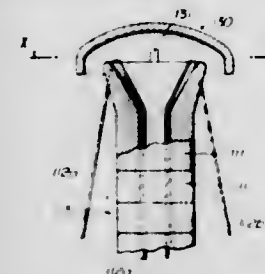
3,312,020

COLLAPSIBLE COLUMNAR STRUCTURE

Wilhelm Schuster, Dauphinestr. 194, Linz (Danube), Austria
Filed May 8, 1964, Ser. No. 368,870
6 Claims. (Cl. 52-108)

1. An elongated structure adapted to be selectively straightened and collapsed, comprising a row of contiguous body sections defining a collapsible column, said sections being provided with passages aligned in the

straightened position of said column, at least one of said sections being provided with an outrigger arm extending generally transversely to said column, a first elongated flexible tension element extending through all said passages, a second elongated flexible tension element anchored to the extremities of said column and engaging



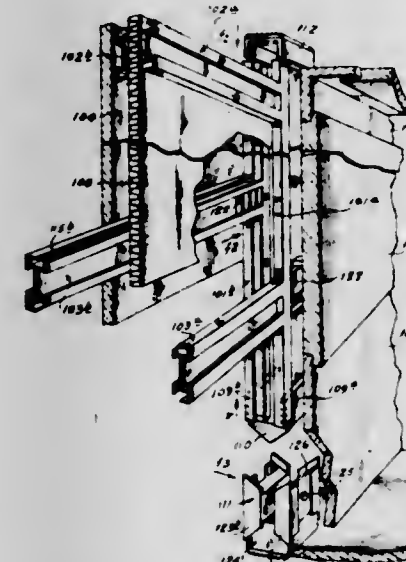
the free end of said outrigger arm, said first and second tension elements being parts of a cable looped about an extremity of said column, and releasable tightening means for alternately tensioning said elements against said column and slackening said elements preparatorily to a collapse of the structure.

3,312,021

SECTIONAL STRUCTURAL MEMBER AND CONNECTING MEANS USABLE THEREWITH

Robert C. Rolland, 7 Place Stanislas, Cannes, France
Filed May 12, 1964, Ser. No. 366,790
Claims priority, application Great Britain, May 16, 1963, 19,424/63

4 Claims. (Cl. 52-122)



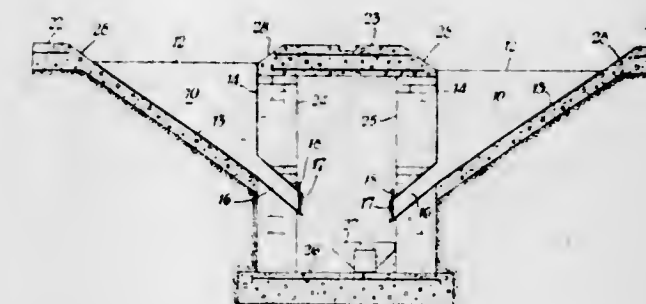
1. In a building having a base and roofing, wall structure comprising a pair of parallel spaced vertical frames each including vertical and horizontal frame members having longitudinal recesses therein, said vertical members including at least one pair of members disposed in oppositely registering relation as between the two frames, an upper and a lower pressure-transmitting member having parallel spaced prongs projecting vertically therefrom for insertion into the upper and lower ends, respectively, of said recesses of both vertical members of said pair, at least one of said pressure-transmitting members having oppositely-sloping inclines on the side thereof directed away from said vertical member, and jacking means associated with said one pressure-transmitting member and comprising a pair of vertical elements movable towards and away from each other and having oppositely-sloping inclines engageable with said inclines of said one pressure-transmitting member, and actuator means for moving said elements relative to each other to apply a vertical force through said inclines to said one pressure-transmitting member for compressing both said vertical members.

3,312,022

APPARATUS FOR THE BULK STORAGE OF PARTICULATE MATERIAL SUCH AS GRAIN

Edmund Patrick Marriage, Jerico Priory, Blackmore, Ingatstone, England
Filed Jan. 27, 1965, Ser. No. 428,457
Claims priority, application Great Britain, Jan. 28, 1964, 3,566/64

3 Claims. (Cl. 52-169)



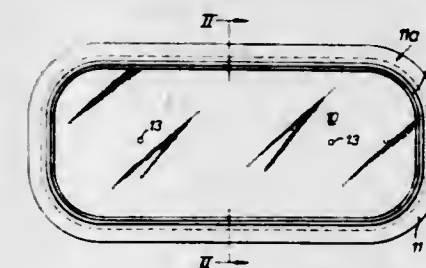
1. Storage means for particulate material comprising at least one floor surface, a discharge area adjacent and below said floor and separated therefrom by a substantially vertical wall, and at least one discharge chute prefabricated from moisture-proof material and comprising a hollow body portion of substantially right-angle triangular longitudinal section, said body comprising elongate entrance aperture means for the admission of material thereinto extending longitudinally of one of the lesser sides of said body portion which is generally in the plane of said floor surface and extends from an aperture therein, and a tube extending from said body portion in the region of the junction between the other lesser side and the hypotenuse side of said body portion through said wall, said tube having an open free end positioned above said discharge area and provided with means for controlling the outflow of material through said tube, said other lesser side of said body portion being located in abutment with said wall.

3,312,023

ANTI-CONDENSATION PANELS

Salomon Zell, Blackpool, England, assignor to Zell-Em Limited, Blackpool, England, a British company
Filed Oct. 8, 1964, Ser. No. 402,458
Claims priority, application Great Britain, Mar. 6, 1964, 9,488/64

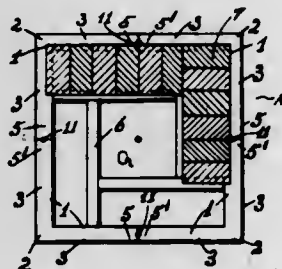
4 Claims. (Cl. 52-203)



1. A lightweight anti-condensation panel for attachment to a window, comprising a flat sheet of flexible transparent plastic material having sufficient stiffness to be substantially self-supporting throughout its area, a peripheral border element of thin flexible plastic material, the inner edge of which overlaps the edge portion of the sheet and the outer edge portion of which is disposed outwardly beyond the periphery of said sheet and defining a border flange, one surface of said border flange being highly polished to be self-adherent to a window, and a spacing frame extending around said transparent sheet adjacent the periphery thereof, said border element, spacing frame and sheet being sealed together in airtight relation.

tion with the adherent border flange surface and spacing frame facing from the same side of said sheet, said spacing frame being flexible to conform to any contour of a window, whereby when said adherent border flange surface is applied to a window the spacing frame enables said panel to follow the contour of the window with the sheet of transparent material spaced from the window and a sealed air space is formed between the transparent sheet and the window to prevent misting of the latter.

3,312,024
MODULAR BUILDING STRUCTURE AND PRE-FABRICATED COMPONENTS THEREFOR
Helmut Paschmann, Stettiner Strasse 9,
Remscheid, Germany
Filed Nov. 24, 1964, Ser. No. 413,462
Claims priority, application Germany, Dec. 12, 1963,
P 33,180
17 Claims. (Cl. 52-221)

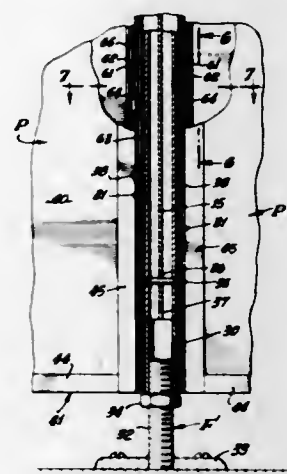


1. A modular structure comprising:
 - (a) a support base member;
 - (b) four rigid corner members, each having a pair of arm members and a leg member extending from a common corner junction in substantially mutually orthogonal directions, with the distal ends of said arms having releasable connectors affixed thereto, said corner members being disposed so as to form an open rectangular, parallelepiped frame, with the arms of adjacent corner members being connected together at their distal ends, and the distal ends of their leg members being in supporting contact with said base member;
 - (c) a span support member disposed across the frame opening defined by said interconnected arm members and connected thereto, said span support member comprising four beams interconnected to form a planar rectangular frame with one end of each beam extending outward along each side thereof, said beam ends being fixedly but releasably connected to the corner piece arms; and
 - (d) a plurality of panels fastened to said span support members, said panels being disposed horizontally thereon.

11. The modular structure of claim 1 wherein one of the corner members is provided with a pair of outwardly disposed lugs, each of said lugs extending substantially parallel to one of the arms of said corner member and perpendicular to the other arm thereof, with each lug having fastening means for connection to similar lugs on corner members of similar modular structures so that four of such modular structures can be united by fastening their adjacent lugs together.

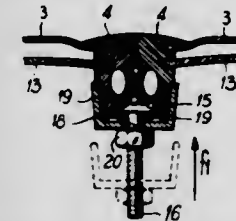
12. In combination, four modular structures according to claim 11, wherein said structures are connected together at their lugs so that a substantially uniform spacing exists between the frames of adjacent modular structures, at least one trough disposed between the adjacent sides of the frames of a pair of adjacent modular structures, said trough being supported by the arms thereof, a grating covering said trough, and a drain pipe communicating with said trough.

3,312,025
PARTITION CONSTRUCTION
Donald A. Deakins, Gardena, Fla., assignor, by mesne assignments, to Katherine M. Griffin, Woodinville, Wash.
Filed May 8, 1961, Ser. No. 158,621
16 Claims. (Cl. 52-239)



13. A partition of the character referred to including a plurality of like longitudinally spaced vertically disposed tubular columns with vertically disposed sides having flat inner and outer surfaces, and a pair of laterally spaced opposing channels in the column adjacent the inner surface of each side thereof, a panel positioned between each pair of adjacent columns and having a frame with vertically disposed ends having flat inner and outer surfaces arranged adjacent the columns with the outer surfaces thereof in flat bearing engagement with each other, each side of the frame having a pair of laterally spaced opposing channels adjacent the inner surface thereof, and releasable coupling means securing the panel and the columns together and including a pair of registering openings in each adjacent side and end of the columns and panel frames to occur between the channels related thereto, a block adjacent each opening in the panel frames having edge portions engaged in the channels related thereto, a screw fastener carried by the block engaging the inner surface of the frame and bias the block in the channels, a flat downwardly and outwardly inclined tab on the block projecting through the opening in the frame and into the opening in the column related thereto, a second block having edge portions engaged in the channels related thereto, a screw fastener carried by the block engaging the inner surface of the side and adjacent the opening in the side and bias the block in the channels, and a flat upwardly inclined tab projecting therefrom through the opening in the column and into the opening in the panel frame related thereto, the downwardly disposed inclined surface of the tab carried by the frame establishing sliding wedging engagement with the upwardly disposed inclined surface on the tab carried by the column, said columns having central vertical webs and having vertically adjustable feet providing for vertical positioning of the columns and orientation of the openings of the coupling means and including, an elongate vertically disposed tubular body at the lower end of each column, a pair of laterally spaced vertical legs fixed to and projecting upwardly from the body at opposite sides of the web, screw fasteners extending between the legs and through the web holding the legs in tight clamped engagement on the web, an elongate vertically disposed stem threaded into the body depending therefrom, a lock nut on the stem engaging the lower end of the body and a flat horizontally disposed floor-engaging pad fixed to the lower end of the stem.

3,312,026
COVERING FOR BUILDINGS
Robert C. Rolland, 7 Place Stanislas, Cannes,
Alpes-Maritimes, France
Filed Mar. 10, 1964, Ser. No. 350,868
Claims priority, application Great Britain, Mar. 20, 1963,
10,950/63
5 Claims. (Cl. 52-403)



1. Covering structure for a building which comprises polygonal panels positionable in edge to edge relation over an outer surface of the building and having sealing elements extending along the edges of the panels, each of said sealing elements including a resiliently flexible portion presenting a side surface which is engageable with a mating side surface of the contiguous sealing element of an adjacent panel, said portions of the contiguous sealing elements of adjacent panels projecting normally to the respective panels in the direction inward of the building and having complementary recesses opening at the mating side surfaces thereof; and retainer means for the contiguous sealing elements of adjacent panels including an outer retainer member having a head portion seatable in said complementary recesses of the contiguous sealing elements, an inner retainer member of channel-shaped, outwardly opening cross-section dimensioned to have said projecting portions of the contiguous sealing elements wedged therein upon drawing of said projecting portions into said channel-shaped inner retainer member, and means connecting said inner and outer retainer members and being operative to displace said outer retainer member, when engaged in said complementary recesses, relative to said inner retainer member in the direction to draw said projecting portions of the contiguous sealing elements into said inner retainer member, whereby said resiliently flexible portions are deformed against each other to ensure tight sealing engagement therebetween at said mating side surfaces.

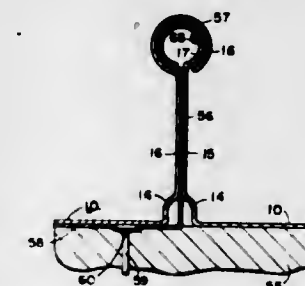
3,312,027
PANEL MOUNTING DEVICE
Michael B. Lawer, Indiana, Pa. (% Greensteel-Korok,
Inc., 29 Laing Ave., Dixonville, Pa. 15734)
Filed Apr. 30, 1964, Ser. No. 363,876
7 Claims. (Cl. 52-475)



7. A panel adapted for removable mounting on a fixed support having spaced aligned slots therein, said panel including front and back faces, said back face having hook means fixed thereto and projecting rearwardly therefrom for engagement within selected ones of the support slots, and rearwardly projecting lock means mounted on

said panel and selectively insertable through at least one of the support slots, said lock means being movable relative to the panel for locking engagement with the support through the corresponding slot so as to prevent removal of the panel from the support, said lock means consisting of at least one lock, said lock including an elongated shank slidably and rotatably received transversely through the panel, a locking head on the rear end of said shank, said locking head being transversely enlarged and shaped for free movement through a support slot upon a predetermined rotational orientation of the locking head relative to the slot, said shank being selectively projectable rearward of said panel for introduction of the locking head through a support slot for subsequent rotation of said locking head inward of said slot, said locking head being incapable of passage through said slot upon a rotation thereof from its slot passing position, and means limiting the rearward projection of said shank.

3,312,028
ROOFING, SIDING OR CEILING STRUCTURE OF INTERLOCKED CHANNEL SECTION PANELS
Patrick L. Schroyer, Downey, Calif., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed Aug. 5, 1963, Ser. No. 299,779
6 Claims. (Cl. 52-478)



1. In a building structure the combination of a plurality of spaced supporting members, a series of pairs of relatively stiff and rigid interlocked metal panels of channel configuration and self-supporting capacity affixed to and closing the space between said spaced supporting members, each of said panels having a central web and a pair of sidewalls projecting outwardly from the opposing side edges of said web, the first sidewall of each panel having a normally closed tubular bead along its free marginal edge and the second sidewall of each panel having a deformable tubular sleeve along its free marginal edge and opening in an opposite direction to the tubular bead on the first sidewall, the first sidewall of each panel also being in substantially full face-to-face and mutually supporting relationship with respect to the second and opposing sidewall of an adjoining panel, the sleeve of the second sidewall of the adjoining panel being positively clamped about and fully enclosing in tight surface-to-surface engagement the tubular bead on the free marginal edge of the first sidewall of the other adjoining panel for substantially the entire length of said bead and sleeve to join said abutting walls in said mutually supporting relationship and to provide a rigid substantially continuous watertight fully closed coupling between said abutting sidewalls of adjoining panels for substantially the entire length thereof, the free end of the fully clamped sleeve terminating adjacent the point of juncture of the coupling and the remaining portions of the sidewalls of the coupled panels, and a blind strip metal connector of relatively shorter length than said coupled panels anchoring said coupled sidewalls and the panels provided therewith to one of the supporting members, said connector including a body portion tightly sandwiched between the associated sidewalls of the coupled panels, a deformable curl at one

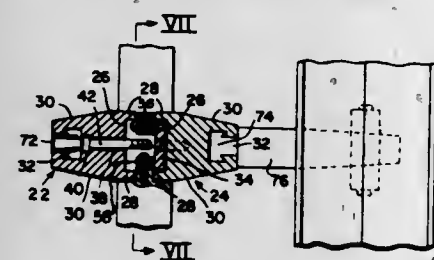
end of said body portion tightly coiled about and opening in an opposite direction to the tubular bead on the first sidewall of a coupled panel and arranged in full surface-to-surface contact with and between both said tubular bead and the sleeve on the respective coupled panels and a foot at the other end of said body portion of said connector anchored to a supporting member and fastening said connector along with said coupled panels to the last-mentioned supporting member.

3,312,029

BARRIER STRUCTURE

Louis Blum and William J. Horgan, Jr., Pittsburgh, Pa., assignors to Blumcraft of Pittsburgh, Pittsburgh, Pa., a firm

Filed Dec. 13, 1963, Ser. No. 330,389
2 Claims. (Cl. 52-495)



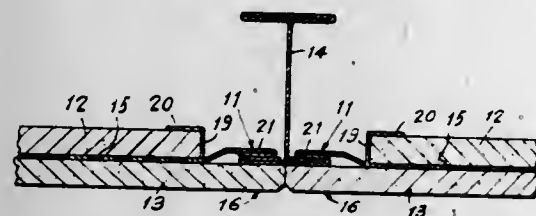
1. In a structure of the character described, the combination comprising a post, and a pair of panels respectively framed into opposite sides of said post, said post including first and second longitudinally extending laterally spaced post members substantially identical and uniform in transverse section, the opposed surfaces of said post members being provided with longitudinally extending recesses, a filler strip fixedly nested in one of said recesses, and of a thickness corresponding to the depth of said recess, and a plurality of elements projected freely through one of said members and threaded into the other member for clamping said panels between said members, the end of each panel framed into said post including a vertically extending marginal area disposed between said post members and affixed to the underlying filler strip independently of the post members.

3,312,030

STRUCTURAL PANELS WITH ATTACHED CLIPS

James E. Gillespie, Caledonia, Ontario, Canada, assignor to Domtar Limited, Montreal, Quebec, Canada, a company of Canada

Filed Nov. 27, 1963, Ser. No. 326,478
4 Claims. (Cl. 52-497)



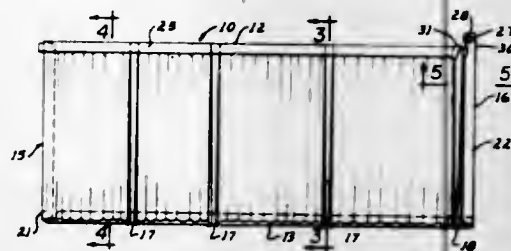
1. For use in a structure having structural members and panels co-operating with said structural members; a prefabricated panel having clips attached thereto, structural member engaging section on said clips adapted to engage said structural members, said clips having perforated portions, said prefabricated panel including a facing sheet and backing means, the perforated portions of said clips lying between said facing sheet and backing means, adhesive extending through said perforations to directly bond said facing sheet and backing means over said perforated portion to thereby anchor said clips to said panel.

3,312,031

SHINGLE STRUCTURE WITH REENTRANT JOINT CONFIGURATIONS AND A NAILING TAB

David G. Berg, Oakland, Calif., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware

Continuation of application Ser. No. 326,134, Nov. 26, 1963. This application Apr. 4, 1966, Ser. No. 540,106
3 Claims. (Cl. 52-530)



1. A shingle structure comprising a continuous sheet of metal having, in normal position, an upper edge, a lower edge, a right-side edge, a left-side edge, an undersurface normally facing a roof or the like and an outside surface normally exposed to weather, said structure having medial grooves and an end groove adjacent said right-side edge of said shingle structure, all of said grooves being defined by indentations in said sheet running from lower edge to said upper edge and formed to be deeper at said lower edge and shallower at said upper edge and to intersect the surface defining said lower edge, said lower edge being formed by a deep box-bend of said sheet, the portion of said lower edge box-bend normal to said sheet being wider than said grooves and the portion of said box-bend generally parallel to said sheet and underlying the undersurface thereof, said upper edge being formed by a folded-back portion overlying said outside surface and said upper edge folded-back portion also extending beyond said left-side edge, said left-side edge being formed by a bent-back portion underlying said undersurface, and said right-side edge being formed by a doubled-back portion overlying said outside surface, the corner formed by the intersection of said upper edge and said right-side edge being formed with an extension of said doubled-back portion of said right-side edge flattened to form a double thickness nailing tab having a box-bend at the edge thereof and said upper edge folded-back portion terminating to form a dam across the end of the groove disposed adjacent the right-side edge, with the folded-back portion of the upper edge also being offset to receive the folded-back portion of a second shingle structure which extends beyond the left-side edge of said second shingle structure whereby the second shingle structure can be interlocked with the right-side edge of the first-mentioned shingle structure.

3,312,032

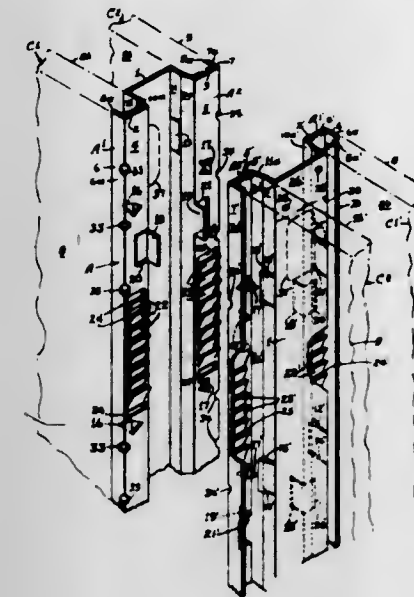
METAL STUD AND PANEL

Robert G. Ames, Hillsborough, Calif., assignor to Ames Taping Tool Systems Manufacturing Co., a corporation of Illinois

Filed July 5, 1963, Ser. No. 292,996
8 Claims. (Cl. 52-580)

1. A metal stud comprising:
(a) two halves, each half having
(b) an elongated web with parallel channels for receiving the edges of plaster boards and extending along the sides of the web; each channel having an inner wall, an outer flange and a base portion interconnecting the wall and the flange;
(c) the inner wall of each channel paralleling the outer flange of the same channel;
(d) the inner wall of each channel being provided with an outwardly inclined portion that terminates at the channel base portion;

(e) whereby the end of a plaster board when moved into the channel will have its inner surface contacted by the outwardly inclined portion of said inner channel wall for forcing the outer surface of the plaster



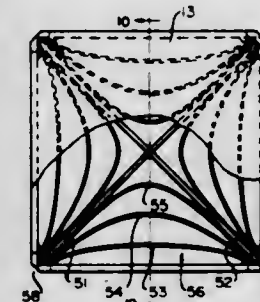
board against the inner surface of said channel outer flange; the plaster board being grooved in its outer surface to receive said flange so that the outer surface of the plaster board lies flush with the outer surface of said flange.

3,312,033

HOLLOW PANEL

John R. Williams, Hayward, Calif., assignor to Utah Construction & Mining Co., San Francisco, Calif., a corporation of Delaware

Filed May 25, 1964, Ser. No. 369,888
11 Claims. (Cl. 52-615)



1. A panel comprising a rectangular frame, spaced skins secured to opposite sides of said frame to define a hollow panel, a plurality of non-intersecting ribs extending adjacent one another and having their edges secured to said skins, said ribs having at least one end meeting at a corner of said panel to transfer forces applied to the skins along the ribs to the corner, said ribs spreading away from one another away from the corner, and means at the other end of said ribs for transferring along the ribs forces applied to said skins to an adjacent support point.

3,312,034

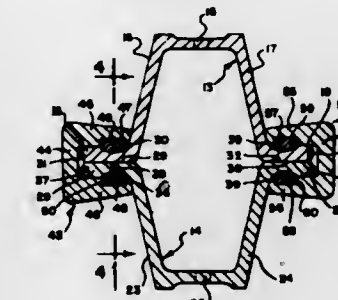
SIGN SUPPORT POST

William N. Steinmann, Indian Hill, Ohio, assignor to The Pollak Steel Company, Cincinnati, Ohio, a corporation of Ohio

Filed Mar. 6, 1964, Ser. No. 349,872
5 Claims. (Cl. 52-731)

5. A sign support assembly comprising a first and second post, each post having a pair of legs, a web connect-

ing said legs, and a flange extending from each said leg, each said flange having a mating side and an obverse side to said mating side, each said obverse side of each flange having a groove portion adjacent said leg from which that flange extends, each said flange being thicker at its outer edge than at said groove portion, the mating sides of said flanges in said first post being in contact with the mating sides of said flanges in said second post, and a plurality of clamping devices for maintaining said first and second posts in abutting relationship, each of said



clamping devices comprising a coupling member having two skirt portions, said skirt portions extending over the said groove portion in one flange of said first post and one flange of said second post, at least one of said skirt portions having a channel therein, and a tapered locking pin frictionally engaging said channel in said one skirt portion of said coupling member and a groove portion in one of said flanges of said post, and means on said second skirt portion cooperating with the other groove in the other flange thereby holding the posts in an assembled relationship.

3,312,035

REINFORCING BAR

Eduard Jean van Koot, Doorwerth, Netherlands, assignor to Tor-Isteg Steel Corporation S.A.H.

Original application Jan. 19, 1961, Ser. No. 83,720, now Patent No. 3,123,941, dated Mar. 10, 1964. Divided and this application Dec. 19, 1963, Ser. No. 331,744
1 Claim. (Cl. 52-737)



A concrete reinforcing member comprising a longitudinal cylindrical bar; a first and second group of diametrically opposed relatively short oblique lugs on said bar, each of said lug groups comprising a plurality of spaced-apart parallel lugs inclined relative to the longitudinal axis of said bar, the first group of lugs on a first side of said bar all being inclined in a first direction, the second group of lugs on the other side of said bar all being inclined in a direction opposite to said first direction, the two groups of said lugs being inclined at different angles of inclination relative to the longitudinal axis of said bar, said first group of lugs being disposed at a more acute angle relative to said longitudinal axis than is said second group, said first group of lugs being longer than said second group of lugs, the angle of inclination and length of said lugs being so related that the transverse distance covered by each of said lugs is the same in both first and second lug groups.

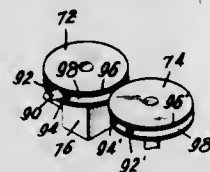
3,312,036

PACKAGING MACHINE

Harry J. Harp, Jr., Jenkintown, Pa., assignor, by mesne assignments, to Union Carbide Corporation, a corporation of New York

Filed Feb. 12, 1964, Ser. No. 344,259

3 Claims. (Cl. 53—182)



3. In a packaging machine, the sub-combination comprising a pair of rollers having juxtaposed peripheries, means for driving one of said rollers, each roller having a portion of its periphery provided with a concave groove, said grooves mating to effect a substantially circular passageway between said rollers, a portion of the periphery of each groove having an annular knurled surface, one of said rollers having a radially outwardly directed cutter means thereon, said one roller having knurled pressure surfaces on opposite sides of the cutter means, and said other roller having knurled pressure surfaces adapted to mate with said first-mentioned knurled pressure surfaces which are disposed on opposite sides of the cutter means.

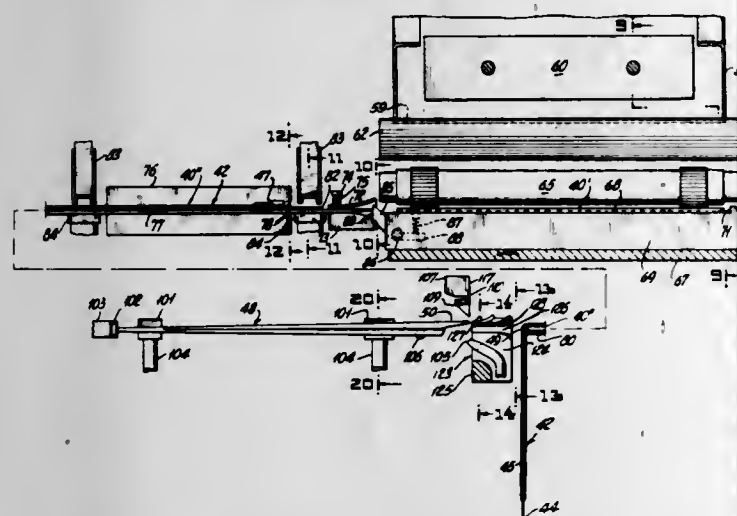
3,312,037

ZIPPER PACKAGING MACHINE

George R. Eckhardt, Fords-Edison Township, Middlesex County, N.J., assignor to Coats & Clark Inc., New York, N.Y., a corporation of Delaware

Filed Feb. 12, 1965, Ser. No. 432,122

11 Claims. (Cl. 53—188)



1. A packaging machine for fastening a flat article to an insert card and inserting the article and insert card into an envelope, comprising:

- (a) means for storing a stack of insert cards;
- (b) means for removing one insert card from the stack of stored insert cards and delivering said one insert card to a slideway;
- (c) means for propelling the insert card along the slideway to a fastening station;
- (d) means for fastening a flat article to the insert card at the fastening station;
- (e) means for storing a stack of envelopes;
- (f) means for removing one envelope from the stack of stored envelopes and placing said one envelope at a filling station in alignment with the slideway, with an open end of the envelope facing the fastening station;
- (g) means for opening the envelope by moving the opposed edges of the envelope adjacent the open end thereof toward each other;

- (h) means for opening the envelope by directing an air blast into the open end of the envelope;
- (i) means for propelling an insert card with a flat article attached thereto from the fastening station into the open end of an opened envelope while said envelope is in the filling station; and
- (j) means for closing the flap of the envelope after the insert card has been positioned therein.

3,312,038

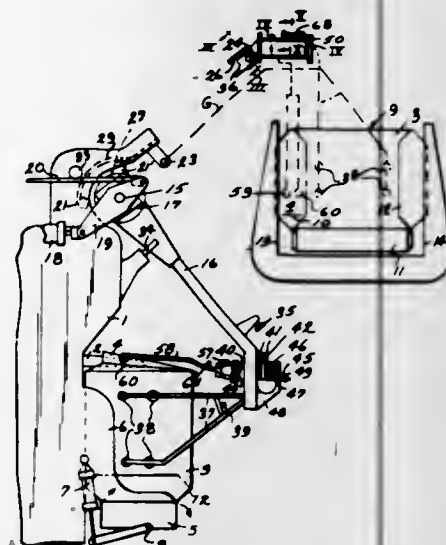
MACHINE FOR FILLING VALVE BAGS

Jozef Knaut, Kerkrade, Netherlands, assignor to Stamicarbon N.V., Heerlen, Netherlands

Filed Apr. 29, 1964, Ser. No. 363,458

Claims priority, application Netherlands, Apr. 29, 1963, 292,155

7 Claims. (Cl. 53—190)



1. Apparatus for feeding valve bags to a filling machine to be filled with granular or powdery material issuing from discharge spout means of the filling machine comprising means for retaining a supply of valve bags and feeding successive valve bags into a supply position wherein the body of the bag is disposed vertically and the valve of the bag faces downwardly in closed relation, means for engaging the body of a bag in releasably secured relation thereto, means for engaging the valve of a bag in releasably secured relation thereto, and means mounting said bag body engaging means and said bag valve engaging means for movement between bag receiving and bag filling positions and for relative movement with respect to each other during their movement between said positions in which when in a bag receiving position said bag body engaging means and said bag valve engaging means are disposed in engagement with the body and valve, respectively, of a bag in said supply position, and during movement from said bag receiving position toward a bag filling position the relative movement of said bag body engaging means and said bag valve engaging means with respect to each other is operable to open the valve of a bag engaged thereby, and when in said bag filling position said bag body engaging means and said bag valve engaging means are disposed to releasably secure a bag engaged thereby with the open valve thereof around discharge spout means of the filling machine and the body thereof therebelow.

3,312,039

LEAD HALTER

Marietta L. Reed, El Paso County, Colo.
(6000 Wilson Road, Colorado Springs, Colo. 80907)

Filed Oct. 22, 1965, Ser. No. 501,148

5 Claims. (Cl. 54—24)

1. In a halter having a headstall, including a crown and an attached pair of opposed cheekpieces, adapted to

encompass the head of an animal, a pair of rings respectively disposed at the lower terminus of the said cheekpieces, a nose band attached at each of its ends to the said rings, the improvement comprising; an elongated flexible member whose central portion lies between said

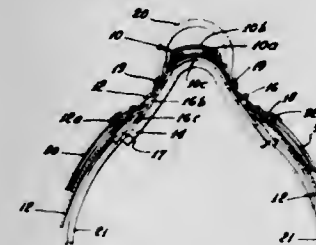


LIGHTWEIGHT VERSATILE SADDLE

Charles Nuzzo, 1604 Westmont Drive,
Alhambra, Calif. 91803

Filed Mar. 25, 1965, Ser. No. 442,704

5 Claims. (Cl. 54—44)



5. A saddle comprising a seat of pliable material, a pair of skirts each attached adjacent its upper end to a side of said seat, a resilient bar extending transversely beneath said seat and within said skirts and having an upper arched portion and a pair of downwardly and outwardly extending legs adjacent said arched portion, said legs each having a free end with a loop therein, means securing said bar in said position, cinch means connected to said legs comprising a ring in each said loop, a pair of cinch straps each extending through a said ring, a cinch, means for releasably connecting said cinch to each said cinch strap, a second ring in each loop, stirrup means connected to each said second ring, and cushioning means inwardly and below said bar and extending beneath said seat and adjacent the inside of the upper part of each said skirt.

3,312,041

DRIER AND METHOD

Wilkes E. Hill, Erie, Pa., assignor to Van Products Company, Erie, Pa., a corporation of Pennsylvania

Filed Sept. 30, 1963, Ser. No. 312,620

20 Claims. (Cl. 55—30)

14. A method of drying compressed gas comprising taking incoming gas and cooling the same, then passing the cooled gas through a first chemical bed of deliquescent desiccant material to remove moisture therefrom, reducing the velocity of all of the gas immediately after

passage thereof through the chemical bed and permitting it to expand and cool, then passing the gas through a



second chemical bed of deliquescent desiccant material to further remove moisture therefrom.

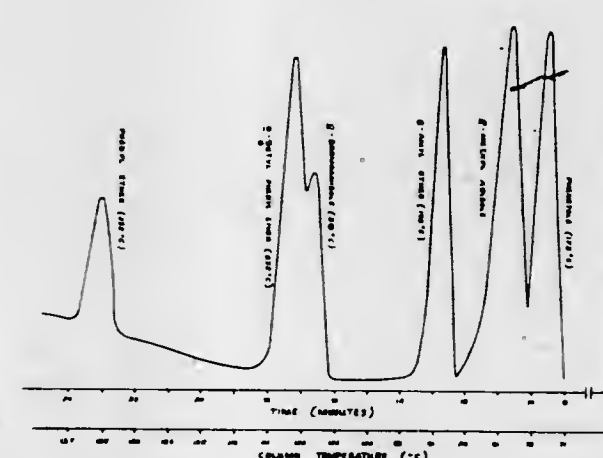
3,312,042

GAS-SOLID CHROMATOGRAPHIC COLUMN

Lockhart B. Rogers, West Lafayette, Ind., and Alan G. Altman, Cincinnati, Ohio, assignors, by mesne assignments, to Varian Aerograph, a corporation of California

Filed Mar. 4, 1964, Ser. No. 349,367

14 Claims. (Cl. 55—67)



14. A method for separating a mixture of chemical compounds in a chromatographic column packed with a solid adsorbent comprising flowing the mixture in vapor phase at a preselected elevated temperature less than the melting temperature of said solid adsorbent, with a carrier gas, through said chromatographic column, said column being packed with devolatilized clathrate crystals formed from a coordination compound of a salt of a transition metal selected from the group consisting of Groups I-B and II-B of the Periodic Table of Elements and a coordinating group selected from the class consisting of water and nitrogen compounds wherein the nitrogen atom has an unshared electron pair.

3,312,043

HYDROGEN DIFFUSION TUBES

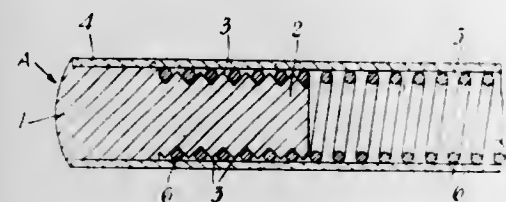
Peter Allen Sexton, Hayes, England, assignor to Johnson Matthey & Company Limited, London, England, a British company

Filed Nov. 12, 1964, Ser. No. 410,477

6 Claims. (Cl. 55—158)

1. A closing plug for sealing an open end of a hydrogen diffusion tube comprising a body portion formed of

material having at least substantially the same co-efficient of thermal expansion as that of the diffusion tube with which it is to be associated and being so dimensioned as to form a tight fit in said diffusion tube when inserted

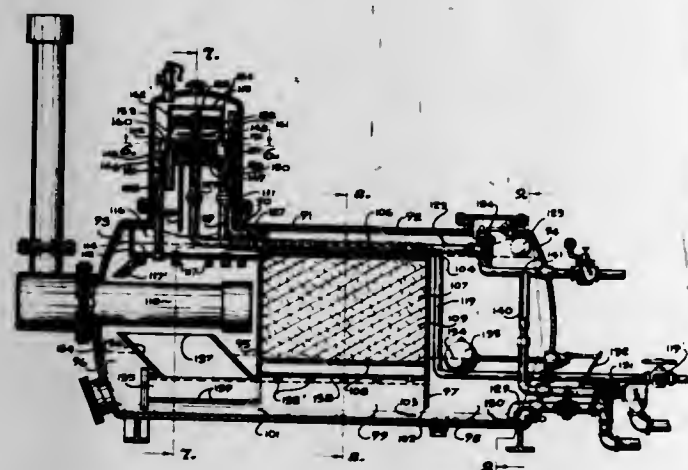


therein and an extension projecting from one end of said body portion of smaller external diameter than that of said body portion, said extension being adapted in use to project internally of said tube and to provide means for positioning an internal support member of said tube.

3,312,044

MEANS FOR TREATING OIL WELL PRODUCTION
Arthur W. McCarter, Great Bend, Kans., assignor to O'Neill Tank Company, Inc., Great Bend, Kans., a corporation of Kansas

Filed Mar. 23, 1964, Ser. No. 353,885
5 Claims. (Cl. 55-168)



1. An oil well production treater including,
 - (a) an elongated and horizontally extended shell,
 - (b) a compartment within the shell adjacent one end thereof,
 - (c) a heat source of large capacity mounted in said compartment,
 - (d) means including a spreader communicating with said compartment for delivering and horizontally distributing oil and emulsion in an upper portion thereof for flow downwardly over said heat source whereby the heat thereof facilitates resolving of free water therefrom to settle to the bottom of said compartment forming a water level which is an interface of oil, emulsion and water,
 - (e) a water outlet communicating with a point near the bottom of the shell and said compartment for removing water developed from said oil and emulsion,
 - (f) means including a water level detector controlling removal of evolved and separated water from said shell,
 - (g) a coalescing section at a level above said interface and having cooperating means for spreading oil and emulsion over the bottom area thereof,
 - (h) a transverse partition in the shell separating said compartment from said coalescing section, said partition having a lower edge spaced from the bottom of

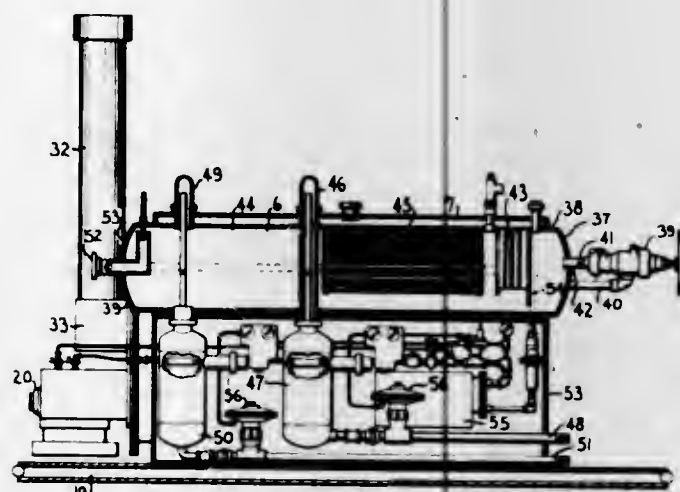
the shell but below the interface for communication between said compartment and space below said spreader means,

- (i) said coalescing section being spaced from the other end of said shell,
- (j) tubular means in said compartment and having an upper inlet above said interface, said tubular means extending through said partition and having a discharge opening below said spreader means in the coalescing section for conducting oil and emulsion from adjacent said heating source longitudinally of the shell to the coalescing section for upward flow therein,
- (k) and an oil outlet having an inlet receiving oil overflowing from the upper portion of said coalescing section.

3,312,045

WELLHEAD PRODUCTION UNIT
Arthur W. McCarter, Honolulu, Hawaii, assignor to O'Neill Tank Company, Inc., Great Bend, Kans., a corporation of Kansas

Filed Aug. 9, 1965, Ser. No. 478,322
2 Claims. (Cl. 55-174)



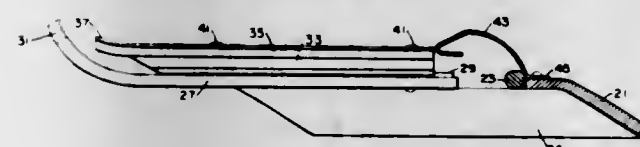
1. In a wellhead gas production unit,
 - (a) a shell having side walls, end walls, a top wall and a bottom wall and a partition cooperating therewith to define a water tank having a body of water therein, said partition being substantially coextensive with the side walls of the shell,
 - (b) a fire tube heater extending longitudinally into a lower portion of said water tank for heating the water therein,
 - (c) a separator in said tank with a major portion immersed in water therein, said separator being above said heater,
 - (d) a control containing area in said shell at one side of the partition exteriorly of said water tank with the separator overlying said control containing area, said control area being substantially the length of the separator, said partition being common with the water tank and the control area whereby heat from the water tank is conducted through said partition to the control area to prevent freezing of controls therein,
 - (e) a well-inflow means extending through said water tank and coupled with said separator for directing a flow of well products through said water tank to said separator,
 - (f) and a product outlet means connected to said separator and extending through said control area for removal of well product phases from the separator.

3,312,046

RUBBER MOUNTED COTTON STRIPPER MEANS FOR COTTON PICKER MACHINES

John J. Bramblett, Pine Bluff, Ark., assignor to Ben Pearson, Incorporated, Pine Bluff, Ark., a corporation of Arkansas

Filed Nov. 23, 1964, Ser. No. 413,143
8 Claims. (Cl. 56-42)



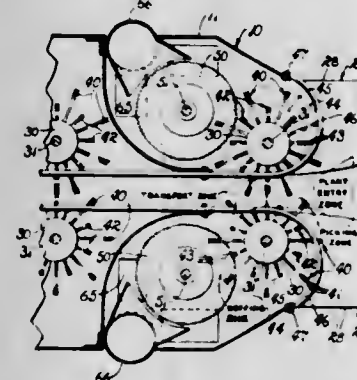
1. Stripper means for use in a cotton picking machine, which machine includes horizontally disposed rows of picking spindles driven in a continuous path along a picking side to attack and withdraw the cotton from the cotton plants, thence along a stripping side for removal of the withdrawn cotton from the spindles, said stripper means positioned on said stripping side for removing said withdrawn cotton from said spindles comprising support means mounted uprightly within said machine, a plurality of mounting bars, means connecting said mounting bars to said support means in substantially horizontal, vertically spaced relation, the spaces between said mounting bars providing passages for said spindles along said stripping side, a like plurality of stripper units, each said stripper unit comprising a stripper base of yieldable rubber-like material held against the inner face of a said mounting bar, holder means attaching said base to said mounting bar including a plate member extending along said base, means clamping said holder plate to said mounting bar with said yieldable base between said holder plate and said mounting bar, a pair of stripper bars embedded in each said base alongside said holder plate, said stripper bars extending from said base toward and into said passages engaging withdrawn cotton carried on spindles passing through said passages to remove said withdrawn cotton from said passing spindles.

3,312,047

COTTON HARVESTING MACHINE

Joe E. Cafaro, 1555 S. Minnewawa, Fresno, Calif. 93702

Filed Dec. 6, 1963, Ser. No. 328,621
13 Claims. (Cl. 56-48)



1. In a cotton harvesting machine adapted for earth traversing movement along a predetermined path of travel, a picking housing mounted on the machine and adapted to be moved along a row of cotton plants, a plurality of tufts of elongated bristles; means in the housing collectively mounting the tufts in a pair of laterally opposed separate groups and defining therebetween a plant passageway, including means for moving the tufts of each group in a respective substantially horizontal circuitous path, each of said paths having a plant entry portion directed rearwardly inwardly toward said passageway, a

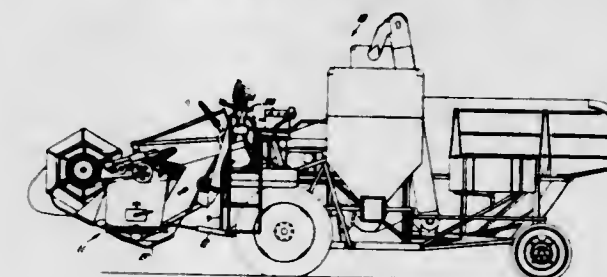
picking portion, a cotton transporting portion, and a doffing portion, the entry portions of said paths being in laterally opposed longitudinally aligned relationship to afford simultaneous free access by tufts of both groups in said entry portions to cotton plants entering said passageway, the bristles of each tuft being adapted to engage cotton on such plants and to transport said cotton during movement through said passageway; doffing means rotatably mounted in the housing along the respective doffing portions of said circuitous paths peripherally engageable with the tufts for removing cotton from the bristles; and powered drive means connected to the tuft mounting means and to the doffing means moving the tufts rearwardly along the passageway at a speed substantially equal to the earth traversing speed of the machine and rotating the doffing means in the same direction in the housing as the circuitous movement of their respective tufts whereby said tufts and doffing means have opposite relative peripheral directions of movement when in engagement.

3,312,048

COMBINE WITH FLOATING HARVESTING PLATFORM

Robert B. Annat, Kenilworth, and Edward Geoffrey Metcalfe, Leamington Spa, England, assignors to Massey-Ferguson (United Kingdom) Limited, London, England, a British company

Filed Mar. 3, 1964, Ser. No. 349,074
Claims priority, application Great Britain, Mar. 13, 1963, 9,856/63
9 Claims. (Cl. 56-214)



1. In an agricultural machine for treating crops, having a crop treating part, means for controlling the height of the part relative to the machine including a pressure fluid operated device between said machine and said part for carrying a portion of the total weight of said part on the machine, a source of fluid under pressure operatively associated with said device, ground engaging means on said part for carrying a portion of the total weight of said part, and fluid operated control means in fluid communication with the device and responsive to changes in pressure therein to discharge fluid from the device to cause lowering of the part when the pressure therein exceeds a predetermined valve corresponding to more than a predetermined weight on said device and to connect the source of pressure fluid to the device to cause raising of the part when the pressure in the device falls below said predetermined value, said raising and lowering tending to maintain the pressure of the pressure fluid within the device, at a substantially constant value whereby a substantially constant predetermined proportion of the weight of said part is carried by said ground engaging means.

3,312,049

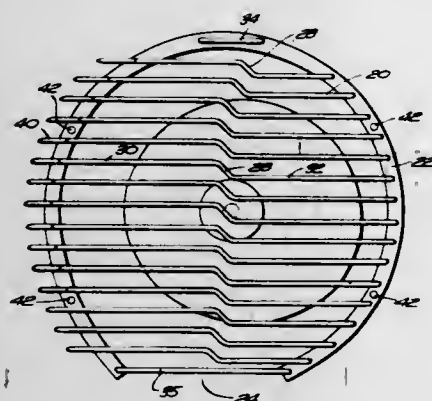
GUARD FOR ROTARY LAWN MOWER

Harry E. Walker, Rte. 2, Mechanic Falls, Maine 04256

Filed Oct. 14, 1964, Ser. No. 403,890
4 Claims. (Cl. 56-255)

1. A guard for a rotary power lawn mower, comprising a circular frame member adapted to be mounted horizontally under a mower, a series of generally parallel

bars secured to said frame member and disposed in a horizontal plane below that of the member, each said bar having approximately equal front and rear portions and a



small central portion defined by reverse bends between it and the front and rear portions, said frame member having a gap at the discharge side of the mower.

3,312,050

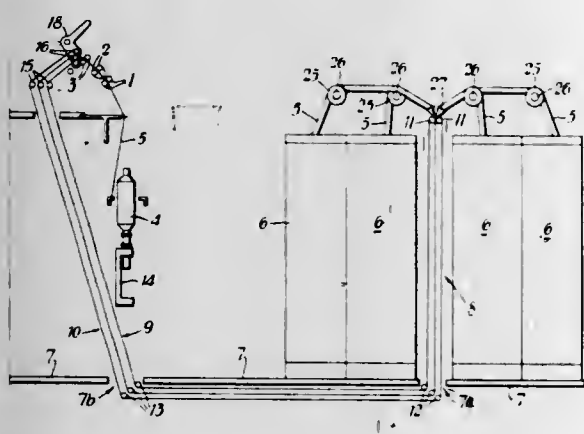
SLIVER FEED AND DRAFTING MEANS OF A RING SPINNING FRAME

Joseph Noguera, London, England, assignor to Casablanca High Draft Company Limited, Manchester, England, a British company

Filed Nov. 16, 1964, Ser. No. 411,424

Claims priority, application Great Britain, Nov. 19, 1963, 45,700/63

4 Claims. (Cl. 57-34)



1. A ring spinning frame comprising roller stand means, at least one roller drafting mechanism incorporating driven intake rollers and supported by said stand means, a pair of endless conveyor belts having co-operating facing runs defining a sliver feed path therebetween extending from a location adjacent a sliver supply source to a location adjacent said intake rollers, means for guiding and supporting said conveyor belts, means for transmitting a drive to said belts, a crank lever mounted for angular movement on said stand means behind said drafting mechanism, a pair of support rollers carried by said lever and around which said endless conveyor belts pass at the delivery end of said co-operating runs, an auxiliary roller carried by said stand means, means for driving said auxiliary roller faster than said intake rollers, an idler roller carried on said lever in driving contact with said belts and in driven contact alternatively with an intake drafting roller or with said auxiliary roller depending upon the angular position of said lever, and spring means urging said lever into the angular position in which said

idler roller is in driven contact with said intake drafting roller.

3,312,051

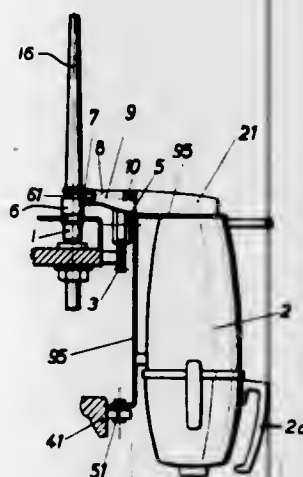
APPARATUS FOR REMOVING THREAD FROM SPINDLE SHANKS

Fritz Schumann and Alfred Nikel, both of Ingolstadt, Germany, assignors to Deutscher Spinnereimaschinenbau Ingolstadt, Ingolstadt (Danube), Germany, a corporation of Germany

Filed Nov. 12, 1965, Ser. No. 507,497

Claims priority, application Germany, Nov. 14, 1964, D 45,852

9 Claims. (Cl. 57-34.5)



1. In spinning apparatus for producing cops of thread having a cop tube spindle, and holding means for holding the thread on a portion of the spindle during exchange of a cop for an empty cop tube, whereby thread is collected on said portion of the spindle, the improvement which comprises:

(I) a collected thread removing device for removing said collected thread from the spindle, including:

(A) a suction means having an intake opening,

(B) releaser means for releasing the collected threads from the spindle, mounted on the suction means for disposition in operative position when the suction means is disposed with the intake opening adjacent said portion of the spindle for application of suction to collected thread; and

(II) mounting means serving for mounting of the suction means with the suction means disposed as aforesaid,

whereby said device can be mounted in operative position with respect to the spindle to release collected thread and draw the released threads into the suction means intake opening.

3,312,052

METHOD OF PRODUCING SLUB YARNS

Takao Shiranezawa, Hirohiko Iida, Koen Takra, and Masayuki Takahashi, all of Komatsu-shi, Japan, assignors to Teijin Limited, Kita-ku, Osaka, Japan, a corporation of Japan

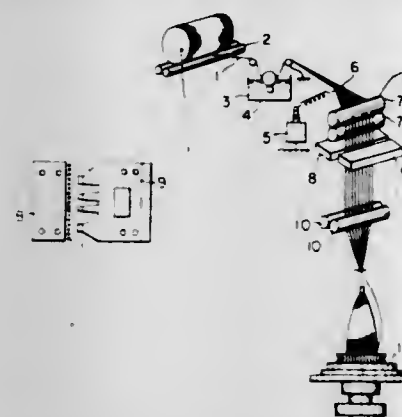
Filed May 4, 1966, Ser. No. 547,543

Claims priority, application Japan, May 7, 1965, 40/26,793; Jan. 13, 1966, 41/2,020

4 Claims. (Cl. 57-157)

1. A method of producing slub yarn which comprises partially cutting a yarn consisting of a plurality of continuous filaments at various points along the length of the yarn to cut a number of said filaments composing the yarn to form free fiber ends in said yarn, said points at which the cutting is effected being in spaced relation from each other, said filaments cut being not necessarily

the same at said respective various points but being filaments encountered at random from among the filaments



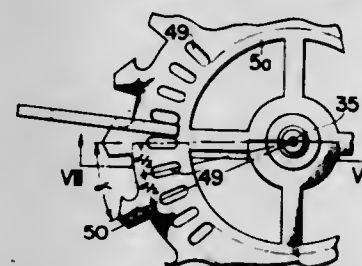
3,312,053 STEP BY STEP DRIVE MECHANISM FOR TIMEPIECE

Hirotohi Takamune, 39-1 Kamihoyashinden, Hoya-machi, Kitatama-gun; Goro Hanane, 893 2-chome, Kamiochiai, Shinjuku-ku; and Yoshifumi Mochizuki, 1468 5-chome, Kyonanchi, Musashino-shi, all of Tokyo-to, Japan

Filed Dec. 7, 1965, Ser. No. 512,072

Claims priority, application Japan, Feb. 19, 1965, 40/9,629, (utility model) 40/313,229

5 Claims. (Cl. 58-28)



1. In a drive mechanism, comprising a lever, an arbor for the lever, a stationary pillar plate, stationary banking pins on opposite sides of said lever providing stop positions on said plate, said lever being swingable on its arbor between said pins, a pair of entry and exit pallets fixedly mounted on said lever, an index wheel rotatably mounted in close proximity of said pallets for driven cooperation therewith, the provision of a permanent magnet made substantially in the form of a yoke having an air gap embracing said wheel and mounted on said plate and on opposite side of said wheel to said lever, and a number of perforations cut through the body of said wheel and arranged in a complete circle concentrically therewith, said perforations having a half peripheral pitch relative to that of peripheral projections on said wheel and arranged in phase therewith, said magnet being adapted for urging said lever to its locked positions through the intermediary of said wheel and for compensating positively a slight reversed rotation of said wheel to its regular feeding direction as appearing at each release of said entry pallet from engagement with said wheel.

3,312,054

SEA WATER POWER PLANT

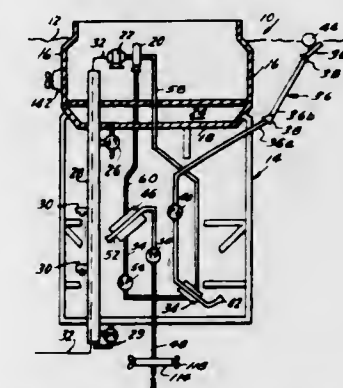
James H. Anderson and James H. Anderson, Jr., both of 1615 Hillock Lane, York, Pa. 17403

Filed Sept. 27, 1966, Ser. No. 600,287

21 Claims. (Cl. 60-26)

1. Apparatus for obtaining power from a naturally occurring body of water which is of sufficient depth to provide relatively warm surface water and relatively cold deep water, said apparatus comprising: boiler means for boiling a liquefied working fluid near the temperature of

the warm water, said boiler means including a heat exchanger having separate sets of flow channels for passing warm and cold fluids in heat exchange relationship; means for flowing a stream of the warm water through one set of said boiler channels; means for passing a liquefied working fluid through the other set of boiler channels; power extracting gas expansion means having an outlet and an inlet, the latter being connected in fluid flow relationship to the other boiler flow channels; condenser means for condensing vaporized working fluid, said condenser means including a heat exchanger having separate sets of flow channels for passing warm and cold fluids in heat exchange relationship, at least one of said boiler



means and condenser means being submerged below the surface of the body of water to a depth at which the water pressure is about equal to the vapor pressure of the working fluid at the temperature of the water flowing through the submerged heat exchanger to thereby achieve a low pressure differential between the separate sets of flow channels; conduit means connecting the outlet of said power extracting means to one of the sets of condenser channels; means for flowing a stream of the cold water through the other set of condenser channels to thereby condense said fluid; and means for flowing condensed working fluid from said one set of condenser channels to said other set of boiler channels.

3,312,055

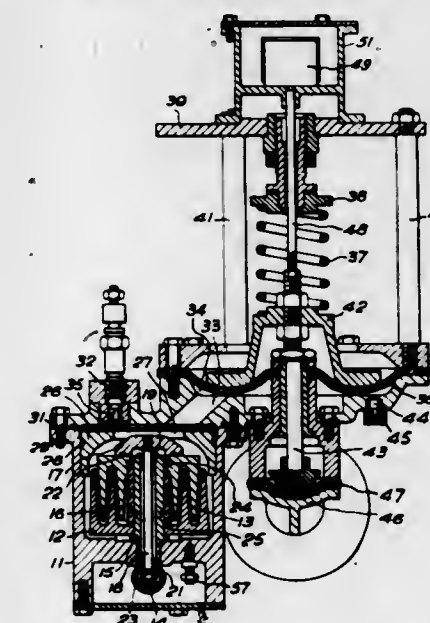
PNEUMATIC ACTUATORS

Charles Roy Jarrett, Griffithstown, and John Edward Medgett, Hereford, England, assignors to Saunders Valve Company Limited, Cwmbran, England, a British company

Filed May 12, 1965, Ser. No. 455,065

Claims priority, application Great Britain, May 14, 1964, 20,141/64

10 Claims. (Cl. 60-37)



1. A pneumatic actuator having a gas space of the actuator in closed communication with an electrochemical cell

in which electrodes and an electrolyte enable gases to be generated whereby the actuator is operated, means in the closed space whereby the gases can be caused to recombine enabling the actuator to retract under reaction of an external force, the electrolytic cell comprising a metallic container, two electrodes of intermeshing cross section within the container, one of the electrodes being in metallic contact with the container and the other being insulated from the container and connected fluid tight to an external terminal, and a cover in the upper part of the container with a central aperture of substantially smaller diameter than the container.

3,312,056

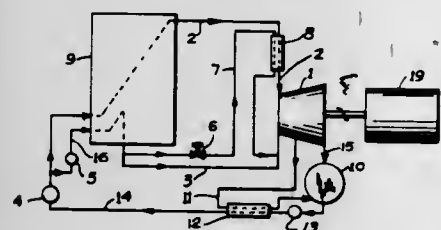
SUPER TEMPERATURE DUAL FLOW TURBINE SYSTEM

Ernest Lagelbauer, 410 E. 13th St.,

New York, N.Y. 10009

Filed Mar. 9, 1964, Ser. No. 350,292

1 Claim. (Cl. 60-39.18)



Apparatus comprising a turbine having blading arranged in first and second sectors each supplied by a nozzle stage, means for introducing a primary working fluid at relatively high temperature to the first sector nozzle stage, a source of secondary working fluid at a lower temperature than said primary fluid, means for elevating the pressure of said secondary fluid to a value exceeding that of said primary fluid, and means for introducing said secondary fluid at its elevated pressure to the second sector nozzle stage, said nozzle stages delivering the respective fluids into the turbine blading to produce substantially equal flow velocities through the rotating turbine blade passages for both fluids, said apparatus including passages connected in parallel relationship between the source of secondary fluid and its nozzle, one of said lines containing a valve and the other an exchanger for transferring heat from said primary fluid to a portion of said secondary fluid.

3,312,057

REGULATOR DEVICE FOR GAS-TURBINE ENGINES AND LIKE ROTARY UNITS

Roger Henri Thaler, Paris, Michel Paul Baliguet, Suresnes, and Albert Stieglitz, Seine-et-Marne, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France

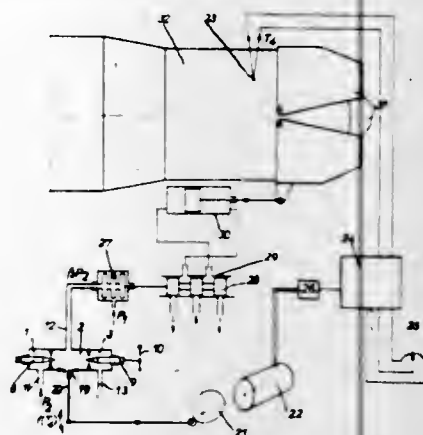
Filed Nov. 27, 1964, Ser. No. 414,083

Claims priority, application France, Nov. 29, 1963, 955,528

9 Claims. (Cl. 60-39.24)

1. A regulator device for gas-turbine engines and like rotary units already having a normal control system responsive to selected parameters and comprising a servo-control responsive to a differential pressure of the form $\beta P_2 - P_1$ in which P_1 and P_2 are respectively the compressor intake and discharge pressures and β is an adjustable pressure reduction coefficient, said regulator device comprising means for continuously detecting gas temperature at a point of the flow path through the engine and for continuously producing a thermometric signal which depends on the detected temperature, and means for applying said thermometric signal as an auxiliary parameter

to said control system for modifying said adjustable pressure reduction coefficient, whereby said control system is



responsive to said selected parameters supplemented by said detected temperature.

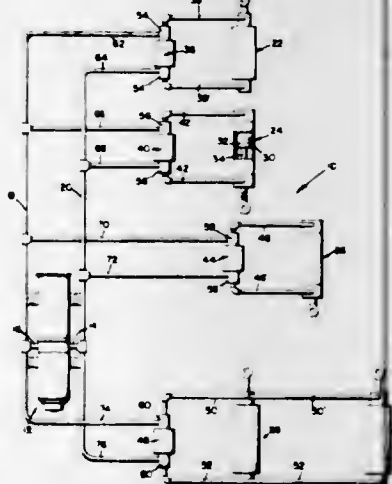
3,312,058

FLUID FLOW CONTROL SYSTEM

Robert E. Shelhart, Dearborn, Mich., assignor to Dura Corporation, Oak Park, Mich., a corporation of Michigan

Filed Sept. 15, 1965, Ser. No. 487,404

7 Claims. (Cl. 60-52)



1. Fluid flow control means comprising a closed system including a reversible pump and fluid reservoir, fluid inlet and fluid outlet conduit means from said pump, a plurality of pressure fluid operated motion devices, a plurality of dual solenoid operated normally closed flow control valves, a separate pressure fluid and exhaust line connecting one valve of each of the dual flow control valves to one of said input and output conduit means, a further pressure fluid and exhaust line connecting the other valve of each of the dual flow control valves to the other of said input and output conduit means, and a pressure fluid and exhaust line extending from each valve of each dual flow control valve, and means connecting each pair of pressure fluid and exhaust lines from each dual valve to at least one of said plurality of pressure fluid actuated motion devices.

3,312,059

HYDRAULIC SPEED CONTROL SYSTEM FOR DISCHARGING LIQUID CARGO

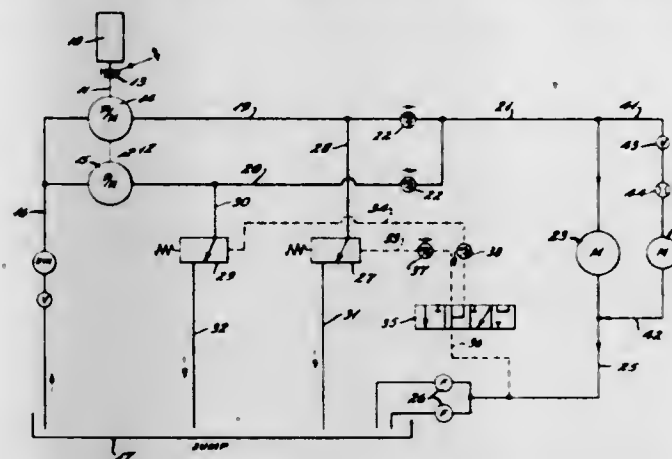
Herman R. Stuteville, Nashville, Tenn., assignor to Nashville Bridge Company, Nashville, Tenn.

Filed Oct. 22, 1965, Ser. No. 362,114

4 Claims. (Cl. 60-52)

1. A hydraulic speed control system for discharging liquid cargo comprising a power plant, at least first and second fluid pumps driven simultaneously by said power plant, said first pump having a predetermined capacity,

said second pump having a capacity less than said first pump, a fluid reservoir, at least one suction line connecting said first and second pumps with said reservoir, each of said first and second pumps having an independent fluid flow line, said fluid flow lines being connected to a common fluid flow line, a cargo pump driven by a fluid motor connected to said common fluid flow line, means for discharging fluid from said fluid motor to said reservoir, a first relief and unloading valve connected to



the independent fluid flow line of said first pump, a second relief and unloading valve connected to the independent fluid flow line of said second pump, means for discharging fluid from said first and second relief and unloading valves to said reservoir, and a selectively operated control valve for controlling the position of said first and second relief and unloading valves, whereby either or both of said first and second pumps can supply fluid under pressure to said fluid motor to drive said fluid motor at varying rates of speed and either or both of said first and second pumps can bypass said fluid motor.

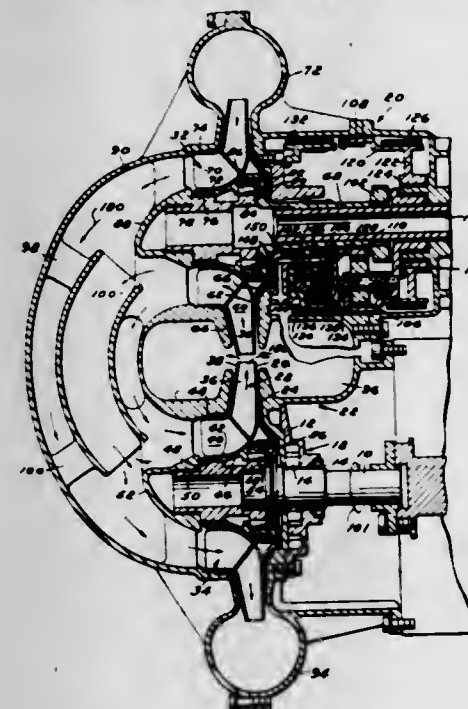
3,312,060

HYDRODYNAMIC TRANSFER DRIVE ARRANGEMENT

Martin George Gabriel, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Oct. 23, 1963, Ser. No. 318,287

8 Claims. (Cl. 60-54)



1. A mechanism for the transfer of power between a plurality of shafts each having a different axis of rotation, comprising, power input and output shafts rotatable about different axes, and hydrodynamic power transfer means therebetween, said power transfer means including a hy-

draulic torque converter having a radial centrifugal pump and a turbine rotatable about different axes, means connecting said pump and said input shaft, means connecting said turbine to said output shaft, said converter also having a reaction member, and means for preventing rotation of said reaction member in one direction while permitting rotation in the opposite direction to effect a torque multiplying stage of operation of said converter or to terminate the same, respectively.

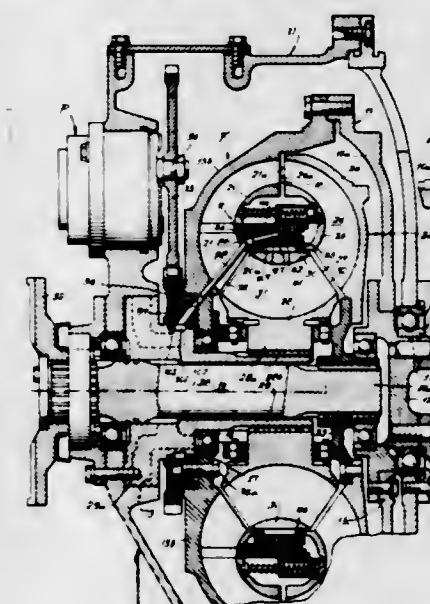
3,312,061

TORQUE CONVERTER EMPLOYING RING VALVE

Eugene S. Murphy, Rockford, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed Sept. 28, 1965, Ser. No. 498,841

17 Claims. (Cl. 60-54)



1. A hydraulic torque converter comprising: a plurality of coaxially mounted bladed elements arranged to define a toroidal chamber within which the blades thereof are disposed and an internal core chamber is bladeless, one of said bladed elements having a core wall carrying means within said core chamber defining an annular shoulder separating stepped cylindrical surfaces; an annular valve disposed in said core chamber for movement between a position nested in said core chamber to a position extending into the bladed toroidal chamber, said valve having a shoulder separating stepped cylindrical walls adapted to be slidably mated with the cylindrical walls of said one bladed element; means for slidably sealing between the cylindrical surfaces of each of said annular valve and said bladed element means for thereby defining a pressure chamber between said shoulder; resilient means normally biasing said annular valve to a nested position within said bladeless core chamber; and means for selectively supplying fluid to said pressure chamber for overcoming the force of said resilient means to move the annular valve in a direction toward the position whereby it extends into the bladed toroidal chamber, whereby throttling of power flow between the bladed elements of the torque converter may be positively affected.

3,312,062

BRAKING SYSTEM FOR VEHICLES

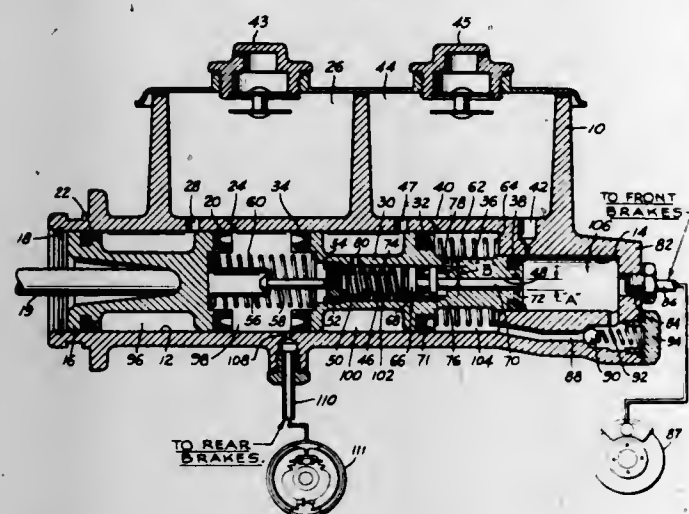
Stanley I. MacDuff, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware

Filed Apr. 30, 1965, Ser. No. 452,241

14 Claims. (Cl. 60-54.6)

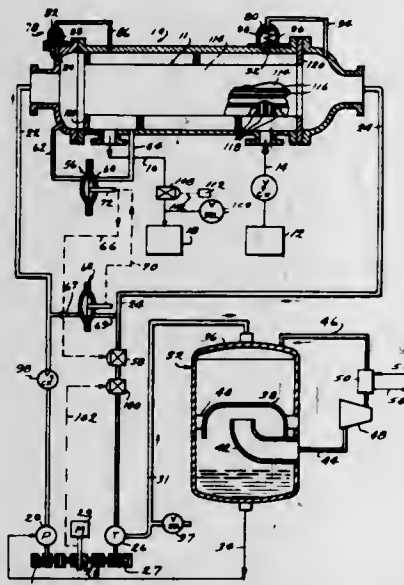
14. In a braking system for a vehicle having a set of front brakes and a set of rear brakes, a fluid pressure generating device comprising a housing having first and

second chamber means and fluid reservoir means communicating with said chamber means, first passage means for communicating said first chamber means with said front set of brakes, second passage means for communicating said second chamber means with said rear set of brakes, a first movable member for generating pressures in said first chamber means to displace fluid into said front set of brakes, a second movable member for generating pressures in said second chamber means to displace fluid into said rear set of brakes, means for applying a force



to one of said movable members to cause actuation thereof, fluid in said system for transmitting such force from said one movable member to the other movable member to cause simultaneous actuation of both members, said first movable member having means for providing a higher rate of pressure increase in said front set of brakes at first chamber means pressures above a predetermined value, said last mentioned means being operatively connected to said first movable member and being responsive to the pressures in said first chamber means.

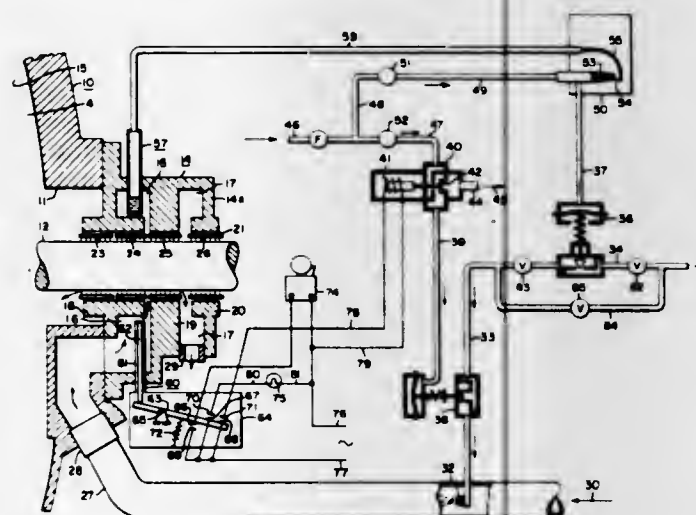
3,312,063
HEAT TRANSFER AT EQUALIZED PRESSURE
James H. Anderson, 1615 Hillock Lane,
York, Pa. 17403
Filed July 22, 1965, Ser. No. 474,017
13 Claims. (Cl. 60-59)



1. Apparatus for changing the heat content of a first stream at a given superatmospheric pressure by means of a second fluid stream at another temperature and at a lower pressure than the pressure of the first stream comprising: a heat exchanger having distinct first and second sets of flow channels for the first and second fluids, said flow channels being defined by thin walls;

means for passing the first fluid stream through said first set of flow channels at the pressure of the first stream; power driven pump means for pressurizing the second fluid stream from the lower pressure to the pressure of the first stream, said pump means having an inlet and an outlet; conduit means connecting the pump outlet to said second set of flow channels whereby the pressure on each side of said channel-defining walls is substantially equal thereby permitting said walls to be of thin construction conducive to high heat transfer between first and second fluids; and conduit means connecting said pump inlet with the second fluid stream at said lower pressure.

3,312,064
STEAM CONTROL APPARATUS
John D. Dickinson, Springfield, Pa., and Lawrence K. Koering, Elk Township, Ewan, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 31, 1965, Ser. No. 444,363
6 Claims. (Cl. 60-64)



1. Apparatus for regulating the temperature of steam for sealing a steam turbine gland structure, comprising means including a conduit connected to said gland structure, means for admitting steam to said conduit at a temperature higher than required by said gland structure, means for injecting water into said conduit to cool said steam, primary means including a primary thermostatically controlled valve for regulating the rate of water injection in a manner to cool the steam to a predetermined range of temperature including a maximum safe temperature and a minimum safe temperature, and secondary means including a secondary thermostatically controlled valve for interrupting the water injection in the event that the steam temperature falls below said minimum safe temperature.

3,312,065
ROTATING COMBINATION HEATER-TURBINES
Joel B. Guin, 148 E. 48th St., New York, N.Y. 10017
Filed Feb. 17, 1965, Ser. No. 433,383
2 Claims. (Cl. 60-108)

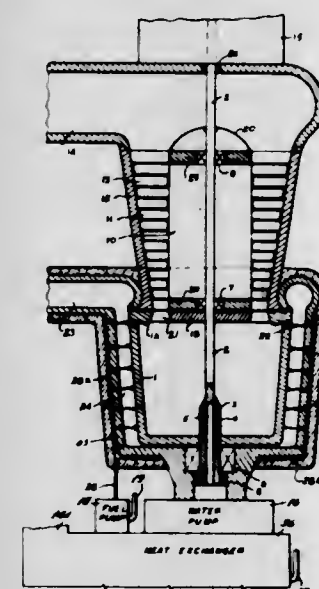
1. A high-pressure heater-turbine without boiler, comprising: a central shaft hollowed in its lower portion, connected with and extending from a pump communicating with a heat exchanger, through the center of an outer shell, through a rotating core which it supports and turns, through a steam exhaust channel, into a power take-off means such as a generator,

the shaft rotating within a first bearing in the lower part of the outer shell, within a second bearing set in an annular ring within and supported by the lowest stator blades, within a third bearing set in an annular ring within and supported by the upper stator blades of said turbine, and within a fourth bearing set in and supported by the upper wall of said steam exhaust channel;

said outer shell abutting on the water pump and surrounding the hollow lower shaft portion, carrying the first of said bearings in which the central shaft rotates and a seal around the shaft to seal off water from said water pump, the shell being narrow at the bottom but spreading out in its upper portion all of which is covered by an insulation layer that encloses a number of fuel channels around the shell periphery;

said rotating core being a covered-bowl shaped structure with both top and bottom parts mounted upon, supported by and rotating with the central shaft, and being separated from said outer shell by the heating chamber;

said heating chamber being an annular space between the outer shell and the rotating core, and expanding at the top into an annular ring shaped space through



which combustion products stream into an exhaust channel leading to the open atmosphere;

said fuel channels surrounding the entire outer wall of said outer shell in a sort of network, and being connected with a multiplicity of fuel nozzles which penetrate the outer shell, said fuel channels receiving fuel from a fuel pump connected to a fuel source, said fuel then being directed through said fuel nozzles into the heating chamber where it is burned, the flames impinging strongly against the wall of said rotating core which is heated thereby to a temperature far above the boiling point of water;

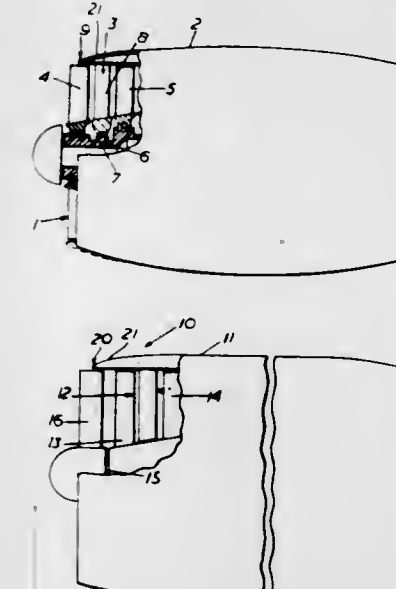
said turbine being located above the rotating core, the lowest and upper stator blades extending into and supporting annular structures which carry said second and third bearings respectively in which said central shaft rotates, the rotor itself being mounted upon, supported by and rotating with said central shaft, the stator and rotor blades alternating; and said steam exhaust channel being located above said turbine and directing the gas from the uppermost stator blades through appropriate channels into said heat exchanger;

all components cooperating so that fuel from a fuel source flows into said fuel pump which forces it through said fuel channels surrounding the outer

shell, thence through said fuel nozzles into the heating chamber where it burns, forcing its flames at the walls of the rotating core and heating it, the burning products then passing into and through said exhaust channel to the open atmosphere,

meanwhile, feedwater flowing from a water line and preheated in said heat exchanger being forced by said water pump through said hollow lower portion of the central shaft through the nozzles therein with centrifugal forces helping sling it strongly against the hot inner walls of the rotating core where it is instantly vaporized, the steam being forced upward through the stator and rotor blades, the latter turning the central shaft and the rotating core attached thereto, the steam then exiting from the top stator blades through said steam exhaust channel back to the heat exchanger, thus completing the cycle.

3,312,066
LOW DRAG POD FOR A GAS TURBINE ENGINE
Harry Pearson, Acrefield, Turnditch, England, assignor to Rolls-Royce Limited, Derby, England, a British company
Filed Mar. 11, 1965, Ser. No. 438,939
Claims priority, application Great Britain, May 13, 1964, 20,020/64
6 Claims. (Cl. 60-226)



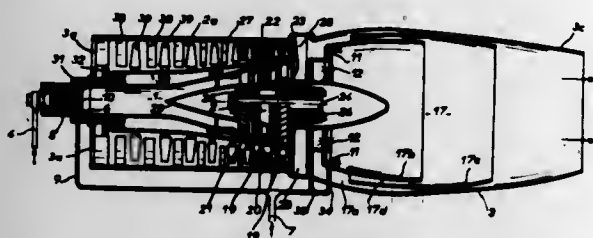
1. In a gas turbine engine for use in an aircraft, wherein said engine has an air intake with a leading lip and with an extrados of said lip on an outside surface of the air intake, and a stage of blades at an upstream end of the engine, the improvement comprising:

a mounting of said blades immediately adjacent to and radially inwardly of said air intake lip, and with said air intake lip extending forwardly at least as far as the trailing edges of said blades and no further than the leading edges of the blades, whereby the tendency of air to breakaway from said air intake lip is substantially reduced.

3,312,067
JET PROPULSION UNIT
René Marcel Benquet, Saint-Mont, Gers, France
Filed Feb. 28, 1964, Ser. No. 348,138
Claims priority, application France, Mar. 4, 1963, 927,432
2 Claims. (Cl. 60-246)

1. A jet propulsion unit comprising the combination of a rocket, means for supplying to said rocket a medium adapted to generate hot gases in said rocket, a turbine

comprising at least one movable wheel and a ring of stationary blades, the inlet of said turbine being connected to the outlet of said rocket whereby said wheel is driven by the gases issuing from said rocket, an axial compressor which sucks atmospheric air and which comprises several movable wheels in series, a tubular support for said wheels extending around said turbine and said rocket, means for carrying said support for rotation,



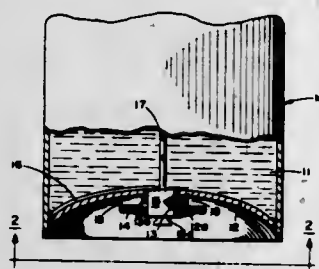
said support being further fast with the periphery of a turbine wheel, the outlets from the compressor and turbine being concentric, a combustion chamber extending to the rear of the outlets of the compressor and turbine whereby said chamber is fed both with the rocket gases having performed work through the turbine and with pressurized air discharged by the compressor, means for injecting fuel into said chamber, and a jet propulsion nozzle extending to the rear of said chamber.

3,312,068

HORIZONTAL FLOW THRUST CHAMBER

Alois T. Sutor, Thomas E. Cowell, and Robert S. Kraemer, Woodland Hills, Calif., assignors to North American Aviation, Inc.

Filed Dec. 5, 1960, Ser. No. 73,726
3 Claims. (Cl. 60—258)



1. A rocket engine thrust chamber including a combustion chamber comprising a cylindrical shaped propellant injector facing radially outwardly from the thrust axis of said chamber, means for injecting propellants radially outward through orifices in said injector and directly into said combustion chamber, said injector having first and second edges at opposite extremities thereof, a first continuous wall connected to said first edge and a second continuous wall connected to said second edge, said walls extending radially and convergingly from said injector, means upon said walls defining a throat at an outer extremity of said second wall, said walls and said injector cooperatively defining an annular combustion chamber therebetween, a combustion product discharge nozzle wall curvingly extending as a portion of said first wall into a direction radially surrounding said combustion chamber, and said first wall being a portion of a propellant storage tank of a vehicle to be propelled.

3,312,069

METHOD OF PREVENTING SCOUR AROUND UNDERWATER STRUCTURES

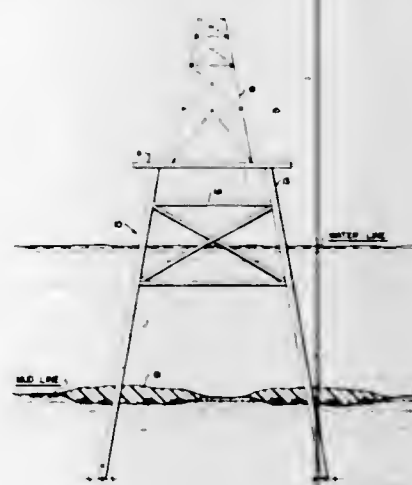
Robert M. Jorda, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Feb. 26, 1965, Ser. No. 435,571
18 Claims. (Cl. 61—1)

1. A method of installing an elongated structural member in an offshore earth formation where the ocean floor

underlying the water comprises a mud line which is unconsolidated, said method comprising:

(a) emplacing a portion of said member within the earth formation;



(b) displacing a layer of solidifiable liquid resin-forming composition out into a radial zone surrounding said member at the mud line; and,
(c) solidifying said liquid composition in intimate and static contact with both said member and the ocean floor at the mud line.

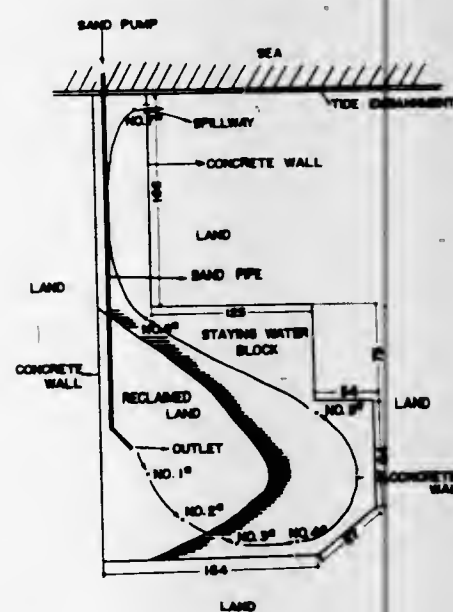
3,312,070

METHOD OF MAKING RECLAIMED GROUND WITH COAGULATIVE SURFACE ACTIVE AGENTS

Shinichiro Matsuo, Tenri, Nara Prefecture, and Hikaru Konishi, Kyoto, Japan; said Konishi assignor to Dai-ichi Kogyo Sanyaku Kabushiki Kaisha, Kyoto, Japan, a corporation of Japan

Filed Oct. 11, 1965, Ser. No. 500,475
Claims priority, application Japan, Mar. 9, 1960, 35/1,271

13 Claims. (Cl. 61—34)



1. A method of depositing earth fill comprising
(i) passing a fluid mixture of solid earth particles comprising a variety of types and sizes including fines within a range of less than 5 microns to 50 microns and sand and larger particles in water through a pipe,
(ii) adding a small effective amount of a coagulative surface active agent to the pipe carrying said water solids mixture at a point from between about 20 meters and 200 meters from the discharge outlet of

said pipe, said coagulative agent being a surface active agent which when admixed with the water-solids mixture will cause the fines and the solids to deposit after discharge at least four times faster than they would deposit in the absence of said agent, and

(iii) discharging said water-solid mixture on a reclamation site whereby the water runs off leaving the solids in the form of an earth-fill deposit having substantially uniform load bearing characteristics.

3,312,071

MINE ROOF SUPPORT CAP WITH CANTILEVER PROJECTION MEMBER

Günther Dommann, Bergrat Altkun, Westphalia, Germany, assignor to Gewerkschaft Eisenhütte Westphalia, Wethmar, near Lunen, Westphalia, Germany, a corporation of Germany

Filed May 6, 1966, Ser. No. 548,161
Claims priority, application Germany, May 8, 1965, G 43,547
11 Claims. (Cl. 61—45)



1. Mine roof support cap adapted to engage supportingly a mine roof thereabove and having situated longitudinally on the upper side thereof a cantilever roof cap projection member in upwardly overlying supporting contact therewith and movable longitudinally relative thereto between a retracted position overlying a greater longitudinal portion of said cap and an extended cantilever position overlying a lesser longitudinal portion of said cap in cantilever supported relation therewith, at least a portion of said member remaining in upwardly overlying supporting contact with said cap in any position of longitudinal movement of said member with respect to said cap, whereby when said cap is in upwardly overlying supporting engagement with the mine roof, at least a portion of said member will be supportingly interposed in clamped disposition between said cap and such roof.

3,312,072

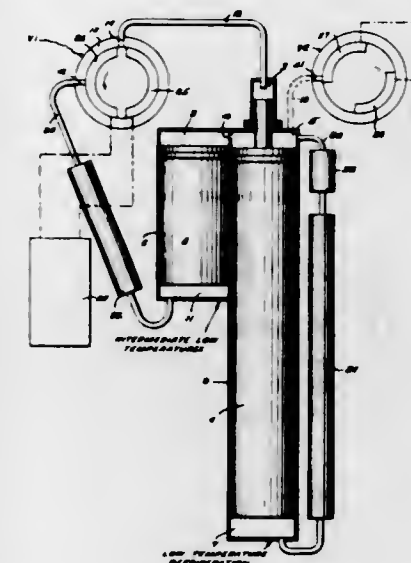
METHOD AND APPARATUS FOR REFRIGERATION UTILIZING STERLING CYCLE TYPE OF OPERATION

William E. Gifford, 829 Ostrom Ave., Syracuse, N.Y. 13210

Filed June 11, 1965, Ser. No. 463,173
4 Claims. (Cl. 62—6)

1. In a method of producing refrigeration in which gas from a high pressure supply source is supplied through a valve means to a confined space whose volume is separated into five lesser volumes, three of which are connected together through heat exchanger and regenerator and the remaining two of which are unconnected, by walls movable under pressure, two of which volumes are connected to one another for the flow of gas therebetween, and said valve means comprising a multipassage inlet and outlet valve for controlling flow of fluid into the two unconnected volumes, the steps which include supplying high pressure gas to one of the unconnected volumes thus causing one of the movable walls to move downwardly and displacing low pressure gas from one of the other two connected volumes, then introducing high pressure gas to the second unconnected volume through a thermal regenerator thereby causing the other movable wall to move and compress gas in two of the connected volumes, then moving the valve to reduce pressure in the first unconnected volume so that the first movable wall can move

upwardly displacing gas from the two connected volumes to the third connected volume through a heat sink heat exchanger and thermal regenerator, then reducing the



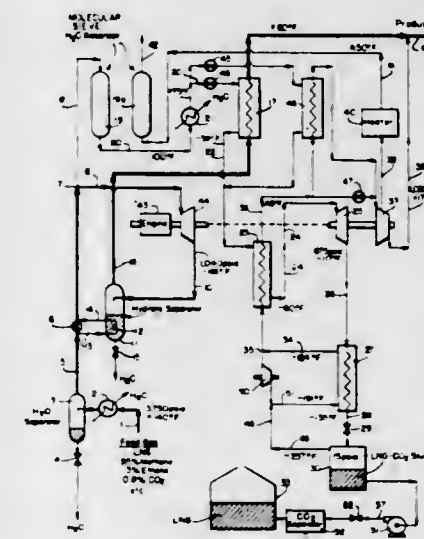
pressure in the second unconnected volume and causing the second movable wall to move and allow compressed gas to expand and produce refrigeration.

3,312,073

PROCESS FOR LIQUEFYING NATURAL GAS

Robert Glover Jackson, Hornchurch, and Alexander Harmens, Purley, England, assignors to Conch International Methane Limited, Nassau, Bahamas, a Bahamian company

Filed Dec. 3, 1964, Ser. No. 415,723
Claims priority, application Great Britain, Jan. 23, 1964, 3,017/64
10 Claims. (Cl. 62—9)



1. A process for producing from natural gas at high pressure a supply of liquefied natural gas at a lower pressure than the high pressure at which the natural gas is available while delivering a second supply of natural gas into a distribution pipeline at an intermediate pressure which comprises

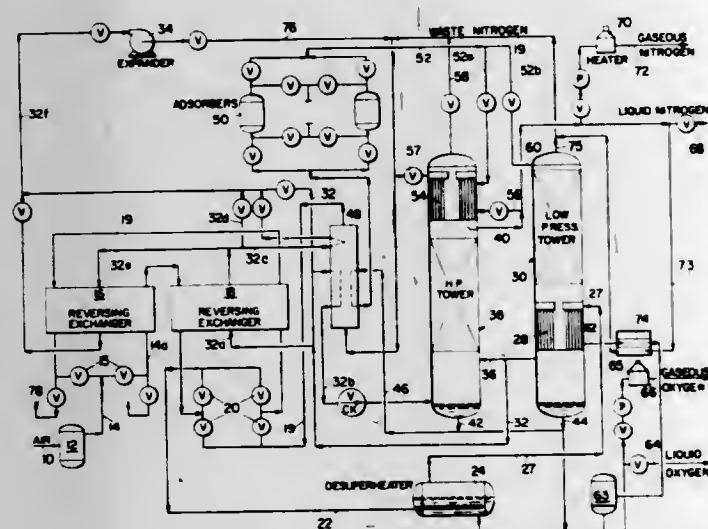
(a) isentropically expanding a first stream of the natural gas from the high pressure at which it is available to the intermediate pressure and so cooling it,
(b) passing the expanded and cooled first stream in indirect heat exchange with a second stream of the high pressure natural gas and then into the distribution pipeline,
(c) further cooling the second stream,

- (d) isentropically expanding the second stream from step (c) to cool it further,
 (e) further cooling the second stream from step (d),
 (f) isenthalpically expanding the second stream from step (e) to produce liquefied natural gas and flash gas, and
 (g) passing the flash gas firstly to step (e) and then to step (c) to effect the cooling in those steps and finally compressing it to the intermediate pressure and passing it into the distribution pipeline.

3,312,074

AIR SEPARATION PLANT

Percival C. Keith, Peapack, N.J., and Emil Cimler, Port Washington, N.Y., assignors to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey
 Filed May 6, 1964, Ser. No. 365,242
 4 Claims. (Cl. 62-13)



1. The method of separating air into its principal constituents in a high and low pressure fractionation zone which comprises passing said air through a series of reversing exchangers in heat exchange with a relatively cold waste gas to reduce the temperature of the air to substantially its temperature of liquefaction, passing said air through a reboiler for the low pressure fractionation zone to vaporize liquid therein and thence into a high pressure fractionation zone in the presence of reflux to separate an oxygen rich liquid from a nitrogen overhead, passing said oxygen rich liquid in part to the low pressure fractionation zone and in part in heat exchange with vapors in the high pressure fractionation zone the parts being in parallel flow, passing said nitrogen overhead from the high pressure zone through the reversing exchangers as the relatively cold waste gas, expanding a non-condensed air from the high pressure fractionation zone to supply the refrigeration requirements for the system, and removing a liquid constituent of the air as a product.

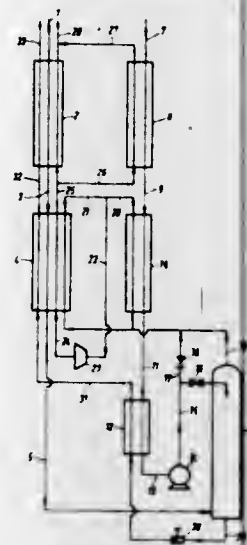
3,312,075

PROCESS OF LIQUID NITROGEN CONTACT WITH HYDROGEN CONTAINING GASEOUS MIXTURE IN AMMONIA SYNTHESIS

Rudolf Becker, Munich-Solln, Germany, assignor to Linde Aktiengesellschaft, Wiesbaden, Germany
 Filed Apr. 20, 1964, Ser. No. 360,950
 Claims priority, application Germany, Apr. 27, 1963, G 37,612
 6 Claims. (Cl. 62-20)

1. In a process for the removal of impurities from hydrogen-containing raw gas mixture by scrubbing with liquid nitrogen and producing a gas mixture suitable for ammonia synthesis, the steps which comprise liquefying nitrogen gas in an amount greater than the amount required for the removal of the impurities from said raw

gas mixture, said liquefaction being effected under a pressure sufficient for its liquefaction and under heat exchange with evaporating product from the sump of the scrubber in which said gas scrubbing is taking place; bringing resultant liquefied nitrogen to the pressure of said scrubber, the latter pressure being higher than the nitrogen liquefaction pressure, and feeding part of said liquid nitrogen at said latter pressure into the head of said scrubber and mixing another part with pure gas leaving the



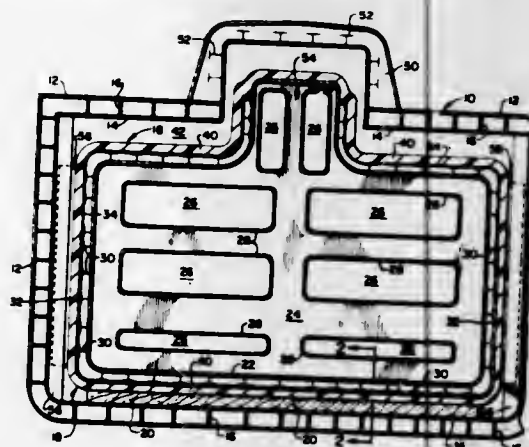
head of the scrubber; preheating said pure gas and evaporating liquid nitrogen mixed therewith by heat exchange with precooled raw gas mixture and nitrogen gas to be liquefied; conducting resultant preheated pure gas mixture containing evaporated liquid nitrogen through an expansion turbine; and then passing the resultant expanded, cooled pure gas mixture in further heat exchange partially with nitrogen to be liquefied entering the system and partially with raw gas from which water vapor and carbon dioxide have been removed.

3,312,076

DRIP PAN LNG TANK

James S. Clarke, 419 Manor Ave., Cranford, N.J. 07016, and Arthur J. Palmer, 49 Moss Ave., Westfield, N.J. 07090

Filed Jan. 18, 1966, Ser. No. 521,273
 3 Claims. (Cl. 62-55)



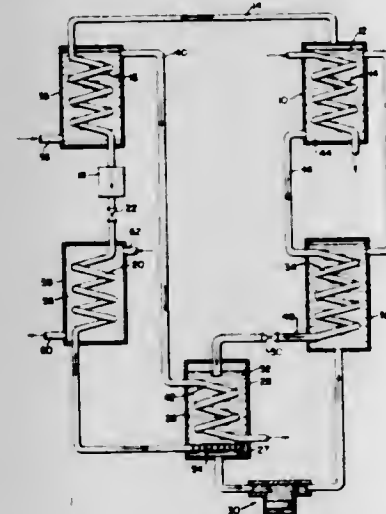
1. A container for liquefied gases at cryogenic temperatures for use in a tanker comprising; a primary tank of sufficient structural strength to contain the liquefied gas, said primary tank including internal structural web means extending across said primary tank fixed to the interior walls thereof; a larger secondary tank substantially similar in shape to said primary tank and partially surrounding said primary tank, thermally conductive structural means for maintaining said secondary tank in fixed spaced relation around said primary tank and for reducing the thermal gradient therebetween; said secondary tank in-

cluding a lower drip pan portion of predetermined thickness less than the thickness of said primary tank yet sufficient to retain small quantities of the liquefied gases that may leak through said primary tank, and an upper spray shield portion of predetermined thickness less than the thickness of said drip pan portion for deflecting any seepage through an upper portion of said primary tank into said drip pan portion; pumping means for removing the liquefied gas from between the primary tank and said drip pan portion, and thermal insulation means applied externally to the entire outside of said secondary tank and to selected portions of said primary tank not enveloped by said secondary tank.

3,312,077

ABSORPTION REFRIGERATION SYSTEM

William L. McHale, Broomall, Svend E. Sorensen, King of Prussia, and James J. O'Connor, Norristown, Pa., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
 Filed Mar. 17, 1964, Ser. No. 352,475
 3 Claims. (Cl. 62-112)



1. A method comprising, evaporating relatively low boiling point substantially pure ammonia vapor from a hot strong liquid solution of mainly high boiling point lithium iodide and low boiling point ammonia and wherein the vapor pressure of said ammonia is drastically reduced, condensing said ammonia vapor into ammonia liquid, evaporating said ammonia liquid at reduced pressure into ammonia vapor and absorbing said vapor in a cool weak liquid solution of lithium iodide and ammonia at said reduced pressure to produce a relatively strong liquid solution of lithium iodide and ammonia, and discharging said relatively liquid strong solution to and mixing it with said first named solution.

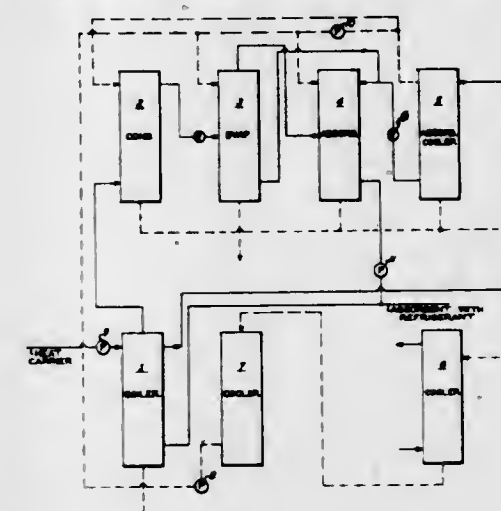
3,312,078

REFRIGERATION PROCESS

Mikhail Emmanuilovich Aerov, Tatiana Alexandrovna Bystrova, Nina Ivanovna Zelenkova, and Vera Afanasjevna Kulikova, all of Moscow, U.S.S.R., assignors to Nauchno-Issledovatel'skiy Institut Sinteticheskikh Spirtov i Organicheskikh Produktov, Moscow, U.S.S.R.
 Filed Aug. 19, 1964, Ser. No. 390,672
 7 Claims. (Cl. 62-112)

1. A method of effecting refrigeration in absorption cooling plants comprising evaporating a refrigerant from an absorbent saturated with said refrigerant by heat exchange with a heat carrier, said refrigerant being a light paraffin hydrocarbon, said absorbent being a liquid, heavy paraffin hydrocarbon, condensing the vaporized refrigerant by heat exchange with water as a cold carrier, evaporating the refrigerant condensate by heat exchange with a medium to be cooled which is readily separable from

the refrigerant, saturating cooled absorbent with the refrigerant vapors and returning the saturated absorbent to the initial evaporation stage, the steps of the heat ex-



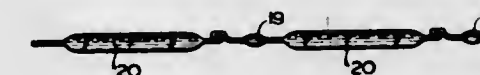
change between said absorbent, said heat carrier, said cold carrier and refrigerant being carried out by direct contact.

3,312,079

INDICATOR DEVICE FOR DEEP-FREEZE PRODUCTS

Hans Siebert, 1 Seibertweg, Kassel-Wilhelmshöhe, Germany

Filed Aug. 27, 1965, Ser. No. 483,094
 Claims priority, application Germany, Mar. 23, 1965, S 96,134
 2 Claims. (Cl. 62-130)



1. An indicator device for indicating temperature variations, particularly of frozen products, comprising an elongated flexible tubular container having a first container portion containing a dye, a second container portion containing a liquid, and a third container portion located intermediate said first and second container portions and having an inner surface composed of two opposite surfaces, said third container portion being normally folded in two successively reverse axial directions of said tubular container so that said opposite surfaces are in sealing engagement with one another whereby said first and second container portions are sealingly separated from one another and so that unfolding of said third container portion establishes communication between said first and second container portions.

3,312,080

HOUSEHOLD REFRIGERATOR INCLUDING AUTOMATIC ICEMAKER AND CONTROL MEANS THEREFOR

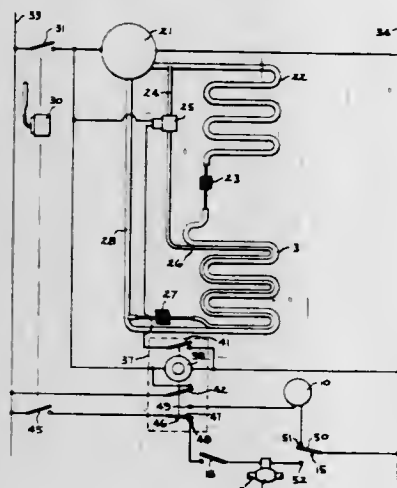
John A. Dahlgren, Louisville, Ky., assignor to General Electric Company, a corporation of New York
 Filed Feb. 24, 1966, Ser. No. 529,863
 1 Claim. (Cl. 62-155)

A household refrigerator comprising in combination: a freezer compartment; a refrigerating system including a compressor and an evaporator normally operating at below-freezing temperatures for maintaining said compartment at below-freezing temperatures; defrost means for periodically warming said evaporator to defrosting temperatures; an automatic icemaker disposed in said compartment including a movable ice mold in said compartment and means including a drive motor for moving said mold to eject ice therefrom;

and control means for controlling the operation of said compressor, defrost means and icemaker comprising;

a timer including a timer motor and a plurality of timer switches operated by said timer motor,

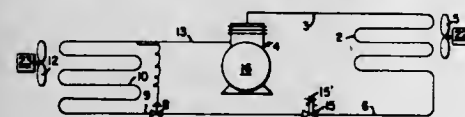
a first circuit including thermal switch means operated by thermal sensing means responsive to the temperature of said compartment for periodically operating said compressor to maintain said evaporator and said compartment at below-freezing temperatures and for energizing said timer motor whenever said compressor is operated,



a second circuit including a timer operated switch for operating said defrost means to defrost said evaporator after a predetermined total compressor operating time,

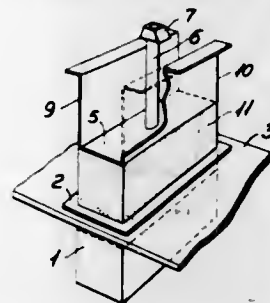
and an icemaker control circuit including a timer operated switch for periodically energizing said drive motor to operate said icemaker through a harvesting cycle and a safety circuit including a safety switch operated by said thermal sensing means for preventing energization of said drive motor unless said compartment is at a below-freezing temperature.

3,312,081
CONTROL APPARATUS FOR REFRIGERATION SYSTEM
Isaac Berger and Jack F. Schmidt, De Witt, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Aug. 3, 1965, Ser. No. 476,858
10 Claims. (Cl. 62-158)



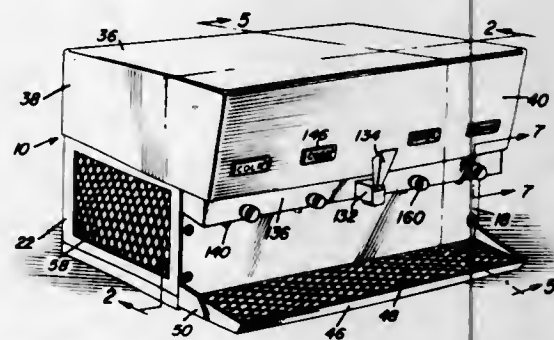
1. In a refrigeration system having a compressor, the combination of a circuit for energizing said compressor; condition sensing means operable at the occurrence of a predetermined malfunction to interrupt said compressor energizing circuit and stop said compressor; timer controlled means effective to prevent completion of said compressor energizing circuit and start-up of said compressor for a timed interval following each stopping thereof; a step switch effective when moved through a predetermined series of steps to interrupt said compressor energizing circuit and prevent start-up of said compressor; and means for moving said step switch one step at each stop-start cycle of said compressor whereby when the number of compressor cycles equals the predetermined series of steps through which said step switch moves, said step switch prevents start-up of said compressor.

3,312,082
APPARATUS FOR PICKING UP FROZEN BODIES FROM A FREEZING MOLD
Hans Gram, Vojens, Denmark, assignor to Brodrene Gram A/S, Vojens, Denmark
Filed Dec. 17, 1964, Ser. No. 419,053
Claims priority, application Denmark, Dec. 20, 1963, 5,989
2 Claims. (Cl. 62-353)



1. Means for picking up frozen bodies from a freezing mold, said mold having inner sides and being open at the top end thereof and filled with a frozen substance, comprising a pick-up member having a flat side devoid of projections into said mold and frozen to the surface of the substance in the mold, the transverse dimensions of said flat side being smaller than the transverse dimensions of said open top end of said mold, said pick-up member further having engaging means secured thereto at a position opposite to said flat side adapted for lifting and lowering said pickup member in relation to said mold, wherein the pick-up member is in the form of a flexible plate of U-form, the lower surface of the bottom of said U-formed plate being said flat side devoid of projections, and wherein said engaging means are secured to the upper surface of the flat side at the bottom of said U-formed plate.

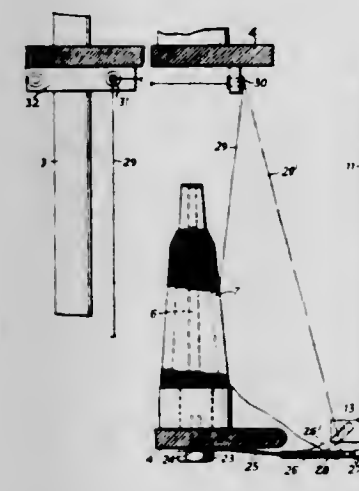
3,312,083
PORTABLE HOME SODA FOUNTAIN
Cecil W. Scoggins, 1189 Holley St. NW., and Donald L. Todd, 560 10th St. NW., both of Atlanta, Ga. 30318
Filed Aug. 25, 1964, Ser. No. 391,935
2 Claims. (Cl. 62-390)



1. A portable home soda fountain comprising a cabinet, a closed water tank in said cabinet capable of withstanding pressure, a cooling coil disposed exteriorly against the tank in heat exchange relation thereto, a refrigeration system disposed within said cabinet and operatively associated with the cooling coil for cooling the cooling coil thereby cooling the water tank and water therein, a faucet communicated with the water tank, and pressure means communicated with the water tank for pressurizing the water therein for discharging water when the faucet is opened, said pressure means having a discharge orifice disposed interiorly of the tank and adjacent the bottom thereof whereby the pressurizing medium will be discharged at the bottom of the supply of water in the tank, said pressure source including a cylinder of compressed carbon dioxide, a regulating valve regulating the pressure of carbon dioxide admitted into the bottom of said tank whereby the carbon dioxide will pressurize the water and mix with the water so that carbonated water is formed.

may be discharged from the tank, said tank having a carbonated water outlet tube connected with the faucet and extending into the top of the tank and terminating adjacent the bottom thereof for assuring discharge of carbonated water substantially throughout the vertical height of the tank, heat sensitive means disposed in said tank, and means operated by the heat sensitive means for controlling operation of the refrigeration system, said pressure source including a discharge nozzle of reduced diameter at the inlet end thereof for increasing the velocity of the carbon dioxide as it is discharged into the water adjacent the bottom thereof, said cabinet including insulating material completely surrounding and encompassing said tank except for access means for the water outlet, heat sensitive means and carbon dioxide inlet, said tank having a large filler pipe associated therewith for enabling the tank to be refilled, a closure plug for said pipe thus enabling the water supply in the tank to be replenished, said cabinet including a trough underlying the carbonated water faucet, a removable lid overlying said cabinet and concealing the carbon dioxide cylinder, the closure plug for the pipe and the fittings for inlet and outlet in relation to the tank, said tank including a pressure release valve to enable excess pressure to be discharged, a plurality of flavoring syrup container members mounted on said cabinet, each said container including a valved discharge for selectively dispensing each of said flavor syrups.

3,312,084
STOP MOTION FOR KNITTING MACHINES
Joseph A. Sharp and Desmond L. Jinks, both of Leicester, England, assignors to Corah-Matic Limited, Leicester, England, a British company
Filed July 6, 1964, Ser. No. 380,389
Claims priority, application Great Britain, July 5, 1963, 26,661/63
2 Claims. (Cl. 66-163)



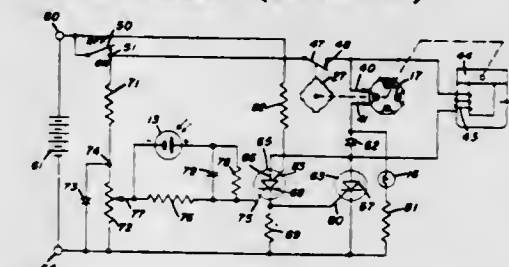
1. In a knitting machine the combination comprising a knitting assembly, a stop motion mechanism controlling said knitting assembly, an electrical system controlling said stop motion mechanism, two electrical contacts connected in said electrical system, a bobbin support for supporting a plurality of bobbins, yarn guide means to guide yarn from each bobbin to said knitting assembly, and a resiliently deformable trapper element for each bobbin which is associated with the bobbin support and is constructed and arranged to permanently trap the run-out end of the respective bobbin yarn, said trapper element carrying one of said electrical contacts and being deformable under the pull of the bobbin yarn from the knitting instruments of the machine only at the time of exhaustion of the bobbin to bring the said electrical contact into engagement with the other electrical contact so that the stop motion is actuated.

3,312,085
PHOTOFLASH LAMP WITH PRIMER
Werner Schilling, Heldenheim (Brenz), and Hans Reiber and Reinhard Görl, Augsburg, Germany, assignors to Patent-Treuhand-Gesellschaft für Elektrische Glühlampen m.b.H., Munich, Germany
Filed Mar. 3, 1965, Ser. No. 437,638
Claims priority, application Germany, Mar. 5, 1964, P 33,765
5 Claims. (Cl. 67-31)



1. A photoflash lamp comprising a hermetically sealed envelope filled with finely shredded combustion material and oxygen, two current in-leads the surfaces of both whereof are fully conductive electrically extending into the envelope, and an ignition mass constituting a primer applied to said electrically conductive surfaces of the current in-leads, said primer comprising finely divided easily ignitable metal particles with a dielectric binder, said primer being in direct contact with the electrically conductive surfaces of both of said current in-leads, and the electrical resistance of the primer amounting to at least one megohm under a potential of up to twenty volts, said metal particles being sufficiently close together so that at a potential of 70 volts sparking occurs therebetween and instigates flashing of the lamp.

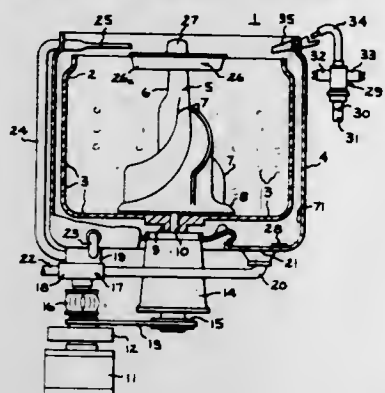
3,312,086
MULTILAMP SLAVE FLASH UNIT
Oran T. Casebeer, Interlaken, Lawrence M. Wood, Rochester, and Donald M. Harvey, Webster, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed July 23, 1965, Ser. No. 474,337
14 Claims. (Cl. 67-31)



1. A slave-flash system comprising: means for supporting a plurality of flash bulbs in a predetermined arrangement; a normally inoperative firing circuit for said bulbs, including a source of firing potential; contact means for selectively connecting each of said plurality of flash bulbs, one at a time, in firing relationship with said firing circuit; photo-electric control means responsive to a predetermined increase in ambient illumination to render said firing circuit operative to fire a bulb connected to said firing circuit at that particular time; and actuating means responsive to the firing of one of said bulbs to cause said contact means to connect another of said bulbs in firing relationship with said firing circuit.

3,312,087

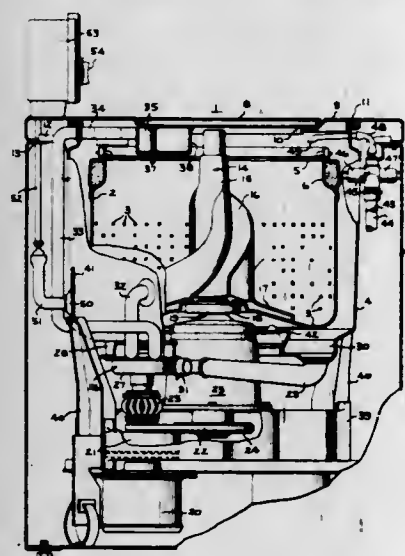
AUTOMATIC WASHING MACHINE
Daniel N. Toma, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Apr. 26, 1965, Ser. No. 450,999
6 Claims. (Cl. 68-12)



1. A fabric washing machine for providing an automatic washing cycle comprising:
 - (a) an imperforate tub to receive washing and rinsing liquid;
 - (b) a perforate basket mounted in said tub to receive fabrics to be washed in the liquid;
 - (c) washing means arranged to effect washing of fabrics in said basket;
 - (d) a drain pump for removing vitiated liquid from said tub;
 - (e) sequence control means including a timer for causing predetermined periods of operation of said washing means and then said drain pump;
 - (f) liquid sensitive control means for controlling said timer, said liquid sensitive control means including a negative temperature coefficient thermistor exposed to the interior of said tub;
 - (g) a timer operated switch effective to interconnect said timer and said liquid sensitive control means at the beginning of drain pump operation;
 - (h) said liquid sensitive control means thereafter being effective to deactivate said timer and being responsive to the level of liquid in said tub dropping below said basket to reactivate said timer.

3,312,088

FILTERING MECHANISM FOR CLOTHES WASHING MACHINE
Daniel N. Toma, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Aug. 9, 1965, Ser. No. 478,137
4 Claims. (Cl. 68-18)



1. In a clothes washing machine:
 - (a) a container to receive liquid and clothes to be washed in the liquid;

- (b) a stationary, elongated pan member of perforate construction mounted adjacent the top of said container;
- (c) recirculation means for removing liquid from said container and returning it thereto through said trough;
- (d) said recirculation means including an oscillator for causing the recirculated liquid to be directed into said trough alternately adjacent each end thereof.

3,312,089

REVERSIBLE CIRCULAR LOCK
Wallace E. Atkinson, Petersburg, Va., assignor to Long Manufacturing Company, Inc., Petersburg, Va., a corporation of Virginia
Filed Nov. 30, 1964, Ser. No. 414,560
4 Claims. (Cl. 70-70)



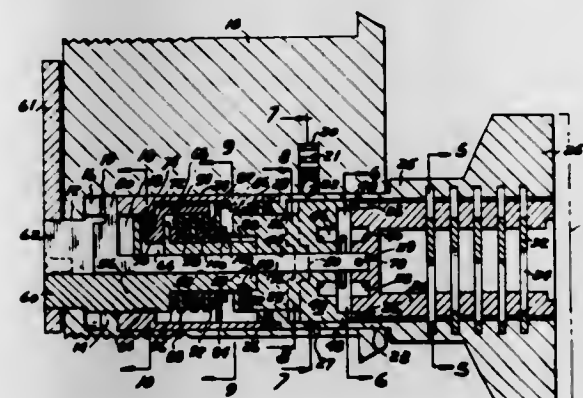
4. A latch for releasably securing together separable parts of a receptacle adjacent a line of separation along coplanar front surfaces of the parts comprising, a base member mounted on one of the parts, the base member having a peripheral outwardly extending flange, a plurality of interruptions in the base member flange, a keeper member mounted on the other of the parts adapted to be arranged for interlocking engagement with the base member to lock the parts against separation, the keeper member having a projecting lug adapted to interfit with one of the base member flange interruptions, a locking member rotatably mounted so as to overlap the base member to effect interlocking between the base member and the keeper member, a peripheral outwardly extending flange associated with the locking member concentrically mounted about the base member flange, a lock bolt positioned on the locking member for reciprocative movement thereacross to effect locking engagement with one of the base member flange interruptions, the lock bolt being rotatable with the locking member, and means associated with the base member and the locking member to effect interlocking of the separable parts, the last named means being a member of flat disc configuration affixed to the locking member, a relieved peripheral zone in the disc member, the peripheral zone being adapted to be angularly shifted to effect a predetermined direction of rotation of the locking member.

3,312,090

KEY AND COMBINATION CYLINDER LOCK
Rolland G. Petersen, 13393 Teary, Detroit, Mich. 48227
Filed June 16, 1965, Ser. No. 464,340
4 Claims. (Cl. 70-285)

1. In a cylinder lock having an actuator cam for shifting a sliding bolt, a movable barrel in the cylinder, projections on the inner surface of the barrel, a plug in the barrel, a rotatable operator in the barrel connected to the actuator cam, a connector between the operator and the plug having slots therein for reception of the projections on the barrel, resilient means urging the barrel to a forward position in the cylinder, a rotatable tie rod connected to the plug slidably retained in the operator, a control tab on the tie rod having a front and a rear position in the cylinder, means in the cylinder preventing rota-

tion of the tie rod when the control tab is in the rear position, rotatable tumblers on the operator each having therein a peripheral slot, a driver for the tumblers controlled by the barrel, a locking dog slidably mounted in the operator, resilient means holding the locking dog in contact with the rotatable tumblers, and means for indicating rotary movement of the barrel so that the same



may be turned in accordance with a pre-selected combination to orient the tumblers and align the slots therein to receive the locking dog, whereupon the barrel then moves forward engaging the projections thereon in the slots of the connector and moving the control tab to the front position so that further rotation of the barrel will be transmitted through the tie rod and operator to the actuator cam and shift the sliding bolt of the cylinder lock.

3,312,091

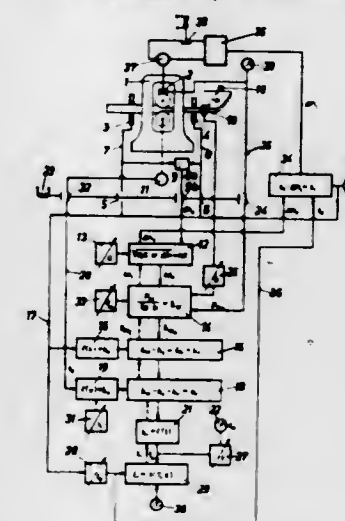
CONTROL SYSTEM FOR MATERIAL REDUCING APPARATUS
Masaru Kobayashi, Toshima-ku, Tokyo-to, Japan, assignor to Kabushiki Kaisha Hitachi Selsakusho, Tokyo-to, Japan, a joint-stock company of Japan
Filed May 19, 1964, Ser. No. 368,676
Claims priority, application Japan, May 20, 1963, 38/25,322
15 Claims. (Cl. 72-11)



1. In the adjustment and control of the take-up and take-off devices including take-up and take-off reels used in a reversible apparatus for reducing work material dimensions, a system which comprises an electromagnetic coupling and an electromagnetic brake provided between said reels and a respective alternating-current motor, and an apparatus adapted to adjust and control the take-up and take-off tensions on and speeds of said work material by controlling the exciting currents supplied to said couplings and said brakes.

3,312,092

CONTROL ARRANGEMENT FOR LEVEL ROLLING METAL PLATES AND SHEETS IN REVERSIBLE ROLLING MILLS
Karl Josef Neumann, St. Ingbert, Saar, Germany, assignor to Verwaltungsgesellschaft Moeller und Neumann Offene Handelsgesellschaft
Filed Oct. 25, 1963, Ser. No. 318,984
Claims priority, application Great Britain, Oct. 25, 1962, 40,399/62
13 Claims. (Cl. 72-13)



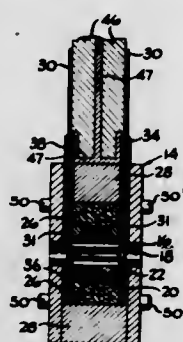
1. In a reversible rolling mill having at least one pair of opposed rollers for reducing the thickness of a metal sheet having a specific deformation resistance which varies as a function of its temperature during a series of passes including at least a pair of passes therethrough, and means for varying the spacing of said rollers, the improvement comprising: first means for generating a first signal indicative of the reduction in thickness taking place as said sheet is passing through said rollers during the first of said pair of passes; second means for generating a second signal indicative of the width of said sheet; third means for generating a third signal indicative of the pressure being exerted by said rollers on said sheet during said first of said pair of passes; fourth means for generating from said first, said second, and said third signals, a fourth signal indicative of said specific deformation resistance of said sheet; fifth means for conducting said first, said second, and said third signals to said fourth means; said fourth means including means, operable when said sixth means is preventing conduction of said first and said third signals to said fourth means for generating a fifth signal indicative of the continuously changing specific deformation resistance of said sheet; said fourth means further including means for generating from said fifth signal, a sixth signal indicative of a reduced roll spacing corresponding to a desired change in thickness of said plate during said second pass of said at least one pair of passes which will produce a predetermined desired pressure on said sheet in the second pass of said at least one pair of passes; sixth means responsive to said sixth signal for causing said means for varying the spacing of said rollers to move said rollers to said reduced spacing subsequent to said first pass and prior to said second pass.

3,312,093

COIL CONSTRUCTION
David F. Brower, San Diego, Calif., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 16, 1964, Ser. No. 352,183
7 Claims. (Cl. 72-56)

1. A device for providing a high intensity magnetic field for use in a magnetic forming operation, said de-

vice comprising an electrically conductive helical coil adapted to receive the workpiece therein, and a conductive element encircling said coil and including a generally hollow continuous cylindrical section generally coaxial with the coil and a plate at each end of said cylindrical section to close same, at least one of said end plates including

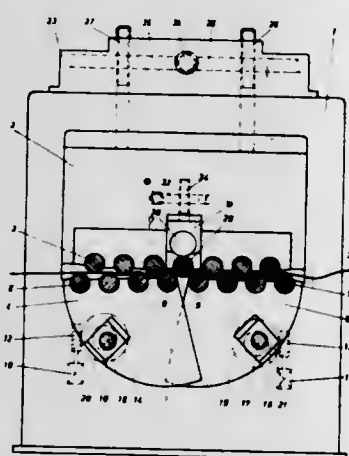


an opening through which a workpiece can be inserted into the center of the coil, said element being capable of withstanding forces equal to those forces applied to the workpiece and being arranged relative to said coil so as to minimize energy losses from the magnetic field produced by the coil and so as to shield the environment of the coil from the field.

3,312,094 SHEET LEVELER

Hans Birkle, Siegen, Germany, assignor to Stegner Maschinenbau G.m.b.H., a corporation of Germany
Filed Nov. 17, 1964, Ser. No. 411,751
Claims priority, application Germany, Nov. 29, 1963, S 88,486

1 Claim. (Cl. 72-162)



In a leveler for straightening sheet material and the like comprising:

a housing having a window formed therein; first and second trains of straightening rollers, each comprising a plurality of spaced-apart rollers received in said window;

said first train arranged in an opposed relationship with respect to said second train so that the rollers of each train are arranged in a nested relationship, said opposed trains of rollers being arranged to form a straightening plane therebetween;

a first frame received in said window for rotatably supporting said first train of rollers;

a screwdown carried by said housing for positioning said first frame and the rollers carried thereby in a direction normal to said straightening plane;

second and third frames pivotally received in said window for rotatably supporting said second train;

means for positioning said second and third frames about axes lying near to the point of intersection of the vertical center plane of the leveler and the straightening plane, whereby selective positioning

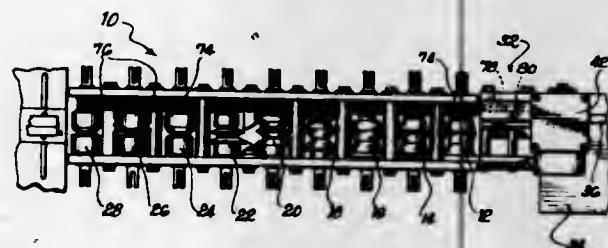
of the rollers of said second and third frames relative to the rollers of said first train creates alternatively first and second zones, one being of an appreciable length wherein high sheet deformation takes place and the other a zone of gradual varying deformation;

a single backup roller arranged with its axis coinciding substantially with the vertical center plane of said leveler and engageable with one of said straightening rollers of said first train to control the shape thereof along its axis for differentially stretching a sheet being leveled to reduce waviness in the sheet; and

a second screwdown for adjusting the backup roller relative to said one straightening roller of said first train.

3,312,095 COMBINATION SHEET FORMING APPARATUS AND SLITTER

Alfred R. Remack, Addison, and Leo R. Gale, Morton Grove, Ill., assignors to The Lockformer Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 27, 1965, Ser. No. 428,421
12 Claims. (Cl. 72-203)



1. In a sheet forming apparatus wherein a plurality of forming rolls are aligned for successive engagement with a sheet passing through the apparatus, and wherein drive means are provided for said rolls whereby the rolls serve to draw the sheet through the apparatus during forming, the improvement comprising a sheet slitter located adjacent the entrance end of the apparatus, drive means for said slitter, and clutch means associated with the slitter, the slitter drive means being adapted to operate the slitter whereby a sheet inserted therein will be driven to said rolls by the slitter, the drive means for said rolls imparting a rotational speed to the rolls whereby the speed of movement imparted to the sheet by the rolls exceeds the speed imparted by the slitter, said clutch means permitting said slitter to overrun its drive means whereby the driving movement of the slitter is imparted by said sheet after said rolls are in engagement with the sheet.

3,312,096 ROLLING MILLS

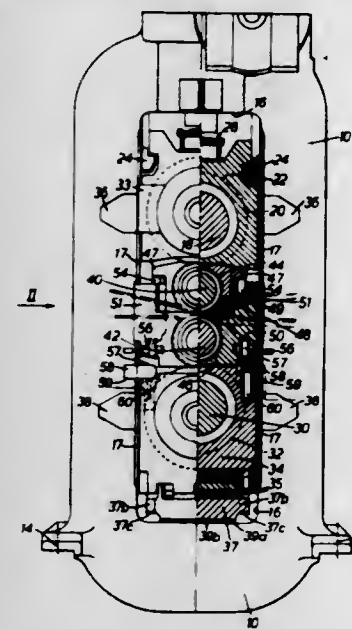
Dennis Stubbs and Kenneth Charles Hanson, Sheffield, England, assignors to Davy and United Engineering Company Limited, Yorkshire, England

Filed Oct. 2, 1964, Ser. No. 401,078
Claims priority, application Great Britain, Oct. 3, 1963, 39,009/63

5 Claims. (Cl. 72-238)

3. A rolling mill stand comprising a pair of housings having windows therein, upper and lower back-up roll assemblies comprising upper and lower back-up rolls having their ends rotatably supported in pairs of upper and lower back-up bearing chocks respectively, upper and lower work roll assemblies comprising upper and lower work rolls having their ends rotatably supported in pairs of upper and lower work roll bearing chocks respectively, the work roll assemblies being nested one in the other so that they are removable as a unit on wheels or the like carried on one of the pairs of work roll chocks, rails or the like, extending parallel with the roll axes, being located within the mill stand, to remain there during roll-

ing, and means for adjusting the height of the rails between an inoperative position in which they are out of contact with the wheels and an operative position in which they support the work roll assemblies with the lower work

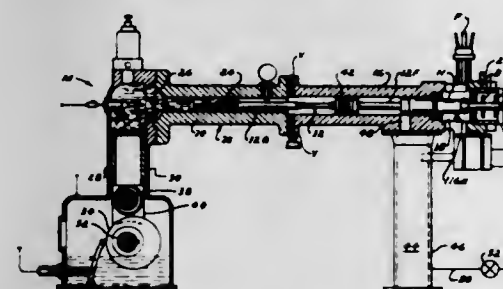


roll clear of the lower back-up roll, and in which the rails are carried on links located on either side of each housing window for vertical movement and arrangement to be moved upwards on withdrawal of the upper back-up roll.

3,312,097 APPARATUS FOR FORMING CUP-SHAPED MEMBERS

Henry G. Henrickson, Oakland, and Cornelis Langewis, Walnut Creek, Calif., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware

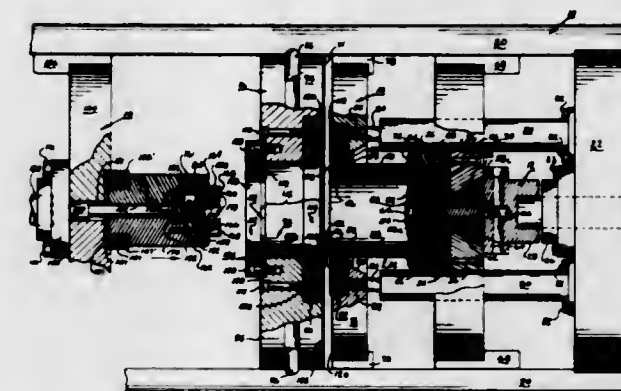
Filed Jan. 23, 1964, Ser. No. 339,813
13 Claims. (Cl. 72-347)



10. A machine for forming elongated metal containers from cup-shaped blanks comprising a barrel having a radially expanded end portion for the reception of the blanks, a cup holder in the form of a sleeve slidable within said barrel, a punch slidably received within said cup holder, means for projecting said cup holder and said punch into said expanded barrel portion while maintaining them in coaxial relation with said barrel including a piston within said barrel for actuation by hydraulic means, piston rod sections interposed between said piston and said punch, means coupling said piston rod sections in a manner effective to transmit a forward thrust of said piston to said punch while permitting relative tilting and displacement of said piston rod sections; a plurality of circumferentially spaced studs of a smooth material supported in and projecting radially from said cup holder adjacent the inner end thereof and into sliding contact with the inner surface of said barrel and mounted in said expanded barrel portion inwardly directed supports having rounded end surfaces for supporting contact with the outer surface of said cup holder as said cup holder is projected into said expanded barrel portion.

3,312,098 APPARATUS FOR FORMING CUP-SHAPED MEMBERS

Henry G. Henrickson, San Leandro, Calif., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed July 1, 1964, Ser. No. 379,488
13 Claims. (Cl. 72-349)



3. An apparatus for forming a cup-shaped workpiece comprising the combination of a movable hollow punch means and a movable mandrel means, a stationary platen means provided with a forming die and disposed intermediate said punch and mandrel means, said punch means including a reverse drawing die surrounded by a shaping die member, biasing means connected to the reverse drawing die for normally effecting alignment of the forward free ends of the drawing die and shaping die member, workpiece holding elements movable toward and away from each other and associated with said drawing die and shaping die member and the forming die of said stationary platen means, said elements having opposed surfaces including cutting surfaces which cooperate upon the initial and continued advancement of the movable punch means relative to the forming die of said stationary platen means to effect the cutting of a flat workpiece from a web of material inserted between said opposed surfaces and then to hold the workpiece in non-frictional relationship with respect to the shaping die member and forming die of said stationary platen means as the said shaping die member advances the workpiece through said forming die and forces the workpiece to assume a cup-shaped configuration, and means for actuating said movable mandrel means whereby said mandrel means can reversely draw said cup-shaped workpiece by drawing said cup-shaped workpiece in said reverse drawing die of said punch means and said mandrel means being provided with a cutting ring means which cooperates with certain portions of said stationary platen means and punch means to trim the peripheral edge of the redrawn cup-shaped workpiece upon the bottoming of said mandrel means in said reverse drawing die of said punch means.

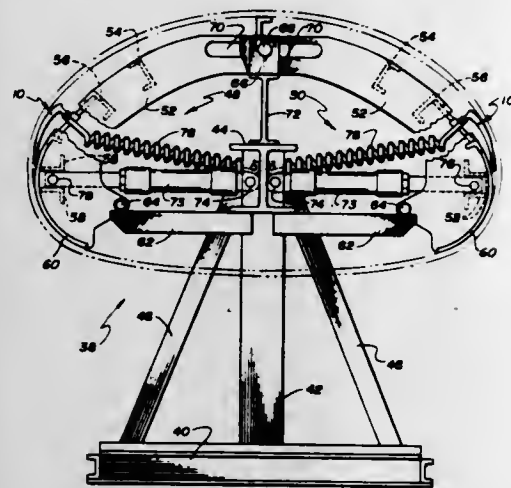
3,312,099 APPARATUS

Almont H. Koepf, Orinda, and Robert K. Richter, Walnut Creek, Calif., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware

Filed Mar. 9, 1964, Ser. No. 350,230
4 Claims. (Cl. 72-392)

1. An arched culvert forming apparatus comprising the combination of at least one expansible arcuate workpiece engaging form which is positionable within the culvert section to be arched, frame means supporting said form and said form including spaced transverse members and an elongated arcuate plate member disposed therebetween; means for expanding said form, an arcuate

shoe hingedly affixed to said transverse members adjacent said plate member, said shoe comprising an elongated plate having an arcuate shape in transverse cross-section

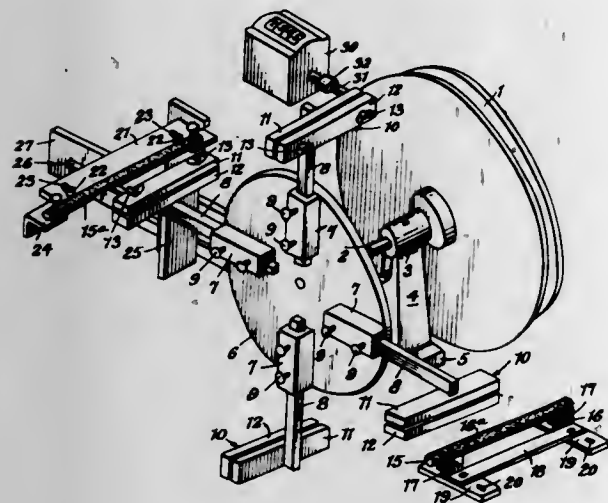


and overlying said first mentioned plate member whereby said shoe accurately represents a continuation and an arcuate enlargement of said first mentioned plate member.

3,312,100 IMPACT WEAR TESTER

Thomas D. Alsie, Metuchen, N.J., assignor to Phillips-Van Heusen Corporation, New York, N.Y., a corporation of New York

Filed June 2, 1964, Ser. No. 371,991
2 Claims. (Cl. 73-7)

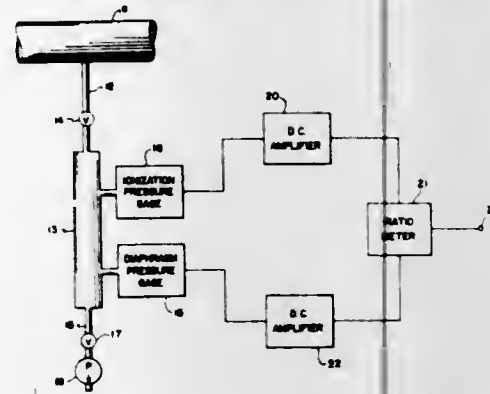


1. A fabric testing apparatus comprising, a disk and means for rotating the same, a plurality of sockets mounted on one face of the disk and extending radially of the same, a bar fitted in each of the sockets and axially adjustable through the same, clamping means on the sockets for holding the bars in selected positions of extension out of the sockets, the bars extending beyond the periphery of the disk, a clamp provided at the outer end of each of the bars for holding a piece of fabric to be tested, abutments in the form of non-rotative rods spaced from the ends of the bars and adapted to have their convex peripheries wipingly contacted by the fabric pieces during the rotation of the disk, each rod having a rough convex surface for contact with the fabric pieces to thereby subject the pieces to frictional wear as such fabric pieces are moved into wiping contact with such surfaces when the disk is rotated.

3,312,101 GAS ANALYZER FOR BI-GASEOUS MIXTURES

Leonard T. Melfi, Jr., Williamsburg, George M. Wood, Jr., Hampton, and Paul R. Yeager, Dare, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Nov. 8, 1963, Ser. No. 322,545
10 Claims. (Cl. 73-23)

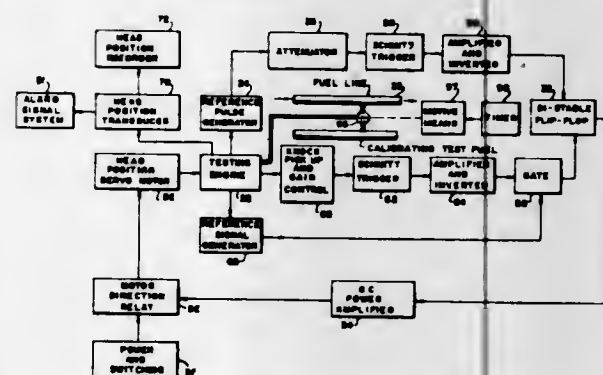


1. An analyzer for measuring the volumetric fraction of one of the gases in a bi-gaseous mixture comprising: ionization pressure gage means which is sensitive to the gas composition of said bi-gaseous mixture for producing a first output proportional to the pressure of said bi-gaseous mixture; pressure gage means, which is calibrated to equal the output of said ionization pressure gage when measuring a one hundred percent volume of the other gas in said bi-gaseous mixture, for producing a second output proportional to the pressure of said bi-gaseous mixture; and means receiving said first and second outputs for producing a third output proportional to said first output divided by said second output whereby said third output is indicative of the volumetric fraction of said one of the gases in said bi-gaseous mixture.

3,312,102 AUTOMATED ENGINE FOR DETERMINING THE COMBUSTION QUALITY OF A FUEL

Alfred E. Traver, Great Neck, N.Y., assignor to Mobil Oil Corporation, a corporation of New York

Filed Dec. 18, 1961, Ser. No. 160,052
12 Claims. (Cl. 73-35)



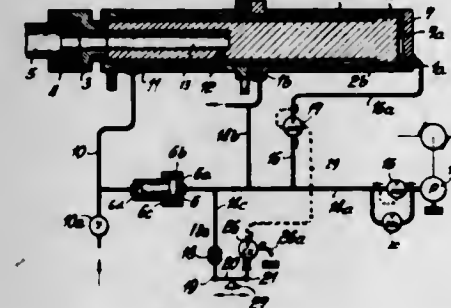
4. In a single-cylinder test engine for conducting a test of the combustion quality of a sample motor fuel by comparison with a reference motor fuel of known combustion quality, the engine performing no useful work, operating under detonation conditions throughout a significant portion of the duration of a test, and having a repetitive operating cycle and engine compression ratio adjusting means for controlling the combustion process of the fuel in the engine, the combination of reversible motive means for actuating said compression ratio means to vary compression ratio, means for generating a signal representative of detonation in said engine,

means responsive to a function of said signal for controlling said motive means to effect adjustment of the compression ratio adjusting means to maintain substantially a predetermined condition of at least one of autoignition time lag and autoignition intensity for both said sample motor fuel and said reference motor fuel, whereby the position of said engine compression ratio adjusting means for said sample motor fuel is a function of the detonation propensity of said motor fuel, and means responsive to adjustment of the compression ratio adjusting means to provide a signal which is a function of said adjustment.

3,312,103 HYDRAULIC PRESSURE CONTROL APPARATUS

Alfons Goeke, Solingen, Germany, assignor to Th. Kleserling and Albrecht, Solingen, Germany

Filed Mar. 23, 1965, Ser. No. 442,010
Claims priority, application Germany, Mar. 26, 1964, K 52,508
20 Claims. (Cl. 73-49.1)



1. Hydraulic pressure control apparatus, comprising, in combination, first hydraulic pressure responsive means; second hydraulic pressure responsive means; pressure producing means; conduit means connecting said pressure producing means with said first and second pressure responsive means and including a first conduit connected with said first pressure responsive means and a second conduit connected with said second pressure responsive means; a control valve means having an outlet and including a control valve member movable between a position closing said outlet and an open position, and being operable by fluid to move to said open position; fluid operated means connected with said first conduit responsive to pressure in said first pressure responsive means and including movable operating means operatively connected with said control valve member for urging the same to said closing position with a force depending on the pressure in said first pressure responsive means; and a valve in said second conduit communicating with said control valve means so that upon a pressure increase in said second pressure responsive means, pressure fluid from said second conduit moves said control valve member to said open position and is discharged through said outlet whereby the pressures in said first and second pressure responsive means are maintained at a predetermined ratio.

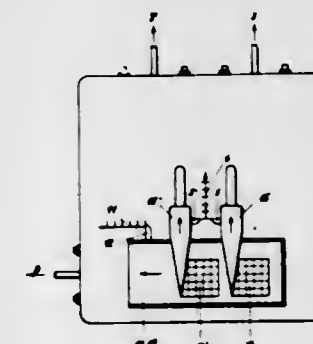
3,312,104 INDICATING DEVICE FOR ROLLER BRAKE TESTERS

Horst Hegenbart, Heppenheim, Hesse, Germany, assignor to Gebr. Hofmann Kg., Darmstadt, Germany, a limited partnership of Germany

Filed Nov. 1, 1963, Ser. No. 320,634
5 Claims. (Cl. 73-123)

1. For use with a roller-type brake tester for vehicle wheel brakes which has a first continuous output means directly proportional in magnitude to instantaneous braking force on a vehicle right wheel and a second continuous

output means directly proportional in magnitude to instantaneous braking force on a vehicle left wheel, a device for receiving both of said output means and indicating braking force on both wheels linearly in close juxtaposition comprising: a frame; a first linearly, elastically extensible-contractile element having two ends; a second linearly, elastically extensible-contractile element having two ends, said first and second elements being generally parallel and side-by-side and each having one end secured to said frame; the other end of said first element connected to said first continuous output means, the other end of said second element connected to said second continuous output means; an indicator fixed to each element other end for linear movement with the respective element other end; and straight-line scale means having a datum and constructed and arranged to be swept over by said indicators whereby absolute value of braking force is indicated for each wheel as the scale distance of the respective indicator from said datum and the difference in



braking force between the left and right wheels is indicated as the scale difference between the two indicators; a third linearly elastically extensible-contractile element having two ends, one end thereof being secured to said frame and said third element extending generally perpendicularly to the first and second elements in a plane generally parallel thereto; means securable on a brake pedal of the vehicle to be tested for providing a continuous output directly proportional in magnitude to instantaneous pedal pressure; the other end of said third element connected to said pedal pressure output means, a scale means holder fixed to said third element other end for linear movement therewith; said scale means comprising rectilinear coordinate graph means carried on said scale means holder; said indicators engaging said graph means and constructed and arranged to mark instantaneous position thereon whereby said indicators each plot a line relating braking force on the respective wheel to pressure on the brake pedal.

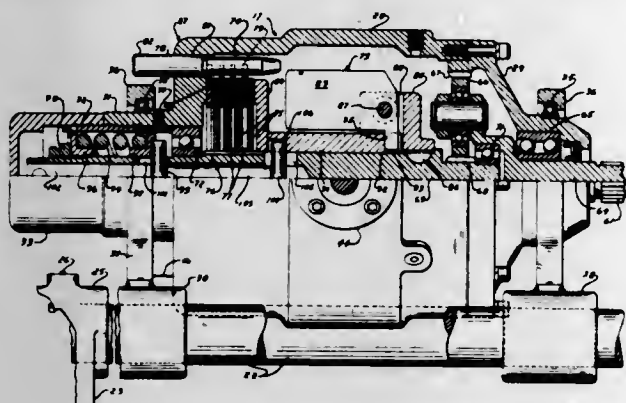
3,312,105 FIXED SPEED TORQUE TESTING APPARATUS FOR ROTARY AIR TOOLS

Lester A. Amtsberg, Utica, N.Y., assignor to Chicago Pneumatic Tool Company, New York, N.Y., a corporation of New Jersey

Filed Aug. 18, 1964, Ser. No. 390,373
16 Claims. (Cl. 73-135)

4. A dynamometer for testing the torque output of a rotary tool at a predetermined speed, comprising bearing support means, a housing supported in the latter means for limited angular rotation, a torque input spindle supported in the housing for relative rotation adapted to be drivingly coupled to the output spindle of a rotary tool, a brake shaft supported axially of the housing for relative rotation, means drivingly coupling the input spindle with the brake shaft, a slip clutch brake having driven clutch means carried by the housing and driving clutch means carried by the brake shaft normally disengaged from the driven means, the driving clutch means adapted

under pressure to become frictionally engaged with the driven clutch means so as to transmit the torque of the input spindle to the housing, a centrifugal speed control governor means carried by the brake shaft controlling engagement of the driving and driven clutch means

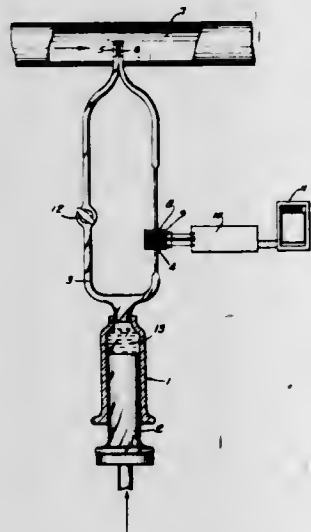


adapted upon acceleration of the brake shaft to a predetermined speed to pressure the driving clutch means into frictional engagement with the driven clutch means, and means for applying a calculable selected torque force to the housing sufficient to counterbalance the torque being applied to the input spindle.

3,312,106 FLOW METER

Merlin Davis, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Army

Filed Dec. 7, 1964, Ser. No. 416,658
9 Claims. (Cl. 73-194)



1. A device to measure the rate of flow of fluids comprising:

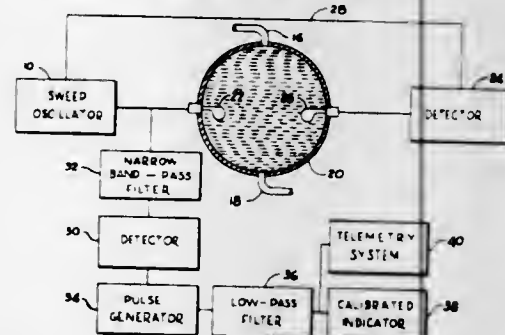
- fluid supply means for supplying fluid at a substantially constant rate of flow;
- bifurcated conduit means terminating in juxtaposed oppositely directed outlets adapted to be injected into a fluid stream, the axis of each of said outlets being in a direction substantially parallel to the flow of the fluid stream, said fluid supply means connected to the inlet of said bifurcated conduit means to supply fluid to the fluid stream through said conduit means;
- a rotameter for measuring the rate of flow of the fluid stream, disposed in one branch of said bifurcated conduit means and including magnetic float means;
- differential transformer means disposed about one branch of said bifurcated conduit means and positioned to include within the core thereof said magnetic float means; and

(e) amplifying and recording means connected to said differential transformer means for measuring the rate of flow of a fluid stream as determined by the displacement of said magnetic float means, said displacement being proportional to the unbalance of the flow of the fluid supply in the bifurcated conduit means caused by the flow of the fluid stream.

3,312,107 LIQUID STORAGE AND MEASURING SYSTEM

Gene A. Burns, La Mesa, and Calvin J. Meierbach, El Cajon, Calif., assignors to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware

Filed Sept. 25, 1964, Ser. No. 399,245
8 Claims. (Cl. 73-290)



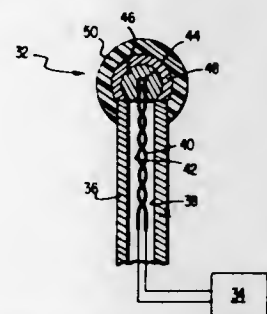
1. Apparatus for measuring the quantity of liquid in a tank having a band of resonant frequencies including a lower resonant frequency when full of the liquid, and a higher resonant frequency when empty of the liquid comprising

generator means responsive to input trigger signals for cyclically generating output signals that regularly change over a predetermined range of frequencies in the tank, said output signals including signals within the band of resonant frequencies, and a start frequency signal outside the band, means connected to said generator means and responsive to a resonant frequency signal within the band for producing the input trigger signals to effect cyclic generation of said output signals by said generator means, and means connected to said generator means and responsive to said start frequency signal in said output signals for generating a signal indicative of the quantity of liquid in the tank.

3,312,108 TEMPERATURE MEASURING DEVICE

William H. Avery, % Applied Physics Laboratory, The Johns Hopkins University, 8621 Georgia Ave., Silver Spring, Md. 20910

Filed June 9, 1964, Ser. No. 373,708
4 Claims. (Cl. 73-359)



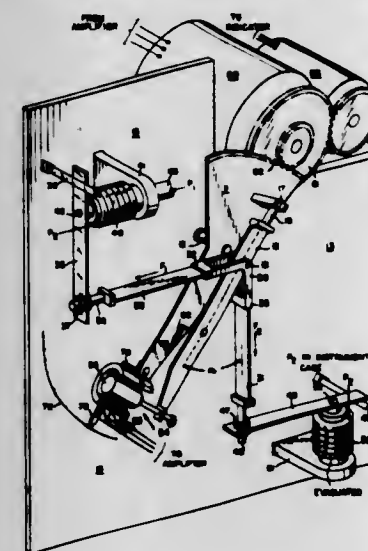
1. A high temperature measuring device comprising, means providing a temperature sensitive element, a heat sink having a large mass relative to the mass of the temperature sensitive element formed about the temperature sensitive element, a solid body heat insulator about the heat sink, and heat responsive means cooperating with

the heat insulator for rapidly removing the insulator to expose the heat sink to the temperature to be measured.

3,312,109 FORCE RATIO RESPONSIVE DEVICE

Robert J. Kutzler, St. Louis Park, Minn., assignor to Honeywell Inc., a corporation of Delaware

Filed May 25, 1964, Ser. No. 432,249
13 Claims. (Cl. 73-407)

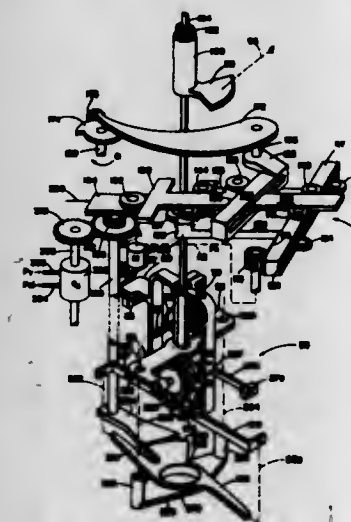


13. A ratio indicator comprising a pair of force producing devices, links lying at an acute angle to each other and respectively connected to the force producing devices to have a force exerted thereon longitudinally of the links by the force producing devices, a reaction link pivoted at one end on a supporting pivot and at its other end pivotally interconnected to the first named links, means mounting the supporting pivot for movement in an arc about the pivotal interconnection, means responsive to movement of the links to produce a regulated force, and means responsive to the value of the regulated force to shift the supporting pivot in a direction to rebalance the forces acting on the first named links, the position of the supporting pivot indicating the ratio of said forces.

3,312,110 CONTROL APPARATUS

Robert W. Armstrong, Mound, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Original application Apr. 27, 1962, Ser. No. 191,685, now Patent No. 3,239,140, dated Mar. 8, 1966. Divided and this application Apr. 19, 1965, Ser. No. 469,957
1 Claim. (Cl. 73-407)



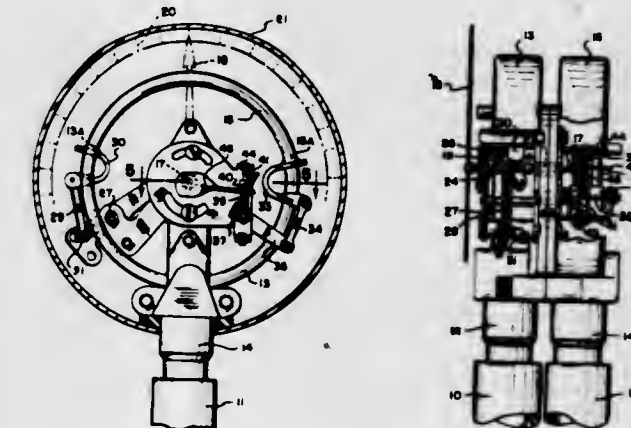
Apparatus of the class described comprising in combination:
a fixed member;

a first member pivotally mounted on said fixed member and rotatable about an axis;
first torque applying means connected directly to said first member and operable to apply a first torque to said first member about said axis as a function of indicated static pressure P_{st} ;
second torque applying means responsive to rotation of said first member about said axis for applying a second torque directly to said first member about said axis, said second torque being solely in accordance with static error pressure, ΔP ; and
third torque applying means also responsive to rotation of said first member about said axis for applying a third torque directly to said first member about said axis, said third torque being a rebalance torque and corresponding to true static pressure P_s .

3,312,111 MULTIPLE-PRESSURE RESPONSIVE DEVICE

Ernest H. Grauel, Bridgeport, Conn., assignor to American Chain & Cable Company, Inc., New York, N.Y., a corporation of New York

Filed Feb. 8, 1965, Ser. No. 430,813
7 Claims. (Cl. 73-412)



1. A device responsive to multiple pressures comprising:

- first and second Bourdon tubes adapted to deflect in response to respective pressures,
- an axially rotatable and translatable helicoid gear,
- cam means movable along said helicoid gear in engagement therewith for affecting rotation thereof,
- first linkage means operable by the first Bourdon tube for moving the cam means with respect to the helicoid gear and thus rotating the gear, and
- second linkage means operable by the second Bourdon tube for axially translating the helicoid gear with respect to the cam means and thus rotating the gear.

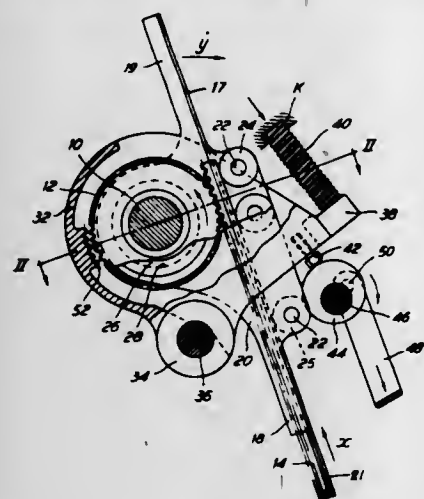
3,312,112 DEVICE FOR CONVERTING RECIPROCATING MOTION INTO PERIODIC UNIDIRECTIONAL ROTARY MOTION

Dante Draganti, Busto-Arsizio, Italy, assignor to Officina Meccanica Erba & C. S.a.S., Busto-Arsizio, Italy, a corporation of Italy

Filed June 1, 1965, Ser. No. 460,260
Claims priority, application Italy, June 3, 1964, 47,920/64
3 Claims. (Cl. 74-84)

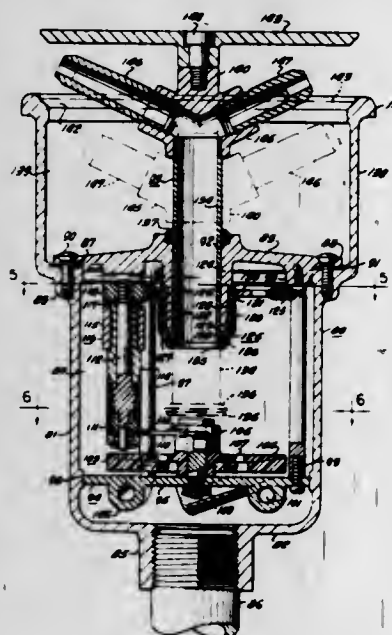
1. A motion converting device comprising an output shaft, a toothed gear secured to said shaft, a housing for said gear, means pivotally mounting said housing on a shaft parallel and spaced from the output shaft, a rack slidably carried by said housing the teeth of which are adapted to engage said toothed gear in one position of the housing, gear teeth carried by the housing adapted to engage the toothed gear in another position of the

housing, means biasing said housing to urge the teeth on said housing into engagement with the gear carried teeth, control means for urging the housing in the op-



posite direction against the bias of the biasing means, and means for synchronously reciprocating the rack and operating the control means.

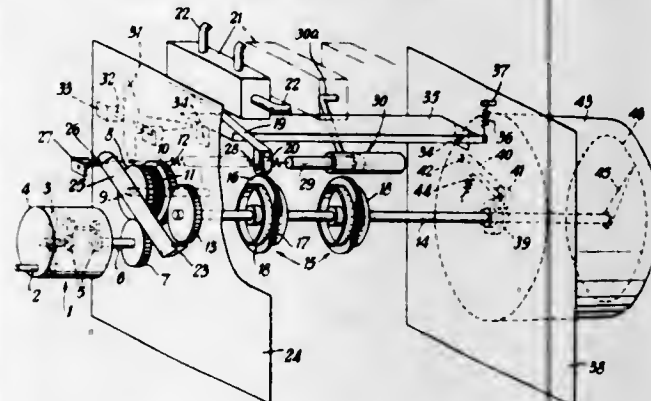
3,312,113
TORQUE TRANSMISSION UNITS
Leo A. Martini, Dallas, Tex., assignor to Telsco Industries, Dallas, Tex., a corporation of Texas
Filed June 18, 1965, Ser. No. 465,112
5 Claims. (Cl. 74-125)



1. In combination, a torque transmission unit including a drive shaft, an element pivotally mounted for oscillation about the axis of the drive shaft, unidirectional clutch means connecting said drive shaft and element for imparting intermittent rotation to said shaft upon oscillation of the element, rotatable cam means, means for rotating the cam means, means for maintaining said element in engagement with said cam means whereby said element is oscillated upon rotation of said cam means, said element undergoing one oscillation upon each revolution of said cam means whereby the unit has a high to low rotational speed reduction and a low to high torque transmission, at least a second torque transmission unit including second cam means mounted on and rotatable with said drive shaft, a member pivotally mounted for oscillation and biased into engagement with the second cam means whereby the member is oscillated upon rotation of the second cam means, rotatable means, and second unidirectional clutch means connecting the rotatable means and pivotally mounted

member for imparting intermittent rotation to said rotatable means upon oscillation of said member, each revolution of said second cam means imparting one oscillation to said member to provide high to low rotational speed reduction and low to high torque transmission, the unidirectional clutch means of the second torque transmission unit including a pair of clutch hubs rotatable about the axis of rotation of said rotatable means, one of the clutch hubs being fixed to said pivotally mounted member for oscillation therewith, said clutch hubs having coacting external peripheral faces, and a helical spring surrounding the latter clutch faces for contraction into engagement therewith so as to connect said clutch faces upon oscillation of said member in one direction for expansion to disconnect said faces upon oscillation of said member in the opposite direction so as to permit reverse oscillation of said member and the clutch hub fixed thereto relative to the other clutch hub.

3,312,114
TIMERS
Jerzy Kazimierz Chuchla, Harlow New Town, England, assignor to Electrical Remote Control Company Limited, Essex, England, a British company
Filed Aug. 28, 1964, Ser. No. 392,894
Claims priority, application Great Britain, Aug. 30, 1963, 34,378/63
7 Claims. (Cl. 74-125.5)

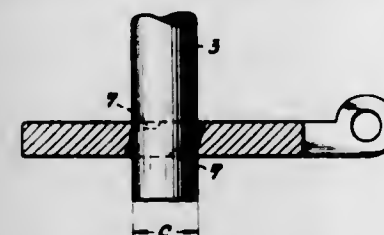


1. An automatic timer, comprising a miniature pneumatic motor, a first shaft rotatable by said motor, a clutch input member fixed to said first shaft for rotation therewith, a clutch output member engageable with and disengageable from said clutch input member, a second shaft fixed to said clutch output member for rotation therewith, a cam fixed to said second shaft for rotation therewith, a displaceable cam follower serving to co-operate with said cam, a miniature pneumatic valve operatively associated with said cam follower for operation by said follower to control flow in a pneumatic pipeline, pneumatic clutch control means for automatically producing engagement and disengagement of said clutch output member and said clutch input member, and resetting means acting on said second shaft for automatically resetting said second shaft to a predetermined position when said clutch output member and said clutch input member are disengaged.

3,312,115
STEPPING MECHANISM FOR CAR JACK
Ferdinand Braselmann, Ennepetal-Oberbauer, Westphalia, Germany, assignor to Ferd Braselmann, Ennepetal-Oberbauer, Westphalia, Germany
Filed Dec. 30, 1964, Ser. No. 422,145
Claims priority, application Germany, Jan. 3, 1964, B 74,888
10 Claims. (Cl. 74-141.5)

1. In a stepping mechanism for a jack or other purposes comprising a bracing bar, and clamping plates each having a bore of a diameter larger than that of said bar,

said bar extending through said bores in said clamping plates, the outer edge portions of the wall of each bore being out of concentricity with the wall of each bore at



diametrically opposite points so as to form arcuate clamping surfaces, said surfaces together forming a single passage having a diameter smaller than that of said bar and having an axis differing from the axis of said bore.

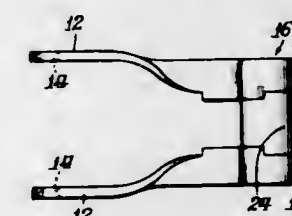
3,312,116
GUIDING PULLEY MEANS FOR BELT SANDER
George R. Blevins, Baltimore County, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Apr. 12, 1965, Ser. No. 447,317
5 Claims. (Cl. 74-240)



1. In an abrading tool comprising a housing, an endless belt within the housing, a motor in a frame within the belt, and a driving pulley within the belt and driven by the motor; the improvement in guiding pulley means for the belt, which comprises:

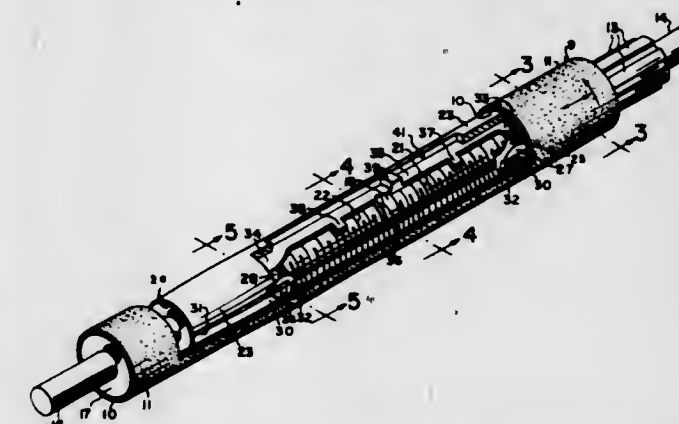
- a bracket within the belt; said bracket and the driving pulley being disposed in relationship to each other at opposite ends of the motor frame;
- said bracket having a main body portion and a pair of substantially-parallel side flange portions each having respective ends projecting above and below said body portion;
- a pair of guiding pulleys comprising an upper guiding pulley and a lower guiding pulley mounted in said respective ends of said side flanges of said bracket;
- said guiding pulleys having respective substantially-parallel axes transverse to the belt travel, and said guiding pulleys projecting forwardly beyond said body portion of said bracket into engagement with the belt;
- means supporting said bracket for limited movement towards and away from the belt;
- said means supporting said bracket including means to adjust said bracket and to align the respective axes of both guiding pulleys, in unison, with respect to the belt travel, whereby both guiding pulleys function as a unitary guiding pulley means for the belt;
- resilient means constantly urging said bracket away from the motor frame, thereby urging both guiding pulleys into engagement with the belt; and
- means to selectively retract said bracket and said guiding pulleys away from the belt.

3,312,117
POWER-TRANSMISSION CHAIN LINKS
William E. Gritt, Indianapolis, Ind., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed Sept. 1, 1964, Ser. No. 393,638
11 Claims. (Cl. 74-250)



1. A chain link, formed of a blank of sheet metal, having on at least one end a transverse tubular hook formed of a plurality of laterally-disposed curved strips in at least a part thereof, said strips being integral, direct extensions of a laterally-extending portion of said link, adjacent strips being of opposite curvature from where they are integral with said portion and formed with interengaged projections and recesses in adjoining sides thereof.

3,312,118
ROTARY-RECIPROCATING TOOL ATTACHMENT
Benjamin A. Aubert, 1141 Knickerbocker Drive, Sunnyvale, Calif. 94087
Filed Apr. 15, 1964, Ser. No. 359,923
7 Claims. (Cl. 74-424.8)

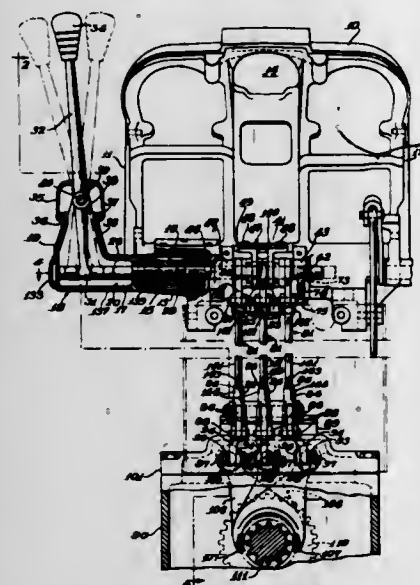


1. A rotary-reciprocating tool comprising, in combination: a housing member, a stem member axially located within said housing, means for rotating one of said members with respect to the other of said members while permitting relative longitudinal movement between said members, first drive means mounted between said members for driving one of said members longitudinally with respect to the other of said members during relative rotation, second drive means mounted between said members for driving said one of said members longitudinally with respect to said other of said members, and means for continuous alternate engagement of said first drive means and then second drive means whereby said members are reciprocated relative to one another so long as said means for rotating is actuated.

3,312,119
REMOTE GEAR SHIFT LINKAGE MECHANISM
Glenn E. Heald, Lisle, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Mar. 22, 1965, Ser. No. 441,636
10 Claims. (Cl. 74-473)

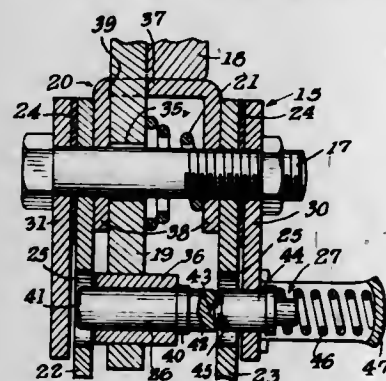
1. A gear shift mechanism for operating a change-speed transmission from a remote station and comprising a frame; a passaged gate carried by said frame; an elongated shaft axially slidable and rotatably mounted in said

gate; a plurality of rockable levers having outwardly extending link end portions and having hubs freely mounted on said shaft and disposed on opposite sides of said gate; lever interlocking means comprising a lug operably connected to said shaft and upon axial sliding thereof disposable in a selected one of the hubs for rocking said levers; said gate and said hubs having recesses therein to receive said lug and being alignable to permit slidable movement of said shaft between a plurality of axially displaced positions thereof; said gate and said hubs being arranged



so that the lug on said shaft must pass through said passaged gate when said shaft is longitudinally moved from interlocking engagement with one rockable lever to similar engagement with another of said levers; link means connected to said link end portions and adapted for operative connection to a change-speed transmission, and lever control means connected to said shaft for operation thereof whereby upon sliding said shaft axially said lug is moved relative to said levers and upon rotation of said shaft said lug rocks a selected one of said levers to shift gears of an associated change-speed transmission.

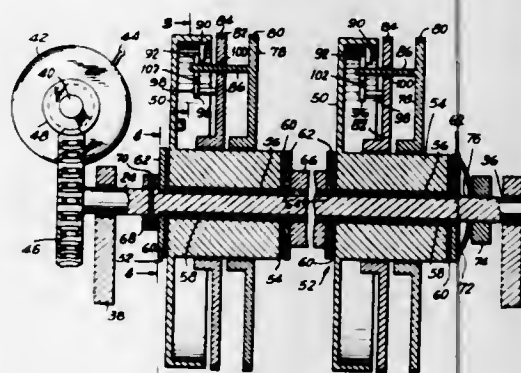
3,312,120
GEARSHIFT LOCKING MEANS
Carl A. Mercer, 21300 Sherman Way,
Canoga Park, Calif. 91303
Filed May 3, 1965, Ser. No. 452,940
7 Claims. (Cl. 74-475)



1. Gearshift locking means comprising:
 - (a) two arms for shifting the gears of a selective transmission,
 - (b) a shift stick provided with an extension,
 - (c) a pivot bolt for said arms and stick,
 - (d) each arm having a hole therein, said holes being aligned when the arms are in neutral position,
 - (e) a lock bolt carried by said stick extension and having an end extending into the hole of one arm to lock said arm to the shift stick extension so that shift of the stick moves said arm to shift gears of said transmission,

- (f) means mounting said stick and extension for manual movement at an angle to the plane of movement of the shift stick,
- (g) a spring-biased detent bolt normally extending into the hole of the other arm to lock the latter and in aligned engagement with the lock bolt,
- (h) said detent bolt being displaced by said lock bolt from the hole of the second arm to lock said arm to the shift stick extension so that shift of said stick moves said second arm to shift other gears of said transmission.

3,312,121
CONTROL MEANS
John R. Lewis, North White Plains, N.Y., assignor to
Safe Flight Instrument Corporation, White Plains, N.Y.,
a corporation of New York
Filed Jan. 27, 1965, Ser. No. 428,441
7 Claims. (Cl. 74-484)

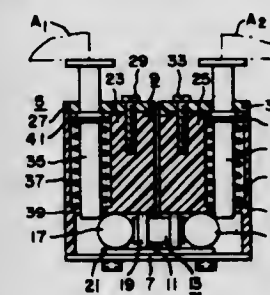


1. A control system for a plurality of driven elements, said system including a plurality of modules, each module comprising a different one of said driven elements, a primary control driver element, a secondary control driver element, disengageable means coupling the driven element to the secondary control driver element, means permanently directly coupling the primary control driver element to the driven element, and means automatically disengaging the first-named coupling upon the operational control movement of the primary control driver element relative to the secondary control driver element, said system further including a master secondary control member, and, for each module, a separate torque limiter means interconnecting the master secondary control member to the secondary control driver element for that module, the upper torque limit values of all the torque limiter means being substantially equal to one another and being from about two to about ten times the operating torque adapted to be applied to a primary control driver element, and means for moving the master secondary control member and for holding the master secondary control member stationary when the moving means therefor is idle.

3,312,122
MECHANICAL INTERLOCK
John P. Conner, Brighton Township, and Stephen S. Dobrosielski, Beaver, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh Pa., a corporation of Pennsylvania
Filed May 25, 1964, Ser. No. 369,716
10 Claims. (Cl. 74-483)

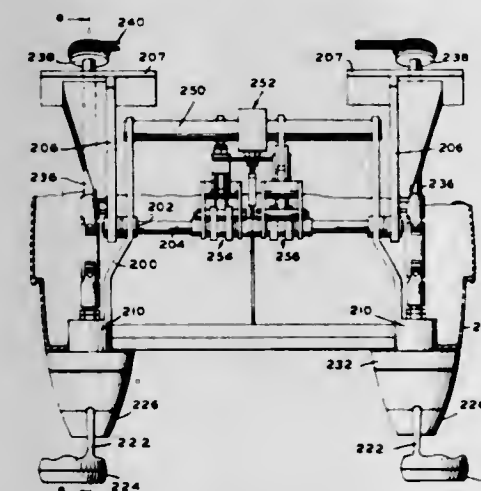
2. A mechanical interlock comprising a base, a housing structure supported on said base and comprising a first housing section, a first operating member supported on said first housing section and movable between first and second operating positions, a second housing section, a second operating member supported on said second housing section and movable between first and second operating positions, track means between said first and second operating members, a blocking structure movably supported on said track means, said blocking structure

operating automatically to prevent said operating members from being in their respective second positions at the same time, and means for moving one of said housing



sections on said base to adjust the dimension between said operating members to thereby adjust said blocking operation.

3,312,123
VEHICLE STEERING CONTROL
Robert J. Rumpf, Grosse Pointe, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Mar. 11, 1965, Ser. No. 438,905
8 Claims. (Cl. 74-494)

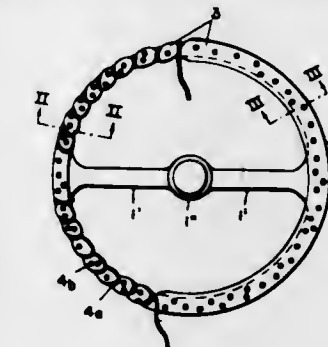


1. A tiltable steering assembly for a motor vehicle, comprising, fixed support means within a portion of the vehicle, a first pair of essentially parallel shafts rotatably mounted in said fixed support means, a second pair of essentially parallel shafts each pivotally secured to one of said first pair of shafts, vehicle operator grip means fixed to each of said second shafts for rotation thereof and therewith, means pivotally secured to said first support means and rotatably supporting said second shafts whereby tilting movement of said second support means relative to said first support means effects a simultaneous tilting movement of said second shafts, and torque transfer means interconnecting said first shafts to each other and adapted to be connected to a steering shaft of said vehicle to thereby provide simultaneously rotation of all said shafts upon rotation of one of said shafts.

3,312,124
STEERING-WHEEL ASSEMBLY FOR AUTOMOTIVE VEHICLES
Klaus Meier and Karl Meier, both of Wolfsburg, Germany, assignors to Kamel-Autokomfort, Wolfsburg, Germany, a corporation of Germany
Filed Dec. 13, 1965, Ser. No. 513,346
Claims priority, application Germany, Dec. 14, 1964, K 49,798; Feb. 26, 1965, K 55,392; Oct. 28, 1965, K 57,515; Nov. 30, 1965, K 52,877
8 Claims. (Cl. 74-558)

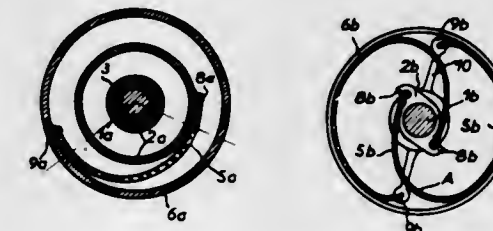
1. In a steering-wheel assembly having a steering-wheel crown, the improvement which comprises a steering-wheel cover enveloping said crown and formed from a band

having a core of porous foamed material and a pair of nonporous surface skins of said material unitarily connected with said core and sandwiching said core between



them, said band being provided with a multiplicity of throughgoing perforations extending substantially to said crown.

3,312,125
DEVICE FOR STORING KINETIC ENERGY, USABLE AS A TORSIONAL VIBRATION DAMPER AND COUPLER
Olivier Durouchoux, 94 Rue du Bac, Paris, France
Filed May 11, 1965, Ser. No. 454,938
Claims priority, application France, May 11, 1964, 974,059
12 Claims. (Cl. 74-572)

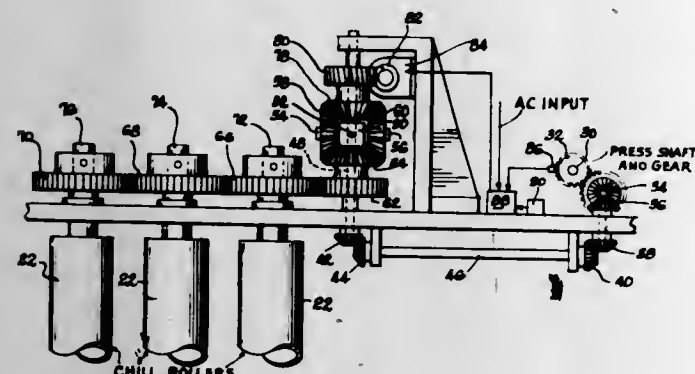


1. In combination with a rotating shaft, a torsion damping device comprising an inner hub secured to said shaft, an outer cylindrical housing substantially coaxial with said shaft and surrounding said hub, a plurality of radial arms positioned at regular angular intervals and freely rotatable in unison with respect to said shaft, and a plurality of elongated, flexible and weighty elements having their respective inner ends firmly secured at regular angular intervals to said hub and their respective outer ends symmetrically interconnected by means of said radial arms, said elements having an outer portion frictionally engaging the inner surface of said cylindrical housing upon rotation of said device.

3,312,126
ADJUSTABLE SPEED DRIVE
Henry H. Hering, Jr., Homewood, Ill., assignor to B. Offen & Co. Inc., Chicago, Ill., a corporation of Illinois
Filed June 10, 1964, Ser. No. 374,055
6 Claims. (Cl. 74-675)

1. In an apparatus for the handling of continuous webs wherein said webs are moved through the apparatus by rollers whereby the webs can be printed on at least one surface, passed through a drier, and then to a web take-up station, and wherein chill rollers are provided between said drier and said take-up station, the improvement comprising drive means for said chill rollers, said drive means including a main drive gear operatively connected to said chill rollers whereby said chill rollers rotate in response to the operation of said drive gear, first means for imparting driving force to said drive gear in accordance with the speed of the drive rollers for the apparatus, and second means for imparting further driving force to said

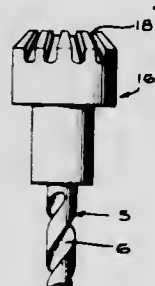
drive gear, each of said first and second means imparting force to said drive gear through a differential, and including a sensor adapted to sense the speed of said drive



rollers for the apparatus and a controller operable in response to said sensor for regulating the driving force of said second means.

3,312,127 TWIST DRILL

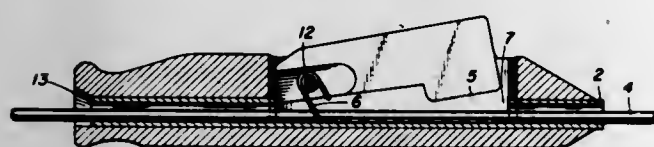
Henry A. Stafford, Santa Maria, Calif., assignor to Semco Twist Drill and Tool Co., Santa Maria, Calif., a corporation of California
Filed Feb. 16, 1965, Ser. No. 432,999
3 Claims. (Cl. 77-71)



1. In a drilling device having a drill driving gear presenting a threaded axial bore opening through both of its ends and a twist drill having a threaded shank portion threaded into said bore from its outer end, said threaded shank portion being characterized by having a recess in its inner end presenting an abutment surface to be engaged by a screwdriver, whereby to facilitate removal of said shank portion from said bore in the event it should become broken off in said bore.

3,312,128 WIRE GRIPPER

Lawrence W. Wasson, 587 Hope St.,
Springdale, Conn. 06879
Filed May 7, 1965, Ser. No. 454,115
5 Claims. (Cl. 81-3)



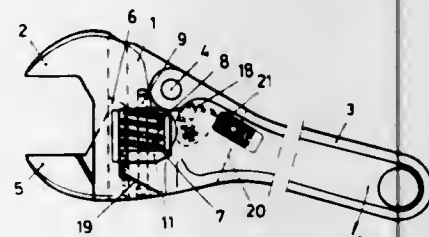
1. A tool for gripping wire for tying and twisting the wire to fasten together reinforcing rods for reinforced concrete comprising in combination,

(a) a unitary casing of size and shape adapted for convenient gripping in one hand, and having an elongated slot in one side of the casing,

- (b) a channel through the center of the casing adapted to have wire threaded therethrough,
- (c) a grippable lever pivoted at one end in the casing and lying in the slot with the other end projecting slightly above the outer surface of the casing, said lever being provided with a wire engaging jaw having sharp hard teeth and positioned to engage wire threaded through the casing on gripping the casing, and
- (d) means for releasing the lever jaw from contact with the wire on relaxation of the grip on the lever.

3,312,129 SLIDING JAW WRENCH HAVING A PIVOTED HANDLE-LEVER GRIP WHICH ENGAGES WORM MEANS TO PREVENT ROTATION THEREOF

Simon Nil Nordgren, 14 Centralvagen, Rimbo, Sweden
Filed June 29, 1965, Ser. No. 467,940
Claims priority, application Sweden, July 3, 1964, 8,109/64
11 Claims. (Cl. 81-126)



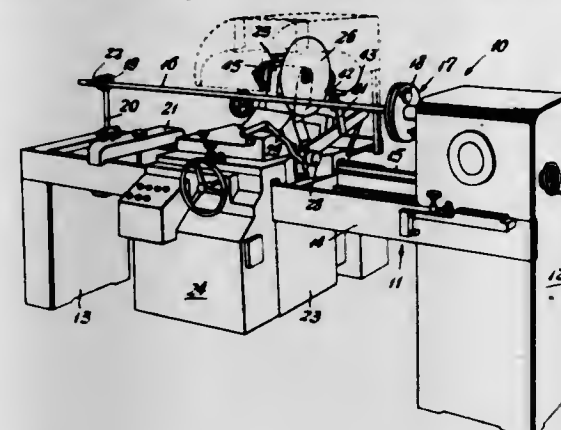
1. A wrench comprising a wrench head having a fixed jaw and a movable jaw mounted on said fixed jaw, said movable jaw being slidably mounted for movement relative to said fixed jaw between a working position wherein said jaws are arranged to turn a work piece therebetween and a slipping position wherein said jaws move about the work piece without turning the same, a handle pivotally mounted on said fixed jaw for pivotal movement relative to said head, means for adjusting the position of said movable jaw relative to said fixed jaw, said adjusting means including a rack means on said movable jaw, a worm means engaging said rack means, and means mounting said worm means for rotational and axial movement relative to the axis thereof, said mounting means for said worm means including a worm shaft, and a bushing mounted on the worm shaft for axial movement thereon, said worm means being mounted on said bushing for axial movement thereon, a spacer member carried on said bushing adjacent one end of the worm means and fixed against rotation about the worm axis, spring means carried on said bushing for urging said worm means and said spacer member into contact at said adjacent end of said worm means, and arresting means carried by said handle and arranged to move into contact with said spacer member to actuate the same into holding contact with said end of said worm means when the handle is moved to place the jaws in the working position.

3,312,130 APPARATUS FOR SLITTING ROLLS OF MATERIAL

Leonard A. Krauthelm, Haledon, N.J., assignor to Lever Manufacturing Corporation, Paterson, N.J., a corporation of New York
Filed July 21, 1964, Ser. No. 384,067
8 Claims. (Cl. 82-70.1)

1. In a machine for slitting relatively wide rolls of sheet material into relatively narrow spools having a frame, means for rotatably supporting a roll of sheet material on said frame, a carriage movably mounted on

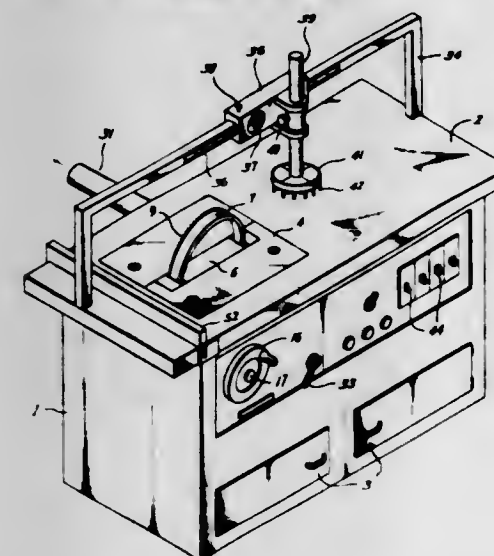
said frame, a cutting tool carried on said carriage for movement toward and away from said roll of sheet material, means for effecting rotation of said cutting tool,



the improvement of means cooperatively associated with said cutting tool for preventing rotation thereof during the cutting operation.

3,312,131 INSULATION FORMING DEVICE

Guy T. Gilmore, Houston, Tex.
(General Delivery, Agua Dulce, Tex. 78330)
Filed Apr. 26, 1965, Ser. No. 450,611
2 Claims. (Cl. 83-5)



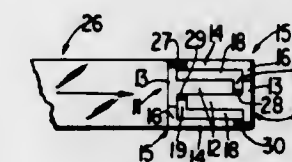
1. In a device for forming insulators for pipe comprising a bench, a cutter blade of a pre-selected diameter rotatably mounted in said bench, a driven wheel in said bench movable into position to drive said cutter blade, means for yieldably maintaining pressure on said cutter blade and against said driven wheel, means for maintaining said cutter blade in position with relation to said bench to maintain one half of said blade above the bench top and means for directing an air jet against the cutter blade for cleaning and cooling said cutter blade as it rotates and a rotatable plate suspended above said blade movable into contact with a block of material and having quadrant guides for positioning a corner of said block of material and directing the path of said block of material through said cutter.

3,312,132 MAGNETIC STRUCTURES

James W. Roe, Willowdale, Ontario, Canada, assignor to Basic Products Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 19, 1965, Ser. No. 498,017
4 Claims. (Cl. 83-32)

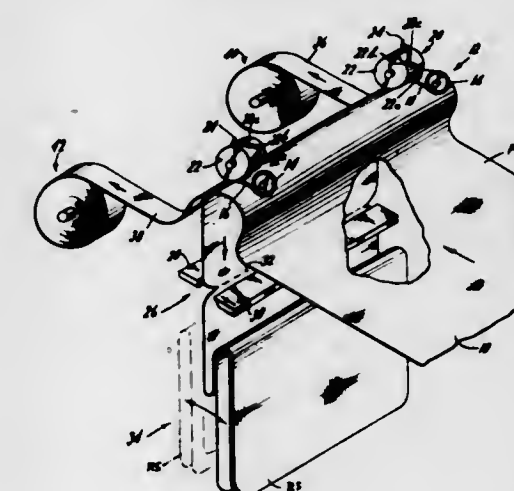
2. The method of making laminations for a transformer core and the like in which the components of each set

of laminations comprise a T-shaped component and two L-shaped components, which method comprises punching the components for two sets of laminations in the same operation from a piece of strip material with the T-shaped



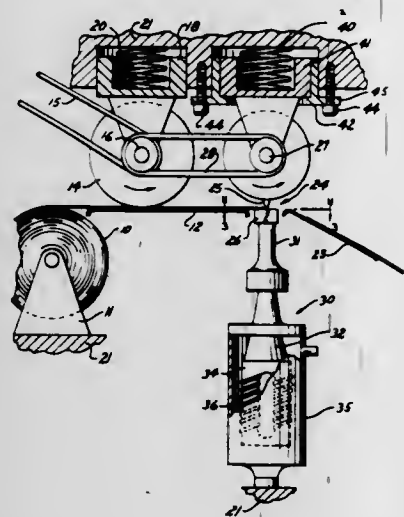
components in opposed relation and one edge of their long legs in contact, and the L-shaped components nested and arranged in opposed relation diagonally of the piece of strip material.

3,312,133
SHEET MATERIAL CUTTING MACHINE
David N. Judelson, New York, N.Y., assignor to Oscar L. Judelson, Inc., Jersey City, N.J., a corporation of New York
Filed Nov. 3, 1964, Ser. No. 408,579
11 Claims. (Cl. 83-83)



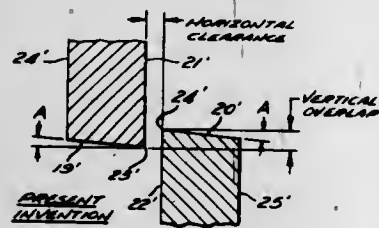
2. A machine for cutting rectangular sheets having rounded corners from a continuous web of sheet material, comprising a frame, means defining a sheet material flow path including an anvil roller mounted for rotation in said frame and a guide roller for guiding the web of material about said anvil roller, rotation of said anvil roller advancing said web of material along said flow path, a pair of side cutting knives at a first cutting station along the periphery of said anvil roller adjustably movable with respect to each other for cutting sheet material into a predetermined width, a pair of corner cutters at a second cutting station along the periphery of said anvil roller mounted for movement into and out of said flow path and movable with said side cutting knives for cutting rounded corners at said predetermined width, end cutting means at a third cutting station removed from said anvil roller for transversely cutting said sheet material for cutting said rectangular sheets therefrom, sheet-receiving and stacking means comprising a movable receiving arm, means moving said arm in timed relation below said end cutting means and transverse to said flow path for catching a rectangular sheet as it is cut from said web of sheet material, drive means operatively connected to said anvil roller, said corner cutters and said end cutting means, and coordination and control means for periodically advancing said sheet material, moving said corner cutters into said flow path, halting the advancement of said sheet material and activating said end cutting means.

3,312,134
CUTTING DEVICE WITH VIBRATING CUTTER
ANVIL
 Richard N. Roney, Dayton, Ohio, assignor to The Sheffield Corporation, Dayton, Ohio, a corporation of Delaware
 Filed Sept. 29, 1965, Ser. No. 491,185
 3 Claims. (Cl. 83-349)



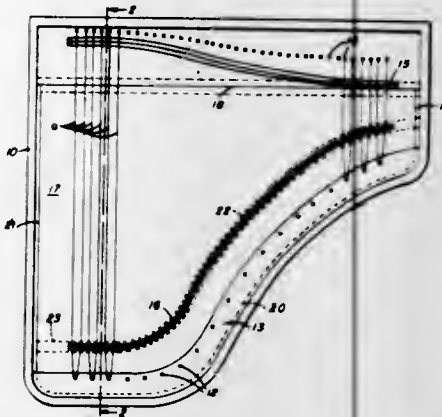
3. Apparatus for cutting material comprising, a base, a cutting member rotatably supported on said base, an opposing support on said base, feed means for continuously moving a strip of material across said supporting member during a cutting operation, drive means operatively connected to both said feed means and to said rotatable cutting member for feeding movement of the strips of material across said support at a rate equaling the tangential velocity of said cutting member during its approach and departure therefrom, a magnetostrictive drive unit, means mounting said supporting member on said support extending parallel to the direction of longitudinal vibration thereof and with the center point of said cutting member at a nodal location therealong, and exciting windings for driving said magnetostrictive unit at ultrasonic frequencies, whereby a strip of material to be cut is continuously fed across said supporting member and is driven at ultrasonic frequencies and through minute amplitudes during a cutting operation.

3,312,135
ROTARY SLITTING KNIFE
 Steve J. Mraz, 12652 Kinsman Road, Burton, Ohio 44021
 Filed May 20, 1965, Ser. No. 457,260
 4 Claims. (Cl. 83-675)



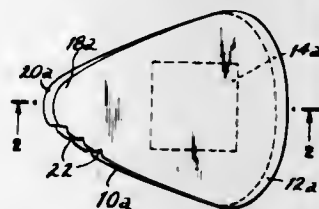
1. A rotary slitting knife having an annular peripheral surface and an inner side face which intersect to form a circular cutting edge, said peripheral surface sloping laterally away from said cutting edge and toward the rotational axis of the knife at an angle between substantially $1^{\circ}7\frac{1}{2}'$ and $2^{\circ}15'$ with respect to said axis.

3,312,136
PIANO SOUND BOARD
 Howard K. Graves, 6633 Somerset Drive, Cleveland, Ohio 44141
 Filed Oct. 22, 1965, Ser. No. 501,661
 8 Claims. (Cl. 84-192)



1. A stringed musical instrument comprising: a frame, a plurality of strings tensionally supported by said frame, bridge means coupled to said strings, stiffening means coupled between said bridge means and said frame, and sound radiator means coupled to said bridge means, part of the periphery of said sound radiator means being acoustically relatively tightly coupled to said frame and part of the periphery of said sound radiator means being acoustically relatively loosely coupled to said frame.

3,312,137
PICK FOR PLAYING STRINGED MUSICAL INSTRUMENTS
 Gerald P. Oddo, 144-34 Melbourne Ave., Flushing, N.Y. 11367
 Filed Apr. 30, 1964, Ser. No. 363,858
 2 Claims. (Cl. 84-322)

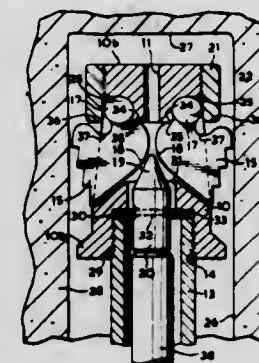


1. A pick for playing a stringed musical instrument, comprising a pair of pick blades each comprising a finger-engaging portion and a string-engaging tapered end portion, a spacing element formed of compressively resilient material and having substantially flat, opposed sides disposed between the finger-engaging portions of said blades, said blades fixedly secured against relative rotation to said opposed sides of said spacing element, with the string-engaging end portion of one of said blades offset relative to that of the other.

3,312,138
EXPANSION SHELL FOR ROCK BOLTS
 James D. Cumming, Havelock, Ontario, Canada
 Filed Mar. 2, 1965, Ser. No. 436,617
 4 Claims. (Cl. 85-66)

1. An expansion shell to secure the end of a bolt in a blind hole comprising: a body member adapted to be secured to the end of a bolt in fixed and immovable relationship thereto; an axial passage through the body member;

a plurality of apertures in the wall of the body member equally spaced about the periphery and communicating with the axial passage; an outwardly opening arcuate recess, at the end of each aperture remote from the bolt, the lower internal edge of said recess forming an inner stop shoulder of a socket; an annular retaining ring fixedly surrounding said body member and enclosing part of each recess with the edge of said ring defining an outer shoulder of a socket; a lug in each aperture adapted to engage the wall of the blind hole;



a socket engaging element on each lug received in the corresponding socket of the corresponding aperture to pivotally mount each lug on the body member for it to pivot in an axial plane, said inner stop shoulder and said ring cooperating to maintain said socket engaging element within said socket in all positions of said lug; a first surface on each lug to engage the corresponding inner shoulder and define a first position wherein the lug is substantially within the aperture; a second surface on each lug to engage the corresponding outer shoulder and define a second position wherein the lug extends out of the aperture to engage the wall of the blind hole; and means carried by the body and axially movable relative thereto in the axial passage to engage the lugs to move them from their first position to their second position.

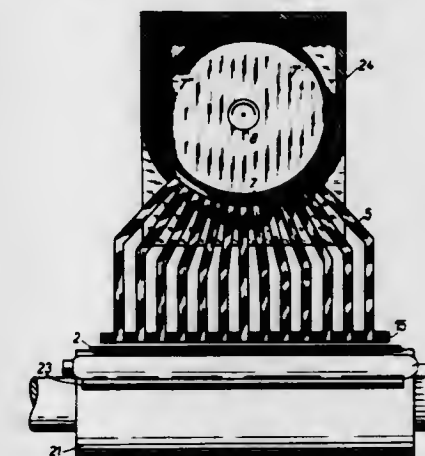
3,312,139
ANCHOR BOLT DEVICE SECURING JOINED MEMBERS
 George R. di Cristina, 1 Hayward Court, Burlingame, Calif. 94010
 Filed Dec. 3, 1964, Ser. No. 415,706
 2 Claims. (Cl. 85-74)



1. An anchor bolt device for joining together in face-to-face relation a pair of members at least one of which is sufficiently soft to be cuttable, said anchor bolt device comprising an axially aligned elongated bolt having a first threaded part at one end portion of the bolt for tight threaded engagement by one of the members to be joined, an integral second bolt portion which is elongated and threaded at the opposite end portion of the bolt, an elongated prong nut threadedly mounted rotatively on said second threaded portion of the bolt, said prong nut having at one end a tubular externally annular and internally threaded nut portion, said annular nut portion having straightly aligned elongated stiffly bendable prongs integrally extended therefrom towards said first bolt portion, said respective prongs having

uniform width and being individually and collectively annularly arcuate conformable to the annular arc of said nut portion, the prongs being relatively spaced annularly at said annular nut portion and having at the free ends thereof annularly arcuate cutter blades of substantially the same annular width as the annular width of the prongs, the said prongs being reinforced against bending intermediate the ends thereof by the transverse arc thereof and being bendable at the connection to said annular nut responsive to leverage of the length of the prongs, the said prongs having a chamfered transversely arcuate bevelled cutting edge at the free terminal end, an externally threaded tubular annular sleeve adapted for mounting slidably longitudinally of said bolt between the free end of the prongs and said first portion of the bolt, said sleeve being adapted for threadedly mounting in a bore in a second member to be joined and having its end which is more nearly adjacent to said prong nut beveled radially outwardly and toward the opposite end of the sleeve, said prong nut and the prongs thereof being threadably advanceable toward said sleeve by relative axial rotation of said nut and said second threaded portion of the bolt, whereby the free arcuate sharpened blade ends and the elongated straight portion of the annularly spaced prongs may contact the bevel of the sleeve and be thereby spread radially outward by bending at the connection with the annular nut portion while maintaining the elongated freely extended portion of the prong body aligned straight responsive to the rigidity of the annular arcuate form of the prong.

3,312,140
APPARATUS FOR MEASURING THE SURFACE AREA OF A SUBSTANTIALLY FLAT OBJECT
 Jiri Dokoupil, Krnov, Czechoslovakia, assignor to Strojvut Krnov, narodni podnik, Krnov, Czechoslovakia, a corporation of Czechoslovakia
 Filed Sept. 5, 1961, Ser. No. 135,971
 Claims priority, application Czechoslovakia, Sept. 6, 1960, 5,449/60
 4 Claims. (Cl. 88-14)



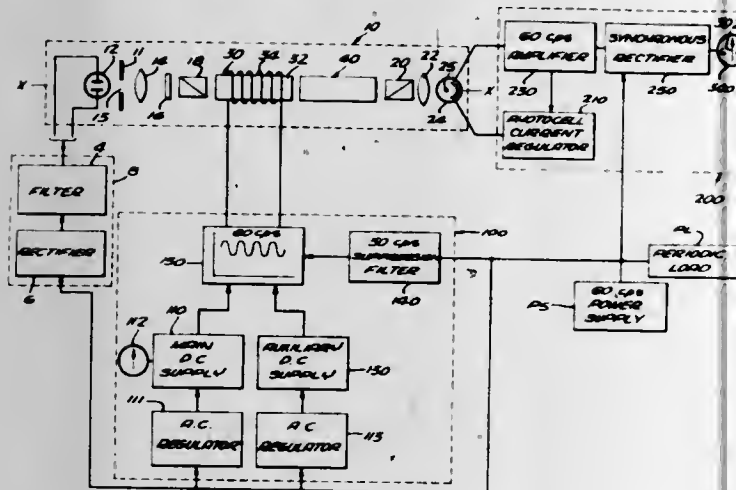
1. In an apparatus for measuring the area of a major surface of a substantially flat object having two major dimensions and a minor dimension, said dimensions being at right angles to each other, in combination, conveying means for moving said object in a predetermined path in the direction of one of said major dimensions; a source of a plurality of light beams on one side of said path, said beams extending in the direction of said minor dimension, being spaced from each other in the direction of the other one of said major dimensions, and arranged for selective interception by said object when the same is moved by said conveying means; a plurality of elongated light-conducting elements on the other side of said path, said elements having respective light-receiving longitudinal end faces adjacent said object when the same is moved by said conveying means, said end faces being spaced from

each other and aligned with respective beams in the direction of said minor dimension for receiving the aligned beams when the same are not intercepted by said object, and respective light-emitting faces spaced from the corresponding light-receiving faces in a direction away from said light source, said elements converging in a direction from said light-receiving to said light-emitting faces thereof, said light-emitting faces being closely juxtaposed and defining an arc; photo-electric cell means centered in said arc opposite said light-emitting faces; a rotary shutter interposed between said arc and said cell means for sequentially exposing the latter to light emitted from said elements; and counter means in circuit with said cell means for counting exposure signals emitted by said cell means responsive to sequential exposure to said emitted light.

3,312,141 SYSTEM FOR MEASURING OPTICAL ACTIVITY OF MATERIALS

Henry H. Cary, Pasadena, Calif., assignor to Applied Physics Corporation, Monrovia, Calif., a corporation of California

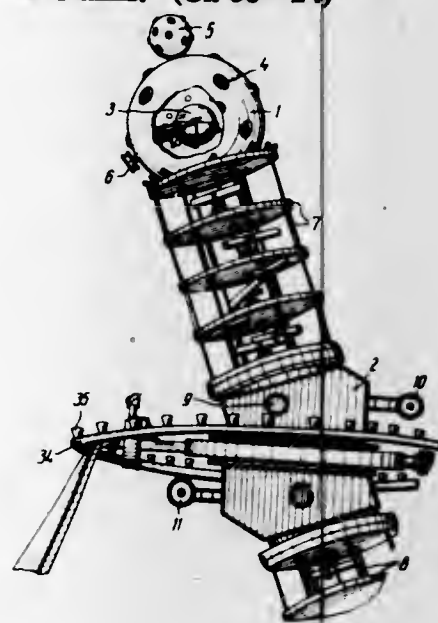
Filed Apr. 23, 1962, Ser. No. 189,337
16 Claims. (Cl. 88-14)



1. In a polarimeter: polarization-sensitive means including a photosensitive device and having a polarization axis associated therewith; a source of radiation energizable from a power source of alternating current of fundamental frequency; means for transmitting from said radiation source along an optical path to said polarization-sensitive means a plane-polarized beam of radiation, said photosensitive means responding to radiation reaching said polarization-sensitive means to produce an electric signal having a magnitude that corresponds to the magnitude of the component of the polarized radiation that is polarized in a direction parallel to said polarization axis; optical rotation producing means located on said path for rotating the plane of polarization of said beam; means for locating on said path a sample having a polarization property such that the sample rotates the plane of polarization of said transmitted radiation as it is transmitted; means acting on said optical rotation producing means to oscillate the plane of polarization of said radiation about a position crossed relative to said polarization axis at said fundamental frequency, whereby an alternating electric signal is developed by said photosensitive device at said fundamental frequency; means selectively responsive to the fundamental component of said alternating electric signal for developing an output signal having a magnitude that corresponds to the amplitude of said fundamental compo-

nent of said alternating electric signal for indicating the amount of rotation of the plane of polarization of such radiation produced by such sample; and rectifier means supplying direct current from said power source of said radiation source, said rectifier means comprising an electric filter connected to said radiation source for attenuating alternating current components having a frequency half the fundamental frequency that is supplied from said power source.

3,312,142 OPTICAL PLANETARIUM Konstantin Nikolaevich Shistovsky, Moscow, U.S.S.R., assignor to Moscovsky Planetary Filed Mar. 2, 1964, Ser. No. 348,667 4 Claims. (Cl. 88-24)



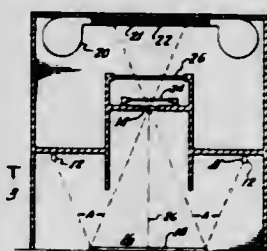
1. In an optical planetarium, an improvement for simulating a full range of solar and lunar eclipses, comprising:
 - a Sun image projector means;
 - a solar eclipse forming disc means disposed adjacent said Sun image projector means;
 - said solar eclipse forming disc means including a first annular element having a toothed periphery and a first driving means engaged with said toothed periphery for selectively rotating said first annular element;
 - a first transparent screen mounted within said first annular element and being rotatable therewith;
 - said first transparent screen carrying an arranged plurality of black shields;
 - said solar eclipse forming disc means being mounted eccentrically with respect to the optical axis of said Sun image projector means to permit said black shields to individually intercept the Sun image projected by said projector means;
 - said first driving means being operative to rotate said first annular element and said first transparent screen to bring a selected one of said black shields into interception with said Sun image projected by said projector means to thereby display a selected type of solar eclipse;
 - a Moon image projector means;
 - a lunar eclipse forming disc means disposed adjacent said Moon image projector means;
 - said lunar eclipse forming disc means including a second annular element having a toothed periphery and a second driving means engaged with said toothed periphery for selectively rotating said second annular element;
 - a second transparent screen mounted within said second annular element and being rotatable therewith;

said second transparent screen carrying an arranged plurality of colored shields;

said lunar eclipse forming disc means being mounted eccentrically with respect to the optical axis of said Moon image projector means to permit said colored shields to individually intercept the Moon image projected by said projector means;

said second driving means being operative to rotate said second annular element and said second transparent screen to bring a selected one of said colored shields into interception with said Moon image projected by said projector means to thereby display a selected type of lunar eclipse.

3,312,143 PHOTOGRAPHIC METHOD AND SYSTEM William Eugene Karow, 7367 W. 93rd Place, Los Angeles, Calif. 90045, and Lewis Edward Simpson, 255 W. 234th St., Wilmington, Calif. 90744 Filed Aug. 17, 1964, Ser. No. 390,035 16 Claims. (Cl. 88-24)

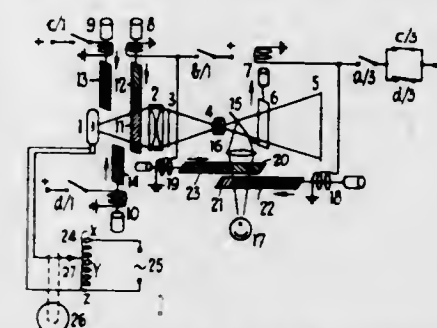


1. A photo-copying system comprising a self-contained lighting means made up of a discrete number of individual light sources located on opposite sides of a central region; a lens system having a predetermined principal focal length distance and mounted to view a generally flat object-region having a central portion generally concentric with said first-named central region; a film support member mounted to support film in a generally flat photo-recording region in image-receiving relationship with respect to said lens system and object-region; and a generally flat variable-density filter mounted in image-intercepting relationship with respect to said object region, said filter being spaced apart from said lens system at a distance at least about one-fourth of said principal focal length distance from the center of said lens system; all of said light sources being mounted in a location relative to said lens system such that the path of all light rays, emanating directly from any portion of said light sources, and corresponding reflected rays define between them angles of at least about 45 degrees; said filter having a generally butterfly-like pattern of greater density than other portions thereof, disposed with respect to the filter portion in image-intercepting relationship with respect to said photo-recording region, with the central and at least some edge portions exhibiting the least density.

3,312,144 COLOUR PHOTOGRAPHY Denis Manktelow Neale, Ilford, England, assignor to Ilford Limited, Ilford, Essex, England, a British company Filed Nov. 9, 1964, Ser. No. 409,795 Claims priority, application Great Britain, Nov. 21, 1963, 46,068/63 7 Claims. (Cl. 88-24)

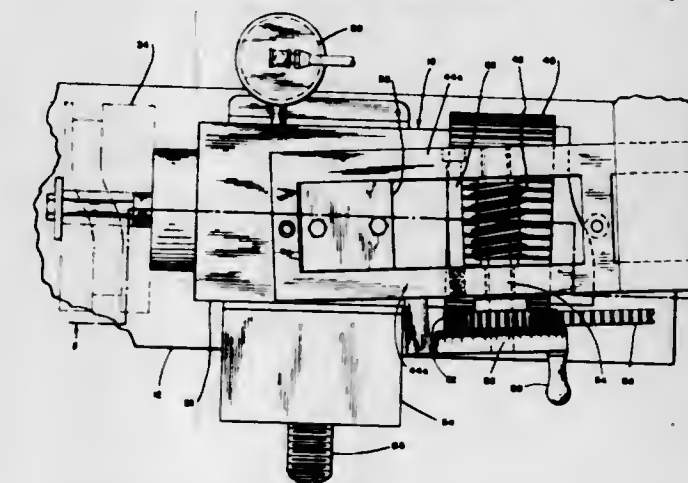
1. A method of printing multicolour transparencies onto multicolour print material selectively sensitive to light in three spectral bands which comprises illuminating the transparency with light containing at least a first spectral band, making a preliminary assessment of

the intensity of light passing the transparency in said first spectral band, initiating printing using light containing said first spectral band and a second spectral band, assessing the integral of time and light intensity passing said transparency in said second spectral band, until a predetermined integral is reached, changing the quality of printing light to exclude said second spectral band, but to include a third spectral band, assessing the integral of time and light intensity passing said transparency in



said third spectral band until a predetermined integral is reached, then excluding said third spectral band from printing light, the first spectral band being excluded from printing light after a time interval measured from initiation of printing and controlled, so that the product of said time interval and preliminary assessment of intensity of light in said first spectral band shall be substantially constant, printing terminating when all of said three spectral bands have been excluded.

3,312,145 CAM CUTTING DEVICE Earl F. Beezer, E-75 Hemlock Drive, Paramus, N.J. 07652 Filed Aug. 13, 1965, Ser. No. 479,432 11 Claims. (Cl. 90-13.9)



1. A cam forming machine comprising a rotatable cutter, a cylindrical housing, a workpiece mounting member rotatable in said housing having means thereon for mounting a workpiece for operation thereon by said cutter, means mounting said workpiece mounting member for movement toward and away from said cutter, cam control means for moving said mounting member toward and away from said cutting including a control cam and a follower one of which is mounted in a fixed position and the other of which is carried by said mounting member, means to rotate said mounting member at a definite, predetermined speed including a gear mounted on said mounting member and a driving worm engaged therewith, means rotatably mounting said worm for adjustable positioning in respect to said gear, and fluid pressure means connected to said mounting member and acting thereon to urge said follower into cooperative engagement with said control cam as said mounting member is moved by cooperative engagement thereof.

3,312,146

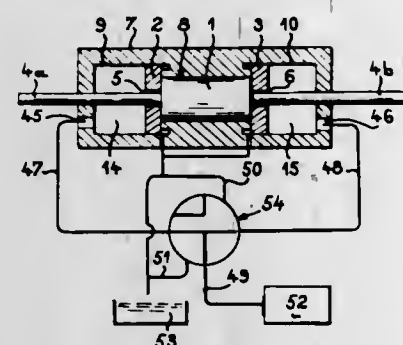
FLUID PRESSURE JACK WITH THREE STABLE POSITIONS

Emile Quéré, Charenton-le-Pont, and Jacques Philippe, Paris, France, assignors to Nord-Aviation Societe Nationale de Constructions Aeronautiques, Paris, France, a joint-stock company of France

Filed Jan. 25, 1965, Ser. No. 427,619

Claims priority, application France, Jan. 27, 1964, 961,682

9 Claims. (Cl. 91—180)



1. A double-acting differential fluid-pressure jack, especially hydraulic, with three stable positions, comprising: a cylinder with three compartments, a central compartment and two outer compartments, each of greater diameter than said center compartment; means for communication of said compartments with each other; three pistons adapted to slide individually, each fitting in one of said three compartments; means for applying and maintaining selectively a fluid under pressure in at least one of said outer compartments; means acting at the same time for putting the outer compartment opposite to said compartment connected to the fluid under pressure into communication with a zone in which exists a pressure less than that of said fluid under pressure; and means for operatively coupling said central piston to the element to be actuated.

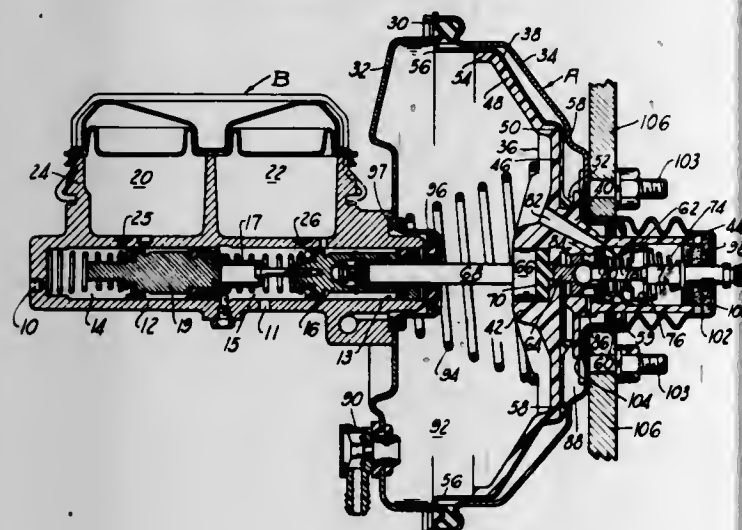
3,312,147

FLUID PRESSURE SERVOMOTOR

Robert E. Reichard, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware

Filed Mar. 7, 1966, Ser. No. 532,283

3 Claims. (Cl. 91—369)



1. In a fluid pressure servomotor: a housing having a front shell and a rear shell joined together; a movable wall within said housing having a hub with a radial flange thereon having a normal portion affixed to said hub, a first axial portion joining said normal portion to an angled portion and a second axial portion adjacent said housing and affixed to said angled portion, said hub having an annular re-

cess adjacent said normal portion and also having a hollow projection rearwardly projecting therefrom that is sealingly and slidably mounted to said housing at an opening through said rear shell, said hub further comprising a chamber that is open to said hollow projection and a boss on the forward side thereof opposite said hollow projection, said boss having an opening therein communicated to said chamber;

reaction means in said boss including means to mount a force transmitting means to said movable wall to be operated thereby and simultaneously develop force in said reaction means;

valve means in said chamber including a valve operator member carried by said hollow projection and a valve plunger operatively connected to said operator member, said plunger being supported by said hub and operatively arranged to receive reaction forces from said reaction means in said boss;

a rolling diaphragm having a peripheral bead forming the seal at the juncture of the front shell to the rear shell, and an inner bead about an opening through said diaphragm which is inserted in said recess of said hub, said diaphragm being placed on the flange of said movable wall such that said first axial portion provides a means to deter the effect of tensile forces on said inner bead to maintain a sealing contact of said diaphragm with said wall whereby said housing is divided into first and second variable volume chambers, said diaphragm cooperating with said second axial portion of said flange to provide a means to vary the effective area of said wall as said wall strokes forwardly under the influence of a pressure differential thereacross as scheduled by said valve means; and

a return spring between said front shell and said movable wall to position the latter so that beads formed on said diaphragm adjacent the first axial portion will be normally against said rear shell and said normal portion is substantially free of spring load on said wall in the released attitude.

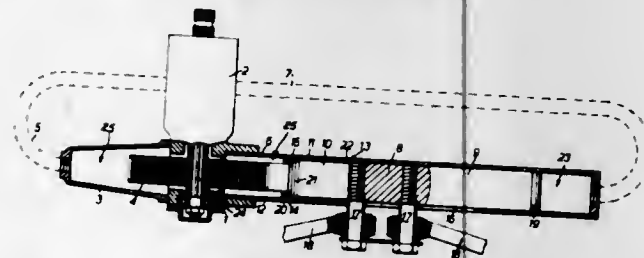
3,312,148

POWER OPERATED STEERING GEAR

Frederick J. Adams, Houghton Regis, near Dunstable, England, assignor to Hydrosteer Limited, Bedfordshire, England

Filed Mar. 10, 1965, Ser. No. 438,647

5 Claims. (Cl. 91—462)



1. In a steering mechanism for vehicles, housing means formed with an opening extending from inside said housing means to the outside thereof and further including a cylinder; a double acting piston mounted in said cylinder, said housing means and said piston providing two variable volume chambers on opposite sides of said piston respectively; a rack connected to said piston within said housing means; a pinion meshing with said rack and being operable for moving said rack and said piston in said cylinder, said pinion constituting the input component of a rack and pinion unit and said rack constituting the output component of said rack and pinion unit, said rack and pinion unit being housed within one of said variable volume chambers; means including conduit means for delivering fluid under pressure to said variable volume

chambers thereby to provide power assistance to movement of said rack; and steering motion transmission means connected to said piston and extending through said opening in said housing means.

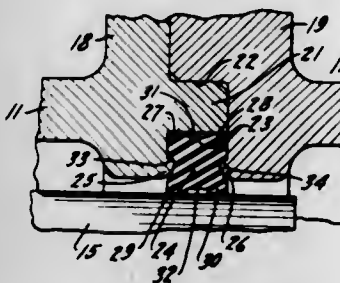
3,312,149

CYLINDER CONSTRUCTION

Lambert W. Fleckenstein, 4445 N. 135th, and Andrew J. Fleckenstein, 13650 Squirrel Drive, both of Brookfield, Wis. 53005

Filed July 7, 1965, Ser. No. 469,996

5 Claims. (Cl. 92—170)



1. A piston and cylinder for dividing a cylinder into separate pressure spaces including plural, adjoining, cylindrical sections defining a multi-section cylinder barrel, means defining the closed ends of said cylinder, a piston positioned within said barrel, ports for admitting and exhausting fluid from axially spaced portions of said sections, said adjoining sections having interfitting confronting portions defining a circumferentially extending groove opening into said cylinder, said groove having an outer wall and side walls extending generally radially of the cylinder, a seal ring positioned in said groove and having an outer surface engageable with said outer wall of said groove, said seal ring having plural spaced lobes projecting inwardly beyond the innermost portions of the cylinder wall of said sections and in sealing engagement with said piston, said ring having recesses in the sides thereof, the side walls of said sections defining said grooves including portions fitting said recesses to thereby captivate said ring, said seal ring serving to divide the space within said cylinder into separate pressure spaces on opposite sides of said ring while serving to seal the joint between said sections.

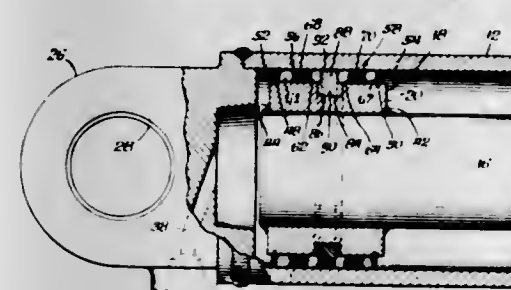
3,312,150

PISTON CONSTRUCTION

Don S. Strader, Salt Lake City, Utah, assignor to International Harvester Company, a corporation of Delaware

Filed Nov. 18, 1964, Ser. No. 412,035

4 Claims. (Cl. 92—252)



1. A piston assembly for a reciprocating hydraulic motor comprising:
(a) a piston rod,
(b) a piston secured to said rod,
(c) said piston having a groove around its periphery,
(d) a split ring with a first portion positioned in said groove and a second portion extending radially outwardly beyond the surface of said piston, said second portion having a width less than the width of said first portion,

(e) at least one bearing ring on said piston engaging said split ring,
(f) sealing ring means engaging said bearing ring for providing a hydraulic fluid seal between said piston and a cylinder wall of said motor, and
(g) additional ring means for locking said sealing ring means on said bearing ring.

3,312,151

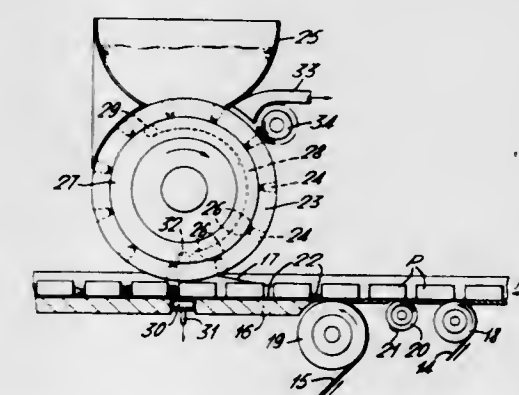
APPARATUS FOR MANUFACTURING COMPOSITE FILTER PLUGS

Desmond Walter Molins, London, England, assignor to The Molins Organisation Limited, London, England, a corporation of Great Britain

Filed Oct. 1, 1964, Ser. No. 400,753

Claims priority, application Great Britain, Oct. 8, 1963, 39,655/63

7 Claims. (Cl. 93—1)



1. Apparatus for manufacturing composite filter rod containing portions of powdered filter material, comprising a powder hopper, a rotatable transfer member having pockets arranged to receive powder from said hopper, means for feeding a stream of filter plugs with gaps between successive plugs at regular intervals on to a continuous wrapper and feeding said wrapper, carrying said plugs, beneath said transfer member, and means for rotating said transfer member in synchronism with the feeding of said plugs so that as each gap passes beneath the transfer member one of the pockets is travelling immediately above said gap, including means for perforating the wrapper below each gap before the gap passes beneath the transfer member and means for applying suction to each gap through the perforated wrapper as that gap passes beneath the transfer member so as to accelerate movement of powdered filter material from the pockets to the gaps.

3,312,152

APPARATUS FOR THE MANUFACTURE OF FILTER PLUGS

David Theodore Nelson Williamson, Deptford, London, England, assignor to The Molins Organisation Limited, London, England, a corporation of Great Britain

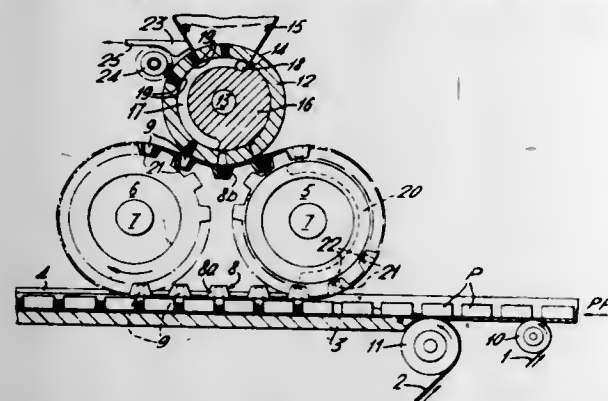
Filed Oct. 1, 1964, Ser. No. 400,862

Claims priority, application Great Britain, Oct. 8, 1963, 35,658/63

4 Claims. (Cl. 93—1)

1. Apparatus for producing composite filter rod containing portions of powdered filter material, comprising means for feeding a stream of filter plugs with gaps between successive plugs at regular intervals on to a continuous wrapper, means for advancing said wrapper, an endless flexible band mounted so that a lower run thereof extends parallel to and immediately above said stream of plugs on said wrapper, said band having a plurality of powder-receiving pockets, a rotatable transfer member mounted above and in contact with an upper run of said band, said transfer member having a plurality of similar powder-receiving pockets, a powder hopper arranged to allow powder to descend on to said transfer member, and

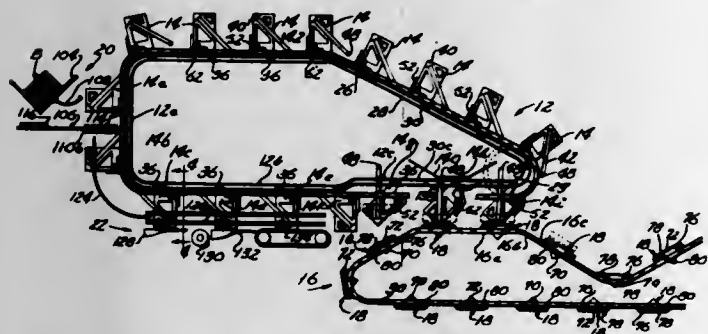
common driving means connected to drive the wrapper advancing means, the band and the transfer member in synchronism so that each of the pockets of said band



travels beneath the transfer member in register with one of the pockets of the latter and thereafter each pocket of the band travels along said lower run in register with one of said gaps.

3,312,153 METHODS AND MACHINES FOR FORMING CARTONS

Robert J. Hickin, Seville, Ohio, assignor, by mesne assignments, to Packaging Corporation of America, a corporation of Delaware
Filed May 20, 1964, Ser. No. 368,962
11 Claims. (Cl. 93-44)



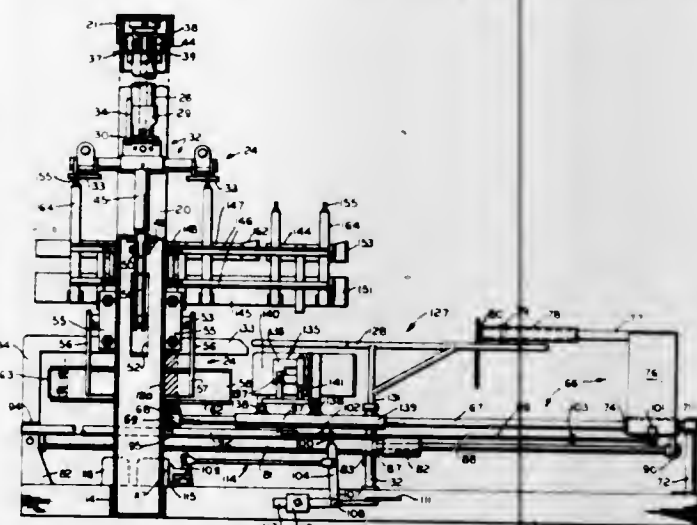
4. In a machine for forming cartons having closure flaps, a first carton blank carrying member movable along a predetermined path, means cooperating with said member for folding and securing closure flaps of a carton blank carried on said member as said member is moved along such path, means for changing the attitude of said member and a blank thereon relative to the direction of movement of said member while travelling along a portion of said path, means for ejecting a carton blank from said first member while in its changed attitude, and a second carton blank carrying member for receiving and retaining an ejected blank in its changed attitude.

3,312,154 CARTON BOTTOM SEALING MACHINE

Frank D. Pierce, Salinas, Calif., assignor to Klemark, Inc., Salinas, Calif., a corporation of California
Filed Feb. 18, 1965, Ser. No. 433,653
4 Claims. (Cl. 93-49)

1. A carton bottom sealing machine for paper cartons and the like comprising in combination, a base structure having a main longitudinal member and a main transverse member, a vertical transverse frame assembly having vertical members secured at each end of said main transverse member and a horizontal top portion connecting the top ends of said vertical members to form a rigid frame, longitudinal guide rods mounted above said longitudinal base member with said rails all in the same horizontal plane, a carton pusher assembly mounted for slidable controlled movement on said rails, a carton receiving platform rigidly mounted on said base to receive a carton with its bottom end flaps folded inwardly and resting on

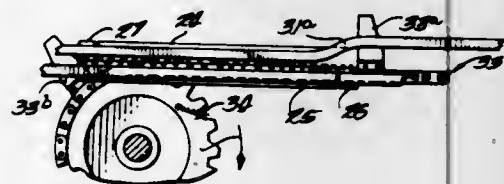
said platform and its bottom side flaps extended downwardly at each side thereof, adjustable guide means mounted on said vertical frame members for directing a carton into the sealing station within said frame, adjustable glue means for applying an adhesive to the inner faces of the bottom side flaps of a carton during passage to the sealing station, a compression assembly mounted for vertical movement between said vertical frame mem-



bers at the sealing station, cam and lever means including a pair of anvils operable in cooperative movement upwardly to approach the compressor assembly in its downward movement to near contact and in the reverse direction with its upward movement, means for operating said machine in cooperative planned sequence, and control means mounted for movement with said carton pusher assembly for controlling the sequence of one complete cycle.

3,312,155 METHOD AND APPARATUS FOR ERECTING A CARTON

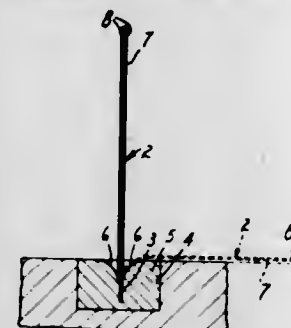
Robert J. Hickin, Seville, Ohio, assignor, by mesne assignments, to Packaging Corporation of America, a corporation of Delaware
Filed Dec. 1, 1964, Ser. No. 415,042
12 Claims. (Cl. 93-53)



1. A method of erecting a collapsed flat-folded tubular member having a pair of first panels foldably connected to one another along corresponding opposed first peripheral segments by a pair of second panels, second peripheral segments of said first panels disposed normal to and interconnecting the foldline connections between said first and second panels being of greater dimension than the corresponding peripheral segments of said second panels, and an elongated flap foldably connected to the second peripheral segment of a least one of said first panels; said method comprising supporting one flat side of the collapsed tubular member in a predetermined plane whereby the first panel to which said flap is connected and one second panel overlie the other panels, folding said flap to an angular position with respect to the plane of support, and exerting a compressive force on the periphery of said collapsed tubular member in a direction substantially parallel to the axis of fold of said folded flap while the overload first panel remains in said plane of support to effect spaced substantially registered relation of said first panels.

3,312,156 HIGHWAY MARKING DEVICE

Mark D. Pellowski, 411 Hamilton,
Winona, Minn. 55987
Filed July 5, 1966, Ser. No. 564,498
3 Claims. (Cl. 94-1.5)



1. A highway marking and warning device comprising a narrow elongated strip of arcuate spring steel, means for securing and supporting one end of the strip in the roadway with the width of the strip being transverse to the length of the roadway and the height of the strip above the roadway being sufficient to strike the underparts of a vehicle whereby to produce a warning noise, said supporting and securing means including arcuate surfaces for supporting the strip when flexed.

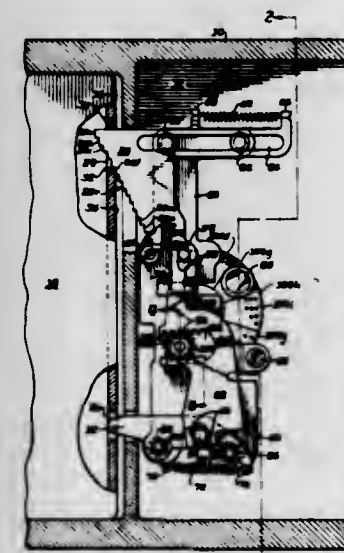
3,312,157 COMPOSITIONS AND METHODS OF USE OF ATACTIC POLYOLEFINS

Salvatore G. Coscia, Philadelphia, Pa., assignor to De Kalb Industries, Inc., King of Prussia, Pa., a corporation of Pennsylvania
Filed Feb. 2, 1965, Ser. No. 429,923
8 Claims. (Cl. 94-9)

1. A road construction comprising a base of granular material, an intermediate layer, consisting essentially of atactic polyolefin and asphalt in a ratio of about 25-50 parts by weight polyolefin and 75-50 parts by weight asphalt, and a surface layer comprising an asphalt composition.

3,312,158 FILM SPEED SENSING MECHANISM FOR CARTRIDGE CAMERA

David M. MacMillan, Wilmette, and Arthur C. Mueller, Niles, Ill., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 20, 1964, Ser. No. 390,811
5 Claims. (Cl. 95-10)



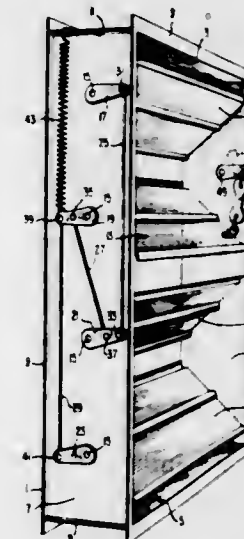
1. In a camera having a housing, a cartridge chamber and an automatic exposure control system including a

photocell, the exposure control system being adjustable in accordance with the speed of the film to be exposed in the camera, the film being supplied in a cartridge insertable in the cartridge chamber, said cartridge having a first film speed notch, and further being adapted to have a second supplemental notch therein, the improvement comprising:

plate means movable in said housing;
first feeler means operably connected to said plate means;
biasing means for biasing said first feeler means toward said cartridge chamber;
second feeler means operably connected to said plate means; and
variable density means operably connected to said plate means for movement therewith in response to movement of said plate means by said feeler means; said variable density means being effective to vary the amount of light striking the photocell in accordance with the movement imparted to said plate means by said feeler means when engaged by at least one of said notches, whereby said automatic exposure control system will be automatically compensated for variations in film speeds in accordance with the sizes and positions of notches in film cartridges adapted to be brought into operative engagement with said feeler means.

3,312,159 COMBINATION FIRE AND VOLUME DAMPER

Wyley Shepherd, 1943 NW. 1st Court,
Miami, Fla. 33136
Filed Apr. 14, 1965, Ser. No. 448,080
7 Claims. (Cl. 98-1)

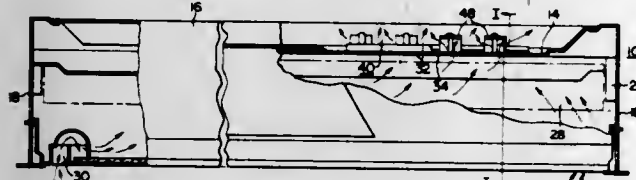


1. A fire damper comprising a frame having upright sides and a horizontal top and bottom, first, second, third and fourth blades journaled at their ends on trunnions extending through at least one of said sides of the frame for rotation about horizontal axes between open and closed positions, first, second, third and fourth levers in unitary assembly with said trunnions of said respective blades on one outer side of said frame, a push link interconnecting said first and third levers remote from their trunnions, a pull link interconnecting said second and third levers remote from their trunnions, a pull link interconnecting said second and fourth levers remote from their trunnions, means continuously resiliently acting on said links and levers in a direction to place said pull links in tension and said push link in compression, and fusible link means placed in tension by said resiliently acting means.

3,312,160 ADJUSTABLE AIR FLOW DAMPER FOR A LUMINAIRE

Carle E. Rackley, Westlake, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 30, 1965, Ser. No. 517,659
7 Claims. (Cl. 98-40)



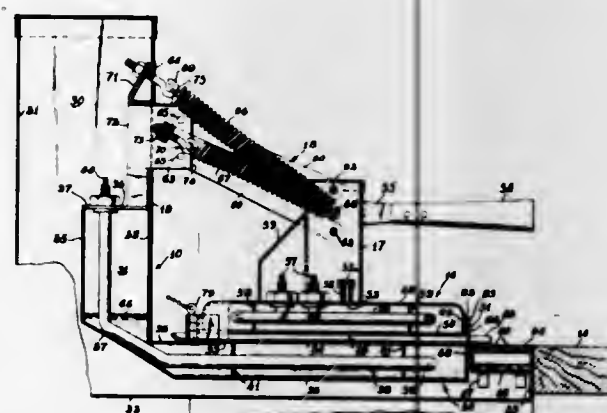
1. An air-handling luminaire comprising:
 - a housing having a top member and walls affixed thereto, a bottom light opening generally defined by said walls;
 - an at least partially light transmitting closure member disposed within said bottom opening and forming an enclosure with said housing;
 - lampholder means mounted on said housing and adapted to support heat generating light-source means within said enclosure;
 - said enclosure having an air entrance means provided along at least one edge of said light transmitting closure member;
 - a portion of said housing top member having a plurality of air exit slots arranged generally parallel with one another with bridge portions formed therebetween;
 - a unitary adjustable damper positioned exterior to said housing, said damper comprising a generally planar damper base portion and a plurality of raised spaced damper cover portions;
 - said damper base portion provided with a plurality of generally parallel air exit slots and bridge portions which generally correspond in shape and spacing to the exit slots and bridge portions provided in said housing top member, said bridge portions of said housing top member and said bridge portions of said damper base portion contiguously and slidably engaging to permit the adjustment of overlap between the exit slots in said housing top member and the exit slots in said damper base portion;
 - said damper cover portions raised a predetermined distance directly over and covering the air exit slots provided in said damper base portion and in said housing top member into said enclosure formed within said luminaire; and
 - means for permitting limited slidable movement of said damper on said housing top member from a full open position where the slots provided in said damper base portion substantially overlap the slots provided in said housing top member to a full closed position where the slots provided in said housing top member are substantially overlapped by said bridges in said damper base portion.

3,312,161 APPARATUS FOR GRILLING FOOD

Frank S. Nanna, 2825 Malabar Ave., Santa Clara, Calif. 95051
Filed Nov. 6, 1963, Ser. No. 321,839
1 Claim. (Cl. 99-377)

Apparatus for cooking food at elevated temperatures comprising a cabinet, including a cooking assembly having a horizontal section and a vertical section disposed at one end of the horizontal section, a lower container having connected horizontal and vertical chambers with

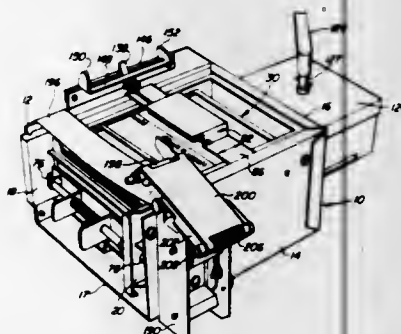
said vertical chamber located in said vertical section, a cooking plate on the upper horizontal wall of the horizontal chamber of said lower container, electric heating means in said horizontal chamber on said lower container and disposed below and close to said cooking plate, oil in said lower container immersing said electric heating means to be heated thereby, said oil filling the region of said horizontal chamber of said lower container between said heating means and said first cooking plate and extending partially into the vertical chamber of said lower container to expand therein, an upper container, said upper container movably disposed above



said cooking plate and having the bottom wall thereof defined by a second cooking plate, second electric heating means in said upper container, oil in said upper container substantially immersing said second electric heating means in the said upper container and heated thereby, and means for supporting said upper container from the vertical section of said cabinet for moving said upper container from a position in which said first and second cooking plates are spaced apart for insertion of food to be cooked therebetween and to a position wherein said first and second plates contact opposite surfaces of the food positioned therebetween.

3,312,162 PRINT PLATE MAGAZINE AND FEEDING MEANS IN ADDRESS PRINTING MACHINE

Glen V. Likens, 1525 Windsor Drive, Gladstone, Oreg. 97027
Filed Oct. 12, 1964, Ser. No. 403,018
11 Claims. (Cl. 101-54)



1. In a printing machine for printing sheets by means of printing plates;
 - a plurality of flat printing plates,
 - means for retaining said plates in a pair of vertical side-by-side stacks with said plates disposed horizontally,
 - plate moving means for moving the bottom plate of one stack and placing it beneath the bottom of the other stack,
 - plate moving means for moving the top plate of said other stack and placing it upon the top of said one stack,
 - means for effecting simultaneous operation of both said plate moving means,

and printing means positioned adjacent one of said stacks and movable into superposed position to an end plate of said one stack to effect printing from said end plate upon a sheet positioned thereon.

ERRATUM

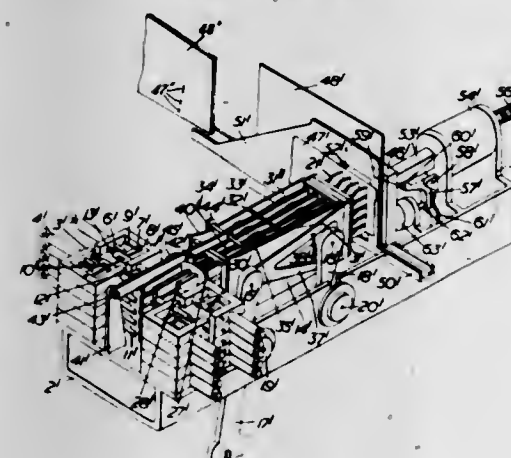
For Class 101-93 see:
Patent No. 3,312,174

3,312,163 CODE SETTING DEVICE FOR PRINT ELEMENTS ON RECIPROCATING CARRIAGE

Lucien Hendrik Muijsboudt, Kapellen, Belgium, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 20, 1964, Ser. No. 412,719

Claims priority, application Netherlands, Dec. 3, 1963, 301,304

13 Claims. (Cl. 101-93)



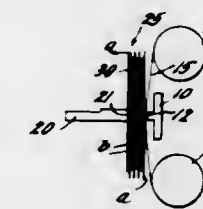
1. Printer apparatus comprising:
 - a plurality of printing elements which are normally in a rest position;
 - a printing medium arranged in a printing position;
 - a code setting device having means for registering and transferring a code to said printing elements;
 - means for bringing said printing elements into a set position, said means including a reciprocating carriage for mounting and guiding said plurality of printing elements, and said carriage being positioned such that when said printing elements are in a set position at least one of said printing elements is set, according to said code, by said setting device in a set condition; and
 - a first holding means for holding the set printing elements in said set condition, whereby during the following movement of said carriage toward said printing position, said first holding means is operated to transfer said set printing elements into a printing condition to print on said printing medium.

3,312,164 PRINTING DEVICES

John P. Sebring, Lewiston, N.Y., assignor to Moore Business Forms, Inc., Niagara Falls, N.Y., a corporation of Delaware

Filed Feb. 4, 1966, Ser. No. 525,074
8 Claims. (Cl. 101-93)

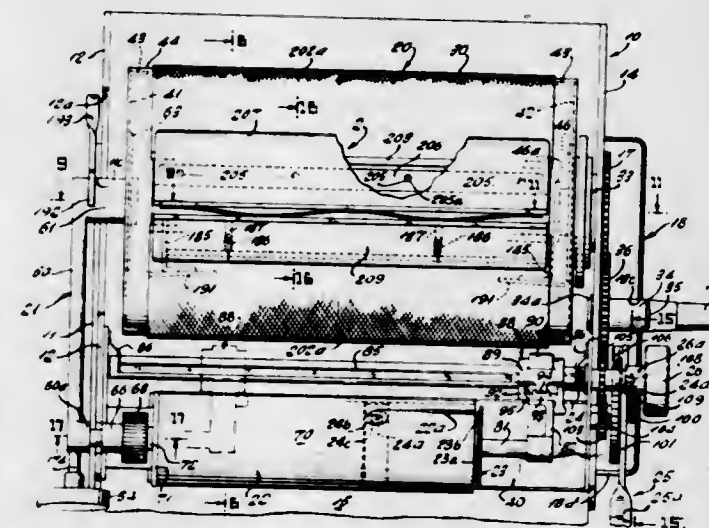
1. Printing apparatus comprising a type member having a surface formed to present a type character, means for supporting a sheet of record material with its surface to be printed presented in front of said type surface, hammer means for delivering a blow to the rear surface of said record material to force the front face against said type surface to imprint a character thereon, laminar means supported in front of said hammer and between



means comprising multiple layers of thin plastic sheeting, said plastic sheeting being a polyester film made from polyethylene terephthalate, the polymer formed by the condensation reaction of ethylene glycol and terephthalic acid.

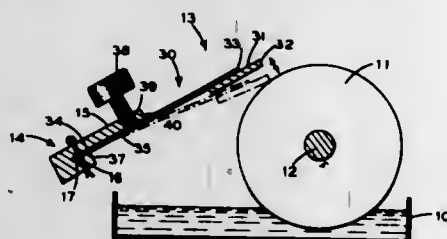
3,312,165 INK CARTRIDGE MOUNT AND INTERNAL INKER FOR ROTARY STENCIL DUPLICATOR

Carl S. Strom, Purdys, N.Y.
(4½ Cromwell Place, White Plains, N.Y. 10601)
Filed Oct. 3, 1962, Ser. No. 228,149
7 Claims. (Cl. 101-119)



1. In a duplicating machine comprising a main frame, paper supply means and a printing cylinder, the improvement which comprises a sub-assembly removably mounted on said frame and including the printing cylinder, an ink cartridge mount, and conduit means communicating the ink cartridge mount with the inside of the printing cylinder for delivery of ink from a cartridge in said cartridge mount to within said cylinder, distributing means within said cylinder for distributing ink over internal surface of said drum, the distributing means including an ink receiving conduit for receiving ink delivered to the printing cylinder and a distributing conduit communicated with the ink receiving conduit for the distribution of ink over the internal surface of the cylinder, said distributing conduit being disposed axially within the cylinder and having an ink inlet, a plurality of axially extending partitions dividing the distributing conduit into a plurality of axially extending compartments, means defining at least one opening in each of said partitions for communicating said compartments for series flow of ink therethrough, the openings in each partition being distributed over a greater length thereof from partition to partition in the direction of flow from the said ink inlet, whereby to obtain improved distribution of the ink, and ink outlet means for delivering ink from the last of said compartments in the direction of flow of ink through the distributor.

3,312,166
ADJUSTABLE WIPER BLADE ASSEMBLY FOR A
ROLLER FOUNTAIN DAMPENER
 Frank Gentile, 1136 Ashley Drive,
 Valley Stream, N.Y. 11580
 Filed June 23, 1966, Ser. No. 559,892
 1 Claim. (Cl. 101-148)

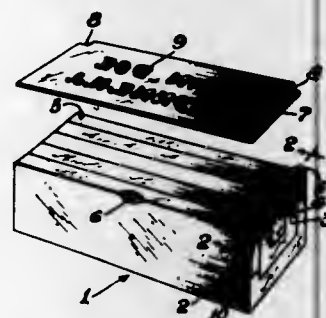


In a printing press having an elongated water fountain roller for transferring dampening fluid to a printing surface, stop means for selectively regulating the amount of dampening fluid retained on said roller in various laterally related zones along the length of said roller, said stop means comprising an elongated rigid mounting bar extending parallel to said roller, and a plurality of stop members mounted on said bar in laterally adjacent relation and extending toward said roller, each stop member comprising a thin flat spring member and a stop element on one end portion of said spring member for making contact with a circumferential portion of said roller of limited axial extent, said mounting bar being formed with longitudinally extending groove means on one edge thereof for receiving therein the other end portions of said spring members, said mounting bar including a first bar portion at said groove means having a longitudinally extending fulcrum edge and a second bar portion at said groove means having a longitudinally extending marginal edge portion projecting beyond the fulcrum edge of said first bar portion, each of said spring members including an inner portion received and anchored within the groove means of said mounting bar, an intermediate portion extending beyond the fulcrum edge of said first bar portion and disposed in opposed relation to the underside of the marginal edge portion of said second bar portion, and an outer portion extending beyond the outer edge of the marginal edge portion of said second bar portion, said stop element being secured to said outer portion of said spring member; and adjustable means on said second bar portion for engaging the intermediate portion of the respective spring members for adjustably varying the deflection of said intermediate portions of said spring members about the fulcrum edge of the first bar portion to vary the contact pressure of the respective stop elements relative to said roller, wherein said spring members are slidably mounted in the groove means of said mounting bar, and means on said mounting bar for retaining each of said spring members against removal from the groove means of said mounting bar, said retaining means comprising a plurality of longitudinally spaced pairs of aligned openings in said first and second bar portions, an opening in the inner portion of each spring member for registration with a pair of said aligned openings when said spring member is received in the groove means of said mounting bar, and a locking pin for each pair of aligned openings in said first and second bar portions and the opening in the spring member in registry with a pair of said aligned openings.

3,312,167
MAGNETIC PRINTING PLATE HOLDER
 Theodore K. Lash, 37 W. 9th St., Bayonne, N.J. 07002
 Filed May 6, 1966, Ser. No. 548,094
 3 Claims. (Cl. 101-382)

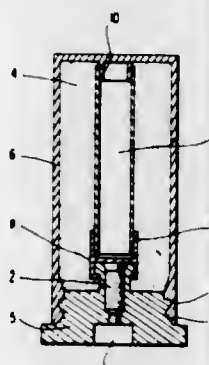
1. A magnetic printing plate holder comprising a rectangular block of rigid non-magnetic material formed with a longitudinal groove; a U-shaped permanent mag-

net fixedly positioned in said groove, the poles of the magnet being exposed along the entire longitudinal groove; a strip of rigid non-magnetic material fixedly positioned within the groove of the magnet, said exposed poles and said non-magnetic material forming a flat embossed plate receiving surface; a magnetizable embossed printing plate formed to the same area dimensions



as the flat plate receiving surface, two pin-head stops positioned on each of the corners of one of the sides of the flat embossed plate receiving surface of the holder and in which the magnetizable printing plate is formed with notches in each of the corners of one of the sides to provide a guide for positioning the plate upon the holder.

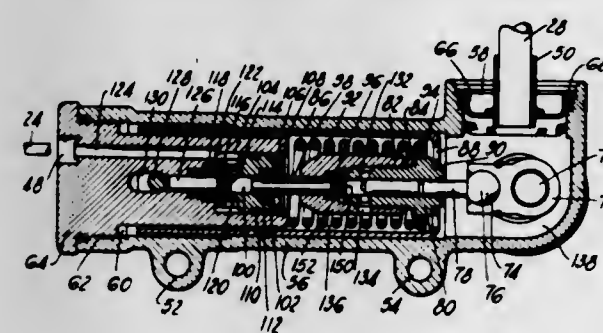
3,312,168
IGNITION DEVICE
 Hans Stadler, Nurnberg, and Heinz Gawlick, Furth, Bavaria, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
 Filed Sept. 8, 1964, Ser. No. 395,616
 Claims priority, application Germany, Sept. 7, 1963, D 42,426
 4 Claims. (Cl. 102-86.5)



1. A surface igniter provided with ignition means for igniting incendiary compositions, comprising a cartridge case having a tubular case shaft closed at its forward end and a bottom piece closing the rearward end of said tubular case shaft; a readily destructible axially extending hollow tubular body means within said cartridge case operable to form a substantially annular sealed chamber between said cartridge case and said body means; an axially extending firing channel formed by and within said body means consisting solely of gases, and extending for substantially the entire length of said tubular case shaft; a rapidly ignitable pyrotechnical mixture within said cartridge case substantially filling said substantially annular sealed chamber; ignition means located adjacent the rear of said body means for producing an ignition flash that will first enter and fill said firing channel, and then pierce and destroy said body means to ignite said pyrotechnical mixture substantially simultaneously over the entire internal surface adjacent said body means; said hollow tubular body means including a tubular member and a separate cup-shaped member telescopically connected with the rearward portion of said tubular member; said bottom piece having a forwardly extending projection;

said cup-shaped member being telescopically connected with the forward portion of said projection; and said case shaft consisting of a readily destructible material.

3,312,169
PUMP
 Harold B. Schultz, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
 Filed Jan. 18, 1965, Ser. No. 426,116
 6 Claims. (Cl. 103-37)

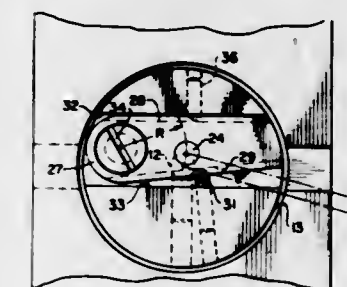


1. A pump comprising:
 a housing having an internal bore which is threaded at one end thereof;
 a reciprocating piston operatively connected in said housing at the end opposite that which is threaded;
 a cylinder assembly operatively connected to said housing by said threads thereon including,
 a threaded plug member having a discharge passage and a discharge port communicated therewith which is communicated with an annular discharge chamber, said plug also having an elongated slot therein,
 a sleeve operatively connected to said plug by a cross pin that extends through said elongated slot of said plug,
 a cylinder block and head assembly operatively connected to said plug by a spring that causes abutting relationship of said block with said sleeve, said cylinder block and head assembly having an internal bore receiving said reciprocating piston, said internal bore of said cylinder block and head assembly being open radially to a chamber formed within said sleeve about said cylinder block and head assembly which radial opening is located to be open by said piston when said piston is at the bottom of its reciprocatory motion to allow fluid to enter said bore ahead of said piston,
 a discharge valve means operatively associated with said bore in said cylinder block and head assembly which is operable upon the creation of a predetermined pressure within said bore to discharge fluid from said cylinder block and head assembly, and
 a tubular means of equal diameter as said piston, said tubular means operatively connecting said cylinder block and head assembly to said annular chamber in said plug.

3,312,170
ECCENTRIC WITH VARIABLE STROKE
 Harrison D. Brallsford, 670 Milton Road,
 Rye, N.Y. 10580
 Filed Oct. 22, 1965, Ser. No. 500,624
 5 Claims. (Cl. 103-38)

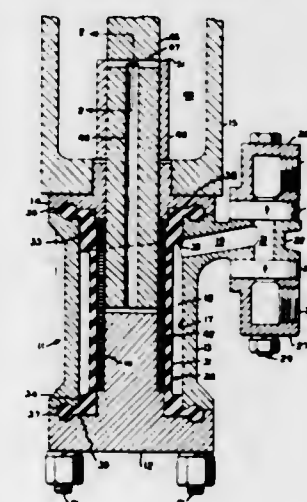
1. A variable rate pump comprising: a motor having a shaft having a first axis; a disc attached rigidly to one end of said shaft to rotate therewith; a pair of abutments on the surface of said disc facing away from said shaft, said abutments defining a slot in said surface of said disc; a pivotal member; a pivot screw attaching said pivotal member to said disc in said slot, the axis of said

screw being offset with respect to said first axis; a crank pin rigidly attached to said pivotal member and extending therefrom in a direction away from said disc and having an axis parallel to said first axis; a pair of set screws, each of said set screws extending through one of said abutments and engaging opposite sides of said pivotal member to clamp said pivotal member to a specific orientation within said slot, the distance between said pivot screw and said crank pin being substantially



equal to the distance between said first and said pivot screw axis, whereby pivoting of said pivotal member adjusts the crank pin stroke; a connecting rod rotatably mounted on said crank pin; a piston attached to said connecting rod to be moved thereby; and a cylinder and diaphragm means cooperating with said piston to provide a fluid pump, the amount of fluid pumped per revolution of said disc being determined by the setting of said pivotal member with respect to said disc.

3,312,171
PUMPS
 Francis H. Cary, Hope, R.I., assignor to The New York Air Brake Company, a corporation of New Jersey
 Filed Oct. 12, 1965, Ser. No. 495,105
 5 Claims. (Cl. 103-44)

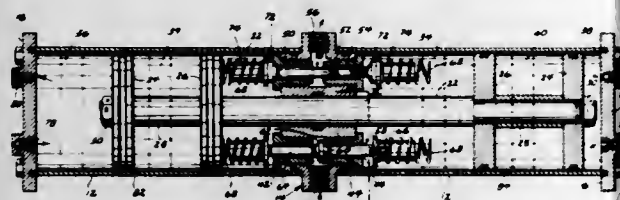


1. A one-piece pumping element made of an elastomer and comprising
 (a) an elongated tubular body of circular cylindrical shape having a pair of steps on its outer periphery that define a central diaphragm portion of one diameter and a pair of end lands of larger diameter, the transverse face of one land being inclined with respect to the longitudinal axis of the body;
 (b) a pair of sealing rings coaxial with and encircling the body, one ring being located adjacent each end of the body; and
 (c) radially extending web members connecting the rings with the lands.

3,312,172

SWITCHING VALVE

Carroll D. Harklan and Roger L. Harklau, Gowrie, Iowa, assignors to Albert W. Vaudt, Gowrie, Iowa
Filed Dec. 2, 1964, Ser. No. 415,405
14 Claims. (Cl. 103—51)



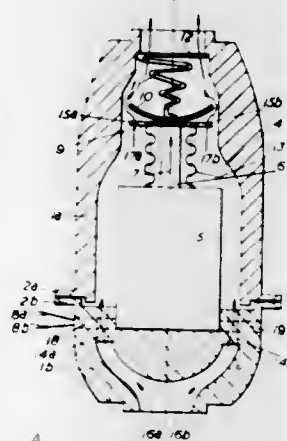
1. In a switching valve, comprising, a housing, a valve body disposed in said housing, a chamber in said housing on each side of said valve body, said valve body having a pair of elongated passageways extending therethrough, each of said passageways being in communication between each of said chambers, said valve body having an inlet opening in communication with one of said passageways, said valve body having an outlet opening in communication with the other of said passageways, means in said one passageway for alternately at times placing one chamber in communication with said inlet opening and closing said other chamber to communication with said inlet opening, and at other times placing said other chamber in communication with said inlet opening and closing said one chamber to communication with said inlet opening, means in said other passageway for alternately at times placing one chamber in communication with said outlet opening and closing said other chamber to communication with said outlet opening, and at other times placing said other chamber in communication with said outlet opening and closing said one chamber to communication with said outlet opening, actuating means for coordinating said means in each of said passageways for at times said one chamber to be in communication with said inlet opening and said other chamber in communication with said outlet opening, and at other times said one chamber to be in communication with said outlet opening with said other chamber in communication with said inlet opening, said one passageway having an enlarged cavity intermediate its ends and thereby defining passageway portions on opposite sides thereof, and a closure element disposed in said cavity, said closure element adapted to move alternately between a first position in sealing engagement with one passageway portion to a second position in sealing engagement with the other passageway portion, said other passageway having seat means at opposite ends thereof, and said means in said other passageway including an elongated element extending the length of said other passageway and having closure elements on opposite ends, said elongated element being adapted to move alternately in one direction placing one of said closure elements in sealing engagement with the adjacent seat means and then in the opposite direction to place the other closure element in sealing engagement with the adjacent seat means, said closure element and elongated elements each having a portion extending outwardly of said valve body, and a spring means disposed on each of said portions

for engagement by said actuating means, and said closure element and said elongated element being movable completely independently of each other.

3,312,173

ELECTRIC CIRCULATING PUMP

Claude Michel Brunau and Rolland Roger Désiré Jean Echard, Paris, France, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed June 17, 1965, Ser. No. 464,674
Claims priority, application France, June 19, 1964, 978,846, Patent 1,407,851
1 Claim. (Cl. 103—53)



A fluid pump comprising a housing formed to provide a chamber therein with a fluid inlet and a fluid outlet, a solenoid with a reciprocable plunger placed in said chamber, said solenoid being adapted when energized to move said plunger axially in said chamber, a perforated circular plate and an elastic disc mounted at the end of the plunger, a return spring for bringing back the plunger to its original position when the solenoid is de-energized, and an elastic bellows fixed between said circular plate and an end of said solenoid, so that when the plunger moves in a first direction upon energization of said solenoid, the elastic disc is pressed by the fluid pressure against the plate and the column of the liquid moves in the same direction, and when the plunger moves in the opposite direction upon de-energization of said solenoid, said disc deflects and the column of liquid flows freely through the holes of the plate.

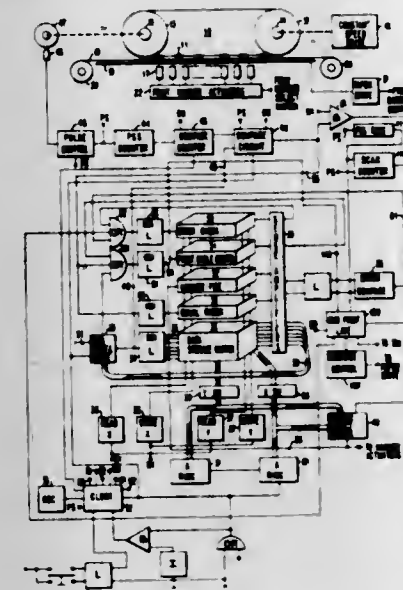
3,312,174

VARIABLE CYCLE CONTROL SYSTEM FOR A HIGH SPEED PRINTER

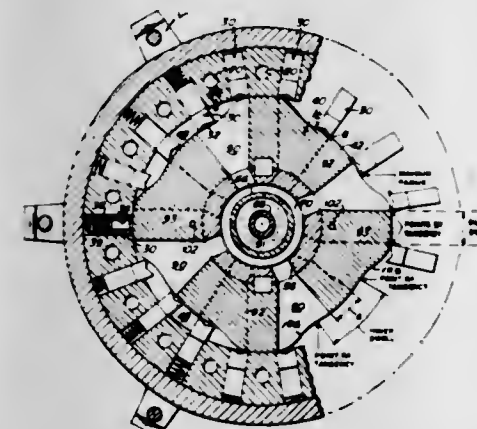
James M. Cunningham, Endwell, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 23, 1965, Ser. No. 516,033
6 Claims. (Cl. 101—93)

1. In a control circuit for a printer having carriage control means for advancing a document past a print line having a plurality of impression devices for forming impressions from character type on a moving type means at different ones of a plurality of print positions in accordance with data in data storage means and having compare means for generating signals for operating the impression devices in accordance with an identity between a character on the type means and a character in storage for each print position characterized by:
a cycle control storage device operated by signals from the compare means for indicating in which position characters are printed,

means controlled by said cycle control storage device for producing a control signal to terminate a printing operation and effect operation of the carriage control means to advance the document in response to completion of printing in all positions to be printed, and



3,312,175
FLUID POWER CONVERTER
Albert A. Schmitz, 5217 Durand Ave.,
Racine, Wis. 53406
Filed Aug. 27, 1964, Ser. No. 392,392
4 Claims. (Cl. 103—121)

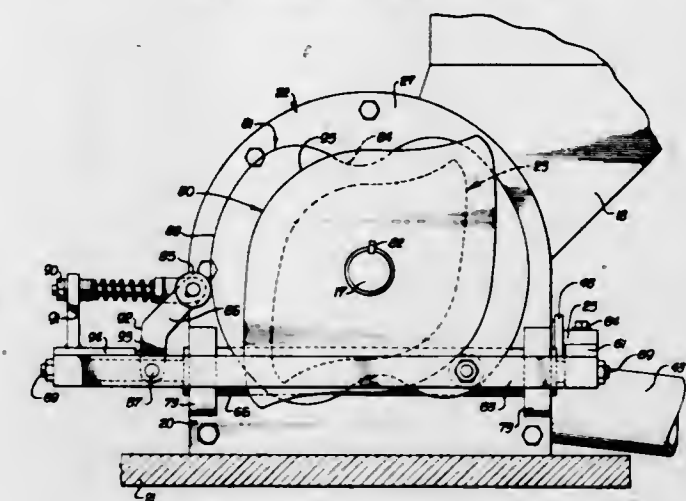


1. A fluid power converter comprising a stator having a contoured periphery, a rotor encircling said stator and defining an annular chamber therewith, means mounting said rotor for rotation about said stator, said rotor including, an annular ring, a plurality of equally and closely spaced separate segments extending inwardly of said ring and held together by said ring and defining a plurality of vane receiving channels, a vane in each of said channels, spring means in each of said channels biasing the inner ends of said vanes to engagement with said contoured surface, brace means along each of said channels forming at least one space therebetween, said brace means being of sufficient depth with respect to the depth of said channel to preclude deflection of the segments forming said channel under fluid pressure exerted thereon, and said vanes having at least one notch along the length thereof receiving said brace means.

3,312,176

PUMPING MACHINE FOR HEAVY FLOWABLE CEMENTITIOUS MATERIALS

Eugene W. Hacker, Los Angeles, Calif., assignor to California Decking, Commerce, Calif., a corporation of California
Filed Mar. 12, 1965, Ser. No. 439,229
14 Claims. (Cl. 103—123)



1. In a pumping machine for plastic flowable materials, said machine including a motor; the combination of: a rotatable shaft driven by the motor; a pump casing having a peripheral wall coaxial with said shaft and providing a pump chamber; said wall having spaced adjacent inlet and outlet openings for said chamber and having a valve opening between said inlet and outlet openings; a rotor means on said shaft within said chamber; valve means reciprocally movable through said valve opening into said chamber in relation to rotational movement of said rotor means; external means surrounding said casing for actuating said valve means in timed relation to rotation of said rotor means to discharge pumped material through said outlet opening; said actuating means including a frame means connected with said valve means and surrounding said pump casing; cam follower means on said frame means; cam means on said rotatable shaft engageable by said cam follower means for reciprocating said frame means and valve means in a plane; said cam means on said shaft including at each side of said pump casing a cam member for camming said valve means into said chamber and a separate cam member for camming said valve means out of said chamber.

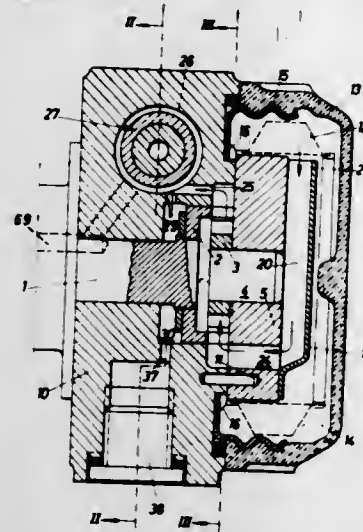
3,312,177

FUEL PUMP ARRANGEMENT FOR AN OIL BURNER

Otto Eckerle, 3 am Bergwald, Malsch, Kreis Karlsruhe, Germany, and Helmut Weinzierl, Rastatt, Germany; said Weinzierl assignor to said Eckerle
Filed Apr. 22, 1965, Ser. No. 449,940
Claims priority, application Germany, Feb. 5, 1965, E 28,634
12 Claims. (Cl. 103—126)

1. A pump arrangement for an oil burner comprising, in combination:
(a) a pump casing defining a cavity therein;
(b) a cover member secured to said casing and substantially closing said cavity;
(c) a suction conduit and a discharge conduit communicating with said cavity;
(d) rotor means movable in said cavity for drawing a fluid into said cavity through said suction conduit and for discharging said fluid under pressure through said discharge conduit;
(e) a cap member enclosing an upwardly extending filter compartment about said cover, said suction conduit having an orifice in the topmost portion of said compartment;

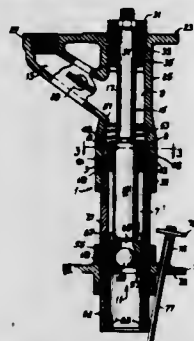
(f) intake means for admitting fluid to said filter compartment; and



(g) a threaded ring, a portion of said ring being interposed between said casing and said cover member for sealingly securing said ring to said cover member and to said casing, said cap member threadedly engaging said ring.

3,312,178 PUMP

Lutwin C. Rotter, Ladue, and Clarence E. Kitchen, St. Louis County, Mo., assignors to McNeil Corporation, a corporation of Ohio
Filed June 3, 1964, Ser. No. 372,163
18 Claims. (Cl. 103—175)



1. A pump comprising a cylinder, a valve seat in the cylinder intermediate the length of the cylinder dividing the cylinder into a first chamber toward one end of the cylinder and a second chamber toward the other end of the cylinder, a valve in the first chamber engageable with the seat to close off communication between the chambers, said valve being adapted to open in response to pressure differential between the second chamber and the first chamber for flow from the second to the first chamber, said cylinder having an outlet from the first chamber and a checked inlet for the second chamber, a reciprocable plunger extending into the cylinder from said one end of the cylinder having a first section in the first chamber and a second section of larger cross sectional area than the first section extending through said valve into the second chamber, said second plunger section having a sliding sealing fit in said valve.

3,312,179

TRACK LEVELLING DEVICE

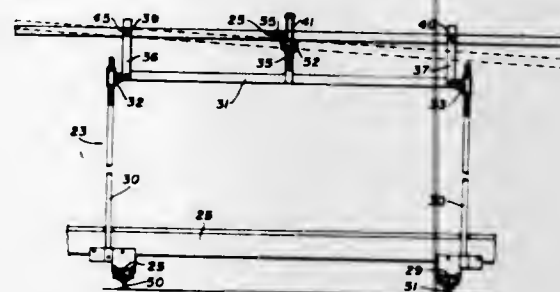
John K. Stewart, Dorval, Quebec, Canada, assignor to Canada Iron Foundries Limited, Montreal, Quebec, Canada

Filed Sept. 25, 1964, Ser. No. 399,323
Claims priority, application Canada, Oct. 8, 1963, 886,282

6 Claims. (Cl. 104—7)

1. A system for surveying and jacking a railroad track comprising a vehicle capable of movement on the rail-

road track and carrying a jacking device for independently jacking each rail of the track, a target element adapted in operation to be located on the track ahead of vehicle and above the track grade rail, a rear optical peep-sight attached to the vehicle and in reference contact to the grade

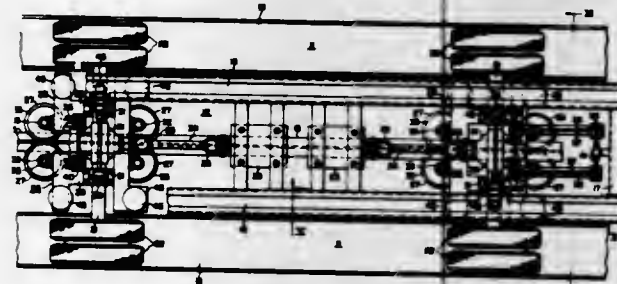


rail a fore-sight element located adjacent the jacking devices, in reference contact with the rails and located above the grade rail; a visual cross level indicating device on the fore-sight element; manually operable means for operating the grade rail jack and manually operable means for operating the other rail jack.

3,312,180 TRANSPORTATION VEHICLES

Erich O. Mueller, Irwin, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 22, 1964, Ser. No. 398,212
7 Claims. (Cl. 104—246)

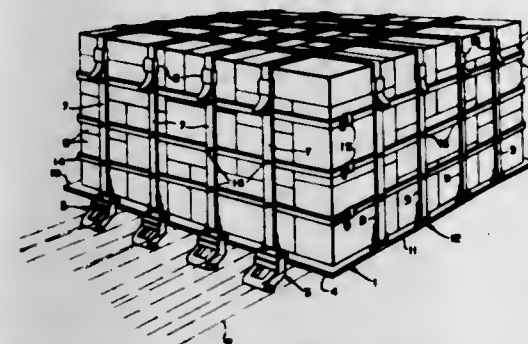


6. In a transportation vehicle having a frame and supporting axles disposed in housings and carrying wheels for running on a roadway having a flanged guide rail coextensive with the roadway, in combination, means for driving the axles, a guide wheel frame attached to each axle housing, four guide wheels rotatably mounted on vertical axes on the guide wheel frame, each guide wheel having a pneumatic tire thereon, two of said guide wheels on each guide wheel frame being disposed to engage opposite sides of the guide rail ahead of the axle and the other two guide wheels on each guide wheel frame being disposed to engage opposite sides of the guide rail behind the axle, a safety disc attached to each guide wheel for engaging the flange of the guide rail to resist lateral forces on the vehicle, spring means disposed between the vehicle frame and the guide wheel frames for supporting the weight of the vehicle, transverse rod means connected to the axle housings and spring connected to the vehicle frame to permit limited lateral movement of the axles relative to the frame, and longitudinal rod means connected to the axle housings and pivotally connected to the vehicle frame to transmit tractive effort and torque reaction to the vehicle frame.

3,312,181 CARGO RESTRAINING METHODS AND DEVICES

Robert W. Davidson, Stamford, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey

Filed Mar. 2, 1964, Ser. No. 348,434
5 Claims. (Cl. 105—369)

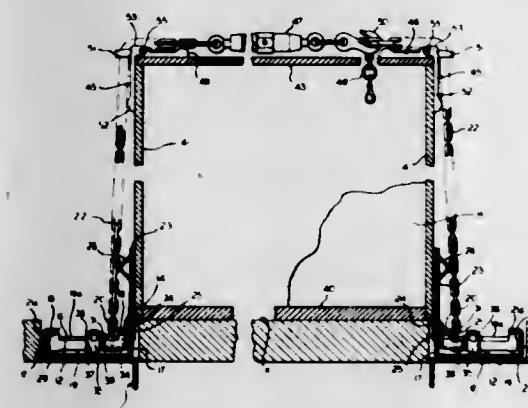


2. A cargo restraining net comprising a plurality of elongated flexible restraining elements; and a plurality of elongated flexible coacting restraining elements having terminal portions adapted to be connected to a pallet, said first-named restraining elements extending generally parallel to each other, said coacting restraining elements extending across said first-named restraining elements, selected ones of said first-named restraining elements having a higher spring rate than the others of said first-named restraining elements, said coacting restraining elements all having a spring rate substantially lower than that of said selected ones of said first-named restraining elements, said first-named elements having terminal portions adapted to be connected to a pallet and to anchoring devices in a vehicle, and means positioning said first-named restraining elements and said second-named restraining elements in a selected coacting operative arrangement relative to a pallet and to cargo to be contained thereby, such that forces developed in said elements exert a predetermined force pattern on said anchoring devices.

3,312,182

TIE DOWN FOR WALL BOARD AND THE LIKE

Keith W. Broling, 18426 Clyde Road, Homewood, Ill. 60430
Filed Nov. 30, 1965, Ser. No. 510,605
13 Claims. (Cl. 105—369)



1. In a tie down system for tying wall board and the like to a vehicle having a flat deck, an upwardly opening retaining channel extending along each side of said deck and recessed therein and having a bottom web,

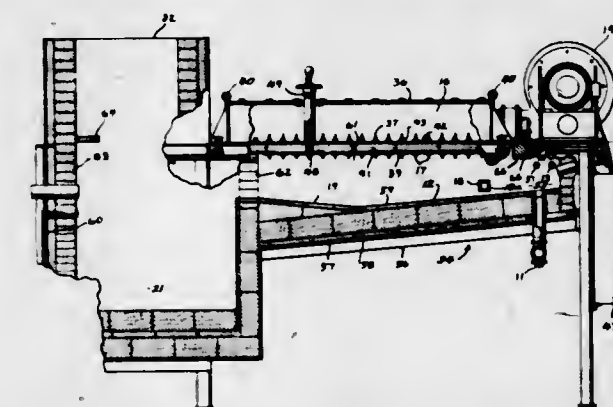
parallel spaced legs extending upwardly therefrom and intumed retaining flanges extending for the length of said legs, a series of tie down anchoring devices mounted in said channels for adjustable movement therealong and for vertical movement with respect thereto, into primary anchoring positions in engagement with the bottoms of said flanges, flexible tie downs attached to said tie down anchoring devices and adapted to extend over the load on the vehicle and bring said tie down anchoring devices into their primary anchoring positions in engagement with the bottoms of said flanges, locking means between said tie down anchoring devices and said flanges for holding said tie down anchoring devices in position in said channels, a series of doors extending along said retaining channels in side by side relation with respect to each other for the length thereof, means hinging said doors to said retaining channels along the inner sides of said channels and the outer sides of said deck, said retaining channels forming storage spaces for said tie down anchoring devices and the flexible tie downs attached thereto, said doors being movable downwardly to cover said channels and to accommodate the loading of wall board thereover onto the flat deck of the vehicle, and being movable upwardly along opposite sides of the load to form a guide for the load on the inner sides of said doors, when in their upwardly pivoted positions, and to form guides for said flexible tie downs extending upwardly along the outer sides of said doors, said doors being retained in their upward positions around the load by said flexible tie downs upon the taking up of tension in said flexible tie downs, to retain the load against laterally shifting movement and to protect the load from said flexible tie downs.

3,312,183

METHOD AND APPARATUS FOR BURNING SEWAGE PLANT SKIMMINGS

Edward L. Kells, Batavia, Lester E. Strobert, Aurora, and Billy S. Washburn, West Chicago, Ill., assignors, by mesne assignments, to Chicago Bridge & Iron Company, Chicago, Ill., a corporation of Illinois
Continuation of abandoned application Ser. No. 312,658, Sept. 30, 1963. This application June 10, 1965, Ser. No. 475,302

17 Claims. (Cl. 110—8)

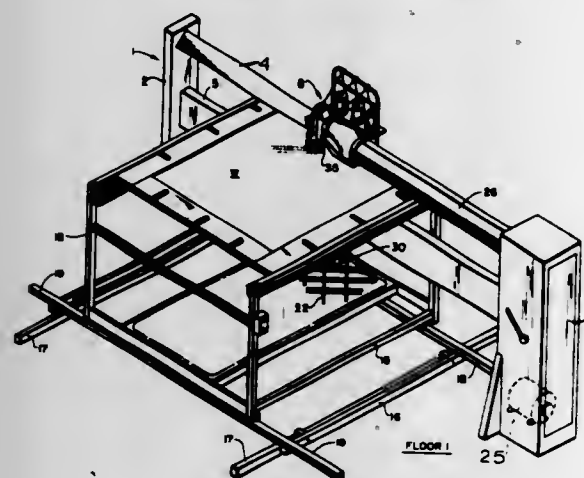


12. Apparatus for self-burning greasy skimmings from a sewage treatment plant, which skimmings include grease and a large percentage of water, said apparatus including: a combustion chamber of a given cubic volume and including a hearth; means to preheat the combustion chamber to a temperature at which the skimmings will self-burn; means to feed the skimmings into the combustion chamber on a metered basis at a rate at which the

amount of grease introduced per hour for each cubic foot of volume of said volume has a B.t.u. content, when burned, in excess of about 100,000; and means to introduce combustion air into the chamber at a rate in excess of the stoichiometric amount in relation to the amount of grease introduced and less than that required to cool the chamber below about 1850 degrees Fahrenheit, said means directly introducing at least a portion of said air in a jet directed generally toward the burning grease and in a direction so as to circulate hot burned gases back over unburned grease on the hearth.

3,312,184 QUILTING MACHINE OF THE ENDLESS GUIDE TRACK TYPE

David R. Cash, 5120 Maryview Drive,
Louisville, Ky. 40216
Filed Feb. 20, 1964, Ser. No. 346,203
5 Claims. (Cl. 112-118)



1. In a quilting machine of the type, having a guide-track shaped to reproduce a given sewing line design or pattern, wherein a drive means not only drives a sewing machine, having an upper sewing head mounted on a cross head frame to reciprocate a main vertical sewing needle on a main vertical needle bar while raising and lowering a main presser foot on a main vertical presser foot bar and having a main lower-thread-locking mechanism mounted on a cross base frame to co-act with said main vertical sewing needle, but also contemporaneously drives a carriage means along a guide-track path which reproduces said given sewing-line pattern to cause said sewing machine to sew that pattern into a workpiece, an improvement rendering said sewing machine capable of sewing up to at least two additional reproductions of the same sewing line pattern into the same workpiece at the same time, comprising:

(A) auxiliary means for mounting a pair of auxiliary vertical sewing needles on said sewing machine comprising

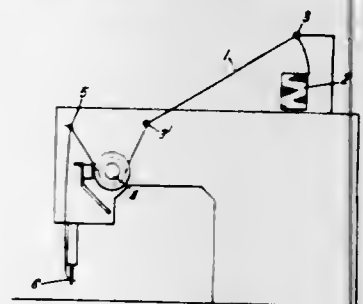
- (1) a 1st auxiliary cross bar,
- (2) auxiliary mounting means at the center of said 1st auxiliary cross bar for rigidly mounting that 1st auxiliary cross bar directly on said main vertical needle bar for movement therewith,
- (3) a pair of auxiliary vertical needle bars, and
- (4) auxiliary mounting means on opposite sides of the center of said 1st auxiliary cross bar for rigidly mounting said pair of auxiliary vertical needle bars directly on said 1st auxiliary cross bar, one on each side of said main vertical needle bar;

(B) auxiliary means for mounting auxiliary presser feet on said sewing machine comprising

- (1) a 2nd auxiliary cross bar,

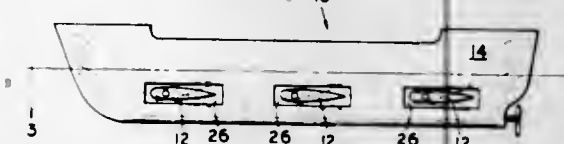
- (2) auxiliary mounting means at the center of said 2nd auxiliary cross bar for rigidly mounting that cross bar directly on said main presser foot bar for movement therewith,
 - (3) a pair of auxiliary vertical presser-foot bars, each having an auxiliary presser-foot at its lower end, and
 - (4) auxiliary mounting means on opposite sides of the center of said 2nd auxiliary cross bar for rigidly mounting said pair of auxiliary vertical presser foot bars directly on said 2nd auxiliary cross bar, one on each side of said main vertical presser foot bar; and
- (C) means for mounting a pair of auxiliary thread-locking mechanisms on said cross base frame, one on each side of said main lower thread-locking mechanism for simultaneous operation therewith and for co-action with said auxiliary vertical sewing needles.

3,312,185
SEWING METHOD AND APPARATUS
Jean Claude Chezaud, Saint-Rambert-l'Isle-Barbe, Pierre Burillon, Lyon, and Dominique Manglier, Cailloux-sur-Fontaine, France, assignors to Societe Rhodiaceta, Paris, France, a corporation of France
Filed May 22, 1964, Ser. No. 369,538
Claims priority, application France, May 22, 1963, 935,751
3 Claims. (Cl. 112-262)



1. A method of sewing flat elements on a sewing machine having a needle carrying a sewing thread, such method comprising the steps of causing the needle to pierce the flat element and thereby to form a stitch, tensioning said thread only at the moment of tightening of the stitch and completely detensioning said thread for the remainder of said sewing.

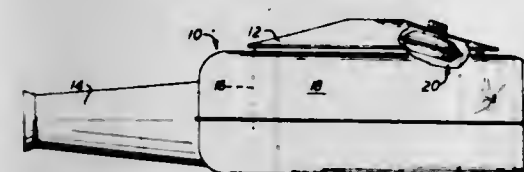
3,312,186
SHIP PROPELLING MEANS
Olav Litsheim, P.O. Box 392, Rockaway, N.J. 07866
Filed Aug. 27, 1965, Ser. No. 483,058
1 Claim. (Cl. 115-4)



A ship propelling means for propelling a ship in water comprising a plurality of fins mounted along the sides of said ship, said fins being mounted so that they are immersed in the water, each of said fins being provided with a thick front end portion and tapering rearwardly to a thin rear end portion, an independently extensible and retractable shaft connected to the thick front end portion of each of said fins, the rear end of each fin being capable of oscillating about each of said independently extensible and retractable shafts, a housing means disposed within said ship to concealingly house said fins in their retracted position, and hydraulic means disposed within

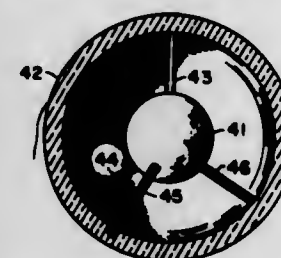
said ship and connected to each of said independently extensible and retractable shafts for extending and retracting said fins.

3,312,187
FLUID FILTER ASSEMBLY HAVING A WARNING INDICATOR
Robert C. McKinlay, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Feb. 2, 1966, Ser. No. 524,417
3 Claims. (Cl. 116-70)



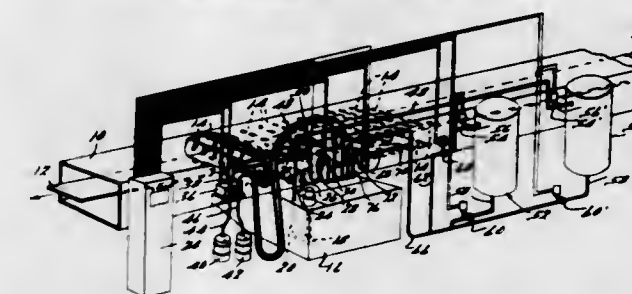
1. In a fluid filter assembly having an outer shell surrounding a filtering member through which fluid passes, said shell and said filtering member defining an enclosure, and said shell having an aperture therethrough: a warning indicator device comprising a main body defining a chamber, said main body having a top structural portion and a bottom structural portion, said top structural portion having a first aperture therethrough, a flexible diaphragmatic member separating said chamber into a first chamber portion partially defined by said top structural portion and a second chamber portion partially defined by said bottom structural portion, elongate indicating means operatively connected to said diaphragmatic member and slidably extending into said first aperture, said warning indicator device mounted in said enclosure so that said first aperture in said top structural portion is aligned with said aperture in said shell, said indicating means having an axial bore extending therethrough communicating with said second chamber portion and the atmosphere, and said top structural portion having a second aperture therethrough communicating between said first chamber portion and said enclosure.

3,312,188
SHOCK INDICATOR
Tenny D. Lode, Madison, Wis., and Frank D. Werner, Bloomington, Minn., assignors to Rosemount Engineering Company, Minneapolis, Minn., a corporation of Minnesota
Filed Aug. 16, 1965, Ser. No. 479,932
5 Claims. (Cl. 116-114)



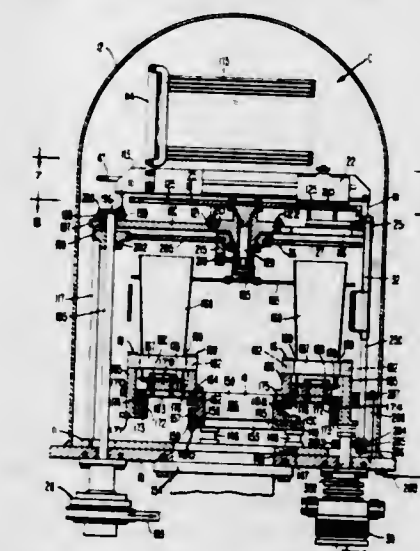
1. Means for measuring mechanical acceleration including a seismic mass, an outer structure at least partially surrounding said mass, a plurality of elastic support elements each having a known elastic limit extending outward from said mass to said outer structure, said support element being in contact with said mass and said outer structure and supporting said mass in a substantially predetermined position with respect to said outer structure, said support elements being arranged to fail by exceeding said elastic limit when subjected to force in excess of a predetermined magnitude.

3,312,189
AUTOMATIC SOLUTION CONTROL SYSTEM
Harold J. McVey, Walled Lake, Mich., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
Filed Dec. 24, 1963, Ser. No. 333,161
8 Claims. (Cl. 118-7)



1. An apparatus for forming a chromate coating on a metal surface comprising a treating station including means for applying an aqueous acidic operating solution containing hexavalent chromium ions and contaminating anion complexes on a metal surface, a cation exchange resin operative to disassociate the anion complex and remove the cation constituent thereof, means including flow control means for passing a controlled proportion of said solution through said cation exchange resin and returning the effluent from said cation exchange resin back to said operating solution, sensing means for sensing the electrical conductivity of said effluent, and control means including means for measuring the electrical conductivity as sensed by said sensing means and operative to actuate said flow control means to increase the proportion of said solution passing through said cation exchange resin in response to a decrease in the electrical conductivity of said effluent below a preselected level as a result of a progressive depletion in the activity of said cation exchange resin.

3,312,190
MASK AND SUBSTRATE ALIGNMENT APPARATUS
Robert S. Bradshaw, Broomall, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Feb. 25, 1964, Ser. No. 347,174
15 Claims. (Cl. 118-49.1)

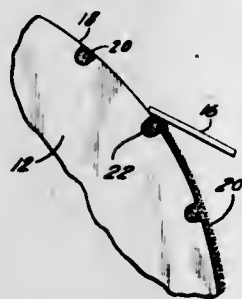


1. In vacuum deposition apparatus having a vacuum chamber, the combination comprising: means supporting a workpiece for successive depositions of different materials thereon, means supporting a plurality of heater units each having a material to be vaporized, mask means movable with said heater supporting means, said mask means having a mask element for each heater unit, feed-through means for indexing said heater supporting means and said mask means so that a selected heater unit and mask element are aligned with said workpiece, and elec-

trical feed-through means for energizing said aligned heater unit to cause the material supported thereby to be vaporized and for moving the selected mask element into facing contact with said workpiece supporting means.

3,312,191

DOCTOR ROLL WITH SPIRAL GROOVES
Donald V. Lowe, Tenafly, N.J., assignor to Lowe Paper Company, Ridgefield, N.J., a corporation of New Jersey
Continuation of application Ser. No. 453,862, Apr. 8, 1965.
This application May 13, 1966, Ser. No. 555,927
3 Claims. (Cl. 118—104)



1. In an apparatus for coating a web of sheet material, a rotary doctor roller adapted to engage the coated web and to rotate in a direction which displaces the surface of the roller which engages said web in a direction opposite to the direction of movement of the web so that said roller is adapted to remove excess coating material and foreign particles such as dirt from the moving web, said roller being formed at its exterior surface with a plurality of passages distributed about its circumference and extending from one end of the roller to the other end thereof forming openings respectively situated at the opposite ends of the roller, and an elongated doctor blade extending longitudinally of and engaging said roller at a given line along its exterior surface, said blade having a surface directed toward said roller and forming an acute angle with a plane tangent to said roller at the line of engagement between said blade and roller, the direction of rotation of said roller advancing the surface thereof toward the line of engagement at the side of said blade which forms an acute angle between said plane and the surface of said blade which is directed toward said roller, said passages being formed such that the path of any given passage while being traced during rotation of said roller in the area of said web travels less than 360° from the point of engagement thereof with the blade to the subsequent point of engagement with said web, whereby during rotation of said roller said blade will press into said passages any excess coating on said roller and the excess coating will flow along said passages out of the latter at the said openings situated at the ends of said roller, so that any particles of dirt or foreign matter will be displaced with the excess coating along said passages and away from said roller to prevent streaking of the web.

3,312,192

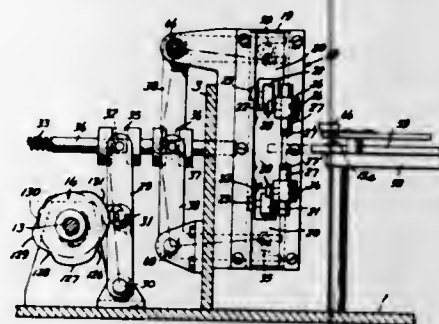
APPARATUS FOR MANUFACTURE OF CERAMIC CONDENSER ELEMENTS
Heizaburo Sato, Maebashi, Japan, assignor to Taiyo Yuden Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Filed June 19, 1963, Ser. No. 289,111
Claims priority, application Japan, Mar. 19, 1963,
38/12,765

9 Claims. (Cl. 118—226)

1. Apparatus for forming a conductive coating on a thin ceramic piece comprising: a pair of stamp rods; first means for reciprocally moving said stamp rods towards and away from each other; second means for feeding a thin ceramic piece in the space intermediate said stamp rods while in their spaced-apart position; said first means

bringing said stamp rods toward each other to apply a conductive coating to at least one of the opposed surfaces of a thin ceramic piece in the space intermediate said pair of stamp rods; third means for removing a ceramic piece having a conductive coating applied to at least one surface thereof; said pair of stamp rods including a pair of stamp pieces at the opposed surfaces thereof; said stamp



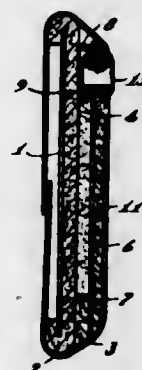
pieces being resiliently formed to firmly engage opposed surfaces of a thin ceramic piece without breakage thereof; said pair of stamp rods including said stamp pieces at the opposed surfaces thereof; a conductive paint supply; fourth means for automatically transferring paint from said conductive paint supply simultaneously to each of said stamp pieces.

3,312,193

INKING DEVICE

Wallace J. Satas, Hudson, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada

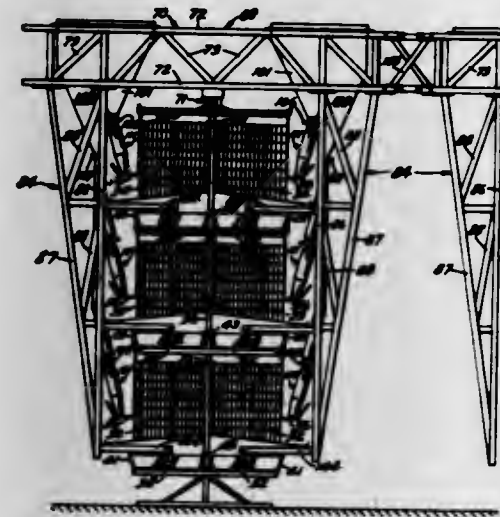
Filed Mar. 5, 1965, Ser. No. 437,515
1 Claim. (Cl. 118—254)



An inking device comprising a backing, a back ink absorbent pad in front of the backing, a front ink absorbent pad in front of the back pad, a barrier between the two pads to control the absorption of ink by the front pad from the back pad, a pervious covering for the front pad, an elongate inkwell in the plane of said back pad, a duct communicating with said well near each end of the well, the well having one or more outlets leading to said back pad, whereby ink may be fed to the back pad through one of said ducts, the other duct serving as a breather and overflow, said ducts extending through said pervious covering and comprising eyelets extending through the front pad barrier and front of the well, said barrier being perforated and in contact with the back and front pads, said back pad having channels extending from said outlets to distribute ink throughout the pad, said channels being within the back pad and having opposite side walls defined by the back pad and having front and back walls defined by said back and perforated barrier, and a holder having lips overlapping opposite edges of the pad, the holder being convex and the backing being resilient so that the pad may be snapped under the lips.

3,312,194

HUSBANDRY APPARATUS
William B. Ernst, 540 NE. 13th St.,
Owatonna, Minn. 55060
Filed July 13, 1965, Ser. No. 471,544
10 Claims. (Cl. 119—22)



2. A poultry husbandry assembly comprising a plurality of multideck cage layer batteries extending generally parallel with respect to each other and each battery comprising two tiers of cages, each tier having at least two rows of cages one above another, each row of cages including a tray disposed therebeneath for collecting droppings, and a feed trough disposed on one side thereof and extending longitudinally along said row adjacent a side thereof, support means positioned between said tiers of cages for supporting the tiers of each battery and for supporting said trays and troughs, a work unit associated with each of said batteries for distributing feed in said troughs and for removing the droppings from said trays, said work unit comprising:

- (a) rail means positioned above and generally centrally of each battery and extending generally parallel with the rows of cages,
- (b) a U-shaped frame having the bight portion thereof mounted on said rail means for moving said frame along said rail means, each depending arm of said frame means supporting therewithin hopper means from which separate chutes are directed to a different one of said feed troughs,
- (c) arm means extending laterally from said depending arm portions and extending laterally therefrom under said cage means and having scraper means formed on the lower end of said arm means and cooperating with said trays for scraping the same and for guiding said frame,
- (d) means rigidly connecting each said work unit for movement of the work unit associated with each said battery in unison, and
- (e) a single drive means including a cable attached to the unitarily joined work units for movement of said unit longitudinally of said batteries.

3,312,195

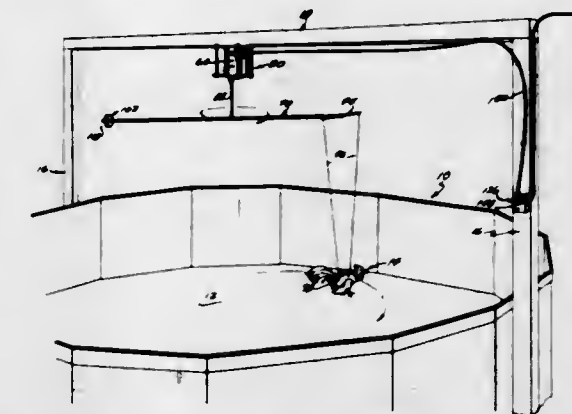
MECHANICAL ANIMAL TRAINER

Luis V. Millán Robena, % Puerto Rico Water Resources Authority, Engr. & Constr. Division, Stop 16½, San-turce, Puerto Rico

Filed Oct. 22, 1965, Ser. No. 502,198
11 Claims. (Cl. 119—29)

1. An animal training device of the character described, comprising an overhead support, motor means carried by the support, a pendant shaft operatively con-

nected to the motor means, a horizontal beam centrally fixed on the lower end of said shaft, a live animal body



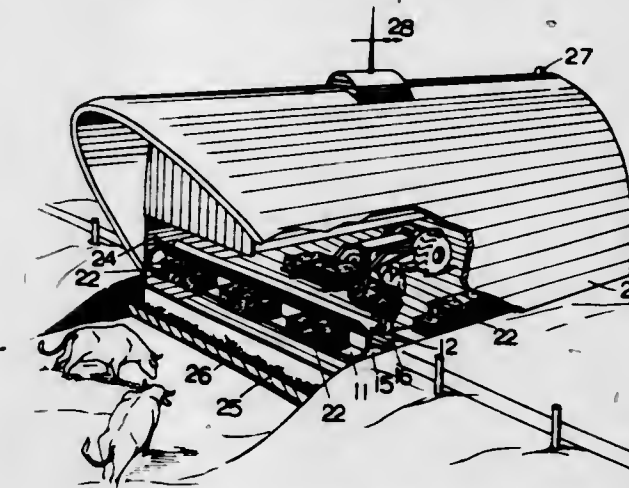
sling suspended from one end of the beam, and means connected to the motor means for controlling the operation thereof.

3,312,196

AUTOMATIC ANIMAL FEEDER

Florian F. Florek, 27 Market St.,
Edinboro, Pa. 16412

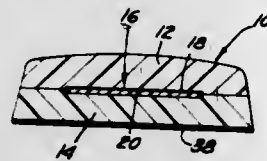
Filed Sept. 7, 1965, Ser. No. 485,205
2 Claims. (Cl. 119—51.13)



1. In combination, a storage space for feed having a floor, a lot surface for animals, said floor being disposed above said lot surface, a feed bin supported below said floor, a feed dispenser extending substantially the length of one end of said floor above said bin, said dispenser comprising a rack having first and second generally flat surfaces disposed generally in the same plane and at the same level as said floor, a trough generally V-shaped in cross section disposed in spaced relation to said surfaces, said trough being of suitable size to receive bales of hay, means attaching the apex of said V to said rack between said generally flat surfaces, said rack being adapted to be disposed with said first flat surface generally perpendicular to said floor while feed is being loaded thereon, said flat surfaces being adapted to receive bales of hay, said rack having motor drive means adapted to rotate said rack to a position where said two generally flat surfaces are generally parallel to said floor while feed is loaded in said trough and on said second flat surface, intermittent timer control means connected to said motor whereby said drive means is adapted to rotate said dispenser to a position to allow said feed on said first generally flat surface to fall into said bin, then to rotate said dispenser to allow said feed

in said trough to fall into said bin, and then to rotate said dispenser to allow said feed from said second generally flat surface to fall into said bin.

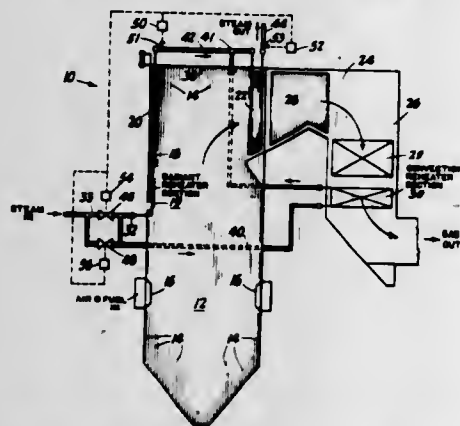
3,312,197
FACSIMILE COIN EMBEDDED IN PLASTIC,
AND METHOD OF MAKING SAME
 Forrest W. Smith, 40931 Park Ave.,
 Hemet, Calif. 92343
 Filed Oct. 15, 1965, Ser. No. 496,604
 3 Claims. (Cl. 120-82)



1. An ornamental paperweight or the like of transparent plastic having a facsimile coin embedded therein, comprising:

- a bottom layer of opaque plastic, surmounted by a top layer of transparent plastic;
- a facsimile coin of metal foil embedded in said plastic substantially at the interface between said top and bottom layers;
- said facsimile coin being cup-shaped and having the impression of one side only of the genuine coin of which it is a replica, and at least a portion of the edge of said facsimile coin bearing the impression of the edges of the genuine coin;
- said facsimile coin having its open, cup-shaped side embedded in said opaque bottom layer of plastic, and only the impressed coin-faced side thereof being exposed to view through said transparent top layer of plastic.

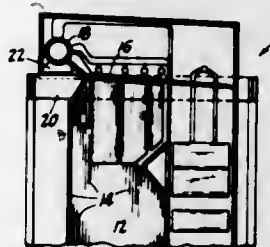
3,312,198
STEAM GENERATOR HAVING IMPROVED
STEAM HEATING SECTIONS ARRANGED
FOR PARALLEL FLOW
 Herbert M. Eckerlin, Raleigh, N.C., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
 Filed Dec. 23, 1965, Ser. No. 515,880
 6 Claims. (Cl. 122-406)



1. In a vapor generator having an elongated furnace chamber defined by fluid cooled tube-lined walls, the combination of one section of said walls being lined with a plurality of upright tubes parallelly spaced, with said first tubes being cooled by the flow therethrough of a relatively low enthalpy fluid; another section of said walls adjoining said first section being lined with a plurality of upright second tubes parallelly spaced, with said second tubes being cooled by the flow therethrough of a first quantity of relatively high enthalpy fluid; means for producing a stream of hot gases for flowing over said tube-lined walls in heat exchange relation therewith and for partially cooling

said gases; a gas offtake duct adjoining one end of said furnace chamber for receiving said partially cooled gases; first tubular heat absorbing surfaces provided in said duct for additional cooling of said gases; means for flowing a second quantity of high enthalpy fluid through said first tubular heating surfaces in parallel flow relation with the flow of said high enthalpy fluid through said second tubes; second heat absorbing surfaces provided in said gas stream in heat absorbing relation therewith, means for combining said first and said second quantity of high enthalpy fluid egressing from said second tubes of said other wall section and from said first tubular heat absorbing surfaces, respectively; means for flowing said combined flow through said second tubular heat absorbing surfaces; first means for controlling the flow of said first quantity of high enthalpy fluid and second means for controlling the flow of said second quantity of high enthalpy fluid; means for obtaining an indication of the temperature of said combined flow; and means for regulating said flow control means of at least one of said first quantity and of said second quantity of high enthalpy fluid in response to said temperature indication means.

3,312,199
DRUM ROCKING SUPPORT FOR
CARRYING HEAVY LOADS
 Konrad S. Svendsen, Bloomfield, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
 Filed Dec. 14, 1965, Ser. No. 513,803
 10 Claims. (Cl. 122-310)

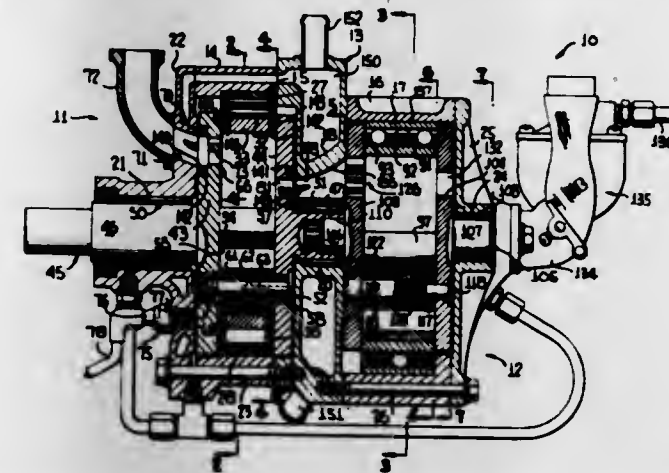


1. In combination, an elongated vessel, a structure fixedly attached to said vessel and extending laterally therefrom with respect to the longitudinal axis of said vessel, means exposing said structure and said vessel to heat causing thermal expansion forces to move said vessel in a direction which lies in the horizontal plane passing through the longitudinal axis of said vessel and is at an acute angle with respect to said longitudinal axis; a first contact surface integral with the underside of said vessel; a fixed support below said vessel and spaced therefrom, including a second contact surface facing said first contact surface; rocking means between said vessel and said fixed support for transferring the weight of said vessel onto said fixed support; one end of said rocking means having a first curvature being organized for rolling contact with one of said first and second contact surfaces; the other end of said rocking means having a second curvature being organized for sliding and oscillating contact with the other of said first and second contact surfaces; and said second contact surface having a three-dimensional support area inversely matching said second curvature.

3,312,200
ENERGY CONVERTER
 Carl F. Benson, Torrington, Conn., assignor to The Torrington Company, Torrington, Conn., a corporation of Maine
 Filed Aug. 21, 1964, Ser. No. 391,167
 19 Claims. (Cl. 123-11)

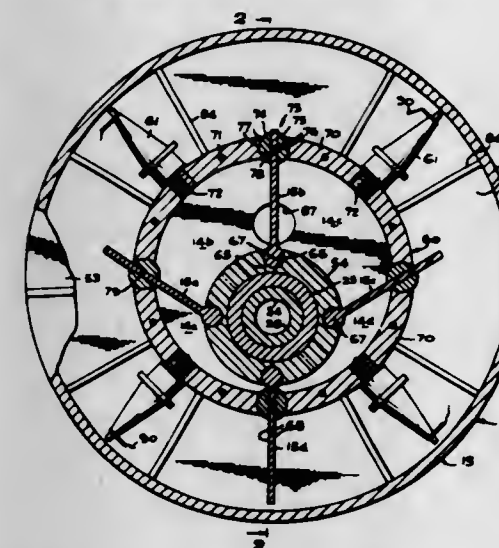
1. An energy converter comprising a housing having a cylindrical bore, a cylinder rotatably mounted in said bore, a plurality of pistons in said cylinder, a shaft, a pair

of axially spaced plates coupling said pistons to said shaft, a plurality of circumferentially spaced exhaust ports in one of said plates, a plurality of circumferentially spaced



intake ports in the other of said plates and port means in said housing for selective fluid communication with said exhaust and intake ports.

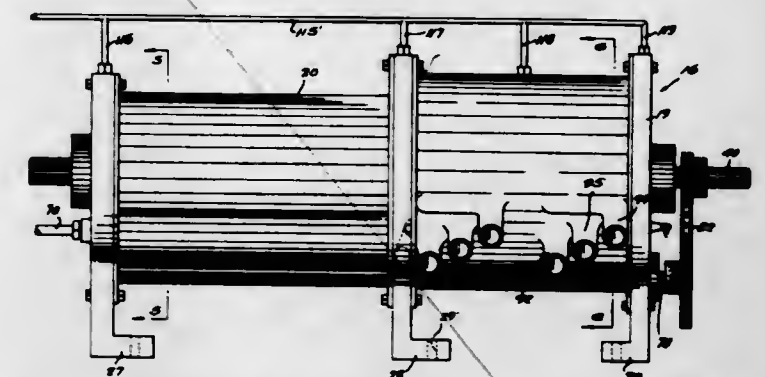
3,312,201
ROTARY FLUID DRIVEN OR FLUID
PUMPING APPARATUS
 Ronald M. Glasoe, San Marino, Calif.
 11649 Waddell St., Whittier, Calif. 90606
 Filed Mar. 10, 1964, Ser. No. 350,761
 4 Claims. (Cl. 123-16)



4. Apparatus comprising a shaft structure, rotary internal combustion engine means disposed about said shaft structure and defining a combustion chamber which rotates about said shaft structure and varies in size as it turns, compressor means disposed about said shaft structure and defining a compression chamber which rotates about said shaft structure and varies in size as it turns to compress air therein, said combustion chamber and said compression chamber having rotating walls which are connected together to rotate about the shaft structure in essential unison so that said engine means drive said compressor means rotatively, said shaft structure containing passage means for conducting compressed air from said compression chamber to said combustion chamber at a predetermined point in the rotary cycle thereof, and means for burning fuel in said combustion chamber in admixture with said compressed air to drive the engine means rotatively, said rotating walls including radially inner and radially outer essentially tubular walls and vanes extending radially therebetween, said chambers having three additional walls disposed transversely of said shaft and which do not turn with said rotating walls, said additional walls including one disposed axially be-

tween and forming a common wall of said two chambers, and including two other walls forming axially outer ends of the chambers respectively, said two other walls containing openings for admitting air to said compression chamber and for discharging combustion gases from said combustion chamber, said shaft structure including a valving sleeve structure within said radially inner walls of the two chambers, and including a separate shaft part extending axially within said valving sleeve structure and adapted to turn therein between two predetermined settings, said passage means including apertures in said sleeve structure communicating with apertures in said radially inner walls of the chambers in valving relation, and including conduit means in said shaft part communicating with said apertures and operable to reverse the valving for reverse rotation of the chambers in response to turning of said shaft part between said two settings, said shaft part and said sleeve structure and one of said radially inner walls containing additional passage means and apertures for conducting said fuel to said combustion chamber.

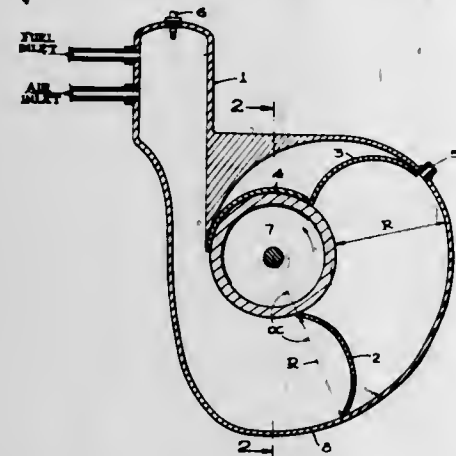
3,312,202
ROTARY INTERNAL COMBUSTION ENGINE
COOLED BY COMPRESSED AIR
 Jaime Udelman, Ave. M. Felipe Tovar, Edificio Hena, Apt. 3, San Bernardino, Caracas, Venezuela
 Filed July 28, 1964, Ser. No. 385,653
 12 Claims. (Cl. 123-16)



1. A rotary internal combustion engine comprising a compression cylinder and a combustion cylinder arranged in axial alignment, a transverse wall separating the cylinders, a common rotary shaft extending axially through the length of said cylinders, a compression vane mounted on said shaft within the compression cylinder and having an outer edge disposed adjacent the inner surface of the compression cylinder, a combustion vane mounted on said shaft within the combustion cylinder and having an outer edge disposed adjacent the inner surface of the combustion cylinder, said vanes extending substantially through the entire axial length of their respective cylinders, a hollow cylindrical sleeve rotatably mounted within the compression cylinder adjacent a portion of the interior surface thereof on an axis eccentric to the axis of the shaft and having an aperture therein receiving the compression vane, fuel mixture supply means connected to the compression cylinder, a hollow cylindrical sleeve rotatably mounted in the combustion cylinder on an axis eccentric to the axis of the shaft and having an aperture receiving said combustion vane, ignition means in the combustion cylinder within said last-named sleeve, conduit means extending parallel to the axis of said shaft in the longitudinal wall of the compression cylinder extending lengthwise thereof and extending lengthwise in the longitudinal wall of the combustion cylinder, said conduit means communicating with the compression cylinder to receive compressed fuel mixture therefrom, said combustion cylinder having a transverse wall formed with a passage in communication with said conduit means and leading to the space in the combustion cylinder within said last-named sleeve, said conduit means including a rotary sleeve valve coaxially.

mounted therein and located adjacent the combustion cylinder, said sleeve valve being apertured to register with said passage, means drivingly coupling said sleeve valve to said shaft to periodically register its aperture with said passage responsive to rotation of the shaft, an air cooling jacket surrounding said combustion cylinder, and means to circulate cooling air simultaneously through said air cooling jacket and around said second-named sleeve.

3,312,203
MOTIVE POWER SYSTEM
Philip G. Luckhardt, 516 N. Scott's Lane,
West Chester, Pa. 19380
Filed June 7, 1965, Ser. No. 461,645
7 Claims. (Cl. 123-17)



3. An engine comprising a housing in the general shape of a cylinder having flat sides, and having combustion chamber extending from a rounded side of said expansion chamber, said combustion chamber having a means for introducing fuel and oxidizing material into said combustion chamber, a rotatable shaft extending through the flat sides of said expansion chamber, a rotor mounted on said shaft and having flat sides which fit snugly against the sides of said expansion chamber, curved vanes attached at one end to the rounded sides of said rotor so as to form a fluid tight seal when the other ends of said vanes are in contact with the walls of said expansion chamber, said expansion chamber having a wedge extending from side to side along its curved wall adjacent said combustion chamber and extending into said expansion chamber to touch said rotor whereby said vanes are pushed back against said rotor just as they approach said combustion chamber and fall out against said expansion chamber wall to form a fluid tight seal when said rotor has turned and said housing having an exhaust port located near the end of said expansion housing and adjacent said wedge so that the combustion products will pass out through said exhaust port when the vane passes thereby.

3,312,204
INTERNAL COMBUSTION PROCESS AND APPARATUS PERMITTING THE USE OF FASTER BURNING FUELS THAN ARE NORMALLY USED IN HIGH-COMPRESSION AUTOMOTIVE GASOLINE ENGINES

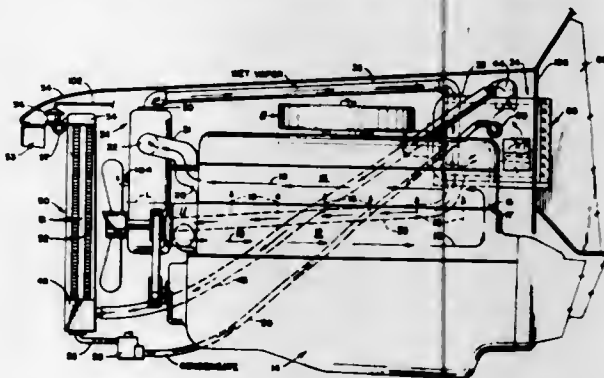
Lester P. Barlow, Stamford, Conn., assignor to The Barlow Vapor Cooling Company, Stamford, Conn., a corporation of Connecticut

Filed July 28, 1966, Ser. No. 568,684
17 Claims. (Cl. 123-41.25)

13. A high-compression automotive engine and fuel system providing ease of starting in cold winter weather, said engine and fuel system including a high-compression reciprocating engine having a cooling jacket, ebullient cooling means for circulating coolant liquid at its boiling temperature through said jacket during engine opera-

tion at normal temperature, ignition means having the spark timed to occur effectively at top dead center, and fuel substantially devoid of knock suppressant additives, such as lead tetraethyl and the like.

14. An ebullient cooling system for an automotive internal combustion engine having cooling jacket means for coolant to circulate through said jacket means and a pump for the coolant: said cooling system comprising a first chamber having an upper level receptive of coolant vapor and a lower level containing coolant liquid during operation of said engine, said first chamber having a first outlet communicating with the lower level thereof for connection to said jacket means to circulate coolant to said jacket means, said first chamber means having first inlet means for connection to said jacket means for receiving from said jacket means a high velocity flow of coolant liquid at its boiling point mixed with coolant vapor, said first inlet means releasing vapor into said first chamber from said high velocity flow and said inlet means utilizing



the momentum of said high velocity flow to impell coolant liquid from said first chamber through said first outlet, a tank in cascaded relationship with said first chamber, said tank having an upper level receptive of coolant vapor and a lower level receptive of coolant liquid during operation of said engine, said tank having a second outlet communicating with the lower level thereof, said tank having second inlet means connected to the upper level of said first chamber for receiving therefrom a flow of wet vapor, said second inlet means releasing vapor into said tank from said flow of wet vapor and said second inlet means utilizing the momentum of said flow to impel coolant liquid through said second outlet, said first chamber having third inlet means connected to said second outlet for receiving coolant flow therefrom to return coolant to said first chamber, a condenser connected to said system at an upper level thereof for receiving coolant vapor to be condensed, and a condensate pump connected to the bottom of said condenser for returning condensed liquid coolant to said system.

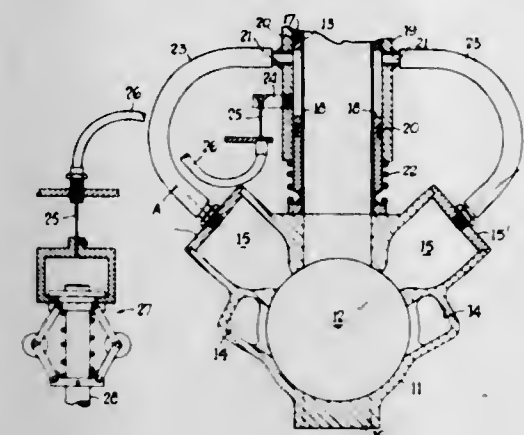
3,312,205
INTERNAL COMBUSTION ENGINES
Josef Ehrlich, London, England, assignor to Bristol Siddeley Ehrlich Engineering Limited, London, England, a British company

Filed July 19, 1965, Ser. No. 472,912
Claims priority, application Great Britain, July 20, 1964, 29,486/64

14 Claims. (Cl. 123-65)

1. A two-stroke internal combustion engine comprising a cylinder, a piston reciprocable in the cylinder, a combustion space within the cylinder and above the piston, an exhaust port so disposed in the cylinder wall as to be opened to the combustion space by the piston towards the end of the combustion stroke thereof, a main entry port so disposed in the cylinder wall as to be opened to the combustion space by the piston later in the combustion stroke thereof than the exhaust port, a source of scavenging air in communication with the main entry port, an additional entry port so disposed in the

cylinder wall as to be opened to the combustion space by the piston later in the combustion stroke thereof than the main entry port, and a reservoir in communication with the additional entry port, the reservoir being in communication with the said source of scavenging air during part of the combustion stroke but becoming isolated herefrom before the main entry port is opened by



the piston thereby maintaining pressure within the reservoir until opening of the additional entry port by the piston, wherein there is provided an exhaust duct communicating with the exhaust port, pressure take-off means communicating with the exhaust duct interior at a controllably variable distance from the exhaust port, and duct means connecting the reservoir to the take-off means and, therethrough, to the exhaust duct interior.

3,312,206
RECIPROCATING ENGINES
Dusan Radovic, 1111 Stephen St., Apt. 50,
San Bernardino, Calif. 92403
Filed Dec. 9, 1964, Ser. No. 417,026
1 Claim. (Cl. 123-78)



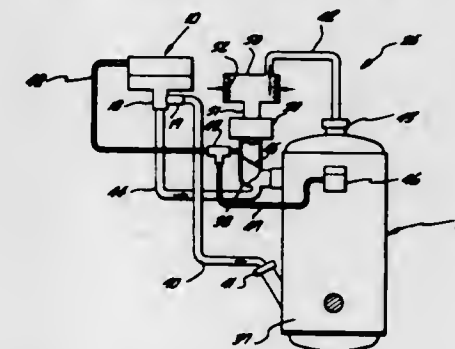
In a reciprocating engine, a cylinder or plurality of cylinders having lateral intake and exhaust ports, a crankshaft, a valve operating camshaft, a working reciprocating piston in said cylinder, the said assembly including an auxiliary piston held against its cam by means of a spring or springs, said cam actuated by a camshaft driven from the crankshaft, the travel of said auxiliary piston in relation to the travel of the working piston timed suitably as:

to keep the volume of the compression chamber reduced up to the end of the combustion, at the instant when the connecting rod of working piston is normal to the lever-arm;
to stop the said auxiliary piston from the instant of that normality until the end of the working stroke;
to reduce almost to zero the volume in the cylinder between the working piston and auxiliary piston at the end of the exhaust stroke;
to increase the intake volume, and wherein said engine includes a small compression piston within the auxiliary piston, the said small compression piston held against its cam by means of a spring, the said cam actuated by the same camshaft as the auxiliary pis-

ton, the travel of the said compression piston timed suitably as:

to protrude from auxiliary piston into the combustion chamber from the instant of ignition to the instant of completed combustion;
to stop at the instant of completed combustion and maximum built-up pressure and remain stationary until the end of the working stroke;
to re-enter the auxiliary piston at the start of the exhaust stroke;
to stay inside the auxiliary piston until the ignition during the next cycle;
to keep effectively the volume of the combustion chamber constant until the connecting rod of the working piston is normal to the lever-arm, and thus produce maximum possible torque.

3,312,207
CRANKCASE EMISSION CONTROL
Robert L. Martin, Newhall, Calif., and Albert E. Breaux,
30095 Hasley Canyon Road, Saugus, Calif. 91350;
said Martin assignor to said Breaux
Filed Feb. 11, 1965, Ser. No. 431,820
13 Claims. (Cl. 123-119)



1. A crankcase emission control device for an internal combustion engine having a crankcase and intake manifold means including a throttle valve, said device comprising evacuating conduit means for connecting said crankcase to said intake manifold means posteriorly of said throttle valve, and pressure operated control valve means in said evacuating conduit means controlling the flow of vapor therein from said crankcase to said intake manifold means, said control valve means being movable between a first position defining a discrete vapor flow area in said evacuating conduit means and a second position defining a vapor flow area in said evacuating conduit means greater than the discrete area in response to a predetermined differential between the pressure in said intake manifold means anteriorly of said throttle valve and the pressure in the crankcase.

3,312,208
INJECTION SYSTEM FOR INTERNAL COMBUSTION ENGINES, SENSITIVE TO THE SPECIFIC WEIGHT OF THE AIR

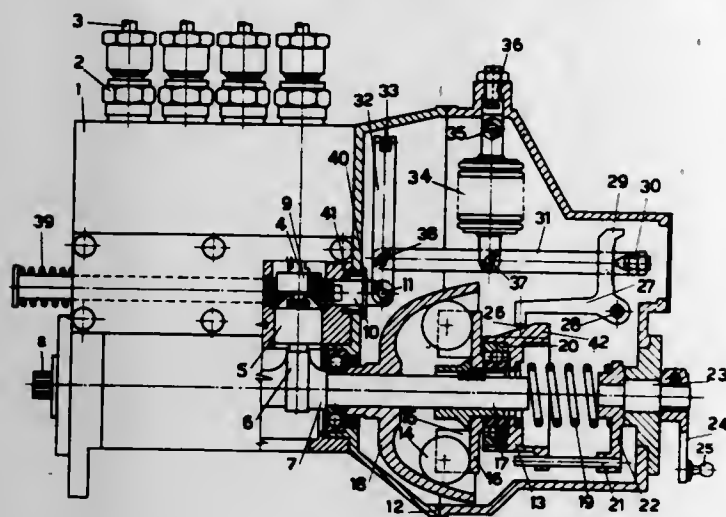
Giampaolo Garcea, Milan, Italy, assignor to Alfa Romeo S.p.A., a company of Italy

Filed Nov. 5, 1964, Ser. No. 409,208
Claims priority, application Mexico, Nov. 28, 1963, 24,258, Patent 715,699

4 Claims. (Cl. 123-140)

1. A fuel injecting system for an internal combustion engine comprising an injection pump, means for adjusting the charges of fuel fed by the pump into the engine, a regulator responsive to the load and speed conditions of the engine, a kinematic chain operably connecting the regulator with the adjusting means and having at least two members, an adjustable connection between said members having a plurality of indexed positions each of which changes the degree of displacement transmitted to

said adjusting means for a given response of said regulator, a compensating means sensitive to modifications in the specific weight of the ambient air, means for connecting said compensating means with one of said kinematic chain members tending to change the indexed position of said adjustable connection in accordance with said modifications, means on one of said kinematic chain



members and spaced means on the other of said kinematic chain members connecting said members for maintaining an indexed position between said members during one range of load and speed conditions for said engine and releasing said members for relative change of the indexed position in accordance with change sensed by said compensating means in another range of load and speed conditions of the engine.

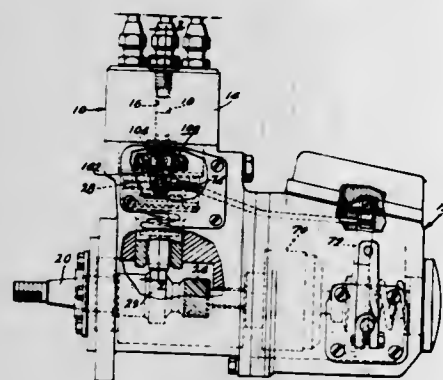
3,312,209

FUEL DELIVERY SYSTEM

Theodore S. Chmura, Chicopee, Mass., assignor to American Bosch Arma Corporation, Springfield, Mass., a corporation of New York

Filed Nov. 12, 1964, Ser. No. 410,416

6 Claims. (Cl. 123-140)



1. A pump for delivering fuel to cylinders of an engine comprising a housing, a fuel distribution chamber in said housing, a sump surrounding said fuel distribution chamber and in communication therewith, a plunger mounted in said fuel distribution chamber, fuel supply passageway means in said housing communicating with a fuel supply and said fuel distribution chamber, discharge passageway means communicating with said fuel distribution chamber and the cylinders of the engine, said plunger adapted for reciprocating and rotating movement in said fuel distribution chamber and operable upon reciprocating movement in one direction to effect flow of fuel under pressure from the supply passageway means to the

cylinders of the engine in a predetermined order through the discharge fuel passageway means, at least three axially spaced radial ports in said plunger providing flow paths between said fuel distribution chamber and said sump adapted to communicate with the sump and the fuel distribution chamber at a predetermined position of the plunger in its reciprocating stroke to effect cutoff of the fuel delivery from said supply passageway means to said discharge passageway means, a pair of sleeves surrounding said plunger and disposed in the sump, a single actuator for actuating the sleeves simultaneously relative to one another and to the plunger in opposite directions whereby during the pumping stroke of the plunger in said one direction the sleeves are actuated axially relative to one another in relation to increased load so that the quantity of fuel discharge per stroke increases and the beginning of injection is advanced and the end of the injection is retarded upon increase of load on the engine.

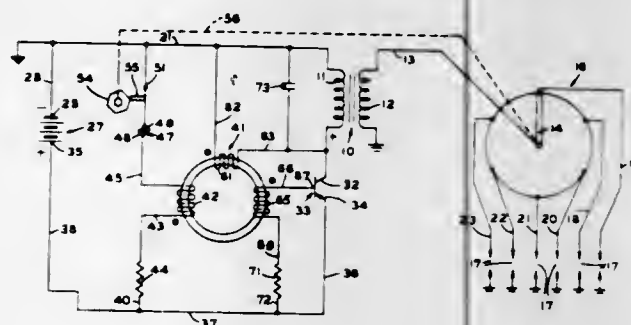
3,312,210

IGNITION SYSTEM

Ole K. Nilssen, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Oct. 12, 1964, Ser. No. 403,263

4 Claims. (Cl. 123-140)



1. An ignition system for an internal combustion engine comprising, a source of electrical energy, an ignition coil including a primary winding and a secondary winding, a plurality of spark plugs, means operable in synchronism with the engine for sequentially coupling said spark plugs to the secondary winding of said ignition coil, a solid state switching device including an output circuit and an input circuit, a saturable switching core capable of being saturated in a first or a second saturable state, a first winding coupled to said source of electrical energy and wound on said saturable core to bias said saturable switching core toward said first saturable state, a second winding coupling said source of electrical energy, said output circuit of said solid state switching device and said primary winding of said ignition coil and wound on said core in a direction to drive said saturable switching core into said second state of saturation, a third winding wound on said saturable core and positioned in the input circuit of said solid state switching device, said third winding wound in a positive feedback direction with respect to said second winding, and means operable in synchronism with said first mentioned means for periodically interrupting the coupling between said first winding and said source of electrical energy whereby said solid state switching device is switched to its conducting state by the energy induced in said third winding and is maintained in its conductive state until said saturable switching core saturates in said second direction whereby said primary winding of said ignition coil is energized only during the period between the interruption of the coupling between said first winding and said source of electrical energy and the saturation of said saturable switching core in said second direction which period is substantially constant and independent of engine speed.

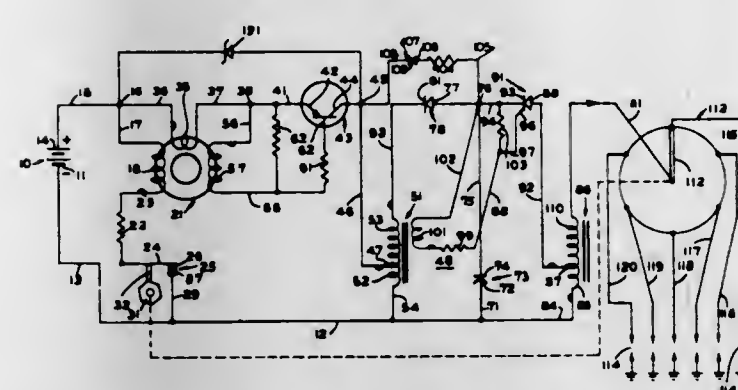
3,312,211

IGNITION SYSTEM

Wesley D. Boyer, Franklin, Mich., assignor to The Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Oct. 13, 1964, Ser. No. 403,451

4 Claims. (Cl. 123-148)



1. An ignition system for an internal combustion engine comprising, a source of electrical energy, an ignition coil including a primary and a secondary winding, a plurality of spark plugs, means operable in synchronism with the engine for sequentially coupling said secondary winding of said ignition coil with said spark plugs, a set of breaker points operable in synchronism with the engine and opening when said means couples said secondary winding of said ignition coil to each of said spark plugs, a step up transformer including a primary winding, a secondary winding and a control winding, means coupled to said source of electrical energy, said primary winding of said transformer and said set of breaker points for coupling said source of electrical energy to said primary winding of said transformer for a predetermined constant time irrespective of the speed of the engine when said breaker points open and while the breaker points remain open, a capacitor coupled to said secondary winding of said transformer receiving the electrical energy from said transformer after said predetermined constant time has elapsed, a solid state switching device having a pair of output electrodes and a control electrode, said primary winding of said ignition coil, said output electrodes of said solid state switching device and said capacitor coupled in series, said control electrode coupled to said control winding of said step up transformer, said control winding being wound to apply a pulse of electrical energy to said control electrode of a polarity to cause said solid state switching device to conduct when said breaker points open thereby discharging the electrical energy stored in said capacitor through said primary winding of said ignition coil when said breaker points open.

3,312,212

HEAT GENERATING APPARATUS

Alfred Wilson, Aldwick Bay, England, assignor to Colt Ventilation and Heating Limited, Surrey, England, a British company

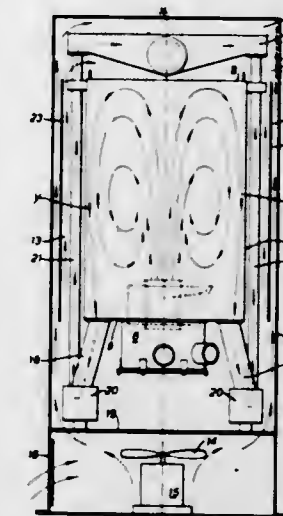
Filed Dec. 14, 1965, Ser. No. 513,734

Claims priority, application Great Britain, Dec. 14, 1964, 50,902/64

2 Claims. (Cl. 126-116)

1. A heat generating apparatus comprising an elongated closed structure of substantially square cross section forming a heat exchange chamber of substantially square cross section transverse to a longitudinal axis thereof; a jacket surrounding said structure forming the chamber; a burner located beneath the bottom of said chamber and delivering a jet combustion product from the bottom of the chamber towards the top thereof, said chamber being formed with exhaust ports located at the bottom of the chamber and at the corners of the square structure to provide for recirculation of the large

proportion of the gases around the chamber by entrainment of the gases surrounding the jet stream emerging from the burner; one leg, each, located at the corners of said chamber and extending downwardly and supporting said structure within said jacket in raised position to provide space for said burner beneath the chamber, said



legs being hollow and in communication with said exhaust ports to form exhaust ducting from the chamber; air inlet means formed in the bottom of said jacket; an air outlet means formed in the top of said jacket; said legs being located in the path of the air from said inlet to said outlet means and forming heat transfer surfaces passed by the air to be heated.

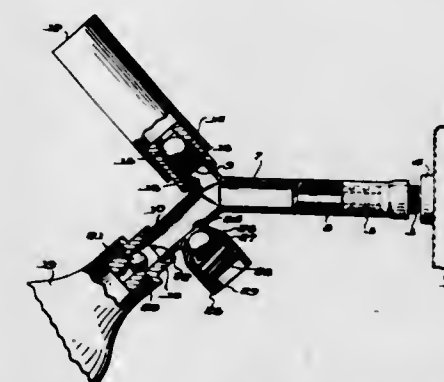
3,312,213

INFLATING DEVICE FOR INFLATABLE SPLINTS

Walter Timm, Dormont, Pa., assignor to Mine Safety Appliances Company, a corporation of Pennsylvania

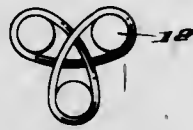
Filed Apr. 27, 1964, Ser. No. 362,668

4 Claims. (Cl. 128-87)



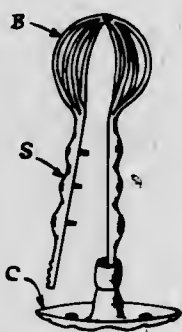
4. The combination with an inflatable splint adapted to surround an injured limb and provided with an air inlet valve having a short resilient inlet tube projecting outwardly therefrom, of an inflating device comprising a rigid tube having a nozzle inserted in said inlet tube and tightly gripped thereby, said rigid tube having two inlets, a squeeze bulb connected to one of the tube inlets for forcing air through the rigid tube into the splint, a check valve connected with the rigid tube for preventing return of air from the splint to the bulb when the bulb is released, a mouth tube attached to the other of said tube inlets to permit the splint to be inflated by blowing into it, a check valve associated with said mouth tube for preventing escape of air outwardly therethrough, and a relief valve connected with said rigid tube to limit the air pressure in the splint to a predetermined value, said nozzle being removable from said inlet tube after said splint inlet valve has been closed.

3,312,214
INTRA-UTERINE DEVICE
 Charles Lalor Burdick, Christiansa Hundred, Del.
 (4400 Lancaster Pike, Wilmington, Del. 19805)
 Filed June 6, 1966, Ser. No. 555,503
 10 Claims. (Cl. 128-130)



1. A trefoil intra-uterine device which comprises an inert endless material in the shape of three continuous freely movable adjacently-positioned loops said loops being interconnected such that the two terminating portions of each loop continue smoothly into the terminating portions of the adjacent loops, said intra-uterine device capable of being deformed by the application of a small amount of force and being sufficiently elastic to return substantially to its original shape when the force is removed.

3,312,215
UTEROCERVICAL CANNULA
 Max N. Silber, 8519 N. Trumbull, Skokie, Ill. 60076
 Filed Aug. 2, 1963, Ser. No. 299,669
 18 Claims. (Cl. 128-131)

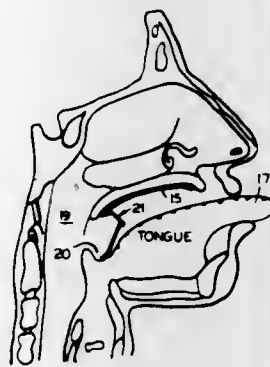


1. A unitary uterine cannula comprising: a tubular stem portion adapted to fit snugly in the cervix; and a head portion adapted to be embraced by the walls of the uterus, the head portion consisting of a plurality of looping flexible arms defining a deformable bulbous portion, the arms having their ends unitary with the stem portion, said stem portion defining a series of longitudinally axially spaced bulbar enlargements along with the said stem, the end of said stem remote from the head portion defining an internal threaded conformation adapted to receive an externally threaded rod for insertion and withdrawal of said cannula into and from the uterus, respectively.

3,312,216
TONGUE-THRUSTING INHIBITING DEVICES
 Melvin Wallsheln, 8645 Bay Parkway,
 Brooklyn, N.Y. 11214
 Filed July 22, 1963, Ser. No. 296,628
 12 Claims. (Cl. 128-136)

1. A tongue-thrusting inhibiting device of the character described, comprising a frame piece adapted to fit into a user's mouth adjacent the palate in releasably fixed engagement with the upper teeth in the mouth, and a freely contractible tongue-contacting means having two ends; said means being biased to extended condition when contracted; one of the ends thereof being mounted on

the frame piece and the other end adapted to contact the tongue; said means extending downwardly rearwardly from the frame piece whereby on mounting the device in the mouth when the tongue is within the mouth, the said other end of said means will contact the tongue at a position forward of the oesophagus, and said means



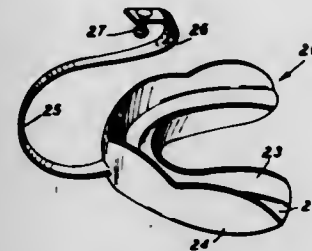
will be in contracted condition, whereupon opening the mouth and thrusting the tongue outwardly therefrom causing the tongue to move downwardly from the palate, said means will automatically become extended and the said other end thereof will bear against the far reaches of the epiglottis to cause annoyance to the user.

3,312,217
ANTI-SNORING DEVICE
 William S. McKinstry, 1520 Waterbury Road,
 Lakewood, Ohio 44107
 Filed Feb. 23, 1965, Ser. No. 434,281
 2 Claims. (Cl. 128-136)



2. An anti-snoring device comprising, a chin member of cup-like configuration and of a size adapted to receive only the chin of the wearer therein, the inner surface of said chin member having a layer of soft material covering the same, strap-like members connected to opposite sides of said chin member, each of said strap-like members comprising an inner portion of elastic material attached to said chin member and an outer portion of non-elastic material attached to said inner portion, means including a buckle on each of said non-elastic portions for adjusting the length of the respective strap-like member, and an arcuate hook-shaped ear holding member attached to each of said non-elastic portions and adapted to be received in partially encompassing relation about the ears of the wearer at the juncture of the wearer's ears to the wearer's head, to hold the chin member in predetermined position with respect to the ears of the wearer and thus hold the mouth of the wearer in closed condition, said ear holding members being formed of deformable plastic and having means embedded therein providing for selective deformation of the ear holding members for selective conformity to the ears of the wearer, said elastic portions of said strap-like members permitting forced relative movement between said chin member and said ear holding members.

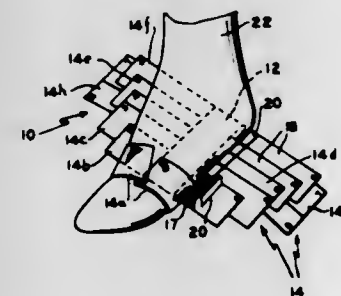
3,312,218
MOUTH PROTECTOR
 Alfred G. Jacobs, 802 University Bay Drive,
 Madison, Wis. 53705
 Filed July 16, 1965, Ser. No. 477,073
 4 Claims. (Cl. 128-136)



3. A protective mouthpiece for absorbing the force of blows transmitted to the mouth of a person wearing a helmet having a face guard attached thereto, said mouthpiece comprising:

- (a) a substantially U-shaped channel member adapted to fit snugly around the wearer's teeth and surrounding gum tissue,
- (b) said U-shaped channel being made from a material which when heated to a temperature in excess of body temperature may be molded to receive an impression of the wearer's teeth and surrounding gum tissue, and which, when cooled to body temperature is tough, resilient, durable and shape retaining,
- (c) a forwardly extending flexible tie member formed integral with said channel member, said tie member extending from the front of said channel member at approximately the occlusal surface of the upper teeth of the wearer of said mouthpiece a distance sufficient to the bend around the face guard of the helmet, and
- (d) an enlarged head on said tie member and an aperture therein to receive said head for attaching said tie member back on itself for securing said tie member to said face guard.

3,312,219
ANKLE SUPPORT
 Arthur C. Peckham, 606-610 Woolworth Bldg.,
 Watertown, N.Y. 13601
 Filed Mar. 3, 1965, Ser. No. 438,468
 3 Claims. (Cl. 128-166)



1. In an orthopedic support of the character described: a flexible strap member having a length such that it will extend from the sole area to the heel area of a human foot when disposed longitudinally along the bottom thereof; said strap member having adhesive means on one side for securing it in fixed relation to the bottom of the foot; a plurality of additional flexible strap members secured in substantially crosswise fashion to the other side of said first-named strap member; said last-named strap members being positioned along substantially the entire length of the first-named member and extending outward-

ly therefrom for direct wrapping engagement with the foot, ankle and lower leg; and adhesive means on the outwardly extending portions of said additional strap members for maintaining said wrapping engagement whereby substantially the entire support adhesively contacts the portions of the foot, ankle and lower leg that are engaged thereby.

3,312,220
DISPOSABLE INDWELLING PLASTIC CANNULA ASSEMBLY
 Myron Michael Eisenberg, 1654 NW. 14th Ave.,
 Gainesville, Fla. 32601
 Filed Apr. 2, 1963, Ser. No. 269,964
 1 Claim. (Cl. 128-214.4)



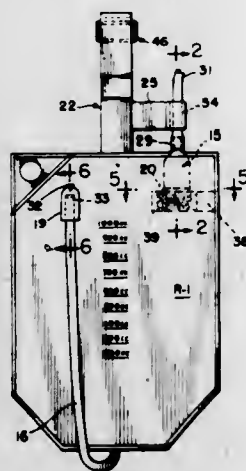
A cannula assembly for insertion through tissue of the body and to remain therein with tight contact between it and the body tissue comprising:

- a hollow, flexible plastic tube having a uniform inside diameter and a uniform outside diameter throughout the major portion of its length, said outside diameter being suitable for intravenous therapy and entrance into body cavities,
- a steel trochar disposed within said plastic tube, said steel trochar being of uniform outside diameter and of a diameter which facilitates easy insertion and removal of said trochar from said plastic tube,
- said trochar having a pointed tip at the distal end thereof extending beyond the distal end of said flexible plastic tube,
- said flexible plastic tube having a tapered blunt tip at the distal end thereof, said tapered blunt tip being of gradually reduced outside diameter to provide a close fit with said trochar and of diameter approaching the outside diameter of said trochar, said tube having a plurality of auxiliary drainage perforations at the distal end thereof,
- a lock-type hub integral with said plastic tube and at the proximal end of said tube, said lock-type hub being of the same material as said flexible plastic tube, said tube and said hub being constructed of a synthetic plastic material which is sufficiently soft to prevent trauma to organs with which said tube comes in contact but flexible enough to yield without flattening, said material being selected from the group consisting of polypropylene plastic, nylon and tetrafluoroethylene plastic, and
- a plastic stylet, said stylet having a head on one end thereof and a tip on the other end thereof, said stylet being disposed within said trochar, with said stylet head being disposed against the proximal end of said trochar.

3,312,221
URINARY DRAINAGE APPARATUS
 Alfred P. H. Overment, 4016 N. Central Park,
 Chicago, Ill. 60618
 Filed Oct. 25, 1963, Ser. No. 318,895
 11 Claims. (Cl. 128-275)

1. Equipment of the class described comprising, a fluid receptacle having an inflow tube fixedly connected to said receptacle for drainage of liquid thereinto, a unidirectional valve means on the end of said tube, said valve means comprising a pair of superimposed layers of flexible plastic in face-to-face contact with each other and welded together along narrow portions of their respective lateral margins without deformation of the said layers and along one end to embrace the inner end of the inflow tube and

to dispose the valve means in suspension from the said inflow tube, the other end of the valve means extending freely within the receptacle, and a perforate container

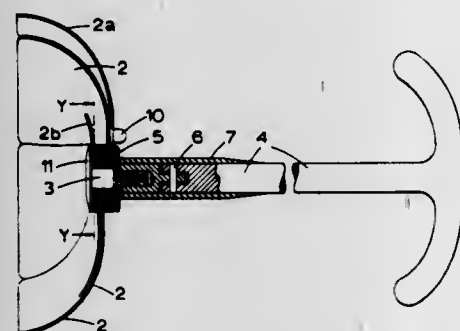


holding a bactericidal substance fixed in the receptacle directly below the outlet end of the flutter valve for immunizing the inflowing fluid.

3,312,222

OBSTETRICAL CERVICAL DILATOR WITH ROTARY, EXPANSIBLE ARMS

Geoffrey H. H. Dwyer, Altrincham, England, assignor to Allen and Hanburys (Surgical Instruments) Limited
Filed Sept. 1, 1964, Ser. No. 393,521
Claims priority, application Great Britain, Sept. 3, 1963, 34,713/63
4 Claims. (Cl. 128—345)



1. An obstetric instrument comprising a pivot pin; a handle connected with said pin; and a shallow cup composed of a plurality of separate sections mounted on said pin and rotatable fan-wise between an open position in which they form said cup, said cup being of a size commensurate with the head of a fetus, and a closed position in which said sections are superimposed one on another and of a size whereby they can be inserted into the uterus of a patient, one of said sections being fixed to and rotatable with said pin and all of said sections except the one furthest from said fixed section being provided with arcuate slots, each of said slots being engaged with a projection of an adjacent section whereby rotation of said handle will open and close said cup.

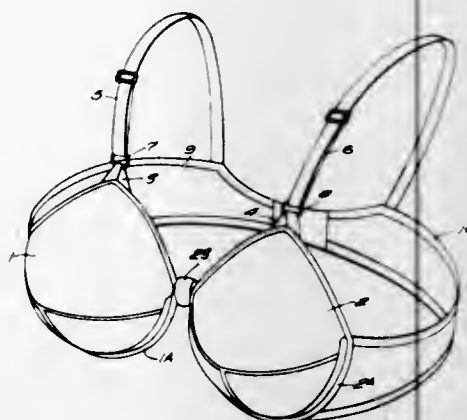
3,312,223

FOLDABLE BRASSIERE

Arnold B. Wilson, Auburndale, Mass., assignor to Micro Wire Products, Cambridge, Mass., a partnership
Filed Jan. 6, 1965, Ser. No. 423,708
2 Claims. (Cl. 128—469)

2. A foldable brassiere comprising a pair of breast cups having perimetral channels, a pair of bands secured to the breast cups, the bands and breast cups being

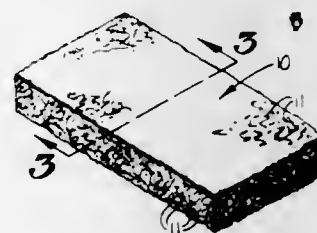
adapted to encircle the body of the wearer, a pair of bowed resilient members disposed in the perimetral channels, a hinge plate having a transverse ridge, the hinge plate providing a pair of bearings adjacent the edges of



3,312,224

NON-WOVEN TEXTILE PRODUCTS AND THE METHOD OF FABRICATING THE SAME

Herbert W. Coates, Joseph F. Baigas, Jr., Milton J. Hamilton, and John T. Haynes, Jr., all of Charlotte, N.C., assignors to Kem-Wove Industries, Inc., a corporation of North Carolina
Filed Mar. 15, 1965, Ser. No. 439,662
11 Claims. (Cl. 128—516)



10. A method of fabricating a brassiere cup from a non-woven textile fabric comprising:

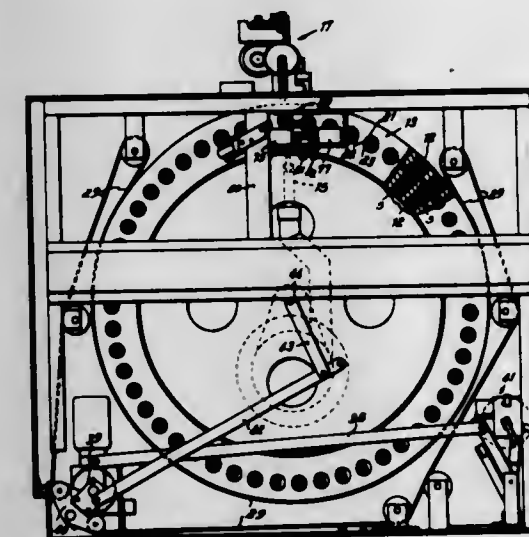
- supplying an open, low density, self-sustaining non-woven textile fabric formed from thermoplastic fibers bonded together with a resinous bonding material;
- compacting the non-woven fabric to a less open, higher density, self-sustaining compacted state, said compacting step comprising
 - heating the non-woven textile fabric to a temperature below the plastic flow temperatures of both the thermoplastic fibers and the bonding material,
 - applying pressure to the heated non-woven fabric to compact the fabric to a less open, higher density, self-sustaining compacted state, and
 - cooling the heated and compacted non-woven fabric so that the fabric will remain in the compacted state;
- cutting the non-woven fabric while in the compacted state into three, generally elliptical shaped, component parts;
- securing the component parts together while in the compacted state to form a brassiere cup, said securing step comprising

- superimposing two of the component parts on each other,
- juxtaposing the third component part to the superimposed part and,
- securing the three component parts together along the juxtaposed edges and around the remaining edges; and
- restoring the formed brassiere cup by heating the brassiere cup to a temperature below the plastic flow temperatures of both the thermoplastic fibers and the bonding material to allow the formed product to expand to the original open, low density state thereof and to mold the brassiere cup into a predetermined shape.

3,312,225

AUTOMATIC CARD FILING APPARATUS

Edward T. Irwin, Cincinnati, Ohio, assignor to The Mosler Safe Company, Hamilton, Ohio, a corporation of New York
Filed Oct. 9, 1963, Ser. No. 314,960
4 Claims. (Cl. 129—16.1)



- Card selecting apparatus comprising:
 - a file having at least one pocket of rectangular configuration for receiving and storing a deck of coded cards therein, said pocket being defined by a pair of opposed side walls, a pair of opposed end walls and having two opposed at least partially open sides, said side walls having apertures therein,
 - means for restraining all but a preselected card against movement relative to the remainder of cards of said deck,
 - means for directing a velocity stream of gaseous fluid through one of said partially open sides against one edge of said deck as movement is effected between said deck and stream whereby said cards are sequentially moved through said velocity stream and said unrestrained preselected card is moved to a physically discrete position relative to the remainder of cards within said deck.
- means adjacent the other of said partially open sides for receiving said preselected card when moved to said physically discrete position and for completely removing said preselected card from said deck, and
- means for returning said preselected card to said deck, said last named means including compressor fingers insertable through said side wall apertures for moving said deck away from one of said end walls for establishing a gap between the last card of said deck and said one of said end walls while said card is out of said pocket and means for inserting said preselected card into said gap.

3,312,226

SMOKING TOBACCO COMPOSITION

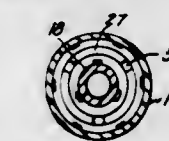
Abraham Bayley and William C. Bailey, Jr., Bon Air, Va., assignors to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia
Filed Feb. 26, 1964, Ser. No. 347,381
3 Claims. (Cl. 131—17)

3. A smoking tobacco composition comprising smoking tobacco and from about 0.1 to 10% by weight, based on the total tobacco composition, of a member selected from the group consisting of 1-menthyl chlorocarbonate and 1-menthyl linalool carbonate.

3,312,227

FILTER HOLDER FOR SMOKERS

José Mazar Barnett, Madrid, Spain, assignor to Filtox S.A., Madrid, Spain, a corporation of Uruguay
Filed Aug. 21, 1964, Ser. No. 391,245
Claims priority, application Spain, May 14, 1964, 299,855
3 Claims. (Cl. 131—187)

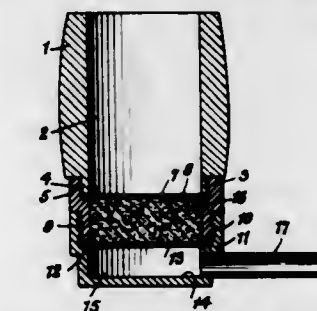


1. A filter holder for smokers comprising a tubular body portion tapering from a cylindrical receiving end to a mouthpiece end, a main socket fitted in the receiving end and extending a short distance toward the mouthpiece end terminating in a closed end having a central aperture, and a rear socket having a flanged end projecting through the central aperture and having its flange resting on the closed end of the main socket around the central aperture therein and said rear socket flaring therefrom with an outwardly inclined wall having inclined wall apertures therein and terminating in a closed end to form a condensation chamber within the rear socket, the size and shape of the rear socket forming a tapering chamber between the rear socket and the adjacent portion of the tubular body portion.

3,312,228

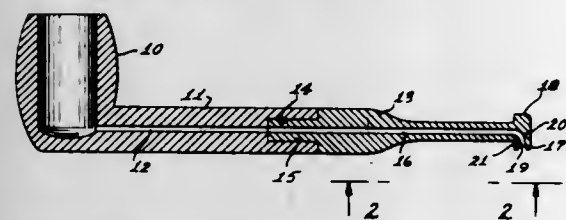
TOBACCO PIPES HAVING SMOKE-FILTERING MEANS

Frederick A. Fassbender, West Orange, N.J., assignor to S. M. Frank & Co., Inc., New York, N.Y., a corporation of New York
Filed Mar. 3, 1965, Ser. No. 436,841
9 Claims. (Cl. 131—205)



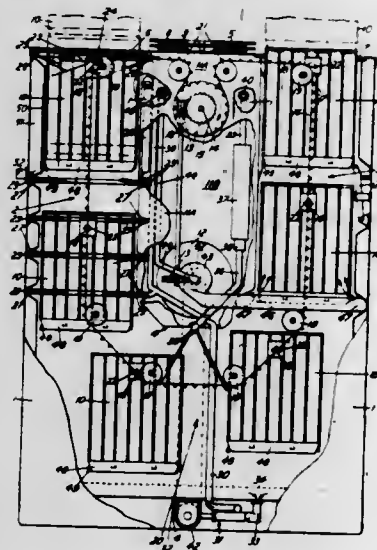
1. A pipe having an upper bowl portion, a cup closing the lower end of the bowl portion, a stem projecting from the cup, a ring interposed between the lower end of the bowl portion and the top of the cup, a foraminous disk located within the ring near the upper end of the same, a second foraminous disk located below the lower end of the ring and a filter located in the ring between the foraminous disks, the second foraminous disk being retained between the lower end of the ring and a part of the interior of the cup, and the two disks defining a chamber between them and the ring, the filter being composed of charcoal and being located in said chamber between said disks.

3,312,229
SMOKER'S PIPE
 Denzel O. Forney, P.O. Box 343,
 Junction City, Ore. 97448
 Filed Nov. 2, 1964, Ser. No. 408,248
 2 Claims. (Cl. 131-229)



1. A smoker's pipe comprising in combination:
 - (A) a bowl at the forward end of said pipe,
 - (B) a rearwardly extending integral stem on said bowl,
 - (C) a mouthpiece demountably connected to the rear end of said stem,
 - (D) said stem and mouthpiece having aligned air and smoke passageways formed therein,
 - (E) an upper bite lug formed on the rear end of said mouthpiece,
 - (F) a lower bite lug formed on the rear end of said mouthpiece located vertically below said upper bite lug,
 - (G) the lower surface of said lower bite lug having a downwardly opening horizontally disposed arcuate semi-circularly sectioned groove formed therein and extending from side-to-side thereof,
 - (H) the rear end of said mouthpiece having a vertically disposed air and smoke passageway means therein having the upper end thereof in communication with said passageway in said mouthpiece and having lower end thereof opening into said transverse groove at an intermediate location in said transverse groove.

3,312,230
DISH-WASHING MACHINES
 Meredith Wooldridge Thring, Buckhurst Hill, England,
 assignor to Thring's Advanced Developments Limited
 Filed Feb. 16, 1965, Ser. No. 432,974
 Claims priority, application Great Britain, Feb. 18, 1964,
 6,711/64
 8 Claims. (Cl. 134-72)

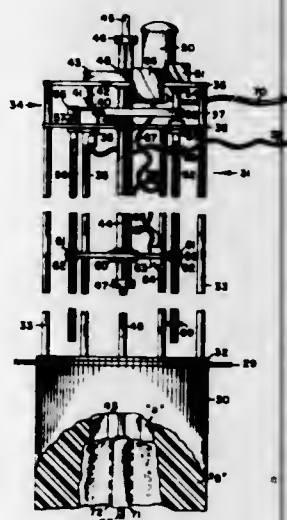


1. A dish-washing machine comprising a cabinet subdivided to provide a downward washing run, an upward drying run and a transfer run between the bottoms of the first two runs, an entry opening at the top of the washing run, a discharge opening at the top of the drying run, a conveyor along each run, drive means for the conveyor, projections on the conveyor, at least one loose basket for loading with articles to be washed, suspension means on the basket for engagement by the projections of the con-

veyor, high pressure scrubbing water jets near the top of the washing run, water spray jets lower down the washing run, a reservoir for supplying detergent to the spray jets, rinsing water jets in the washing run below the spray jets, further rinsing water jets in the transfer run, a waste outlet for disposing of dirty water, and nozzles for directing hot air into the drying run.

3,312,231
APPARATUS FOR THE RECLAMATION OF SOLID PROPELLANT ROCKET MOTOR CASES

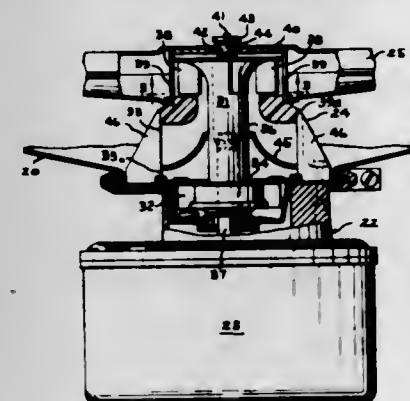
Joseph W. Monroe, James L. Murphy, Jr., Mary H. Larimer, Robert H. Brown, and Marvin R. Potts, Huntsville, Ala., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
 Filed Oct. 29, 1962, Ser. No. 283,516
 6 Claims. (Cl. 134-111)



1. An apparatus for disintegrating and removing from a rocket motor case a solid propellant grain that has been cast therein, comprising a bottom ring that is adapted to be positioned on the open end of the motor case in axial alignment therewith, a plurality of equally-spaced, vertically-disposed support rods secured at their lower ends to said bottom ring, a power unit, said power unit comprising a lower circular plate secured to the upper ends of said support rods, a plurality of equally-spaced, vertically-disposed support rods secured at their lower ends to said lower circular plate and an upper circular bearing plate secured to the upper ends of said last said support rods, a power source mounted on said lower circular plate, a gear assembly mounted on said upper circular bearing plate and having a drive connection with said power source, a vertically disposed tubular member extended through said gear assembly and having a drive connection therewith, a fluid supply conduit mounted within said tubular member and rigidly connected thereto, a second power source mounted on the upper surface of said upper circular bearing plate, a second gear assembly mounted on said upper circular bearing plate and having a drive connection with said second power source, a first vertically-disposed, traversing screw connected to said second power source, a first output source secured to said first traversing screw, a second vertically-disposed traversing screw mounted for rotation in said lower circular plate, a second output source secured to said second vertically-disposed, traversing screw, a flexible drive connection between said first and second output sources, a follower plate secured to said vertically disposed tubular member, said follower plate having operational connection within said first and second traversing screws whereby said follower plate and said tubular member are reciprocated within said motor case, a manifold connected to the lower end of said fluid supply conduit and a plurality of fluid

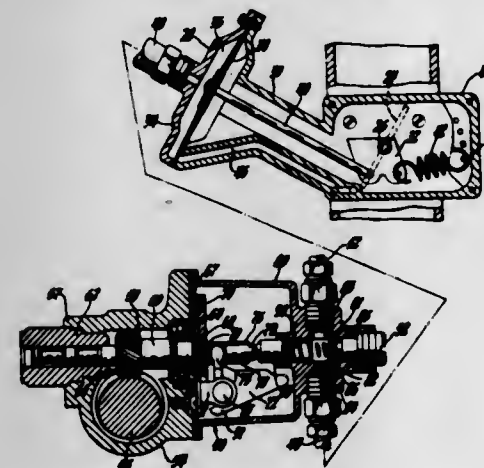
ejection nozzles secured to said manifold for directing jets of fluid against the solid propellant grain in said motor case for the disintegration and removal thereof.

3,312,232
PUMP IMPELLER AND REACTION-TYPE SPRAY DEVICE HAVING AN INLET DISPOSED IN THE SAME PLANE
 Thomas E. Jenkins, Louisville, Ky., assignor to General Electric Company, a corporation of New York
 Filed Jan. 22, 1965, Ser. No. 427,271
 4 Claims. (Cl. 134-176)



1. A pump and spray mechanism for use in an automatic dishwasher having a wash chamber with means adapted to receive and support articles to be washed comprising:
 - (a) a housing having a generally annular inlet,
 - (b) rotatable shaft means disposed within said housing,
 - (c) impeller means carried by said shaft for rotation therewith, and
 - (d) a spray device rotatably supported from said housing and having an inlet disposed radially outward from, and in substantially the same plane as, said impeller,
 - (e) said spray device having a plurality of orifices directed toward the means adapted to receive and support articles to be washed.

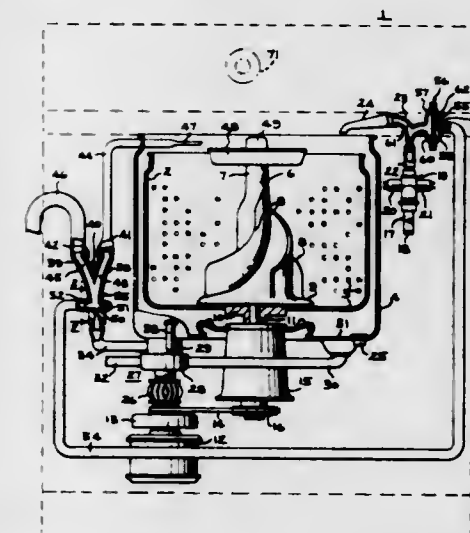
3,312,233
EXCESSIVE SPEED RESPONSIVE ENGINE GOVERNORS
 Robert E. Young, Anderson, and Clarence L. Julian, Middletown, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
 Filed Jan. 3, 1964, Ser. No. 335,490
 2 Claims. (Cl. 137-57)



1. A speed responsive centrifugal governor for an engine having a fluid pressure operated actuator, said governor comprising:
 - a housing adapted to be mounted on the engine;
 - a governor shaft rotatably carried by the housing and adapted to be driven at a speed proportional to en-

gine speed, said shaft having a sleeve portion at one end extending coaxially with the axis of rotation and an axially-directed slot in said sleeve portion; a yoke element rotatably carried by said governor shaft and pivotally supporting in centrifugally unbalanced flyweight having a finger extending through said slot into intersecting relation with the axis of rotation; said housing having a bore spaced from the yoke element and coaxial with the axis of rotation and a transverse passage intersecting the bore and communicating with the actuator; a valve element slidably received in the bore, said valve element being movable in the bore to meter fluid flow through the passage; and a plunger reciprocally carried in said sleeve portion and contacting both said finger and said valve element to provide an actuating connection therebetween, the contacts of said finger and plunger and of said plunger and valve element occurring substantially along said axis of rotation whereby frictional loss due to said contacts is minimized.

3,312,234
WASHING MACHINE
 Everett D. Morey, Louisville, Ky., assignor to General Electric Company, a corporation of New York
 Filed Aug. 6, 1964, Ser. No. 387,924
 6 Claims. (Cl. 137-81.5)



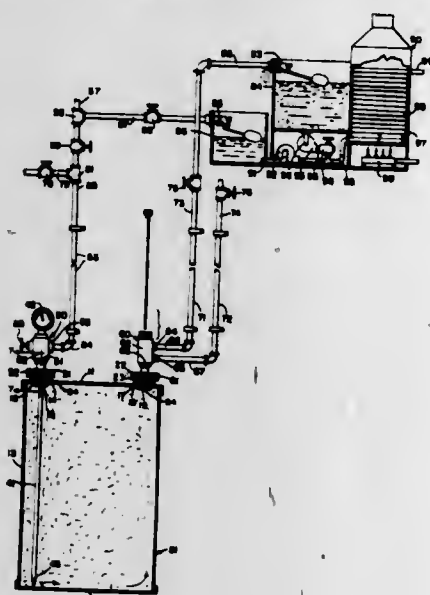
1. In a clothes washing machine including a container to receive liquid and clothes to be washed in the liquid;
 - (a) a liquid supply mechanism for introducing liquid into said container,
 - (b) recirculation means for removing liquid from said container and discharging it back into said container, and
 - (c) means responsive to the introduction of additional liquid into said container during recirculation for diverting the path of recirculated liquid from said container to drain.

3,312,235
DETERGENT DISPENSING APPARATUS
 Barry J. Graceman and Lennart L. Johnson, Minneapolis, Minn., assignors to Grace-Lee Products Inc., Minneapolis, Minn.

Filed Feb. 23, 1965, Ser. No. 434,242
 2 Claims. (Cl. 137-268)

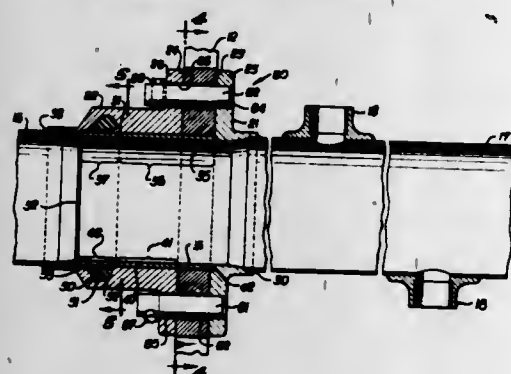
2. A detergent dispensing apparatus comprising:
 - (a) a drum containing a water soluble detergent having a top, a bottom and an enclosing wall structure therebetween,
 - (b) spaced bung holes in said top,

- (c) a tube insertable into one of said bung holes and extending substantially to said bottom,
- (d) means on said tube for closing said bung hole,
- (e) a nozzle at the lower end of said tube and having a transversely disposed opening,
- (f) means for directing water under pressure into said tube,
- (g) means for discharging the dissolved detergent through the other bung hole and including,
- (h) a reservoir for the detergent solution,
- (i) a float valve associated with said reservoir,
- (j) means for discharging the dissolved detergent into said reservoir through said float valve,



- (k) a heater,
- (l) a second reservoir for water,
- (m) a float valve associated with said second reservoir and maintaining water in said reservoir,
- (n) a pump drawing water from said water reservoir and running it through said heater,
- (o) a reservoir for the detergent solution,
- (p) a float valve associated with said detergent reservoir,
- (q) a pump drawing dissolved detergent from said detergent reservoir and discharging it into said water before it reaches the heater,
- (r) and means for discharging the heated mixture from the heater.

3,312,236
TORQUE TRANSMITTING COUPLING FOR IRRIGATION WHEEL
 Dillard W. Stewart, 3753 E. Ave I, Lancaster, Calif. 93534
 Filed Apr. 15, 1964, Ser. No. 360,144
 4 Claims. (Cl. 137-344)



1. In a movable irrigation system, a wheel and coupling assembly which includes:
 a wheel having a hub with an axial passage of non-circular cross section therethrough;

a reception coupling member having an internal passage with a torque portion of non-circular cross section mating with said hub opening adjacent said hub, and a sealing portion spaced from said hub;
 a hollow conduit probe coupling member having an elongated probe closely received through said hub opening and into said reception member passage, said wheel, said reception coupling member and said probe coupling member adapted to be connected together in coupled relationship, said probe having a torque section of non-circular external cross section mating with said hub opening and said torque portion, and a sealing section mating with said sealing portion;
 and sealing means between said sealing portion and said sealing section of said probe.

3,312,237
BICUSPID HEART VALVE
 George Mon, Washington, D.C., and Kenneth E. Woodward, McLean, Va., assignors to the United States of America as represented by the Secretary of the Army
 Filed May 6, 1964, Ser. No. 365,541
 3 Claims. (Cl. 137-512.15)

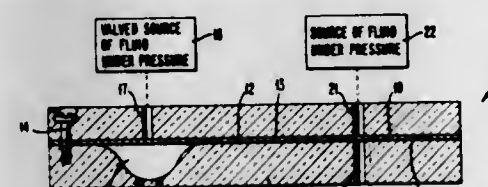


1. A fluid valve comprising a hollow cylindrical member, a center pin member mounted transversely within said cylindrical member, first and second support pins mounted transversely within said cylindrical member and a resilient flapper member extending around said center pin member, whereby fluid flow in one direction forces said flapper member to bend around said center pin toward the longitudinal axis of said cylindrical member to allow the passage of fluid through the valve, while fluid flow in the opposite direction forces said flapper member outwardly toward said cylindrical member to form a seal thereagainst with intermediate support for said flapper member being provided by said first and second support pins, a second hollow cylindrical member mounted within said first mentioned cylindrical member to form a valve seat for said resilient member, one end of said second hollow cylindrical member is chamfered to reduce fluid turbulence, the other end of said second hollow cylindrical member is of complementary shape to said resilient flapper member to form an end seal with said flapper member, said resilient flapper member is elliptical in shape with a groove extending thereacross along the minor axis to accommodate said center pin member, said groove being shaped to serve as a limit stop against said center pin member to prevent the resilient flapper member from folding completely about said center pin member and striking against itself.

3,312,238
MONOSTABLE FLUID LOGIC ELEMENT AND ACTUATOR
 William F. Volt, Jr., Lexington, Ky., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
 Filed Dec. 24, 1964, Ser. No. 421,032
 27 Claims. (Cl. 137-552.5)

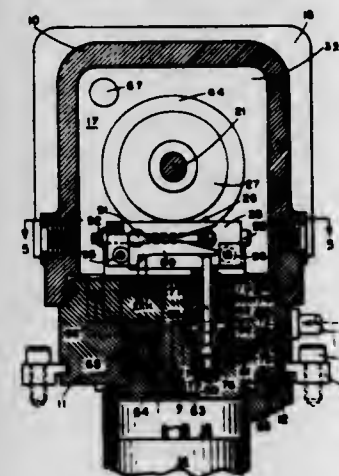
1. A fluid element comprising:
 a housing having an elongated slot therein;

an elongated tape of flexible material movably received in said slot;
 means stationarily anchoring one end of said tape relative to said housing;
 at least one actuating cavity formed in said housing adjacent said slot for receiving said tape;
 a source of input signals;



output means carried by a movable portion of said tape spaced from said cavity; and
 means responsive to the input signals for creating a pressure gradient extending transversely of said tape for deflecting the same into said actuating cavity and causing movement of said tape in said slot to shorten the overall effective length thereof and to move said output means.

3,312,239
CROSSHEAD ASSEMBLY
 Fred F. Chellis, Manchester, Mass., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
 Filed June 17, 1964, Ser. No. 375,726
 6 Claims. (Cl. 137-560)

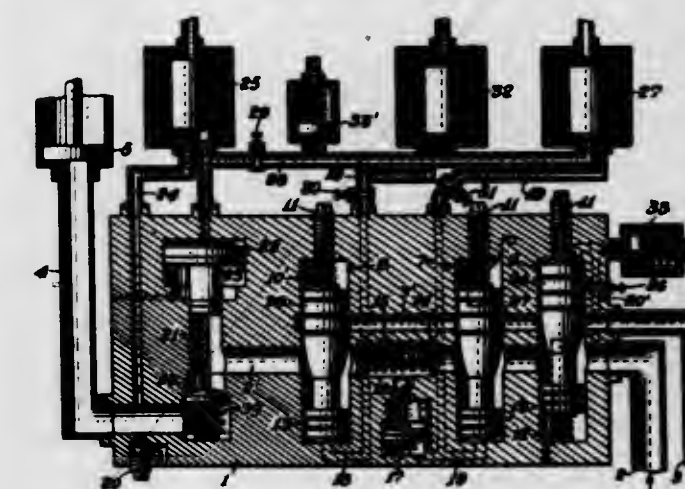


1. A crosshead assembly capable of controlling the flow of a fluid into and out of an enclosure and of controlling the circulation of said fluid within said enclosure through the motion of a member movable within said enclosure, comprising in combination

- (a) motor means adapted to rotate a motor shaft;
- (b) a motor housing;
- (c) a crankcase block affixed in fluid-tight relationship to said enclosure;
- (d) a crankcase housing forming with said motor housing and said crankcase block a fluid-tight crankcase;
- (e) fluid conduit means adapted to conduct high-pressure fluid into and low-pressure fluid out of said enclosure;
- (f) mechanically actuated high-pressure inlet and low-pressure exhaust fluid control valves associated with said fluid conduit means, located within said crankcase block and adapted to control the flow of said high-pressure and said low-pressure fluid;
- (g) a driving rod associated with said movable member in said enclosure and extending through said crankcase block into said crankcase;
- (h) an auxiliary shaft affixed to said motor shaft, through first collar means, and eccentrically mounted thereto;

- (i) second collar means mounted on said motor shaft adjacent to said first collar means and eccentric thereto;
- (j) driving rod moving means within said crankcase and comprising a Scotch yoke and an associated bearing cam mounted on said auxiliary shaft;
- (k) inlet valve actuating means affixed to said first collar means and eccentrically mounted thereto; and
- (l) outlet valve actuating means affixed to said second collar means.

3,312,240
HYDRAULIC CONTROL ARRANGEMENT FOR AN ELEVATOR
 Erich Ruchser, Rommelshausen, Germany, assignor to Erich Herlon, Stuttgart-Frauenkopf, Germany
 Filed Oct. 16, 1964, Ser. No. 404,532
 15 Claims. (Cl. 137-596.12)



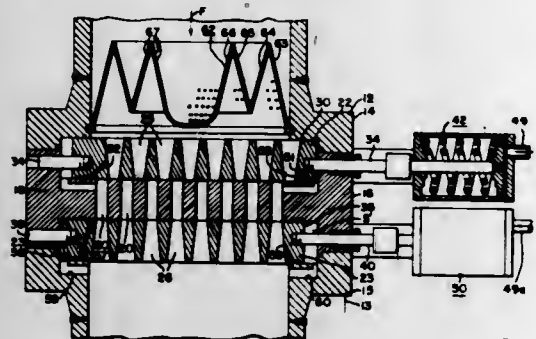
1. In a hydraulic control arrangement, in combination:

- (a) an elongated first conduit having one end portion adapted to be connected to a source of pressure fluid, the other end portion of said conduit being adapted to be connected to an apparatus to be controlled by said arrangement;
- (b) a second conduit adapted to be connected to a return line;
- (c) two by-pass valves interposed between said one end portion and said second conduit;
- (d) a third by-pass valve interposed between said other end portion and said second conduit;
- (e) a check valve arranged in said first conduit between said end portions thereof for connecting said end portions in response to a predetermined fluid pressure in said one end portion,
 - (1) one of said two by-pass valves being normally open, and
 - (2) the other one of said two by-pass valves and said third by-pass valve being normally closed;
- (f) a shut-off valve in the other end portion of said first conduit and spaced from said third by-pass valve in a direction away from said check valve; and
- (g) actuating means for operating said by-pass valves and said shut-off valve in timed sequence.

3,312,241
FLUID CONTROL APPARATUS
 Ozro N. Bryant, Chester, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
 Filed Apr. 16, 1964, Ser. No. 360,280
 3 Claims. (Cl. 137-599)

1. A valve structure for controlling the flow of pressurized fluid comprising:
 a tubular housing having a central axis,

a planar stationary grid member disposed in said housing transverse to said axis and having a plurality of ports arranged in a pattern, a planar movable grid member received in said housing transverse to said axis and disposed in slidable face-to-face abutment with said stationary grid member, said movable grid member having a plurality of apertures arranged in said pattern, said housing having an internal wall of substantially the same cross-sectional configuration as said movable grid member but of larger cross-sectional area, means for slidably moving said movable grid member from a first position in which said ports and said apertures are in mutual registry to permit flow of fluid to a second position in which said ports and said apertures are out of registry with each other to block flow of fluid,

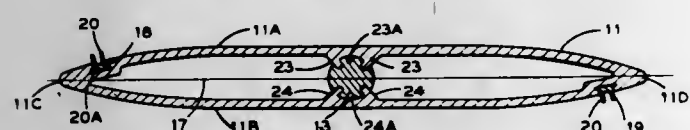


said housing and said movable grid member at least partially defining a first space when said movable grid member is in said first position and a second and diametrically opposed space when said movable grid member is in said second position; and said stationary grid member having first passage means for admitting fluid to said second space during movement of said grid member to said second position and said housing having diametrically opposed second passage means for admitting fluid to said first space during movement of said grid to said first position, whereby the fluid pressure in said second space is effective to minimize the force required to move said movable grid member from the first to the second position, and, conversely, the fluid pressure in said first space is effective to minimize the force required to move said movable grid member from said second to said first position.

3,312,242

DAMPER CONSTRUCTION

Elliot Kahn, New Rochelle, and Alex Bobrowich, Bronx, N.Y., assignors to Arrow Louver and Damper Corp., Brooklyn, N.Y., a corporation of New York
Filed June 11, 1964, Ser. No. 374,459
4 Claims. (Cl. 137-601)



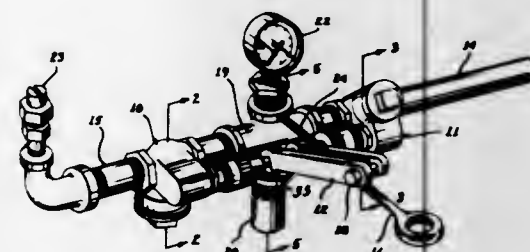
1. a louver or damper blade comprising,
 - (a) an integrally constructed hollow air foil section including similarly constructed upper and lower surface defining portions,
 - (b) each of said surface defining portions having their respective longitudinally extending edge portions converging to define an integrally formed bight portion that defines the opposed longitudinal edges of said air foil section,
 - (c) said upper and lower surface defining portions being similarly disposed with respect to the chord line of said foil section,

- (d) a shaft extending longitudinally of said foil section to define the axis about which said damper blade pivots,
- (e) and means for connecting said air foil section to said shaft, said latter means comprising a longitudinally extending rib projecting into the interior of said foil section, said rib being substantially co-extensive with the length of said foil section, and said shaft having a complementary groove formed therein for receiving said rib to key said foil section to said shaft.

3,312,243

COMPLEMENTARY ACTING VALVES FOR RECIRCULATING FLUID DISTRIBUTION APPARATUS

Finis E. Booker, P.O. Box 162, Eloy, Ariz. 85231
Filed Dec. 2, 1964, Ser. No. 415,372
2 Claims. (Cl. 137-609)

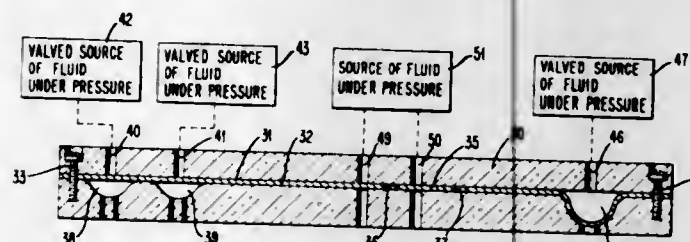


1. Flow control apparatus comprising complementary acting delivery and recirculation valves having stems, said valves communicating with a fluid input line and positioned with the stems of said valves in substantially co-axial relationship, said valves having lever operating means joined to provide a substantially unitary common operating means, and calibration means engaging said operating means whereby said recirculation valve is maintained at least partially open.

3,312,244

BISTABLE FLUID LOGIC ELEMENT

William F. Voit, Jr., Lexington, Ky., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 24, 1964, Ser. No. 420,928
14 Claims. (Cl. 137-625.18)



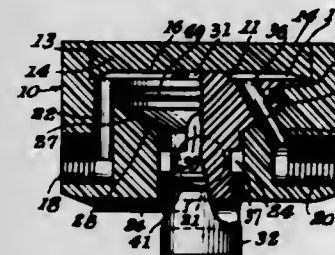
1. A fluid element comprising:
 - a housing having an elongated slot therein;
 - an elongated tape of flexible material movably received in said slot;
 - means for stationarily anchoring both ends of said tape relative to said housing;
 - at least one actuating cavity formed in said housing adjacent said slot for receiving said tape;
 - a source of input signals;
 - output means carried by a movable portion of said tape spaced from said cavity; and
 - means responsive to the input signals for creating a pressure gradient extending transversely of said tape

for deflecting the same into said actuating cavity and causing movement of said tape in said slot to move said output means.

3,312,245

MULTIPLE PORT VALVE

John B. Reilly, 740 E. Edgehill, Whittier, Calif. 90601
Filed July 6, 1965, Ser. No. 469,606
7 Claims. (Cl. 137-625.23)



1. A multiple port valve comprising:
 - (a) a body having a closed back, an axial bore opening at the front end, and a cylindrical chamber bore coaxial with and larger than said bore and located between said back and bore,
 - (b) a conical seat connecting said bore and chamber bore and facing toward the back of the body,
 - (c) a first port in said body with a connecting passage opening into said chamber bore adjacent the back of the body,
 - (d) a second port in said body phased 90° from the first port with a connecting passage opening into said front bore,
 - (e) similar third and fourth ports in said body, each with a connecting passage opening on said conical seat, one diametrically opposite the first port and the other diametrically opposite the second port, and
 - (f) a valve stem rotatively fitted into the front and chamber bores with the back end face thereof subject to the pressure of fluid from the first port and biased thereby in a forward direction,
 - (g) said stem being provided with a conical face engaged with and pressed in a direction toward the conical seat in the body,
 - (h) said stem having a passage extending from the end and conical faces to selectively connect the chamber bore and the second and third bores according to the rotated positions of the stem in the body, and
 - (i) having diametrically arranged channels formed therein and open to said front bore in the body and communicating the third or fourth port, according to the rotated positions of the stem, with the second bore.

3,312,246

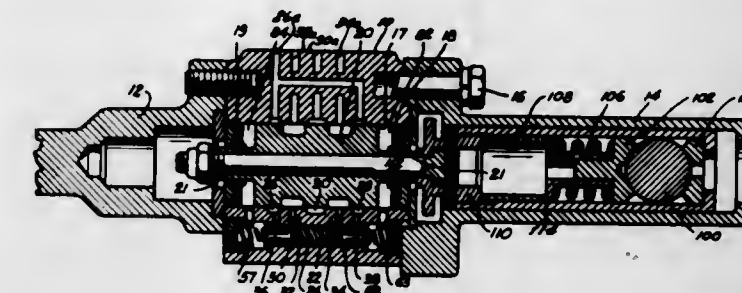
POWER STEERING VALVE

George M. Tam, South Bend, Ind., assignor to The Bendix Corporation, St. Joseph, Mich., a corporation of Delaware

Filed Sept. 21, 1964, Ser. No. 397,744
5 Claims. (Cl. 137-625.69)

1. A valve for power steering or the like comprising:
 - a housing member having a bore therein, pressure port means, first and second cylinder port means, and return port means;
 - a valve member located in said bore and movable in opposite directions from a neutral position for controlling flow between said port means;
 - said pressure port means being communicated to said first cylinder port means and said second cylinder port means being communicated to said return port means upon movement

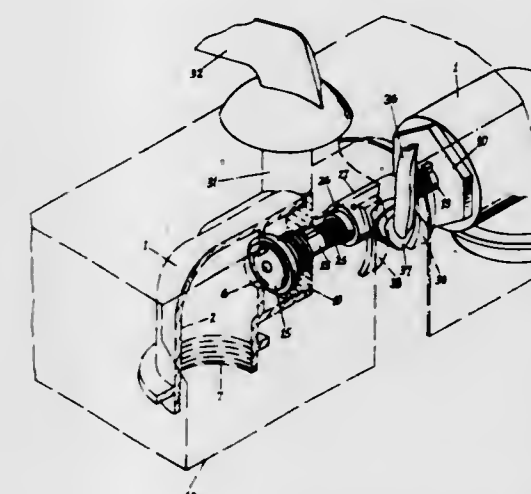
of said valve member in one direction, and said pressure port means being communicated to said second cylinder port means and said first cylinder port means being communicated to said return port means upon movement of said valve member in the opposite direction; first and second pressure chambers; said valve member having first and second opposed surfaces, the first of which is exposed to the pressure in said first chamber and the second of which is exposed to the pressure in said second chamber; said chambers and surfaces being arranged relative to each other so that the pressure in said first chamber acting on said first surface will oppose movement of said valve member in one direction and the pressure in said



3,312,247

SINGLE HANDLE FAUCET

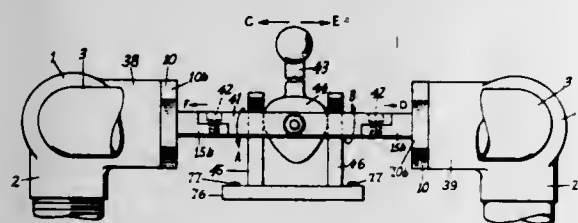
Ernest C. Browning, 2383 Zollinger Road, Columbus, Ohio 43221
Filed Sept. 24, 1964, Ser. No. 398,995
9 Claims. (Cl. 137-636.2)



1. In a device of the character described, a pair of valves which are mirror images of each other, each of said valves comprising a hollow body having an independent inlet means, means providing a valve seat within the body, a valve element extending from a position within the body to a position outside the body, the valve ele-

ment having on its opposed end means cooperating with said valve seat for regulating fluid flow, and outlet means, the said outlet means being joined together whereby said valves are held in opposed positions with their valve elements in axial alignment, means to prevent rotation of the valve elements in the said bodies, said valve elements being threaded on their other ends with threads of opposite hand, an elongated control member rotatively mounted on said valve elements and having engagement with said threads, and a common means for rotating said control member and for moving said control member and said valve stems axially.

3,312,248
SINGLE HANDLE FAUCET
Ernest C. Browning, 2383 Zollinger Road,
Columbus, Ohio 43221
Filed Aug. 9, 1965, Ser. No. 478,206
10 Claims. (Cl. 137-636.2)



1. A single handle faucet comprising a pair of valves which are mirror images of each other, said valves having hollow body portions, said valves having independent inlet means and connected outlet means, means providing valve seats within said body portions, a pair of hollow axially aligned valve elements having opposed and other ends, means on the opposed ends of said valve elements cooperating with said valve seats for regulating fluid flow, said valve elements having internal threads of opposite hand, control means threadedly joining the other ends of said valve elements, means for preventing the rotation of said valve elements, means for selectively and simultaneously rotating and shifting said control means whereby rotation of said control means will cause opposite axial movement of said means cooperating with said valve seats, and shifting of said control means will cause axial movement of said means cooperating with said valve seats in the same direction.

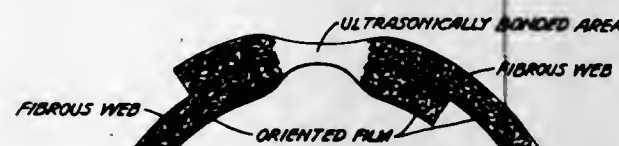
3,312,249
AERODYNAMIC VALVE FOR HIGH-FREQUENCY OPERATION
Jean Cadiou, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France
Filed Mar. 31, 1964, Ser. No. 356,311
Claims priority, application France Apr. 2, 1963, 930,098, Patent 1,362,526
3 Claims. (Cl. 138-42)



1. An aerodynamic valve consisting of a tube permitting the free flow of an escaping fluid and hindering the fluid counter-current, and of a plurality of successive frustoconical elements having their large bases inscribed in said tube and their small bases directed towards the large base of the next element, the axes of said elements being alternately inclined in opposite directions.

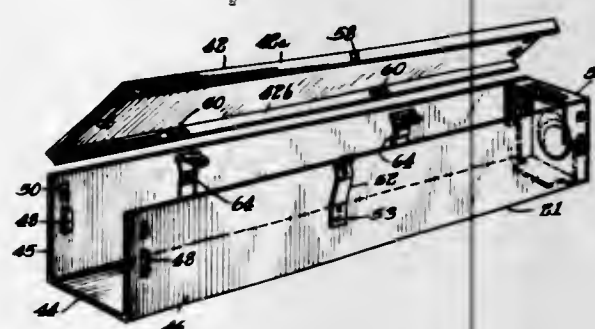
3. A valve as set forth in claim 1, wherein one side of each frustoconical element is parallel to the tube axis.

3,312,250
INSULATING SLEEVES
Stanley R. Strignano, White Bear Lake, and Eugene J. Stifter, St. Paul Park, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed June 6, 1963, Ser. No. 284,110
10 Claims. (Cl. 138-128)



2. An insulating sleeve consisting essentially of a strip of a non-woven fibrous web comprising oriented fibers of polyethylene terephthalate ultrasonically welded together edge to edge in an overlap fashion.

3,312,251
LAY-IN DUCT FOR ELECTRICAL WIRING
Franklin E. Marks and Donald G. Fischer, Lexington, Ky., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Jan. 21, 1964, Ser. No. 339,246
18 Claims. (Cl. 138-158)



18. A combination hinge-cover and screw-cover lay-in duct comprising a pair of aligned duct sections and a connector connecting said duct sections and disposable therein in either of two predetermined positions relative thereto, said duct sections each including a flanged cover and a channel-shaped body portion having a hinge curl extending outwardly from a side portion thereof through a flange of said cover and a resiliently deformable hinge lock member secured to the inner surface of said side portion and substantially engaging said hinge curl to removably secure said flanged cover thereon for opening and closing pivotal movement, said connector including a channel-shaped body portion and a connector cover connected thereto for opening and closing pivotal movement in directions respectively opposite to the directions of opening and closing pivotal movement of said flanged covers when said connector is disposed in said duct sections in one of its said predetermined relative positions, said connector cover having a pair of captive nuts and screws, each nut and its associated screw being shiftably mounted on said connector cover for movement to either of two predetermined positions relative thereto, said flanged covers of said duct sections each having a slot therein cooperable with a respective one of said screws, said slots each having an enlarged portion through which the head of the respective screw may pass when said connector is in said one predetermined relative position and the respective screw is in one of its said predetermined relative positions and a narrower portion in which the

shank portion of the respective screw may be transversely received when the respective screw is shifted to the other of its said predetermined relative positions, and said connector cover opening and closing respectively in the same directions as the directions of opening and closing pivotal movement of said flanged covers when said connector is disposed in said duct sections in the other of its said predetermined relative positions.

3,312,252
WEFT-INSERTING DEVICES FOR CONTINUOUS-FEED LOOMS
Raymond Dewas, 120 Boulevard de Saint Quentin, Amiens, Somme, France
Filed Mar. 10, 1965, Ser. No. 438,537
Claims priority, application France, Mar. 12, 1964, 967,117
4 Claims. (Cl. 139-122)



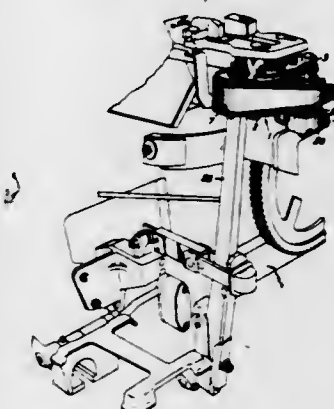
1. In a weft inserting device for a loom in which the weft is supplied from a stationary source, a clamping member consisting of a rigid member and a resilient member having at one end a foot portion secured flat against said rigid member and a rigid portion having at its end a clamping zone for clamping the weft thread, said resilient member being rigid over the greater portion of its length and having an intermediate flexible portion of relatively short length extending between said rigid portion and said end foot portion.

3,312,253
PICKERS FOR LOOMS FOR WEAVING
Robert M. Sedden, Knaresborough, England, assignor to Unitex Limited, Knaresborough, England, a company of Great Britain
Filed May 7, 1965, Ser. No. 453,992
4 Claims. (Cl. 139-159)



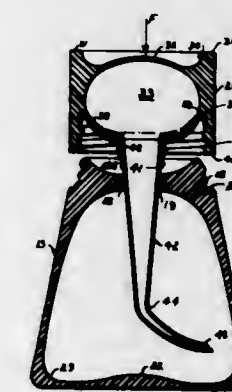
1. A picker for an underpick loom for weaving comprising an integral body of relatively hard non-deformable polyurethane having a shuttle engaging nose and formed with a through bore, and a sleeve of softer deformable polyurethane having its outer periphery integrally surface bonded to said bore so as to completely continuously line said bore, said sleeve being adapted to deform to accommodate to the picker stick dimensions when the picker bore is force-fitted onto the picker stick and thereby prevent said force-fit from inducing stresses in said hard body while providing sufficient grip to retain the picker against undue movement on the stick.

3,312,254
CUSHIONING DEVICE FOR THE PICKING STICK OF LOOMS
Jaime Picanol, Casa Páral Catalunya, Zandberg, Zillebeke, near Ypres, Belgium
Filed Nov. 25, 1964, Ser. No. 413,798
Claims priority, application Belgium, Feb. 18, 1964, 43,400, Patent 643,932
5 Claims. (Cl. 139-168)



1. Cushioning-stopping device for a picking stick in looms, characterized in that it comprises substantially the combination of a cushioning member and a stopping member, the said cushioning member consisting substantially of at least a flexible strip guided by two friction drums, said strip has a receiving surface for said picking stick between said two friction drums and its ends are secured to an adjustable return drum, said stopping member is substantially disposed in a plane parallel to said receiving surface of said strip and is retracted therefrom when the latter is at rest position.

3,312,255
LIQUID CONTAINER AND DROPPER ASSEMBLY
Ellison Miller, 1278 NE, 191st St., North Miami Beach, Fla. 33162
Filed Apr. 23, 1964, Ser. No. 361,933
3 Claims. (Cl. 141-24)



1. In combination, to dispense liquid, (a) a bottle having a main chamber and (b) a cap;

(a) said cap including:

- (1) side walls having a distal end and a proximal end, and a head of resilient material intermediate said ends,
- (2) a flexible diaphragm having a central hole spaced from said head and spanning said walls to define a compression chamber between the walls, head and diaphragm and said diaphragm including a depending skirt portion, and

- (3) an axially extending pipette type dropper nested in the skirt depending from the cap and communicating through said hole with the compression chamber;
- (b) said bottle having a threaded neck and said proximal end of the side wall having mated threads of a corresponding axial length to the threads of the neck;
- (c) the neck of said bottle having an inverted dome shaped seating surface which partially roofs the main chamber and which has a central opening there-through;
- (d) said diaphragm overlying and nesting in the seating surface when the cap and bottle are in threaded engagement in a biased attitude so that the volume of the compression chamber is reduced relative to the volume when the cap and bottle are separated from one another so that the same volume of air in the compression chamber is displaced into the main chamber through the dropper each time the cap and bottle are mated, and each time the cap and bottle are separated substantially the same amount of fluid is displaced into the dropper and may be ejected therefrom on relative movement of the diaphragm and head to contract the compression chamber.

3,312,256

RETRACTABLE SNORKEL NOZZLE
Delwin J. Reisinger, Greenville, S.C., assignor to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut

Filed Dec. 2, 1964, Ser. No. 415,379
6 Claims. (Cl. 141-65)



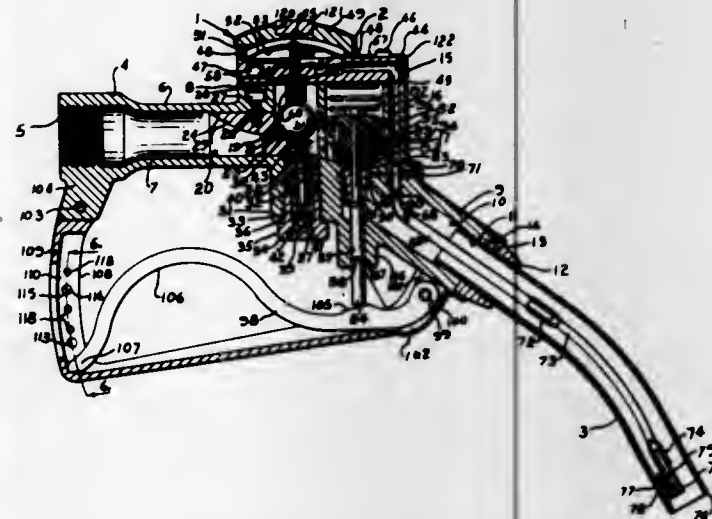
1. Vacuum packaging equipment comprising:
- (a) a means for reducing pressure to less than atmospheric;
- (b) a vacuum chamber in communication with (a);
- (c) the upper end of said chamber fixedly secured to the lower portion of a lifting mechanism;
- (d) an elongated conduit fixedly secured to the lower portion of said lifting mechanism and positioned interiorly of said chamber;
- (e) said conduit sealably extending downwardly through the lower portion of said chamber and having an aperture in the upper portion in communication with the interior of said chamber;
- (f) said conduit terminating in a nozzle exteriorly of said chamber and communicatable with the interior of an object to be vacuumized;
- (g) an elongated sleeve slidably circumenveloping the upper portion of said conduit and sealably engaging the lower portion of said lifting mechanism, said sleeve continuing to circumenvelop said conduit exteriorly of said chamber but terminating short of said nozzle;
- (h) means for removably positioning the upper portion of an object to be vacuumized about the lower portion of said sleeve so that said nozzle extends into the central portion of said object;
- (i) and means for moving said sleeve, and thus the upper portion of said object, downwardly thus disengaging the upper end of said sleeve and establish-

ing communication between said vacuum chamber and said nozzle, the lowering of said sleeve thus causing the relative retraction of the nozzle from the central portion to the upper portion of the object being vacuumized.

3,312,257

AUTOMATIC DISPENSING NOZZLE
William A. Knapp II, Prairie Village, Kans., and Eugene W. Wirth, North Kansas City, Mo., assignors to William A. Knapp Company, Kansas City, Mo., a corporation of Missouri

Filed Nov. 29, 1963, Ser. No. 326,814
4 Claims. (Cl. 141-214)



1. A liquid dispensing nozzle including:
- (a) an operable main valve closing in the direction of fluid flow;
- (b) a ball movable in the path of fluid flow in advance of said valve;
- (c) a flow-restraining seat for said ball;
- (d) means carried on said main valve forming an obstruction restraining the ball from seating on said flow-restraining seat only when the main valve is in fluid flow-closing position, a flow deflector having a solid portion mounted in the path of fluid flow at one side thereof in spaced relation to said flow restraining seat to define a ball receiving recess therebetween at said one side, said deflector portion being spaced from the opposite side of said path and diverting flow therethrough with the ball while in said recess being substantially free of seating force from said fluid flow;
- (e) resilient means normally urging said ball away from said seat into said recess; and
- (f) pressure-responsive means operable by suction induced by fluid flow when the valve is unseated for acting on said ball to overcome the resilient means and move said ball to the seat whereby said ball is seated responsive to fluid flow to terminate the fluid flow through the nozzle.

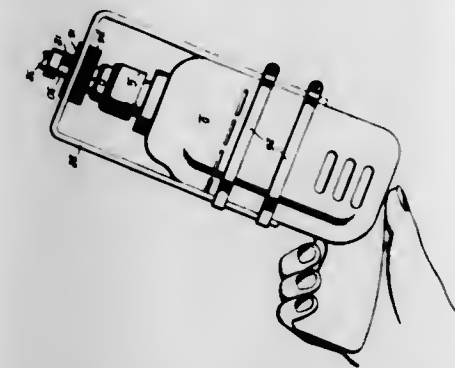
3,312,258

GUARDED ROUTER TOOL
Sam Spampinato, Baltimore, Md., assignor of fifty percent to Charles J. Dekowski, Baltimore, Md.

Filed Sept. 29, 1964, Ser. No. 400,129
4 Claims. (Cl. 144-251)

1. In a machine having an elongated rotary cutting tool, a cutter guard for said cutting tool, comprising a bushing for positioning around the body of said cutting tool, said bushing having a threaded shank, a tubular portion, and a flange intermediate said threaded shank and said tubular portion, said tubular portion having a transverse slot therein to expose a portion of said body of

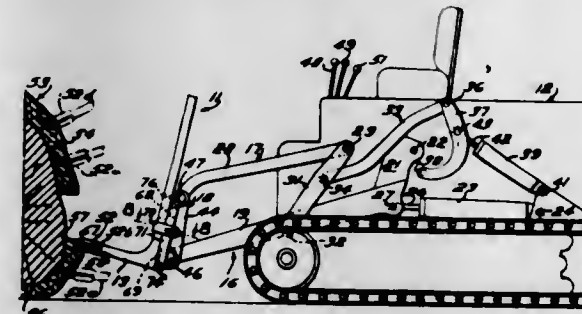
said cutting tool, a bracket member secured to said machine and having an aperture for receiving said threaded shank and abutting said flange of said bushing, and nut



means for threadably engaging said threaded shank and tightening said bracket member against said flange of said bushing.

3,312,259

BARK STRIPPING MECHANISM
Carl E. Strombeck, P.O. Box 95, Lodi, Calif. 95551
Original application Aug. 21, 1964, Ser. No. 391,272, now Patent No. 3,245,444, dated Apr. 12, 1966. Divided and this application Feb. 14, 1966, Ser. No. 549,072
2 Claims. (Cl. 144-311)



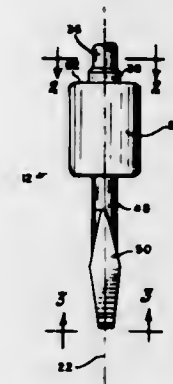
1. A method of stripping bark from logs reclining on the ground with a powered vehicle having a fork lift mechanism operatively mounted thereon including at least one fork with a portion projecting outwardly from the confines of the vehicle and means connected to the fork for selectively raising and lowering same and moving it inwardly or outwardly relative to the vehicle, comprising the steps of securing a bark stripping shoe to the outwardly projection portion of said fork in position to dispose a generally continuous peripheral cutting edge of the shoe with one portion thereof forwardly of said fork and another portion thereof laterally outwardly of said fork, manipulating said vehicle to present a substantial portion of said cutting edge of said shoe against a reclining log in different positions of the vehicle relative to the log and drive said cutting edge into the bark of the log under the impact of said vehicle, and manipulating said fork lift mechanism to controllably raise and lower said fork while moving it inwardly and outwardly relative to said log in correlation with manipulation of said vehicle to move it forwardly and rearwardly and thereby strip said bark from said log with said shoe.

3,312,260

SOCKET TYPE ADAPTER FOR TORQUE-TRANSMITTING TOOLS
Arden B. MacNeill, 63 Riverview Ave., Waltham, Mass. 02154
Filed Apr. 2, 1965, Ser. No. 444,957
6 Claims. (Cl. 145-50)

1. In a socket attachment for a torque transmitting tool of the type having a stem carrying a male adapter on a common longitudinal axis, the combination of a plastic

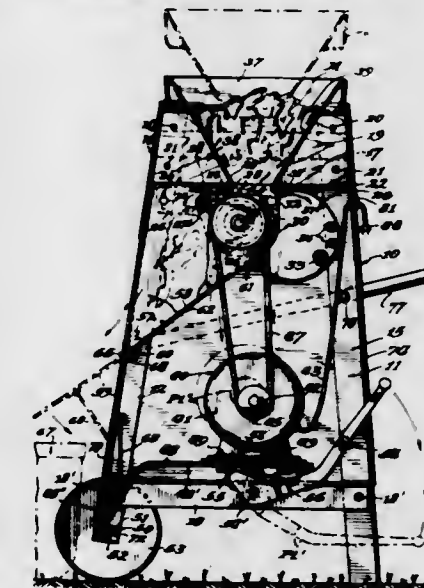
body having two ends and a circular cross section with the center of the circle coinciding with said longitudinal axis when the socket attachment is in place on said adapter, a socket in one of said ends with sides symmetrically located about said axis for slidably receiving said male



adapter, means in the other end of said plastic body having a configuration arranged symmetrically about said longitudinal axis for gripping a work piece with torque transmitting capacity thereto, and a thin metal housing tightly surrounding said plastic body for effecting increased strength of the structure.

3,312,261

CUTTING MACHINE
Harold R. Linschoten, 14 Evergreen Lane, Carpentersville, Ill. 60110
Filed Mar. 9, 1964, Ser. No. 350,212
3 Claims. (Cl. 146-123)

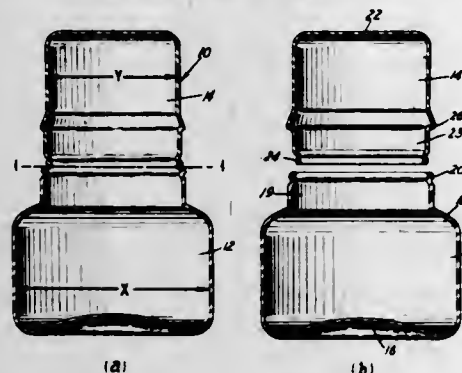


1. In combination: a frame, a hopper mounted on said frame for receiving materials to be cut, a cutter assembly disposed at the discharge end of said hopper, said cutter assembly including a pair of spaced apart mounting plates, a brace spanning the distance between and rigidly connecting said mounting plates, an elongated knife extending between said mounting plates, means for adjustably securing said knife at each end to one of said mounting plates, a cutter reel disposed between said mounting plates substantially parallel to said elongated knife, said cutter reel including a cutter shaft rotatably mounted in said mounting plates, a plurality of cutter blades carried by said cutter shaft in cutting relationship with said elongated knife, a chute mounted in said frame for discharging materials which have been cut by said cutter assembly, a pulley secured to said cutter shaft, a motor disposed below said cutter assembly and having a drive shaft, a pulley secured to said drive shaft, an endless flexible belt trained over said pulleys, means for pivotally mounting said motor to said frame so that at least some

of the weight of said motor tensions said endless belt, and cam means for selectively holding said motor in a raised position to relieve the tension on said endless belt.

3,312,262 BLOW-MOLDED ARTICLE

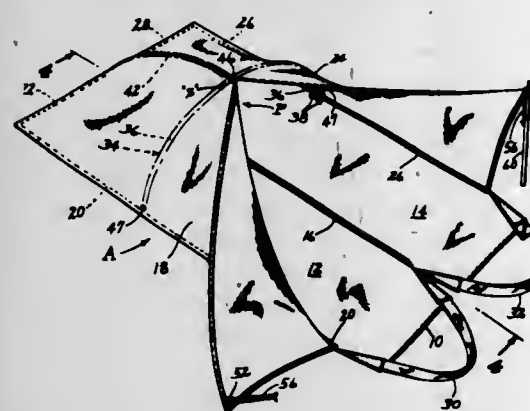
Paul H. Hunter, New Brunswick, N.J., assignor to Union Carbide Corporation, a corporation of New York
Filed Dec. 4, 1964, Ser. No. 416,973
9 Claims. (Cl. 150—5)



1. A blow-molded hollow body which comprises:
 - (a) integral portions of different diameters;
 - (b) said body being closed at both ends and adapted to be separated into two portions;
 - (c) said portions adapted to serve as an outer container body and an inner container body; each of said container bodies having a beaded neck portion;
 - (d) said beaded neck portion of said outer container body being adapted to receive said beaded neck portion of said inner container body in air-tight, leak-proof, interlocking frictional assembly therewith;
 - (e) said outer container body having an inner diameter greater than the outer diameter of said inner container body such that when said neck portions are placed in interlocking frictional assembly, said container bodies form a double wall container with air space between the walls thereof, and
 - (f) said beaded neck portion of said outer container body being adapted to receive closure means for said double wall container.

3,312,263 TOTE BAG FOR FALLEN LEAVES

Richard E. Wahlstrom, 1825 Deer Hill Road, Wayzata, Minn. 55391
Filed Sept. 21, 1965, Ser. No. 488,972
5 Claims. (Cl. 150—2)



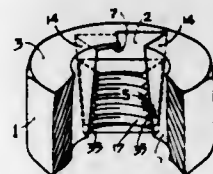
1. A tote bag for fallen leaves comprising:
 - (a) a flat rectangular bottom panel,
 - (b) a first upper flat rectangular panel secured at its outer longitudinal edge to the longitudinal outer edge of said bottom panel and at its lower transverse edge to the lower transverse edge of said bottom panel,
 - (c) a second upper flat rectangular panel secured at its outer longitudinal edge to the longitudinal outer

edge of said bottom panel opposite to the first mentioned longitudinal edge and at its lower transverse edge to the lower transverse edge of said bottom panel,

- (d) a portion of the inner edge of each of said first and second panels joined to form a pocket extending for a portion of the length of said first and second panels and said bottom panel,
- (e) a support including a semi-circular brace portion and
- (f) an arcuate leg connected at its upper end to said brace portion centrally thereof,
- (g) said support member positioned upon said bottom panel and within said pocket to support said pocket in an open position, and
- (h) means for securing said first and second upper panels together and upon said bottom panel.

3,312,264 SPEED-LOCK-NUT

Alexander Dresdner, 4630 Decarie Blvd., Montreal, Quebec, Canada
Filed June 21, 1965, Ser. No. 465,536
7 Claims. (Cl. 151—19)



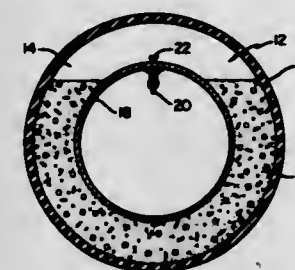
1. A lock-nut comprising a body having an axial unthreaded cylindrical bore and a front and rear face, said body having a segmental groove running axially thereof and opening into said bore, said groove having a bottom wall slanting radially outwardly from said front face to said rear face, the lateral walls of said groove each tapering towards said front face, said lateral walls converging transversely in the general radial direction towards the axis of the bore in dovetail-fashion, the longitudinal edges of said groove defined by said lateral walls and the surface of said bore being substantially straight and converging longitudinally axially of said bore towards said rear face of said nut body, a wedging insert, shorter in length than said groove and slidably received therein, having a rear and a front face, an arcuate screw-threaded radially inner face, a radially outer face making a radial included angle with said threaded face, and flat side faces which converge radially in the direction of said threaded face and longitudinally axially of the insert towards the rear face thereof, the side faces and radially outer face of said insert being generally parallel to and conforming to the lateral walls and bottom wall of said groove and the screw-threaded radially inner face of said insert being a portion of a cylindrical surface substantially parallel to the cylindrical surface of said bore.

3,312,265 BALLASTED VEHICLE SUPPORT MEANS AND BALLAST THEREFOR

Roscoe E. Turner, Littleton, and N. A. Leuker, New Raymer, Colo., assignors of twenty percent to Philip H. Sheridan and twenty percent to Kenneth F. Ross, both of Denver, Colo., and twenty percent to Duane C. Burton, Boulder, Colo.
Filed Jan. 29, 1965, Ser. No. 428,619
9 Claims. (Cl. 152—334)

1. A ballasted vehicle tire comprising a resilient vehicle tire having an annular sealed chamber inflatable with gas under pressure, a ballast material filling said chamber between approximately 65% and 100% of its capacity when the tire is at rest, gas maintained with-

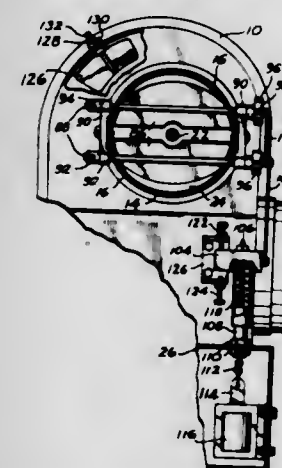
in said chamber under pressure to inflate said tire, said ballast material including a finely divided powder, a resilient material in particle form and a granular material having substantially smooth-surfaced portions, said powder having a portion thereof having a fineness of



95 mesh or finer and forming, by volume, at least about 20% of said ballast material, said resilient material forming, by volume, at least about 3% of said ballast material, said granular material having a density substantially less than that of said powder and forming, by volume, up to 50% of said ballast material.

3,312,266 OIL BURNER SYSTEM

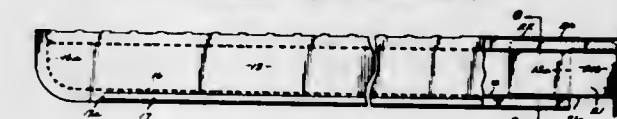
George F. Dibert, 8335 SE. 7th Ave., Portland, Oreg. 97202
Filed Sept. 10, 1965, Ser. No. 486,485
12 Claims. (Cl. 158—28)



1. In an oil burner system including a hollow housing having an air inlet opening, a burner air tube having an open front end and communicating at its rear end with the interior of the housing, and blower means in the housing for supplying air under pressure to the front end of the air tube, the combination therewith of
 - (a) air control means mounted movably on the housing adjacent the air inlet opening for adjustment between an open position restricting the inlet opening to a predetermined minimum degree for delivering a predetermined maximum amount of air to the blower means, and a closed position restricting the inlet opening to a predetermined maximum degree for delivering a predetermined minimum amount of air to the blower means, and
 - (b) electrically actuated drive means for the air control means, the drive means being operable upon actuation to move to a fixed position,
 - (c) resilient means interengaging the drive means and air control means for relative movement therebetween and urging the latter normally to one of said open and closed positions, and
 - (d) adjustable stop means operatively engaging the air control means for varying the limits of movement of the latter, whereby to vary the open and closed positions of the air control means and therefore the maximum and minimum amounts of air to the blower means.

3,312,267 GAS BURNER

Anthony R. Passarello, Bellevue, Ohio, assignor to Johnson Corporation, a corporation of Ohio
Filed Jan. 13, 1964, Ser. No. 337,309
1 Claim. (Cl. 158—99)



A gas burner body comprising a unitary sheet of metal providing an elongated planar first side wall, said sheet bent back upon itself approximately 180° at the top of the burner body to provide a hollow narrow rib of less depth than said side wall, said sheet then bent away from said side wall and rib at approximately 90° to provide a top wall for said body, said sheet then bent upwardly at approximately 90° and then bent back upon itself approximately 180° to provide a second hollow narrow rib, said sheet extending downwardly from said second rib to form an elongated planar second side wall parallel to and co-extensive with said first side wall, means closing the bottom and one end of said body, there being a plurality of burner jet openings through the crests of said ribs, said body having an open end, a portion of said side walls and of said bottom closing means cut away adjacent said open end, and a U-shaped sleeve slidable in said open end, said sleeve having a bottom adapted to slide along the upper surface of said bottom closing means and having upstanding parallel walls adapted to lie inside of said body side walls and to extend slidably into said ribs, whereby said sleeve may regulate the amount of air entering said body when a gas jet is inserted into said open end.

3,312,268 BURNER ELEMENTS

William C. Milligan, 1618 San Angelo Blvd., San Antonio, Tex. 78201
Filed July 12, 1965, Ser. No. 471,124
4 Claims. (Cl. 158—99)



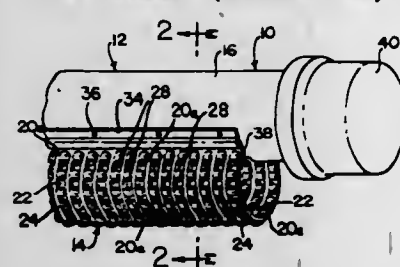
1. An infrared radiant heating burner element for use in a gas fueled space heater comprising a rectangularly shaped unitary catalytic ceramic structure having an outer rectangular perimeter defined by a support flange having an outer edge wall and two oppositely disposed upper and lower flange surfaces, at least part of one said flange surfaces defining a reference plane generally parallel to said rectangularly shaped structure, said structure including a firing surface comprising a transverse succession of juxtaposed longitudinal ridges each of which is defined by a pair of angularly related generally rectangular planar ridge surfaces, one of said pair of ridge surfaces defining with one of the pair of ridge surfaces of the juxtaposed

successive longitudinal ridge one of a succession of inter-disposed longitudinal valleys, said successive ridges and said valleys being defined in first groups of successively rising elevation relative to said reference plane, followed by second groups of successively falling elevation relative to said reference plane to obtain a serrated sawtooth cross-sectional shape, a rectangular gas input surface oppositely disposed to said firing surface and generally of a sawtooth cross-section shaped similarly to said firing surface, spaced gas inlet means extending into said valleys for delivering gaseous fuel to said firing surface, and means for supplying gaseous fuel to said spaced gas inlet means.

3,312,269 INFRA-RED RADIANT HEATER AND GRID THEREFOR

Arthur C. W. Johnson, Troy, Mich., assignor to Combustion Research Corporation, Troy, Mich., a corporation of Michigan
Continuation of abandoned application Ser. No. 370,795, May 28, 1964. This application Apr. 6, 1966, Ser. No. 540,561

16 Claims. (Cl. 158-99)



1. In an infra-red radiant heater of the combustion type:

- means forming a walled fuel-air mixture distribution chamber for a combustible mixture of fuel and air;
- said distribution chamber having means for distributing the fuel-air mixture to a combustion zone adjacent said distribution chamber so as to maintain the region of said wall adjacent said combustion zone at a non-incandescent temperature;
- a deterioration resistant, apertured radiant grid which is the primary burner component adapted to be heated to incandescence by the combustion of the fuel-air mixture in the combustion zone adjacent said distribution chamber;
- said grid overlying the region of the distribution chamber in which said combustible mixture distributing means are provided and the combustion zone for the mixture issuing from said means;
- said grid further surmounting said combustion zone so that said combustion zone lies substantially within the compass of said grid and said grid provides outlets for combustion products generated in said combustion zone;
- the region of said grid through which said combustion production products pass from said combustion zone being substantially coextensive in length with said combustion zone so that said radiant grid is heated by combustion of the fuel-air mixture in said combustion zone and the radiant energy and sensible heat in the combustion gases formed in said combustion zone are substantially uniformly imparted to said radiant grid;
- said radiant grid being fabricated of heat resistant material having imperforate ribs displaced therefrom to provide openings through the grid, the outer surfaces of said ribs extending generally parallel with the plane of the grid and serving to deflect laterally and away therefrom any air currents moving substantially normal to said plane, said ribs being so located that there are no openings

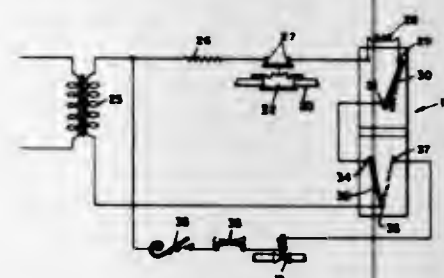
through the grid normal to the radiant surface whereby said radiant grid has an emitting surface which is substantially equal in radiant area to the projected area of the grid so as to maximize the area emitting infra-red radiation from the burner;

- the lateral edges of said ribs defining ports which communicate with the aforementioned openings through the grid to form tortuous paths for the flow of combustion products through said grid, the edges of said ribs being so located that the projected areas of said ports normal to the radiant surface are interiorly of said ribs;
- whereby the hot combustion gases formed in said combustion zone will course over the ribs of said grid as they are exhausted from said combustion zone through said grid to maximize the transfer of heat from said gases to said grid.

3,312,270 GAS BURNER CONTROL WITH LAGGED THERMAL ELEMENT TO PREVENT IMMEDIATE RE-IGNITION

William H. Branche, Indianapolis, Ind., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed Apr. 13, 1965, Ser. No. 447,628
3 Claims. (Cl. 158-124)



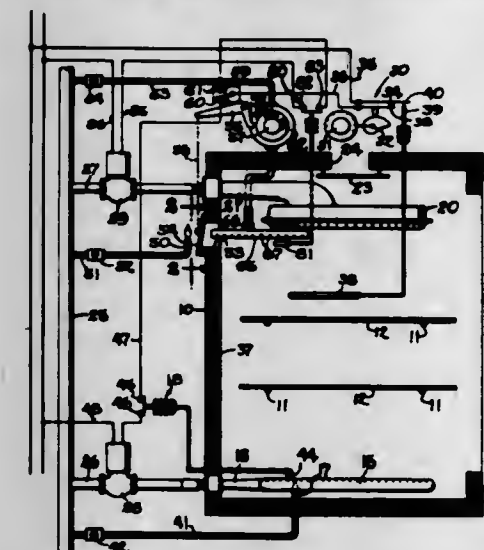
1. A gas burning apparatus having an automatic ignition system operative to automatically ignite a pilot flame comprising:

- a gas valve controlling the supply of gas to a burner in a combustion chamber of said apparatus;
- pilot means to provide a pilot flame;
- a pilot ignition coil disposed in a position to ignite said pilot flame;
- a first temperature actuated switch having a cold position in which one circuit is closed and having a warm position in which said one circuit is broken and another circuit is closed, said circuits being connected to energize the main gas valve when said switch means is in said warm position thereof and to energize said pilot ignition coil when said first switch is in said cold position thereof, said first switch means being in heat exchange relation with said pilot flame, and said first switch means having a relatively rapid actuation time to deenergize said ignition means in a relatively short period of time after said pilot flame is lighted and to deenergize said gas valve a relatively short time after said pilot flame is extinguished;
- a body member having a second temperature actuated switch means mounted thereon in series with said first switch in said one circuit, said second switch being operative to energize said ignition coil when said first and said second switches are in a cold position thereof, said second switch means and said body member both being in heat exchange relation with said pilot flame, and said body member having a sufficiently large thermal storage effect so that said second switch means exhibits a relatively slow cooling rate to provide a substantial period of time between the extinguishing of the pilot flame and the energization

of the ignition coil, to thereby permit purging of gas from the combustion chamber before said pilot flame is relighted.

3,312,271 OUTSIDE PILOT ARRANGEMENT

Herbert S. Beach and John R. Fulmer, Kankakee, Ill., assignors, by mesne assignments, to Geo. D. Roper Corporation, Kankakee, Ill., a corporation of Delaware
Filed Mar. 6, 1964, Ser. No. 350,007
1 Claim. (Cl. 158-127)



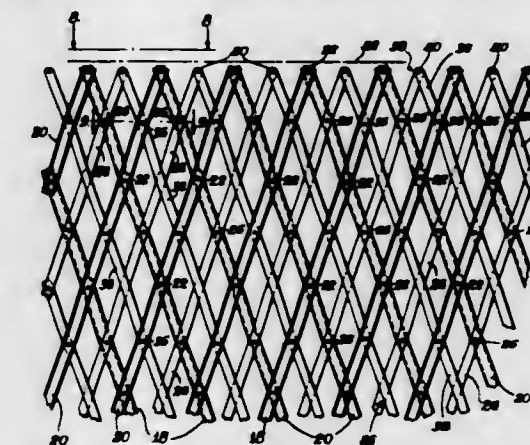
In a gas oven having a housing defining a single cavity with an oven burner in the bottom and a broiler burner in the top of the cavity, the combination comprising, a flash port located in a wall of the housing, a gas manifold, an outside pilot with a supply line connected to said manifold and having a standing flame disposed adjacent said flash port, a pilot tube having an inner end and an outer end with the inner end adjacent said broiler burner and the outer end disposed in said flash port, an inside pilot supply line connected between said manifold and said inner end of said pilot tube, selector means including a valve in said inside pilot supply line for admitting gas to said pilot tube incident to the selection of broiler operation so that said standing flame on said outside pilot is propagated on said pilot tube for igniting the broiler burner, and means coupled to said selector means for blocking said flash port when broiler operation is not selected so that said standing flame on said outside pilot is not extinguished incident to the operation of the oven burner.

3,312,272 FOLDING GATE

Joseph Catalano, 1218 W. Grand Ave., Chicago, Ill. 60622
Filed Mar. 4, 1964, Ser. No. 349,248
3 Claims. (Cl. 160-162)

1. A folding gate of the character disclosed, comprising a mesh having ends, a top and a bottom, the mesh being made up of integral strips arranged in sets including a main pair of sets and at least one auxiliary set, each set being disposed essentially in a different plane, and the planes being arranged in juxtaposed position, the strips in each of the main pair of sets being parallel and the strips of those two sets being relatively inclined at an angle and being interconnected at spaced points therealong, the points of connection including points adjacent the ends of the strips, the strips in the auxiliary set being also parallel, the auxiliary set being disposed between the interfacing surfaces of the main sets, and each strip in the auxiliary set being interconnected at spaced points with strips of an adjacent main set, the strips of the auxiliary set being parallel with the strips of the main set to which they are not connected and forming an angle with the strips of the

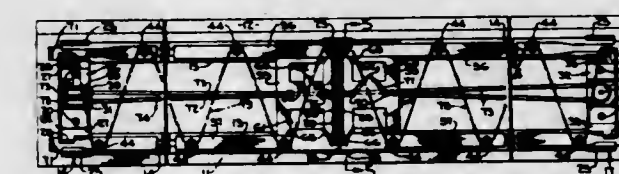
main set to which they are connected similar to the angle between the strips of the two main sets, all of the connections between the strips being pivotal connections, and the mesh being extensible and contractable in direction between the ends thereof, the strips in each main set being disposed in side-by-side abutting relationship when the mesh is in contracted position, and the strips of the auxil-



iliary set being narrower than those of the main sets, whereby to enable the strips of the auxiliary set to lie between the rows of connecting means connecting the strips of the main sets when the latter are in side-by-side abutting relationship, and the mesh, when fully contracted, having an end-to-end dimension no greater than that determined by the side-by-side abutting relationship of the strips in the main sets.

3,312,273 DRAPERY TRAVERSING APPARATUS

Richard L. Adam and Tommie C. Wynn, both of 2039 N. Baker St., Bakersfield, Calif. 92805
Continuation of application Ser. No. 270,029, Apr. 2, 1963. This application May 19, 1966, Ser. No. 551,469
5 Claims. (Cl. 160-345)

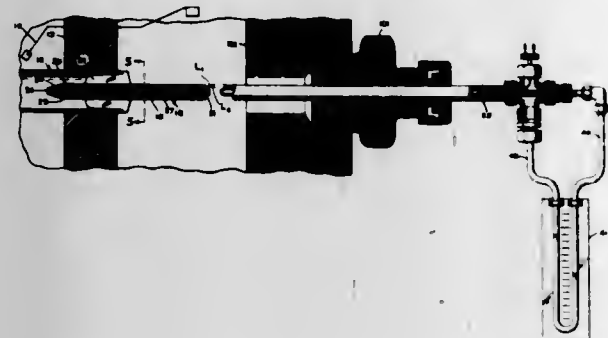


1. In an apparatus for hanging and traversing an unpleated, unreinforced piece of tapestry fabric to invest the same with uniform pleat-like folds, the combination of: rail mounting means; a pair of horizontal parallel guide rails mounted on said means and spaced apart approximately the full depth horizontally of said pleat-like folds; a multiplicity of hangers running freely on each of said rails; a pair of flexible tapes, each tape serially connecting the hangers on one of said rails to determine the maximum distance each adjacent pair of said hangers may be spaced apart on said rail, the ends of said tapes at a particular pair of corresponding ends of said rails being anchored to said rail mounting means so that said tapes position the hangers on each rail in respectively uniformly offset relation to the hangers on the other rail when both said tapes are pulled taut away from the ends thereof which are anchored; and means extending downwardly from said hangers for engaging the upper edge of said fabric at suitable uniformly spaced points along said edge to connect said edge at one alternate set of such points to the hangers on one rail and at the other alternate set of such points to the hangers on the other rail, said fabric being folded at said points into uniform pleat-like folds with each hanger coinciding with one of said points, said folds being expanded and said fabric extended when said tapes are pulled taut, and being collapsed and said fabric compressed when said hangers and tapes are compacted toward the anchored ends of the latter.

3,312,274

CALORIMETER FOR MEASURING FOULING RESISTANCE OF A SURFACE CONDENSER TUBE
Joseph F. Sebald, Bloomfield, N.J., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware

Filed Apr. 16, 1964, Ser. No. 360,390
8 Claims. (Cl. 165—1)



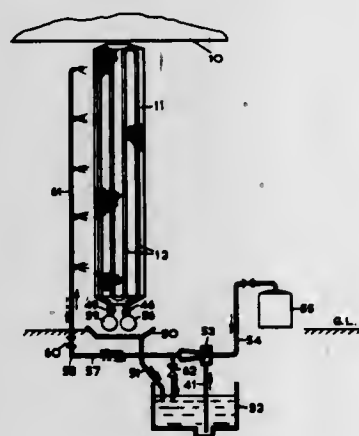
3. A working calorimeter tube for a condenser including a tube sheet having a plurality of tubes, said working calorimeter tube being disposed in said tube sheet and including means operatively connected therewith comprising fluid flow rate measuring means for measuring the fluid flow rate through said working calorimeter tube and a temperature sensing means for measuring the temperature of the fluid flowing in said working calorimeter tube to provide data to be used in determining the heat transfer of said working calorimeter tube, and means disposed within the condenser and in close relationship with said working calorimeter tube for measuring the pressure within the condenser in the vicinity of said calorimeter tube.

3,312,275

WATER COOLING SYSTEM

John Harold Daltrey and Peter James Christopher, both of Rugby, England, assignors to The English Electric Company Limited, London, England, a British company

Filed May 6, 1966, Ser. No. 548,205
Claims priority, application Great Britain, Feb. 9, 1961, 4,832/61
2 Claims. (Cl. 165—1)



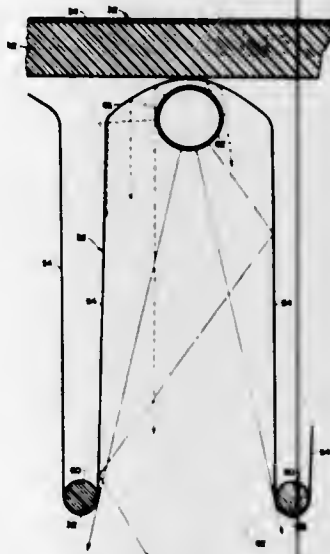
1. A method for preventing internal freezing of tube-and-fin heat exchanger elements of a cooling tower in freezing weather, comprising the step of applying water flowing over the external surface of said elements so as to form between the fins an ice coating in direct contact with the fins and tubes of the elements, whereby said ice coating acts both as an insulating means for the tubes, as a means for preventing normal flow of air through the elements, and as substantially the sole cooling agent for a fluid flowing in the tubes.

3,312,276

RADIANT HEATING APPARATUS

Horace L. Smith, Jr., Richmond, Va., assignor to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia

Filed Oct. 28, 1965, Ser. No. 505,492
6 Claims. (Cl. 165—133)



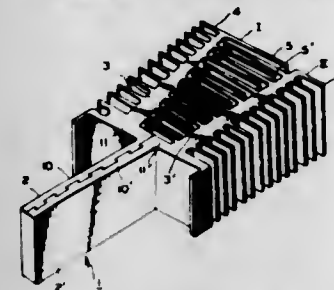
1. The combination of:
 - a. a radiant heating unit comprising:
 - (1) a casing having an open side;
 - (2) a tubular radiator in and having parallel, spaced apart legs extending generally the length of said casing and tubular end bends disposed alternately at opposite ends of said casing providing fluid communication between successive radiator legs, whereby there is a continuous flow path through said radiator, said radiator being fabricated of a generally rigid, self-supporting, structural material;
 - (3) a reflector in said casing, said reflector having, in surrounding relationship to each of said tubular radiator legs and extending substantially the length thereof, an independent reflecting portion with a generally parabolic cross-section for concentrating and directing the radiant energy emitted by the associated radiator leg which includes first and second leg portions and a web portion connecting said leg portions, each said tubular radiator leg being closely adjacent the connecting web portion of the reflector portion in which it is housed and the length of said reflector portion legs being a multiple of the diameter of the tubular leg and of the width of said web portion and thereby extending well beyond said radiator leg to shield said leg from convection currents and the cooling effects of such currents;
 - (4) reflector portions integral with and joining the adjacent legs of each pair of adjacent reflecting portions at the ends of the legs adjacent the open side of said casing; and
 - (5) individual stiffening members extending generally the length of said reflector fixed to and between each pair of adjacent reflecting portion legs in juxtaposition to the connecting portion therebetween to increase the structural rigidity of said reflector; and
 - b. means for circulating a liquid heated to a temperature of not lower than about 500° F. through said radiator to thereby heat said radiator to a temperature at which it will emit radiant energy in the infrared portion of the spectrum.

3,312,277

HEAT SINK

John G. Chitouras, Arlington, and John H. Sununu, Concord, Mass., assignors, by mesne assignments, to Astro-dyne, Inc., Burlington, Mass., a corporation of Massachusetts

Filed Mar. 22, 1965, Ser. No. 441,830
7 Claims. (Cl. 165—185)



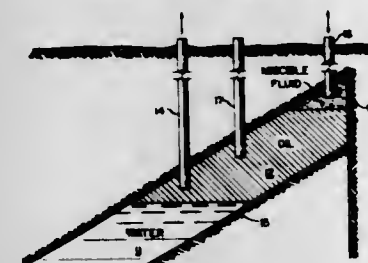
6. Heat-sink apparatus having, in combination, symmetrical left- and right-hand heat-conductive members each having a substantially L-shaped base, the transverse arm of which is intermediately provided with a longitudinal support element extending in a direction opposite to the longitudinal arm thereof and carrying a plurality of longitudinally spaced fins extending transversely from the support element, the members being joined with their longitudinal arms connected back-to-back and their adjacent pluralities of transverse fins interleaved with one another.

3,312,278

PRODUCTION METHOD FOR STEEPLY-DIPPING FORMATIONS

Robert L. Warden, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Mar. 30, 1964, Ser. No. 355,838
2 Claims. (Cl. 166—9)



1. A method of enhancing oil recovery from a gas-cap free water-drive oil reservoir having in one area an appreciable steep dip and containing an oil zone in communication with an underlying water zone under pressure, said method comprising the steps of:
 - providing a production well from the surface in communication with the oil near the oil-water interface, providing an injection well in communication with the oil reservoir at a shallower depth, injecting through said injection well a miscible fluid of a density no greater than the oil while producing said oil through said production well, continuing said injection of a miscible fluid until the lower boundary of the injected miscible fluid has moved downward to the general area of the oil-water interface while producing the oil through said production well, terminating the injection of said miscible fluid and subsequently opening said injection well and producing said miscible fluid from said reservoir up said injection well to the surface by the water drive of the reservoir, providing inlet and outlet wells in communication with a second oil reservoir, connecting the injection well of the steeply-dipping reservoir with the inlet well of said second oil reservoir during the period said miscible fluid is produced from said injection well, and

injecting said oil-miscible fluid into the second oil reservoir through the inlet well thereof to effect a fluid drive of oil in said second oil reservoir under an injection pressure augmented by the pressure of the water drive in the steeply-dipping oil reservoir.

3,312,279

METHOD OF WATER FLOODING BY USING PHOSPHORYLATED MANNAN

Donald O. Hitzman, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Nov. 23, 1959, Ser. No. 854,529
5 Claims. (Cl. 166—9)

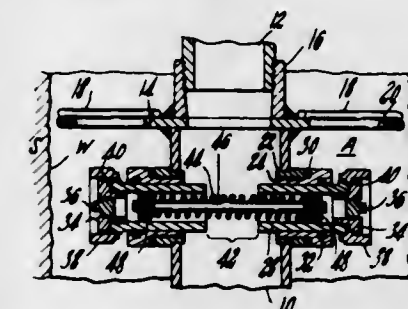
4. A method of secondary recovery of oil from an oil-bearing formation which comprises injecting into said formation phosphorylated mannan which is an exocellular polysaccharide which is synthesized from glucose by a species of yeast, *Hansenula holstii*, in an amount sufficient to increase the viscosity of water in said formation.

3,312,280

OIL WELL COMPLETION

Harry Koplin, 1785 Broad Causeway, North Miami, Fla. 33161

Filed Mar. 10, 1965, Ser. No. 438,711
7 Claims. (Cl. 166—21)



1. An oil well completion method comprising the steps of:
 - placing into a well bore an elongated tubular casing of smaller diameter than said bore, leaving an annular space between the outside of said casing and the walls of said bore, next
 - resiliently forcing opposite pairs of extensible tubular connector members laterally outwardly from said tubular casing, to span said annular space at selected points in said bore located at levels corresponding to strata in the well bore to be connected to said casing, the outer ends of said connector members, when extended, making sealing contact with said strata and carrying chemically destructible closure plugs therein, then
 - filling the said annular space and around each of the extended said connector members with a sealing cement by introducing the cement downwardly into said annular space from the top thereof and entirely outside of said casing,
 - allowing the sealing cement to set, and finally
 - destroying the closure plugs in said connector members by the application of chemicals thereto introduced from the inside of said tubular casing, whereby passageways are opened from said strata through said connector members and into said tubular casing.

3,312,281

OIL PRODUCTION WITH STEAM

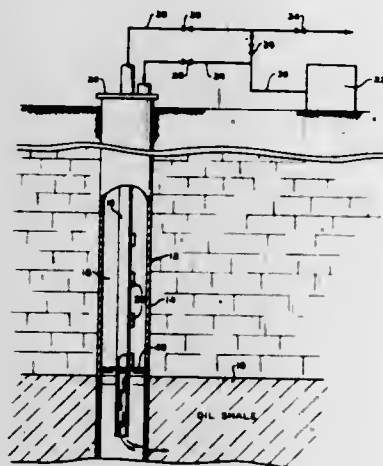
William B. Belknap, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed June 4, 1964, Ser. No. 372,553
5 Claims. (Cl. 166—40)

2. Apparatus for alternately injecting steam thru a well into an oil-bearing subterranean stratum and steam

lifting oil produced by the steam injection comprising in combination:

- (a) concentric casing and tubing strings connecting a well head with said stratum providing an annulus therebetween;
- (b) a gas lift valve positioned at each of several levels in said tubing string for injecting steam into said tubing from said annulus;
- (c) a steam generator at ground level adjacent said well head;
- (d) conduit means for passing steam from said generator to said tubing string and to said annulus;
- (e) valve means in said conduit means for alternately separately passing steam to said annulus and to said tubing string; and
- (f) means for passing produced oil from said tubing string to a production line when steam is being injected into said annulus.



3. A process for producing oil from an oil-bearing stratum thru a well therein provided with a casing and a tubing string, which comprises the steps of:

- (a) providing said tubing string with gas lift valves at selected spaced-apart levels beginning near the level of said stratum and injecting superheated steam at high pressure from a steam generator into said stratum thru said tubing string for an extended period so as to cause hot oil to flow into said well from the surrounding stratum;
- (b) thereafter, terminating the injection of steam thru said tubing string and injecting steam from said generator into the annulus formed by said tubing and casing;
- (c) injecting steam at substantially less pressure than in step (a) from said annulus thru said gas lift valves into said tubing string progressively at a series of different levels therein beginning at the lowermost as the liquid oil passes each level so as to lift said oil thru said tubing while maintaining said tubing open to flow to a production line; and
- (d) repeating steps (a), (b), and (c).

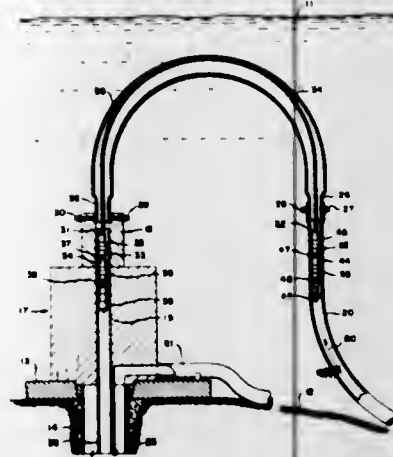
3,312,282
PUMPING WELL TOOLS THROUGH FLOWLINES OF IRREGULAR DIAMETER
Edward D. Yetman, Bakersfield, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Jan. 30, 1964, Ser. No. 341,300
4 Claims. (Cl. 166-46)

1. For use in servicing underwater oil and gas wells an apparatus adapted to be pumped through a flowline having a major portion thereof of a given diameter and having at least one portion of enlarged diameter, said apparatus comprising:

- (a) a first tool carrier;

- (b) a second tool carrier axially spaced from said first tool carrier;
- (c) sealing means circumferentially mounted on each of said tool carriers for sliding engagement with the internal walls of the major portion of the flowline; and,



- (d) an elongated flexible unitary cable member axially joining said first and second tool carriers, the length of the cable member being at least as great as the length of said enlarged diameter portion, said cable member having sufficient stiffness to transmit forces of compression between the tool carriers without buckling.

3,312,283
SYSTEM FOR INSTALLING AND RETRIEVING WELL TOOLS IN WELL STRINGS
Edward D. Yetman, Bakersfield, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed June 30, 1964, Ser. No. 379,301
7 Claims. (Cl. 166-46)



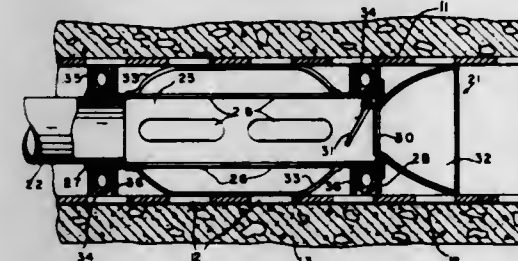
1. An apparatus for installing well tools in one of a series of identical pockets disposed laterally of and in communication with the interior of a well string, said apparatus comprising:

- (a) tool carrier means adapted to be pumped through the well string in sliding contact with the wall thereof;
- (b) a selectively operable installation mechanism operatively associated with said carrier means and adapted to be activated to install a tool in a pre-selected pocket of the well string, said pocket being laterally offset from the well string axis in one direction;
- (c) an indexing mechanism operatively secured to said installation mechanism and having means for determining the number of pockets by which the apparatus has passed; and

- (d) actuating means carried by said indexing device and cooperable with said installation mechanism to install the tool in said preselected pocket of the well string when activated by said indexing mechanism.

3,312,284
APPARATUS FOR CLEANING INFILTRATION TYPE WATER COLLECTOR
Adolphe Aloys d'Andiffret, Westerville, and John J. Tomcik, Columbus, Ohio, assignors to Aqua Ran Water Supplies, Inc., Columbus, Ohio, a corporation of Ohio

Filed Oct. 9, 1963, Ser. No. 314,963
11 Claims. (Cl. 166-171)



8. In combination; a pipe having lateral apertures therein for the flow of water into the pipe, and a cleaner device reciprocally mounted in the pipe comprising a hollow tubular perforated member substantially shorter than said pipe, plates on opposite ends of said member, seal means on the inner sides of said plates for sealing the ends of said member to the inside of the pipe, a cable connected to one plate and extending out one end of the pipe to draw the member along the pipe, and means on the other plate for connecting a hose thereto for supplying air under pressure to the inside of said member, said pipe being apertured at the end opposite said one end for reciprocally receiving said hose.

3,312,285
WELL PIPE CENTRALIZER
James R. Solum, Los Angeles, Calif., assignor to B & W Incorporated, Torrance, Calif., a corporation of California
Original application Oct. 2, 1962, Ser. No. 227,805, now Patent No. 3,270,697. Divided and this application Feb. 2, 1966, Ser. No. 524,553
3 Claims. (Cl. 166-241)



2. A well pipe centralizer for resiliently centering a well pipe within a well bore, comprised of a pair of spaced and aligned collars adapted to fit the well pipe and a plurality of circumferentially spaced ribs extending between said collars, said ribs integral with and of

the same blank of material as said collars, said ribs and collars being of a heat treatable spring steel, at least some of said ribs bowed outwardly between said collars and being heat treated to spring characteristics for engaging the well bore to resiliently center the well pipe, and at least one other of said ribs having a profile different from the said outwardly bowed ribs with such different profile including a longitudinally central portion positioned inwardly of said collars for engaging the exterior of the well pipe.

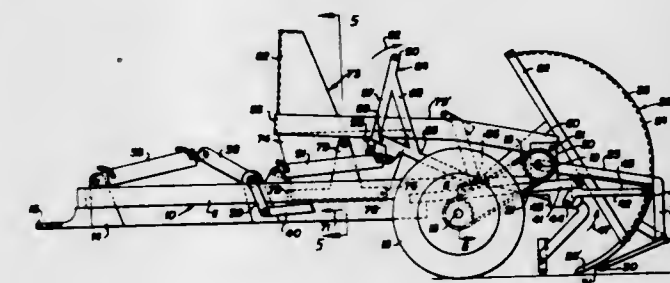
3,312,286
SURFACE PROPELLER
Finn T. Irgens, Milwaukee, Wis., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware

Filed Apr. 28, 1966, Ser. No. 545,968
7 Claims. (Cl. 170-159)



1. A propeller comprising a hub having an axis of intended rotation, a blade extending from said hub, means defining a pocket located at least in one of said hub and said blade adjacent to the juncture of said blade and said hub, said pocket being open rearwardly and radially outwardly in the direction of said blade and being defined, in part, by a first surface which merges with said blade, a second surface extending fore and aft in approximately parallel relation to the intended axis of hub rotation, and a connecting surface joining said first surface and said second surface.

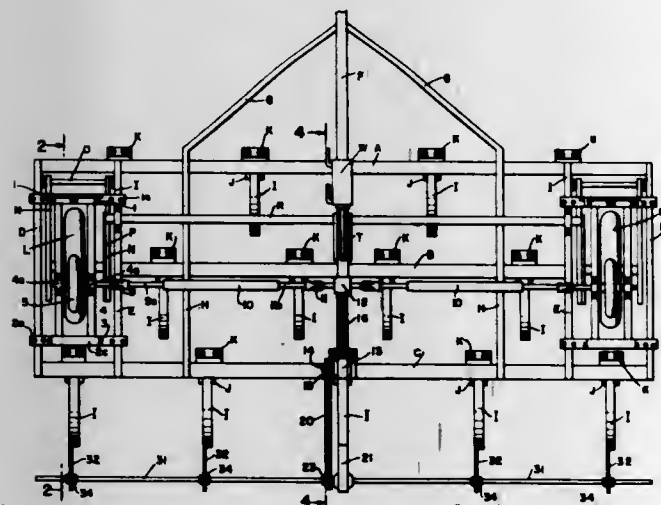
3,312,287
REEL TYPE STONE PICKER
Philip Gus Wagner, Earl Grey, Saskatchewan, Canada
Filed Aug. 27, 1964, Ser. No. 392,570
5 Claims. (Cl. 171-63)



1. In a reel type stone picker, the combination of a frame, rotatable ground engaging wheel means provided on said frame, a transverse shaft rotatably journaled in the frame, a comb assembly swingably mounted on said shaft for raising and lowering movement independent of the shaft rotation, said comb assembly including a set of stone gathering teeth disposed in an operative position at ground level when said comb assembly is lowered and spaced substantially above the ground when the comb assembly is raised for transport, a stone receptacle provided on the frame, a stone transferring reel rotatable with said shaft for delivering stones from said comb assembly into said receptacle, means for raising and lowering

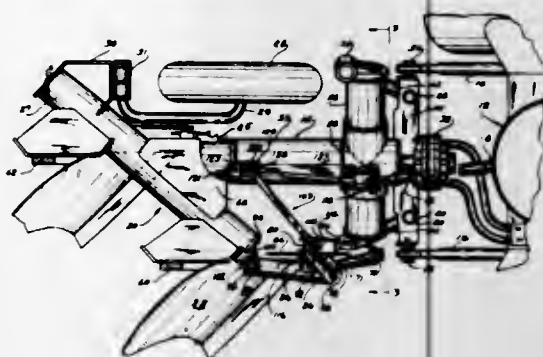
said comb assembly, drive means between said ground engaging wheel means and said shaft for rotating said reel by rotation of the wheel means, and means automatically responsive to raising of said comb assembly for interrupting said drive means when the comb assembly is raised.

3,312,288
ROD WEEDER ATTACHMENT
Edward J. Cervenka, Rte. 2, Moccasin, Mont. 59462
Filed July 27, 1964, Ser. No. 385,154
14 Claims. (Cl. 172-44)



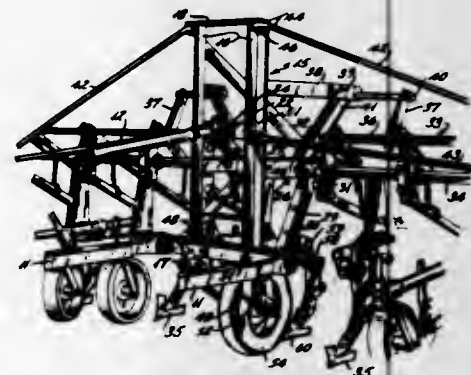
1. In combination with a tool bar frame vertically adjustably mounted on ground wheels having pneumatic tires and having a rearmost row of cultivator tool bars having curved shanks; a rod weeder attachment mounted on said frame comprising vertically pivotal frames each carrying a drive wheel having a pneumatic tire adapted to frictionally engage its related ground wheel when the tool bar frame is lowered with respect to said ground wheel; means yieldably depressing the free ends of said pivotal frames; a chain sprocket journaled in a center main bearing disposed between the drive wheels; flexible shaft sections connecting the drive wheels and the chain sprocket; a second chain sprocket journaled in a jack shaft assembly mounted on the tool bar frame in rear of the center main bearing; a chain running around the said sprockets; a third chain sprocket on the shaft of said second sprocket disposed in substantial alignment with one of said cultivator tool bars; a boot mounted on said one cultivator tool bar; a fourth chain sprocket on a shaft journaled in the upper end of the boot and disposed in alignment with the third chain sprocket; a second chain running around said third and fourth chain sprockets; a fifth chain sprocket within the upper end of the boot mounted on said last named shaft; a non-circular shaft journaled in the lower end of the boot; a sixth sprocket mounted on said non-circular shaft; a third chain running around the fifth and sixth sprockets within said boot; bearings mounted on the cultivator tool bars of said row at each side of the boot; non-circular rod weeder shafts journaled in said bearings in alignment with the non-circular shaft of the boot and connected thereto by universal joints, said rods being adapted to rotatively engage the ground surface when the tool bar frame is lowered with respect to the ground wheels to bring the lower ends of the cultivator tool bars below the ground surface; pairs of front and rear uprights receiving therebetween the pivotal frames respectively mounted on the tool bar frame; rods extending through each pair of rear uprights and through the frames to form pivots therefor; said frames carrying at their sides bearings for their related drive wheels; and the pairs of front uprights each receiving therebetween the front ends of the frames.

3,312,289
ATTACHMENT FOR TURN-OVER PLOW
Phillip D. Wenzel, Rockford, Ill., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Oct. 13, 1964, Ser. No. 403,472
8 Claims. (Cl. 172-162)



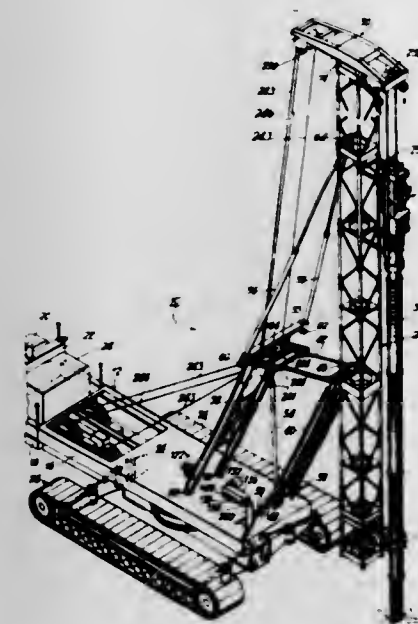
1. In a combination tractor and turn-over plow, having a stationary plow frame and a turn-over frame, coulters and coulters standards shiftably carried by the turn-over frame, means connected to said coulters standards and to said stationary plow frame, said means shifting said coulters and coulters standards during turn-over movement from a right hand operating position, through a rearward position to a left hand operating position.

3,312,290
CULTIVATOR HARNESS
Paul D. Abbott, P.O. Box 187, Blytheville, Ark. 72315
Filed Apr. 14, 1966, Ser. No. 542,592
3 Claims. (Cl. 172-451)



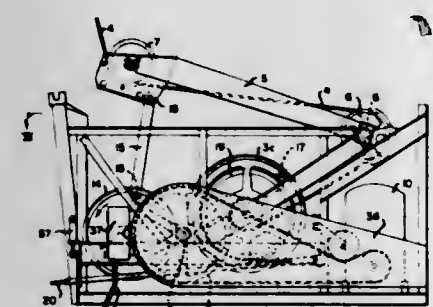
1. A harness for mounting a front mounted tool bar having an earth-working implement thereon with an operating lever on a vehicle three-point hitch having a pair of draft arms and an upper link, said harness comprising a main frame including a pair of upright generally parallel members, a pair of vertically spaced cross members connecting said upright members, connecting pin means mounted on one of said cross members and providing attaching means for said draft arms, means carried by said other cross member providing a connection for the upper link, means for removably mounting at least one tool bar having earth working implements on said main frame, means on said main frame for securing said operating lever in fixed operating position, an auxiliary frame adjustably mounted on said main frame, and gauge wheel means carried by said auxiliary frame for controlling the position of said main frame when the implement is in operating position, whereby a normally front mounted implement can be mounted on a tractor hitch at the rear of the tractor and the hitch can raise and lower the implement.

3,312,291
DERRICKS
Stanley C. Haug, Brooklyn, N.Y., assignor to Raymond International, Inc., New York, N.Y., a corporation of New Jersey
Filed Oct. 5, 1964, Ser. No. 401,365
20 Claims. (Cl. 173-28)



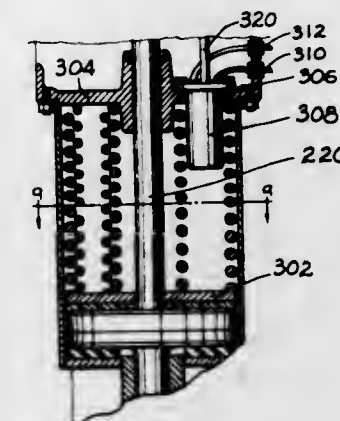
19. A derrick comprising a horizontal base, a leader, a parallel motion mechanism pivotally interconnecting said base and said leader, said leader being medially foldable for shipping purposes, a head frame, the medial portion of which being pivotally connected to said leader for rotating said head frame under said leader for shipping purposes, and driving means for said horizontal base.

3,312,292
DRILLING METHOD AND APPARATUS
Walter P. McKain, Parkersburg, W. Va., assignor to Acme Fishing Tool Company, Parkersburg, W. Va., a corporation of West Virginia
Filed May 18, 1964, Ser. No. 368,101
16 Claims. (Cl. 173-89)



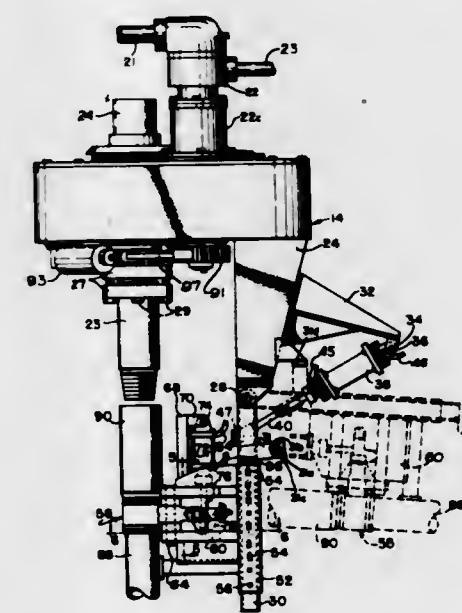
1. Drilling apparatus comprising a cable carrying a drilling tool, a drum upon which the cable is wound, a brake for the drum, means for applying and releasing the brake, operating means for cyclically raising the cable to raise the drilling tool and releasing the cable to permit the drilling tool to fall freely under the influence of gravity, tending to turn the drum to pay out cable, control means for altering the speed of the operating means and means including indicating means indicating changes in the tension on the cable, whereby the operator is enabled to operate the control means to alter the speed of the operating means and to operate the means for applying and releasing the brake to obtain optimum drilling effect.

3,312,293
SPRING OPERATED DEMOLITION DEVICE
Earl F. Cutler, Dundee, Ill., assignor to Roofing Machinery Mfg. Co., Elk Grove, Ill., a corporation of Illinois
Filed July 10, 1964, Ser. No. 381,870
10 Claims. (Cl. 173-119)



5. In a power hammer of the type having a hammer shaft including a hammer head which is adapted to strike an anvil carried on one end of a tool-carrying anvil shaft in order to deliver a blow, including spring means for forcing said hammer shaft downwardly toward said anvil and means for retracting said hammer shaft against the force of said spring means after delivery of each blow, the improvement comprising, a housing, and a plurality of helical compression springs disposed within said housing and circumferentially spaced therein, each of said springs being parallel to said hammer shaft and having one end abutting against a fixed portion of said housing with its other end acting to urge said hammer shaft downwardly toward said anvil.

3,312,294
PIPE HANDLING DEVICE
John Hart Wilson, % Wilson Manufacturing Co., P.O. Box 1031, Wichita Falls, Tex. 76307
Filed Aug. 4, 1964, Ser. No. 387,459
13 Claims. (Cl. 173-164)

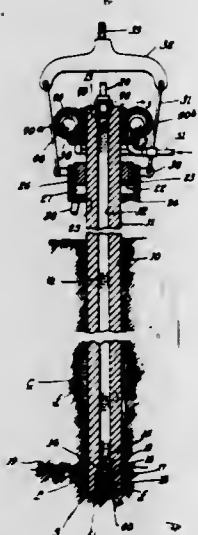


1. A pipe handling device for use in combination with a drilling rig, which drilling rig has an upright tower with a traveling block, a swivel, and a pipe rotating device depending therefrom, which pipe handling device comprises: (a) a bracket mounted on the pipe rotating device for movement by the traveling block,

- (b) an arm pivotally mounted on said bracket,
 (c) a support frame mounted on said arm,
 (d) a pair of arcuate pipe engaging members pivotally mounted on said support frame, with the axis of the pivot being substantially parallel to the axis of said arcuate pipe engaging members,
 (1) an arm extending in the opposite direction from each arcuate pipe engaging member,
 (2) a roller journaled on each said arm near the end thereof opposite each arcuate pipe engaging member,
 (e) a cam, a portion of which cam has spaced apart parallel faces and a wedge-shaped portion associated with a side thereof, which cam is pivotally mounted on said support frame to actuate said arcuate pipe engaging members,
 (1) said cam being adapted to move between said rollers to positively close said pipe engaging members, when said cam is in one position, and to permit said pipe engaging members to open when said cam is in another position, and
 (f) operator means operatively associated with said cam to pivotally move said cam by remote control.

3,312,295
METHOD AND APPARATUS FOR FLUID INJECTION IN VIBRATORY DRIVING OF PILES AND THE LIKE

Albert G. Bodine, Jr., Los Angeles, Calif.
 (7877 Woodley Ave., Van Nuys, Calif. 91406)
 Filed Sept. 23, 1965, Ser. No. 489,652
 31 Claims. (Cl. 175-19)



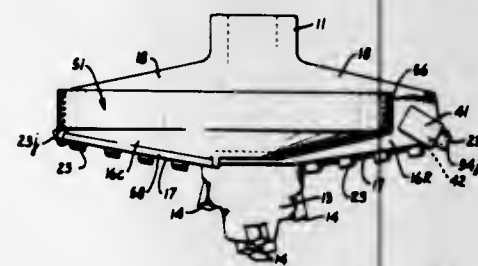
1. The method of vibratory driving of a longitudinally extended penetrating element having a penetrating end with a vibratory impacting end face into granular media for piling and the like, that includes:
 bringing said impacting end face of said penetrating end of said element into forcible engagement with said media;
 vibrating said element with longitudinally directed vibrations while in engagement with said media, so as to cause vibratory impacting of said end face against the media and thereby vibratory penetration in tight engagement with the media;
 conducting a flow of wash fluid through a conduit directly to said vibratory impacting end face of said element with said flow maintained while said face is impacting against said media; and
 providing, adjacent said impacting face, a cavity for reception of wash water and media displaced by said penetrating element and mixed with said wash fluid.

3,312,296
METHOD OF REDUCING THE PERMEABILITY OF PORTIONS OF BORE HOLES
 Edwin Lee Paramore, Dallas, Tex., Neal W. Glazner, Jr., Las Vegas, Nev., and Ronney R. Koch, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
 Filed May 13, 1964, Ser. No. 367,915
 6 Claims. (Cl. 175-72)



1. A method of reducing the permeability of a portion of a hole formed in the earth, said method comprising:
 directing a confined flow of sealant material, isolated from the periphery of said hole, generally axially of said hole and toward said hole portion, said sealant material comprising a composition including latex and gypsum cement materials;
 constricting said axial flow of sealant material so that its flow velocity is increased;
 passing said constricted flow through outlet means so as to form a diverging spray of sealant material particles; and
 projecting said spray of sealant material particles from said outlet means toward the wall of said hole portions;
 said sealant material being impinged as particles against said wall portion while maintaining a space between said outlet means and said wall portion substantially unoccupied by continuous phase liquid material; and
 said thus impinged sealant material being, at least in part, imbibed by said permeable formations.

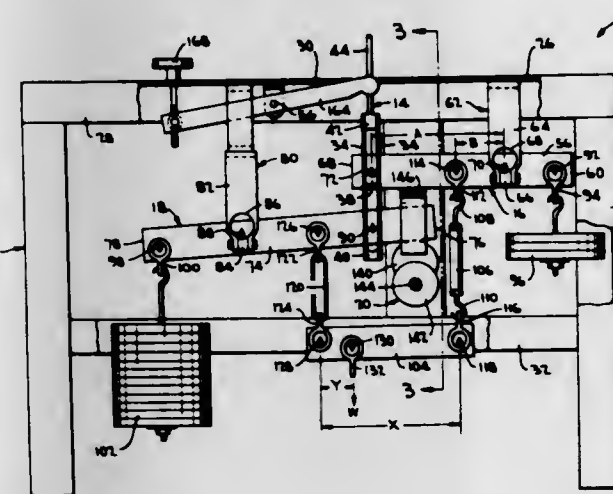
3,312,297
EARTH AUGER HEAD HAVING FINGER TIP TEETH
 Gerald A. Petersen, Sunnyvale, Calif., assignor of one-half to Anita E. Petersen, Saratoga, Calif.
 Filed Sept. 21, 1964, Ser. No. 397,754
 8 Claims. (Cl. 175-392)



1. An auger head having at least one outward projecting arm formed with a plurality of sockets spaced apart along said arm, a tooth in each said socket complementary to said socket, and means for removably holding each said tooth in its respective socket, each said tooth comprising a short section of hard material bar stock partially projecting from said arm, each said tooth being a right prism of rhomboid shape in cross-section, each said socket being parallel and slanted upwardly-rearwardly relative to the normal direction of rotation of said head, whereby one

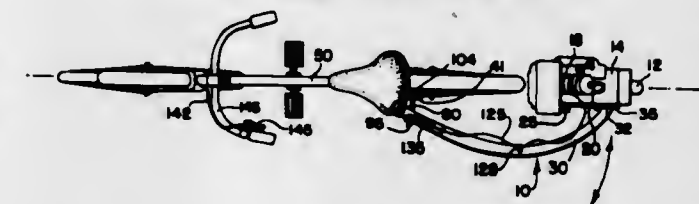
side edge of the exposed end of each said tooth is the cutting edge in said normal direction of rotation, said cutting edge being lowermost in drilling position.

3,312,298
AUTOMATIC DUAL RANGE WEIGHING SCALE
 Robert G. Best, George H. Hartzell, and John W. Zsulevich, Columbus, Ohio, assignors to Thurman Scale Company, a division of Thurman Manufacturing Company, a corporation of Ohio
 Filed May 27, 1966, Ser. No. 553,530
 12 Claims. (Cl. 177-158)



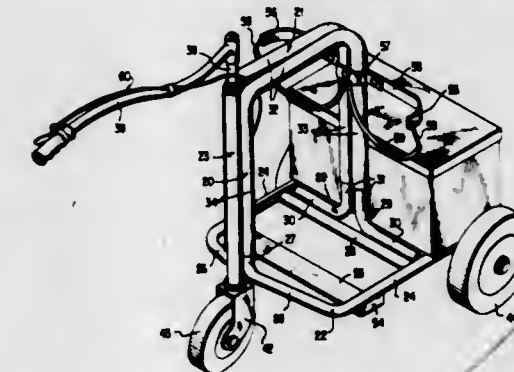
1. Automatic dual range weighing scale means comprising:
 means responsive to movement for indicating the weight of a load being weighed;
 first weighing lever means having spaced apart inboard and outboard end portions;
 second weighing lever means having spaced apart inboard and outboard end portions;
 said first and second weighing lever means having their inboard end portions disposed for engagement with said movement responsive means;
 first and second fulcrum means respectively supporting said first and second weighing lever means between their respective inboard and outboard end portions
 coupling means for connecting said first and second weighing lever means with a load to be weighed; and
 movable cam means selectively engageable with one of said weighing lever means, thereby leaving the other of said weighing lever means free for movement independent of said one weighing lever means;
 said movable cam means, when engaged with said first weighing lever means, preventing said first weighing lever means inboard end portion from engaging said movement responsive means, whereupon that portion of the load being weighed which is transmitted to said second weighing lever means will cause said second weighing lever means inboard end portion to engage and move said movement responsive means, thereby defining a first range of operation of said scale means;
 said movable cam means, when engaged with said second weighing lever means, preventing said second weighing lever means inboard end portion from engaging said movement responsive means, whereupon that portion of the load being weighed which is transmitted to said first weighing lever means will cause said first weighing lever means inboard end portion to engage and move said movement responsive means, thereby defining a second range of operation of said scale means.

3,312,299
BICYCLE PROPELLING UNIT
 Floyd W. Kuecker, 1620 S. 29th St., La Crosse, Wis. 54601
 Filed June 10, 1965, Ser. No. 462,901
 7 Claims. (Cl. 180-11)



1. A power drive unit for bicycles comprising, a frame having a single road wheel journaled on one end thereof and a drive engine mounted on the frame and coupled to the road wheel in driving relation therewith, said frame being comprised of a curved arm extending from the road wheel with a pivot structure having horizontal and vertical displacement axes at the other end of the arm, a pair of spaced parallel plate members mounted on the pivot structure and including connection means therein connecting the plates together in a clamping relationship, said plate members being mounted to fit around the clamp on one end of a frame of a bicycle ahead of and in adjacent relationship with the hub of the rear wheel axle of the bicycle, and control cable means extending from the drive engine and mounted on the arm of the frame with a portion extending beyond said arm and adapted to be mounted on the bicycle frame for control of the drive engine, said pivot structure being located normal to and affixed on one of the spaced plates and positioned on one side of the bicycle frame to extend translationally from one end of said curved arm and with the other end of the curved arm with the drive engine attached thereto being positioned such that the drive wheel of the power unit will be aligned with the rear bicycle wheel.

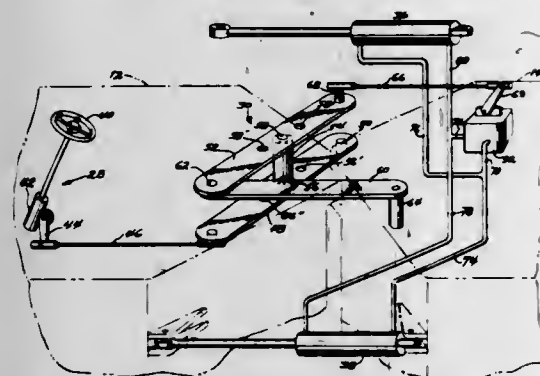
3,312,300
POWER-OPERATED UTILITY CART
 William D. Jones, E. Club Drive, Thomasville, Ga. 31792
 Filed Nov. 2, 1964, Ser. No. 408,273
 6 Claims. (Cl. 180-19)



4. A three-wheeled utility vehicle of the type guided by a walking attendant comprising a bottom generally horizontal frame section including a transverse horizontal article supporting member, an upstanding laterally narrow top frame section secured to the bottom frame section at the longitudinal center line thereof and extending longitudinally of the bottom frame section from the front end thereof to a point intermediate the ends of the bottom frame section, the top frame section being generally inverted U-shaped and having forward and rear legs, a vertical steering post secured to the forward legs of the top frame section immediately forwardly of the bottom frame section, a front steering wheel shaft and steering handle assembly journaled within said steering post, a rear transverse axle secured to the rear end portion of the bottom frame section rearwardly of the rear side of the

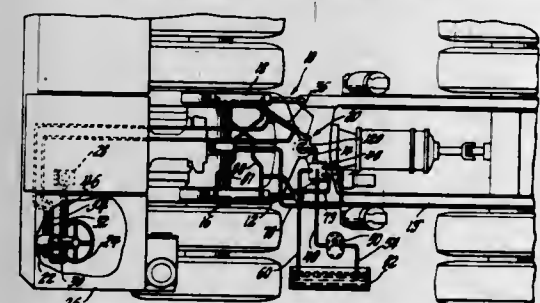
top frame section, a pair of rear wheels on said axle outboard of the sides of the bottom frame section, a laterally elongated rectangular box secured on the rear end portion of the bottom frame section adapted to contain power drive means for said rear axle, and a horizontal cross arm on said top frame section at the rear side thereof and near the top thereof and extending on opposite sides of the top frame section for approximately the full width of the bottom frame section and also disposed rearwardly of said article supporting member.

3,312,301
ARTICULATED VEHICLE STEERING SYSTEM
Marcus W. Hagen, Kenosha, Wis., assignor to International Harvester Company, a corporation of Delaware
Filed Aug. 4, 1965, Ser. No. 477,219
12 Claims. (Cl. 180-79.2)



1. In a steering control system for a vehicle having first and second frame sections articulated together about a substantially upright axis and having motor means to pivot the frame sections about the axis, the combination including: means on the first section to produce steering input signals having a selected magnitude; means between the frame sections operating responsive to the input signals to produce steering output signals having a magnitude proportional to the selected magnitude; control means on the second section operating responsive to the output signals to actuate the motor means at a rate proportional to the magnitude of the output signals.

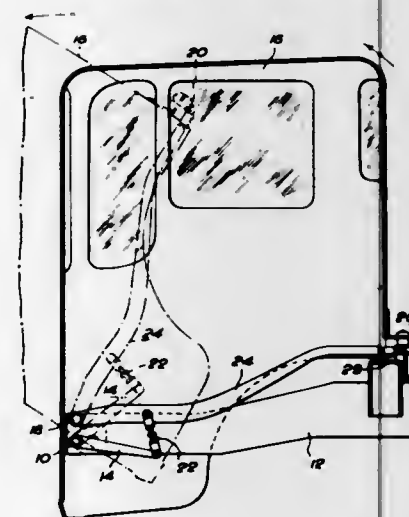
3,312,302
HYDRAULIC STEERING SYSTEM
Manuel Naddell, Los Angeles, Calif., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 27, 1965, Ser. No. 483,070
9 Claims. (Cl. 180-79.2)



1. A hydraulic steering system for an articulated vehicle having first and second frame sections pivotally interconnected about a vertical steering axis, at least one double-acting hydraulic cylinder connected between said frame sections for effecting relative movement thereof about said steering axis, a source of pressurized fluid, a control valve mounted on one of said frame sections adjacent said pivot axis for supplying pressurized fluid from said source to said hydraulic cylinder, a slave cylinder comprising a relatively movable piston member, said slave cylinder being mounted on the other of said frame sections adjacent said pivot axis, a force trans-

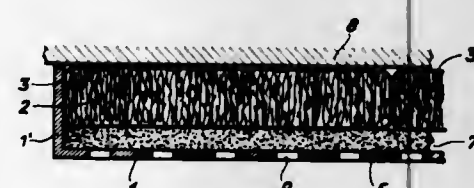
mitting member supported on said vehicle for pivotal movement about said steering axis, means pivotally connecting said piston member and said control valve to said force transmitting member, said means being spaced from the steering axis, a steering wheel mounted on said other of said frame sections, means operatively connecting said steering wheel to said slave cylinder so that movement of the steering wheel causes the piston member to actuate said control valve through said lever whereby pressurized fluid is directed to said hydraulic cylinder.

3,312,303
TILTING VEHICLE CAB
James Milloy, 164 Fox Lane, Leyland, England
Filed Mar. 29, 1965, Ser. No. 443,195
Claims priority, application Great Britain, Apr. 17, 1964, 16,070/64
5 Claims. (Cl. 180-89)



1. Mechanism for mounting a forwardly pivoting cab on a motor vehicle comprising a transverse torsion bar adapted to be secured at one end to the chassis frame of said vehicle; a tilt beam separated from said cab, pivotally mounted on said chassis frame at the front thereof and coupled to the cab structure at the rear thereof; means coupling said tilt beam to the other free end of said torsion bar, whereby tilting torque is transmitted from said bar to the structure of said cab at the rear thereof; and locking mechanism adapted to hold said cab in a normal "down" position by locking the rear end of said tilt beam to said chassis frame.

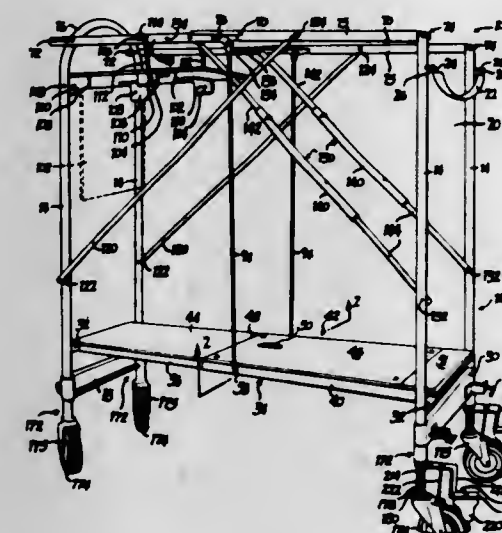
3,312,304
MULTI-LAYERED SOUND ABSORBING PANEL
Yian-nian Chen and Erich Philipp, Winterthur, Switzerland, assignors to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company
Filed Nov. 20, 1964, Ser. No. 416,676
Claims priority, application Switzerland, Nov. 21, 1963, 14,304/63
4 Claims. (Cl. 181-33)



1. A sound absorbent construction material comprising a foraminous sheet, a layer of fibrous sound absorbent material disposed adjacent the sheet and substantially parallel thereto, a synthetic film enveloping said layer,

and means to space said layer from the sheet by a distance at least equal to one-half the diameter of the holes in the sheet.

3,312,305
FOLDING SCAFFOLD
Leo S. Waun, 14939 University, Allen Park, Mich. 48101
Filed Aug. 2, 1965, Ser. No. 476,266
11 Claims. (Cl. 182-15)



11. In a folding scaffold, a frame including support members at each end of the frame, a centrally hinged working platform pivotally connected to said support members, a pair of centrally hinged guard rails also pivotally connected to the support members at an elevation above said platform, and a pair of diagonal struts each having variable effective length and each being pivotally joined between one of said supports at one end of the scaffold and a guard rail section at the opposite end of the scaffold, said platform and said guard rails being foldable at said hinged portions and said struts varying in length upon such folding to accommodate collapsing of said scaffold for convenient storage thereof.

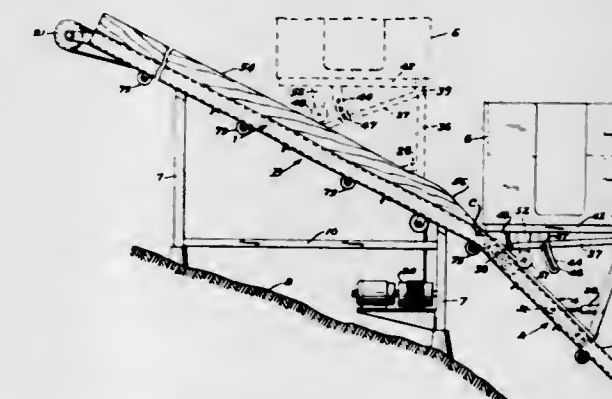
3,312,306
ULTRASONIC METHOD OF LUBRICATING A COMPLEX MECHANISM
Robert A. Carlston, San Dimas, and Paul C. Denny, Pasadena, Calif., assignors of one-third to Morton R. Miller, Los Angeles, Calif.
No Drawing. Filed Apr. 30, 1964, Ser. No. 364,025
18 Claims. (Cl. 184-1)

15. A method of lubricating a complex mechanism without disassembly thereof, comprising the steps of immersing the mechanism in a liquid bath containing a halogenated solvent in which a silicone lubricant is dissolved in a concentration of about 0.5 to 5% by volume, and applying ultrasonic energy to the bath while keeping the mechanism immersed therein so as to disperse lubricant throughout the mechanism.

3,312,307
HILL CLIMBING ELEVATOR
Sherman A. Camp, 51 Lushern Court, Walnut Creek, Calif. 94598
Filed Nov. 12, 1964, Ser. No. 410,359
3 Claims. (Cl. 187-10)

1. In a hill climbing elevator,
(a) a pair of spaced rails of generally channelled cross-section facing one another to form an inclined track,
(b) means to support said rails to hold said track on a predetermined incline,
(c) a carriage frame between the rails,

(d) wheels on the opposite sides of said carriage frame confined and riding inside the respective channels of said rails,
(e) a hoist line connected to said carriage frame,
(f) power means for said hoist line for pulling up or lowering said carriage on said inclined track,
(g) support elements extended from said carriage frame adjacent each rail to above the level of said track,
(h) a floor frame and an elevated cab on the floor frame, an end of said floor frame being pivoted on said support elements, the free end of said floor frame gravitating toward said track about the pivot of said pivoted end,
(i) coacting means on said floor frame and on said support element to limit the pivoting of said floor frame away from said track,
(j) adjustable abutment means projecting from said support elements toward the free end of said floor frame for abutting said floor frame in a generally horizontally attitude of said floor frame relatively to said inclined track thereby to maintain the cab on said floor frame in a generally perpendicular attitude.

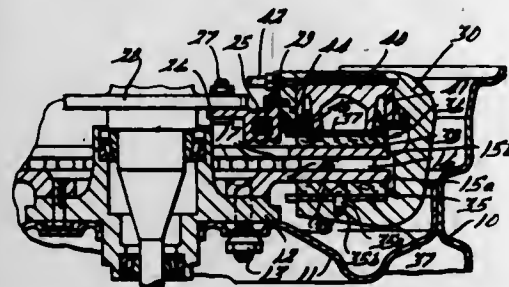


(k) the incline of one portion of said track being steeper than the incline of another portion of said track,
(l) rolling supports spaced from said pivoted end toward said free end of said floor frame and extending toward the top of the respective rails of said track to space said floor frame from said rails at a predetermined distance for holding the cab in said perpendicular attitude,
(m) compensating guides spaced above the rails of one of said portions for engagement by said rolling supports, the height of said rolling supports relatively to the spacing of said compensating guides above said rails being such that said rolling supports engage and ride upon said compensating guides thereby to turn said floor frame about said pivotal end in proportion to the difference of incline between said portions of said track for maintaining said floor frame in a horizontal attitude and said cab on said floor frame in a vertical attitude.

3,312,308
DISK BRAKE
Shunso F. Watanabe, Livonia, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Oct. 21, 1965, Ser. No. 499,676
5 Claims. (Cl. 188-72)

1. In a disk brake for a wheel having a stationary part, a brake disk secured to said wheel for rotation therewith, a caliper straddling at least a portion of the periphery of said brake disk, a pair of opposed brake shoes, and means carried by said caliper for actuating said brake shoes, that improvement which comprises a torque member having one end connected to said stationary wheel

part and having its free end connected to said caliper, said torque member comprising a hollow part having spaced bendable areas, and friction members press fitted



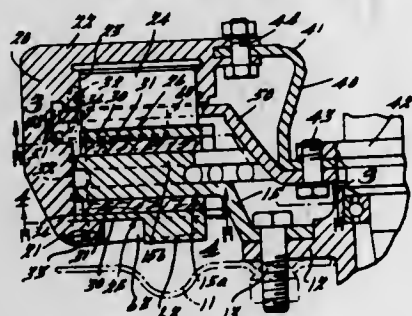
in said torque member and engaging said torque member adjacent said bendable areas and frictionally engaging one another to control the deformation of said torque member.

3,312,309

SPOT TYPE DISK BRAKE

Talivaldis Sturis, Plymouth, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware

Filed Apr. 5, 1965, Ser. No. 445,332
9 Claims. (Cl. 188-73)



1. A disk brake for braking a rotary disk including a stationary torque plate disposed generally parallel to the disk and having a pair of spaced shoulders disposed perpendicular to the disk, a caliper held against rotation by direct engagement with said torque plate shoulders and having a fluid motor portion on one side of the disk and a reaction portion on the other side of the disk, a first brake shoe disposed between said torque plate and the disk and engageable at the opposite ends thereof with said shoulders to transmit all of its braking torque to said shoulders, said first brake shoe being motivated by said fluid motor portion, a second brake shoe disposed between the disk and said reaction portion and motivated by said reaction portion, the braking torque of said second brake shoe being absorbed by said caliper, and means disposed on the side of said torque plate opposite from the disk operable to support and guide said caliper for movement generally perpendicular to the disk and operable to resist twisting of said caliper about said torque plate under the influence of said second shoe.

3,312,310

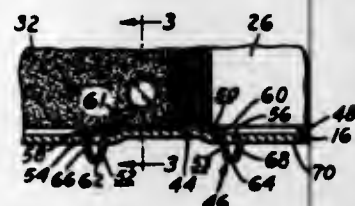
BRAKE MECHANISM AND SHOE GUIDE AND BEARING MEANS THEREFOR

Ronald W. Bennett, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed May 12, 1965, Ser. No. 455,223
5 Claims. (Cl. 188-78)

1. In a brake having a backing plate and a brake drum and a brake shoe mounted on said backing plate and means for moving said brake shoe into and out of braking engagement with said drum, the improvement comprising a plurality of pairs of apertures in said backing plate in substantial arcuate alignment with the edge of said shoe which is immediately adjacent said backing

plate, and a plurality of replaceable unitary shoe guide and bearing pads each having a shoe edge-engaging guide and bearing surface extending between a pair of said



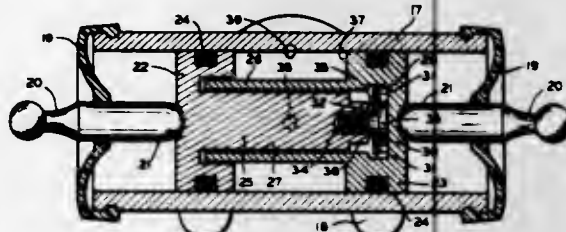
apertures and further having reversely bent ends extending through said pairs of apertures and removably snap locking said pad to said backing plate.

3,312,311

AUTOMATIC BRAKE ADJUSTER

George F. Dixon, St. Joseph, Mich., assignor to Clark Equipment Company, a corporation of Michigan

Filed Jan. 29, 1965, Ser. No. 429,031
9 Claims. (Cl. 188-79.5)



5. In a brake assembly including a brake drum, at least one brake shoe movable into and out of engagement with said brake drum, means for moving said shoe into engagement with the drum, and means for returning the shoe from said engagement, the improvement comprising first and second members comprised in said moving means, said first member having a projection, said second member having an aperture receiving said projection at all times, said aperture having an enlarged portion, one of said members being telescopically movable relative to the other, a retaining element slidable axially on said projection and received in said enlarged end portion upon full inward telescoping movement of said one member relative to the other, said retaining element having a plurality of resilient prongs extending radially outwardly of the cross section of said aperture but falling within the cross section of the enlarged portion, and means limiting the axial movement of the retaining element on the projection, said prongs biting against the surface of said aperture upon outward telescoping movement of the one member relative to the other member sufficient to draw the prongs into the aperture, whereby to limit said inward telescoping movement of the one member to a distance equal to said limited axial movement.

3,312,312

SHOCK ABSORBERS

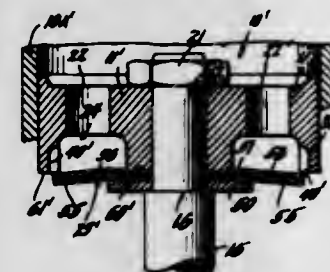
Christian Marie Lucien Louis Bourcier de Carbon, 64 Blvd. Maurice-Barres, Neuilly-sur-Seine, France

Filed Dec. 23, 1964, Ser. No. 420,756
Claims priority, application France, Jan. 9, 1964, 959,815

5 Claims. (Cl. 188-88)

1. In a direct acting piston-and-cylinder shock absorber, which includes a cylinder containing damping fluid: a piston rod and a piston disposed for reciprocation in said cylinder; means for bypassing damping fluid through the piston from one side to the other, said means including an annular cavity formed in one side of the piston and having inner and outer circular walls, the inner wall comprised by a substantially cylindrical axial projection concentric with and surrounding the piston rod, the outer wall comprised by an annular peripheral skirt

extending axially from the piston in the same direction as said cylindrical projection, a washer concentric with said piston rod and said inner cylindrical projection and carried in fixed position with relation thereto and spaced axially from said inner cylindrical projection, a valve member comprising at least one thin annular resilient valve disc positioned across said cavity and having its radially outer marginal portion seated against the outer portion of said annular skirt for movement in an axial direction away from said skirt, and its radial inner marginal portion seated upon said washer for movement away from said washer in the opposite axial direction, whereby movement of said piston in one direction causes pressure



of damping fluid against the valve member in the opposite direction and causes the valve member to yieldably flex away from one of its seats and afford an annular opening between the adjacent portions of the valve member and the seat for the controlled passage of fluid therethrough, and a second washer removably positioned immediately axially inwardly of said first named washer, in the space between the first named washer and the inner cylindrical projection, and of an outside diameter less than that of said first washer and also less than the inside diameter of said valve member, said valve member being free of any lateral confinement either radially inwardly or outwardly in any of its positions.

ERRATUM

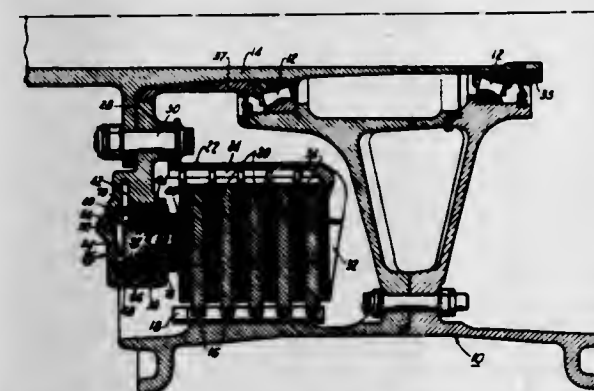
For Class 188-106 see:
Patent No. 3,312,331

3,312,313

INDEPENDENTLY OPERABLE DUAL BRAKE ACTUATING APPARATUS

Edward L. Moyer, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware

Filed June 23, 1965, Ser. No. 466,356
7 Claims. (Cl. 188-106)



1. Independently operable first and second brake actuating apparatus comprising:
a carrier member adapted to house both the first and second brake actuating apparatus;
a cylinder formed in said carrier member;
a sleeve member concentrically arranged in fixed position in said cylinder and separating said cylinder into first and second chambers;
a first piston slidably carried in said first chamber and

operatively connected to the brake for actuating the same;

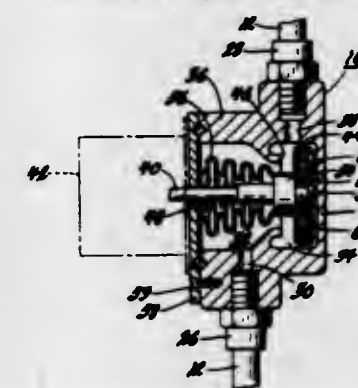
a second piston concentric with said first piston and slidably carried in said second chamber and operatively connected to the brake for actuating the same;
a first source of controllably pressurized fluid operatively connected to said first chamber for supplying pressurized fluid thereto to actuate said first piston;
a second source of controllably pressurized fluid operatively connected to said second chamber for supplying pressurized fluid thereto to actuate said second piston;
said first and second sources of pressurized fluid being independently controllable to cause pressurization of said first piston and said second piston, respectively.

3,312,314

VEHICLE DIFFERENTIAL BRAKE CONTROL

Theodore F. Peters, Utica, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 28, 1965, Ser. No. 467,481
1 Claim. (Cl. 188-152)



In a vehicle braking system a control differential unit including valve means for selectively shutting off brake pressure to vehicle wheels which are to be used as driving wheels, said valve comprising: a valve body having a main body portion and a cover attached to an opening thereof to form a closed structure; an inlet from a master cylinder into said body and an outlet to vehicle wheel brakes from said body; shiftable means slidably disposed within said body in a disposition bringing about an isolation of said inlet from said outlet when shifted to an extreme of movement in response to an input force; and elastomeric means surrounding said shiftable means and having terminal portions, a first of said terminal portions forming an O-ring seal for the terminus of said main valve body portion and the cover for said valve body, and a second terminal portion forming a seat on said shiftable means for engagement with another portion of said valve body, said elastomeric means including raised portions of substantially mound shape in spaced apart relationship providing a point contact with said valve body for maintaining a predetermined spaced relationship between said shiftable means and said valve body while said shiftable means is in a normal position of rest.

3,312,315

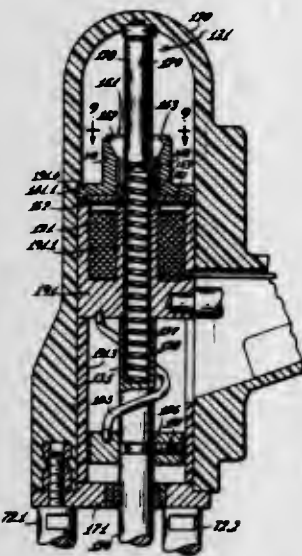
ELECTRIC BRAKE FOR WELDING APPARATUS

Harold J. Graham, Canton, Mass., assignor to Omark Industries, Inc., Portland, Oreg., a corporation of Oregon

Original application Sept. 8, 1958, Ser. No. 759,583, now Patent No. 3,047,711, dated July 31, 1962. Divided and this application July 30, 1962, Ser. No. 214,456
1 Claim. (Cl. 188-163)

In welding apparatus of the type described, an electric brake for fixating an actuating rod relatively to an apparatus housing, comprising:
housing means;

rod means for actuating a work-piece;
a magnetic sleeve surrounding said rod means and fixed to said housing means;
a solenoid magnetically associated with said sleeve;
brake wedging means fastened to said housing means and having a conical portion surrounding said rod means;
armature means surrounding said rod and arranged for attraction by said magnetic sleeve upon energization of said solenoid; and

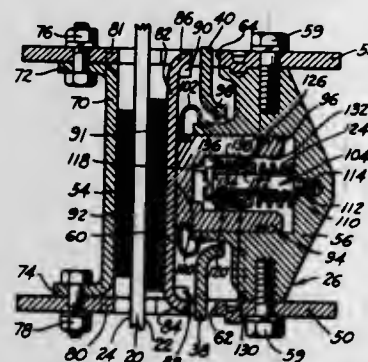


brake sleeve means attached to said armature means and having resilient wings extending therefrom into said conical portion with correspondingly conical portions and with axially extending portions fitting said rod means;
whereby energization of the solenoid attracts the armature means and brings the conical and axially extending portions of the brake sleeve means into engagement with wedging means and housing means, thereby coupling the rod means and the housing means.

3,312,316

DISC BRAKE ADJUSTER

Richard T. Burnett, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Original application Oct. 20, 1960, Ser. No. 63,894, now Patent No. 3,134,459, dated May 26, 1964. Divided and this application June 28, 1963, Ser. No. 291,544
3 Claims. (Cl. 188—196)



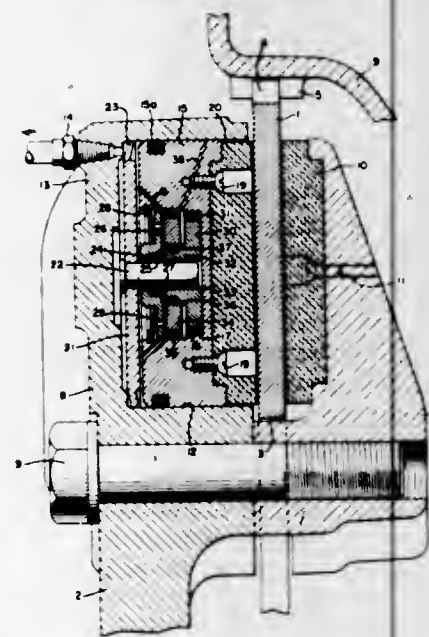
1. An automatic adjusting device for a brake comprising a housing having a cylinder therein with one end of said cylinder being open, a fluid operated piston disposed in said cylinder for movement through the open end of said cylinder, said piston being closed across its diameter adjacent said open end, a cylindrical axially extending recess in said piston opening into said cylinder and disposed opposite the closed end of the piston, an axially extending pin fixed at one end to said housing and having its other end extending into said axial recess, an annular block of friction material completely enclosed

within said axial recess and encircling said pin and in frictional engagement with the circumference of said axial recess, said friction means being movable axially relative to said pin and piston, and biasing means mounted on said pin and completely enclosed within said axial recess for normally urging said friction means in an axial direction away from the open end of said cylinder.

3,312,317

AUTOMATIC BRAKE ADJUSTMENT WITH HYDRAULIC RESET DEVICE

Jesse G. Hawley, Penn Yan, N.Y., and Albert W. Cook, Tallmadge, and Carl E. Bricker, Cuyahoga Falls, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Jan. 28, 1965, Ser. No. 428,818
4 Claims. (Cl. 188—196)



4. The combination in a brake of a rotatable disc, a fixed housing straddling a portion of the disc, an anvil portion of the housing, a block of friction material carried by the anvil portion and adapted to engage one side of the disc, a cylinder portion of the housing, a cup-shaped piston slidable in the cylinder portion, a block of friction material on the outside of the bottom of the cup of the piston and engageable with the other side of the disc, mounting means fixed to the housing and extending into the cup of the piston, a friction grip positioned on said mounting means, means for applying hydraulic pressure to the cup side of the piston to apply the brake, spring means between the piston and grip to return the piston to brake clearance position upon release of the hydraulic pressure, reset piston means in the cup of the piston engaging with the grip, said reset piston means being exposed at one side to the hydraulic pressure to return the grip any distance caused by housing deflection, and means maintaining atmospheric pressure on the other side of the reset piston means.

3,312,318

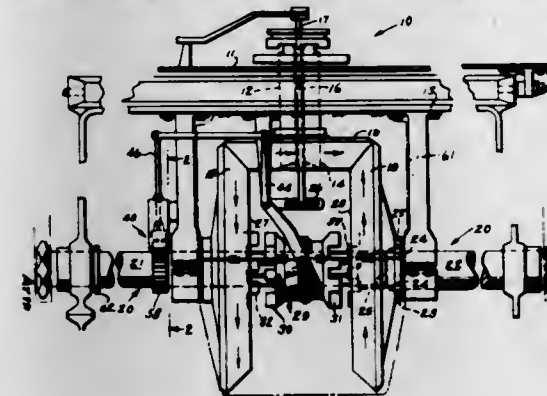
TRANSMISSION AND BRAKE FOR CRAWLER TYPE VEHICLES

Arthur P. Ryan, 35 Health St., Dansville, N.Y. 14437
Substituted for abandoned application Ser. No. 259,995, Feb. 20, 1963. This application Sept. 3, 1965, Ser. No. 484,970

1 Claim. (Cl. 192—4)

In a steering mechanism, the combination of a carrier body, a revolving machinery deck on said carrier body, said revolving machinery deck having a centrally disposed shaft vertically extending downwards through said deck and said vertically extending shaft extending through said carrier body, a horizontal bevel gear supported on the

lower end of said shaft, a pair of vertical bevel gears in vertical position in engagement with said horizontal bevel gear, one of said vertical gears being supported rotatably free upon a horizontal shaft and the other of said vertical bevel gears being supported in keyed relationship upon said horizontal shaft and a clutch mechanism for engaging selectively either of said vertical bevel gears, said vertically extending shaft supporting said horizontal bevel gear as a centrally disposed opening therethrough, a rod

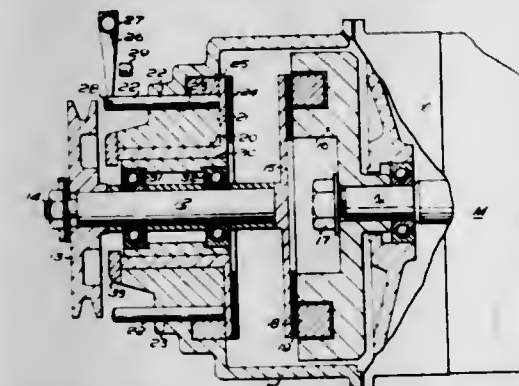


extending through said opening for vertical movement therewithin, a shift fork element, said rod being affixed to said shift fork element at its lower end, said shift fork element transmitting vertical movement of said rod to the horizontal, longitudinal movement of said jaw clutch, a linkage, a locking assembly and a lock gear, said vertical rod being further connected to said linkage to operate said locking assembly comprising a vertical slidable lock block which is selectively engageable with said lock gear, said lock gear being rigidly mounted upon a first shaft element.

3,312,319

PERMANENT MAGNET OPERATED CLUTCH AND BRAKE

George Carroll, Stockport, and Benjamin Gordon Mann, Bramhall, England, assignors to The Marine Engineering Company (Stockport) Ltd., a corporation of Great Britain and Northern Ireland
Filed Dec. 14, 1964, Ser. No. 418,250
Claims priority, application Great Britain, Dec. 14, 1963, 49,486/63
9 Claims. (Cl. 192—18)

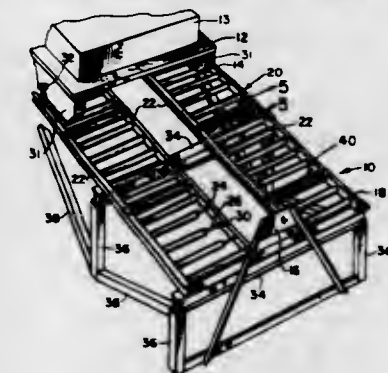


1. A clutch brake motor comprising a motor, a first shaft permanently connected with said motor and adapted to be driven thereby, a first clutch part secured to said first shaft, a permanent magnet incorporated with said first clutch part, a brake part secured against rotational movements and disposed opposite said first clutch part in spaced relationship therefrom, a second shaft mounted in line with said first shaft, a second clutch part secured to said second shaft and disposed between said first clutch part and said brake part and formed from ferrous material and means for moving said second clutch part from a first position wherein one face thereof engages said brake part to a second position wherein the opposite face thereof engages said first clutch part, whereby movement from said first position to second position is servo-assisted by virtue of magnetic attraction, and including a sleeve,

bearings between said sleeve and said second shaft, a housing in which said sleeve is rotatably and slidably mounted, a helical slot in said housing, a peg secured to said sleeve and extending therefrom in a radial direction and passing through said slot whereby movement of said peg causes axial movement of said sleeve and hence said second clutch part between said first and second positions.

3,312,320

CONVEYOR BRAKING ROLLER
Nicholas J. Frolo, Harvey, Ill., assignor to Frolo Corporation, a corporation of Illinois
Filed Mar. 18, 1966, Ser. No. 535,587
11 Claims. (Cl. 193—35)



1. A speed retarding device for an article moved by gravity comprising shaft means non-rotatively supported in weight bearing relationship, a hollow roller journaled on said shaft means, planetary gear means within said roller having intermeshing sun, ring and planetary gear units, one of said units being held stationary by said shaft means, another of said units being rotated by said hollow roller, and a third of said units being rotated by the interaction of the other two units, a braking surface means carried by said roller, centrifugally responsive brake shoes carried by said third unit moved by centrifugal force into frictional engagement with said braking surface means, and means interconnecting said roller and moving article for rotating said roller and retarding said gravitational movement of the article.

3,312,321

SHOE DISPENSER

Anthony J. Gretzky, Muskegon, Mich., assignor to Brunswick Corporation, a corporation of Delaware
Filed May 11, 1965, Ser. No. 454,841
16 Claims. (Cl. 194—2)

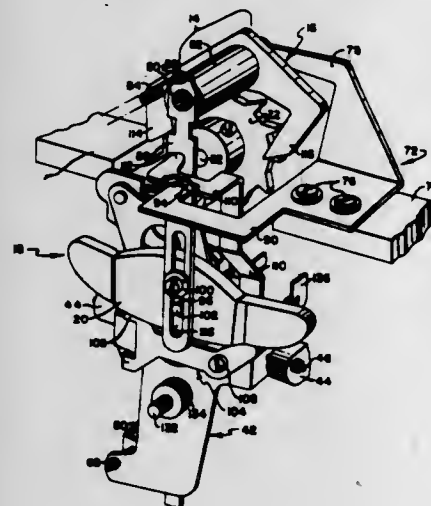


1. A vending machine comprising: at least one article dispensing magazine including a frame; a plurality of article supporting members mounted on said frame for

movement between article supporting and article dispensing positions; a single latch member releasably retaining each of said article supporting members in article supporting position; and means for releasing said latch members including, a single control member movably mounted on said frame and having spaced actuating means each movable into engagement with one of said latch members for serially releasing each of said article supporting members for movement to the article dispensing position, first spring means urging said control member in an actuating direction, detent means for preventing movement of said control member, solenoid operated means for releasing said detent means, and means for reengaging said detent means after one of said control member actuating means has released one of said latch members.

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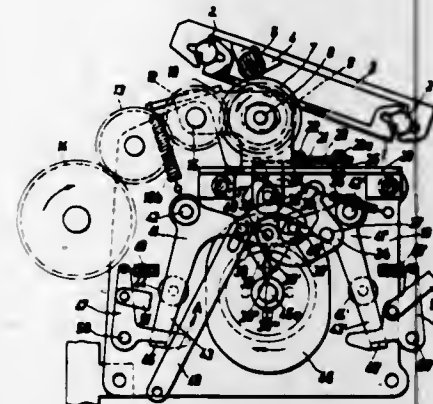
ESCAPEMENT MECHANISM FOR TYPEWRITERS
Floyd H. Canny, Syracuse, N.Y., assignor to SCM Corporation, New York, N.Y., a corporation of New York
Filed Mar. 5, 1965, Ser. No. 437,504
2 Claims. (Cl. 197—82)



1. A typewriter comprising:
 - (a) a frame;
 - (b) a carriage movably mounted on said frame;
 - (c) means for biasing said carriage in a letter feed direction;
 - (d) a toothed member operatively connected to said carriage;
 - (e) a first escapement mechanism including:
 - (1) a rockable member;
 - (2) a pair of dogs mounted on said rockable member, said pair of dogs rockable from an operative position to an inoperative position and in said operative position engageable with said toothed member for controlling a normal single step movement of said carriage in the letter feed direction under the influence of said biasing means;
 - (3) an arm rigidly mounted on said rockable member;
 - (f) a second escapement mechanism including a pair of dogs mounted for slidable movement from an inoperative position to an operative position and in said operative position engageable with said toothed member for controlling continuous stepping movements of said carriage in the letter feed direction under the influence of said biasing means; and
 - (g) key operable means for rocking said first escapement mechanism from said operative position to said inoperative position causing said arm to contact and simultaneously move said second escapement mechanism from said inoperative position to said operative position.

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FRICTION GEAR DRIVE FOR THE PAPER CARRIAGE OF A BUSINESS MACHINE
Horst Priebe, Bielefeld, Germany, assignor to Anker-Werke Aktiengesellschaft, Bielefeld, Germany, a corporation of Germany
Filed Mar. 22, 1965, Ser. No. 441,423
Claims priority, application Germany, Mar. 24, 1964, A 45,590
7 Claims. (Cl. 197—176)



1. With a paper carriage for business machines having shaft means journaled on the carriage and extending parallel to the carriage travel-direction, in combination, a device for driving the carriage comprising a friction wheel drivingly engageable with said shaft means for imparting rotation thereto, a drive shaft resiliently journaled in parallel relation to said shaft means, a Cardanic mount fastening said wheel on said drive shaft, and control means for setting said wheel on said drive shaft at an angle to the axis of said shaft means.

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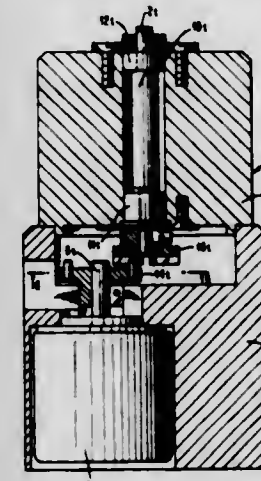
PAPERMAKING MACHINE
Charles T. Banks, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Apr. 15, 1966, Ser. No. 542,894
5 Claims. (Cl. 198—25)



1. In transferring apparatus for articles having side and end surfaces, the combination of first and second spaced conveyors, a deck across which the articles may be moved from said first conveyor to said second conveyor, a transfer wheel which has a first series of spaced pusher elements and which is rotatably mounted whereby the pusher elements may engage the articles on said first conveyor and push the articles across said deck onto said second conveyor, a second series of pusher elements carried by said transfer wheel and movable with respect to the transfer wheel so that their path may be non-circular, and cam means effective for moving said second series of pusher elements with respect to said transfer wheel as the transfer wheel rotates so that the second series of pusher elements may first engage a side of each of said articles and subsequently engage an end of the article for completing the movement of the article onto said second conveyor.

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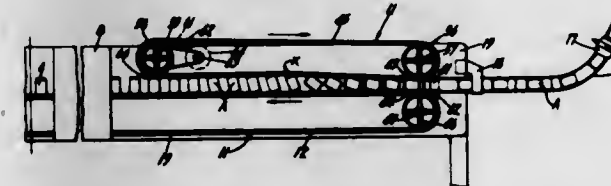
CHIP ORIENTOR
George C. Beck, Fishkill, Jean J. L. Godat, Poughkeepsie, Arne H. Larsen, Wappingers Falls, and Thomas J. Rajac, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed May 27, 1965, Ser. No. 459,343
7 Claims. (Cl. 198—33)



1. An apparatus for successively angularly orienting semiconductor chips having three ball terminals arranged in a triangular relation comprising, a rotatably mounted head having a T-shaped protruding configuration, said T-shaped configuration defined by two sectors each having downwardly inclined sloping surfaces, and a single sector having a single downwardly sloping surface, a head support for rotatably mounting said head, a base, a four position stepping motor mounted in said base, a Geneva drive operatively connecting said motor and said head in driving relation, said T-shaped configuration on said head adapted to engage, and center a chip, when seated thereon, and said motor adapted to rotate said chip to a predetermined angular position.

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ARTICLE ORIENTING APPARATUS
George Alfred Huppenthal, Titusville, N.J., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 23, 1965, Ser. No. 481,481
12 Claims. (Cl. 198—33)

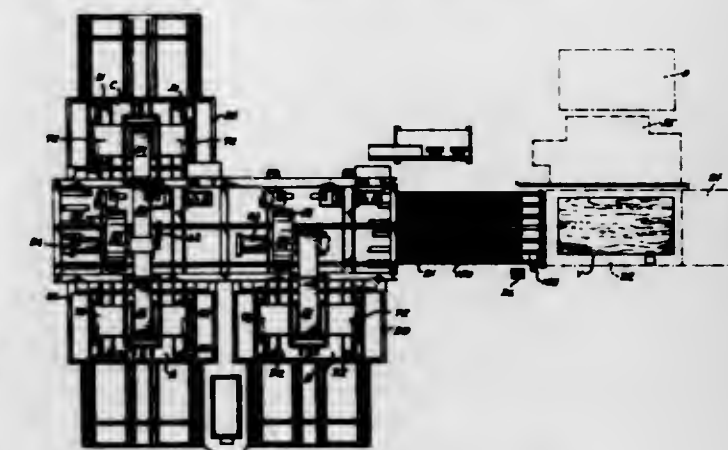


1. An article orienting apparatus, comprising: a pair of endless conveyors having substantially highly frictional surfaces, said conveyors disposed one above the other with the lower run of the upper conveyor confronting the upper run of the lower conveyor throughout a substantial length of both runs between an article receiving end and an article discharge end; said confronting runs being spaced apart by a predetermined distance at said receiving end and by a different predetermined distance at said discharge end, said spacing being dependent upon the variance in dimensions across the transverse section of the articles in a plane normal to the longitudinal of said runs; and means for moving said runs at predetermined different speeds in a direction from said receiving end to said discharge end of said runs whereby each

article is engaged by the frictional surfaces of said runs and is rotated thereby to a predetermined different orientation at said discharge end of the runs.

3,312,327

PLYWOOD LAY-UP MACHINE
Charles C. Clapp, Tacoma, Byron B. Brookhiser, Milton, and Fremont R. Cody, Tacoma, Wash., assignors to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Continuation of application Ser. No. 435,393, Nov. 25, 1964, which is a continuation of application Ser. No. 135,825, Sept. 5, 1961. This application Mar. 25, 1966, Ser. No. 537,538
20 Claims. (Cl. 198—35)



6. A plywood lay-up machine comprising: a conveyor, a supply station for veneer sheets alongside said conveyor, means for picking up a sheet from said station, means for receiving said sheet from said pick-up means and transferring said sheet to a position over said conveyor, and means for removing said sheet from said latter means and guiding means fractionally engageable with the top surface said sheet as said sheet is moved toward said conveyor.

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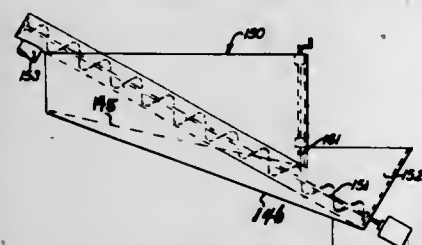
FEED INTAKE FOR FEEDER HOPPER
Elmer B. Carpenter, Springdale, Ark., assignor to Big Dutchman, Inc., Zeeland, Mich., a corporation of Michigan
Filed Nov. 5, 1965, Ser. No. 506,459
8 Claims. (Cl. 198—57)



1. A feed return intake apparatus for automated feeding equipment of the type characterized by a supply hopper, a feed return trough communicating with said hopper, and a conveyor means traveling within said trough, said return apparatus comprising: a convergent channel means having side and top walls positioned within said trough and retained therein, said channel means extending partially into said hopper, and converging in the direction of motion of said conveyor means to provide a feed path of progressively decreasing cross section between said walls and a section of said trough; said channel means receiving feed return to said hopper by said conveyor and compacting such feed between said chan-

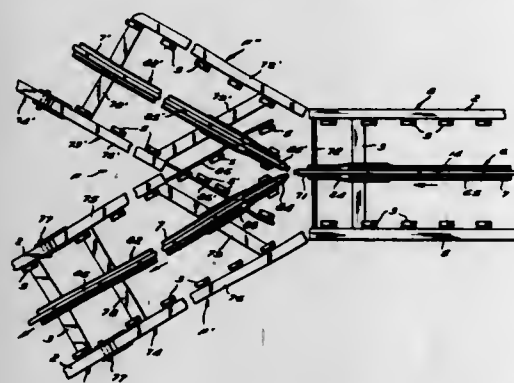
nel means and the bottom of said trough, such that the feed is compressed to pass easily into said hopper without spilling from the trough.

3,312,329
CONVEYOR FEEDER SYSTEM
Marshall F. Hokana, Ellendale, N. Dak. 58436
Filed Mar. 24, 1964, Ser. No. 354,411
4 Claims. (Cl. 198—64)



1. A feed processing assembly comprising a gravity feed tank, said tank having at least one separator defining separate compartments, each of said compartments having an inclined bottom terminating in gate means, said gate means leading to a common receiving area for dispensed feed, means for conveying feed from said area to a processing mill, and further means for moving processed feed from said processing mill to an elevated collector tank, said gravity feed tank includes an enclosed screw conveyor positioned substantially longitudinally and centrally of said gravity feed tank adjacent the inclined bottom, one end of the conveyor extending beyond said gravity feed tank to a material-receiving compartment and said conveyor being open at said one end to collect and remove material from said compartment.

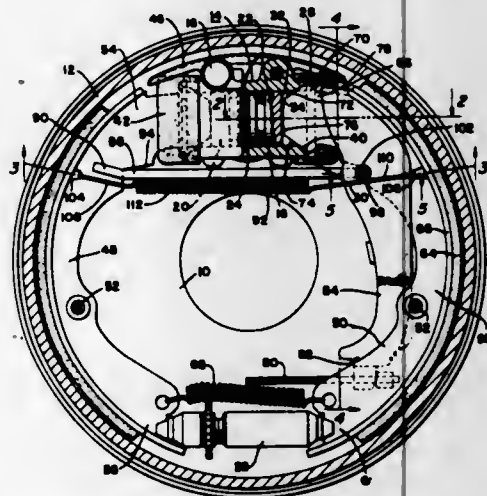
3,312,330
CONVEYOR APPARATUS
Victor A. Juengel, Helena, Ark., assignor to Juengel V-Matic Systems, Inc., Helena, Ark., a corporation of Arkansas
Original application Aug. 30, 1963, Ser. No. 305,731, now Patent No. 3,252,563, dated May 24, 1966. Divided and this application Aug. 27, 1965, Ser. No. 483,232
12 Claims. (Cl. 198—81)



1. A conveyor switch comprising a first frame forming part of a first track; a second frame forming part of a branch track and disposed in angular relation to said first frame; a third frame forming part of another branch track and disposed in angular relation to said first and second frames; a first intermediate frame disposed between said first and second frames and mounted for movement between raised and lowered positions relatively thereto; a second intermediate frame disposed between said first and third frames and mounted for movement between raised and lowered positions relatively thereto; article-conveying rollers carried by said frames so that when either of said intermediate frames is in its raised position while the other is in its lowered position an article can travel on the rollers in a track defined by the first frame, the raised intermediate frame and the branch frame adjacent said

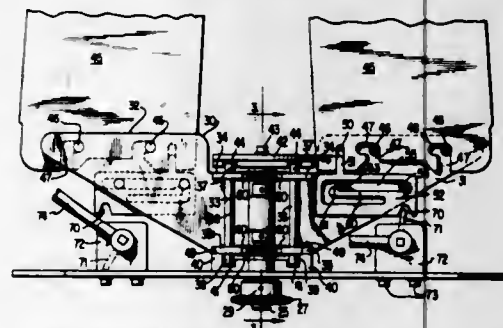
intermediate frame; and driving means for moving an article carried by said rollers in said track defined by said frames.

3,312,331
BRAKE OPERATOR MECHANISM
Frederick W. Sampson, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Mar. 14, 1963, Ser. No. 265,415. Divided and this application Jan. 27, 1965, Ser. No. 428,515
2 Claims. (Cl. 188—106)



1. In a vehicle brake mechanism having a rotatable drum and a nonrotatable backing plate and a wheel cylinder assembly secured to said backing plate and primary and secondary shoes actuated by said wheel cylinder, a single retractor spring having the opposite ends thereof engaging said shoes and extending substantially parallel to and immediately underneath said wheel cylinder assembly, a spreader strut engaging said shoes and a lever for actuating said spreader strut to mechanically actuate the brake, said spreader strut being wider than said single retractor spring and positioned intermediate said wheel cylinder and said single retractor spring throughout at least the coiled length of said spring to provide a heat shield for said spring, said retractor spring having a linear extension at one end thereof engaging one of said shoes and extending alongside said spreader strut actuating lever and exerting a side load thereon urging said lever into continuous surface engagement with the web of the one shoe to prevent the actuating lever from rattling against the shoe web.

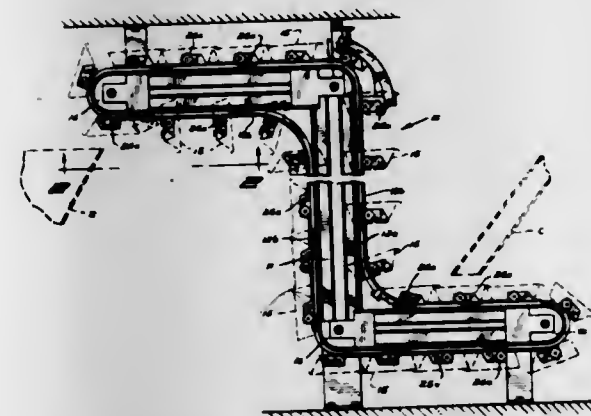
3,312,332
CONVEYING MECHANISM FOR A STOCKING BOARDING APPARATUS
John W. Glaze, Jr., Charlotte, N.C., assignor to Auto-board Corporation, Charlotte, N.C., a corporation of North Carolina
Filed Apr. 26, 1965, Ser. No. 450,594
12 Claims. (Cl. 198—131)



1. In a stocking boarding apparatus, a boarding form conveying mechanism comprising endless chain conveying means, means driving said chain conveying means

around a closed path including a relatively straight segment and a curved segment, a plurality of supporting brackets mounted in spaced relation along said chain conveying means for movement therewith around said closed path, means on each of said brackets for supporting a boarding form spaced outwardly from said endless chain conveying means, means for releasably retaining the boarding forms on said brackets, said retaining means including locking means movable between a locking position engaging and retaining the forms on said bracket and a releasing position releasing said forms, and means successively swinging each of said brackets and the form supported thereby through an arc while moving past said curved portion of said closed path to increase the spacing between successive forms moving on said curved portion.

3,312,333
ATTITUDE CONTROLLED CONVEYOR
J. Leavitt Anderson, 2501 Crosby Road, Wayzata, Minn. 55391
Filed Oct. 23, 1965, Ser. No. 503,425
7 Claims. (Cl. 198—145)

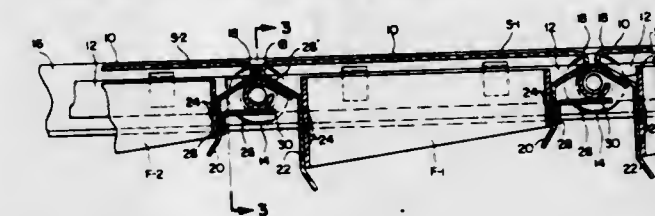


1. A conveyor system wherein attitude of individual conveying elements may be controlled including:
(a) a support structure defining a conveyor path;
(b) means arranged on at least selected portions of said support structure for supporting a drive device thereon;
(c) a drive device arranged to provide a continuous driving force around said conveyor path and supported thereon by said support means;
(d) a plurality of individual conveyor elements for carrying material therealong;
(e) mounting means for rotatably mounting said conveyor elements on said drive device to position the conveyor elements in transverse relation spaced outwardly from the conveyor support structure;
(f) at least one cam follower fixedly attached to said mounting means for controlling the attitude of the conveying element;
(g) cam members arranged on at least selected portions of said support structure for engagement with said cam followers whereby the attitude of the conveyor element is controlled when said cam and follower are in registration; and
(h) a source of driving power for said drive device.

3,312,334
CONVEYOR
Ralph C. Parkes, Rydall, Pa.
(2701 N. Hancock St., Philadelphia, Pa. 19133)
Filed June 29, 1965, Ser. No. 467,968
1 Claim. (Cl. 198—195)

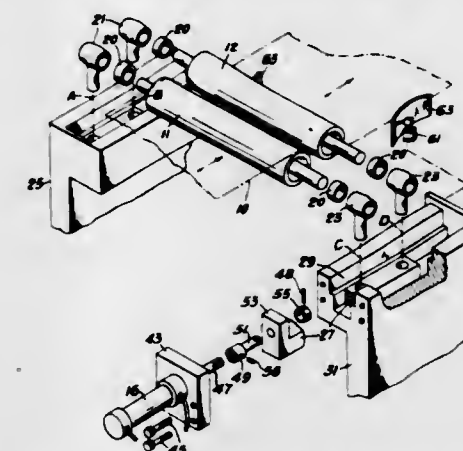
A conveyor for receiving and conveying material, said conveyor including a propelling chain, a plurality of separate frames secured to said chain at intervals to provide gaps between the trailing ends

of leading frames and the leading ends of trailing frames, a flat material receiving bed carried by each frame, each of said beds being perforated over its entire material receiving surface and being larger than its corresponding frame, measured in the direction of its movement, whereby the perforated trailing end of a leading bed and the perforated leading end of a trailing bed coact to substantially cover the gap between their corresponding frames,



each of said beds having a leading extension bent downwardly and rearwardly and secured to the leading end of the corresponding frame, and having a trailing extension bent downwardly and forwardly and secured to the trailing end of said frame, elongated member attached to each leading extension and a bracket attached to each trailing extension, said elongated member being articulately received between the bracket and each trailing extension thereby providing a bearing surface for each of said trailing extensions.

3,312,335
BELT TRACKING DEVICE
Thomas H. Paris, Trenton, N.J., and Charles H. Rodgers, Sykesville, Md., assignors to Koppers Company, Inc., a corporation of Delaware
Filed Sept. 2, 1965, Ser. No. 484,684
4 Claims. (Cl. 198—202)

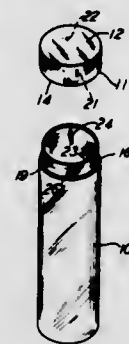


1. A control for maintaining a web in a predetermined line of travel comprising:
a pair of web-guiding rolls extending generally transversely across the web and spaced apart along the periphery of one roll and under the periphery of the other roll,
means for pivoting said rolls at one end,
a carriage connecting said rolls at the other end,
a correction motor operably connected to said carriage, cyclic means for periodically as a function time rendering said correction motor effective and ineffective for positioning said carriage,
sensing means responsive to changes in lateral position of said web, and
means operable in response to said sensing means and connected to said correction motor to cause said motor to position said carriage during the time period said motor is rendered effective thereby changing the transverse position of said rolls to maintain the web along a predetermined line of travel.

3,312,336 COIN TUBE

Anthony R. Fally, Chicago, Ill., assignor to Whitman Publishing Company, Racine, Wis., a corporation of Wisconsin

Filed Jan. 13, 1964, Ser. No. 337,301
1 Claim. (Cl. 206—82)

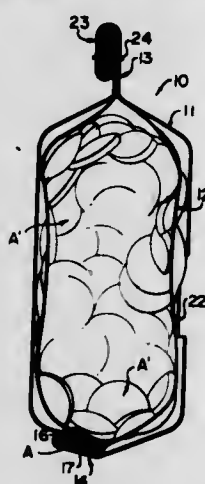


A coin tube comprising a tubular body portion and a tubular cap portion air-tightly telescopically mated over the open end of said body portion and said portions being releasably secured together through a connection therebetween, said body portion being flexible in the length thereof covered by said cap portion for flexing to adjust to fitting with said cap portion in the placement and removal of the latter, said connection including two pins and two openings for receiving said pins in mated pairs on diametrically opposite sides of said portions, one of said openings being a slot extending from the edge of said body portion and with said one being adapted to slidably receive one of said pins on said cap portion and arranged therewith in the nature of a bayonet connection upon assembly and disassembly of said cap portion with said body portion, and the other of said openings being a pin hole fully spaced from said edge and adapted and located to snugly receive the other of said pins when said one of said pins is disposed in the inward end of said slot and thereby releasably secure said bayonet connection.

3,312,337 PROTECTIVE PACKAGE FOR FRANGIBLE ARTICLES

Vernon P. Martin, West Chester, Pa., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Mar. 21, 1966, Ser. No. 536,113
4 Claims. (Cl. 206—46)



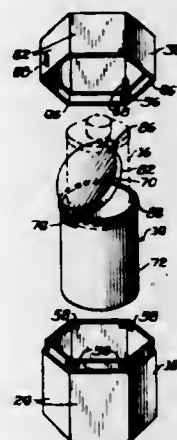
1. A shock-absorbing package adapted for protecting a plurality of frangible articles comprising an outer container, an inner container housed within said outer container, said outer container being constructed of non-heat-shrinkable material, said inner container being constructed of heat-shrinkable material, a plurality of frangible articles in said inner container, said inner container being heat-shrunk into intimate conforming relationship to said articles, said inner and outer containers being tu-

bular bag members having closed axially opposite end portions, means connecting said inner container to said outer container at each of the axial end portions thereof, and said containers being disconnected over major surface areas thereof whereby the shrinkage of said inner container is ineffective to materially affect the outer container and the material of the latter remains relatively smooth and unwrinkled.

3,312,338 PROTECTIVE PHOTOGRAPHIC FILM PACKAGE

Philip E. Uterhart, Park Ridge, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

Filed Oct. 23, 1964, Ser. No. 405,963
3 Claims. (Cl. 206—52)



1. A two piece container adapted when closed to form a sealable enclosure for film in a receptacle comprising: a polygonal body section of resiliently flexible substantially self-sustaining material; a polygonal cap section of similar material cooperating with said body section to form a closed container; each of said polygonal sections having a planar portion and wall portions joining one another at an angle defining a corner, said wall portions being perpendicular to said planar portions, said planar portions of said sections being in substantially parallel planar relationship when said sections are mated; said wall portions having flanges forming telescopically related axially interfitted end portions; at least one bead in one of said flange portions at a corner thereof; at least one groove complementary to said bead in a corner of the other of said flange portions to provide an interlocking strain separable connection when said sections are brought together, yet permitting ready separation of said sections by application of opposing axial forces; each of said flanges being of greater flexibility than its adjacent wall portions; receptacle spacing means in a corner of one of said sections maintaining said receptacle spaced from wall portions of said sections; and abutment means in the other of said sections positioned to be engaged by the flange portion of the other of said sections to limit unintended telescoping of said sections.

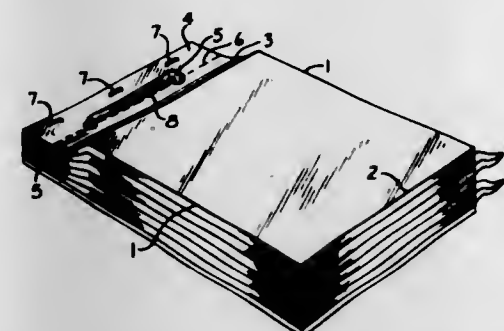
3,312,339 FLEXIBLE BAGS AND BAGGING MEANS

Frank R. Millon, Dallas, Tex., assignor to St. Regis Paper Company, New York, N.Y., a corporation of New York

Filed June 19, 1964, Ser. No. 376,428
9 Claims. (Cl. 206—57)

2. A bag sub-package for use in bagging and filling operations comprising a plurality of superimposed and aligned open-mouthed bags of plastic sheet material, each

comprising a front wall, a back wall and a lip extending from said back wall beyond the open defining terminal edge of said front wall, said lip being formed with at least one opening and with a line of perforations extending

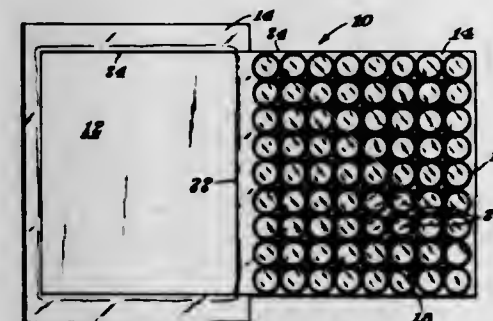


between the defining side edges of said lip and across said opening therein, and fastening means securing said bags together disposed in said lips between their said line of perforations and the outermost edge of the lips parallel to said line.

3,312,340 SKIN PACKAGE FOR BOTTLES AND OTHER OBJECTS

Rolland J. Face, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Dec. 27, 1965, Ser. No. 516,562
7 Claims. (Cl. 206—80)



1. A package comprising a backing, a plurality of objects located on said backing in a specific relationship with one another, a plastic film skin covering said objects and secured to said backing about the periphery of said objects, a separating line located in a curved area of said film skin between said backing and said objects wherein said skin is not engaged with at least one of said backing and said objects, said line extending partially about the peripheral extent of said skin whereby when said skin is separated about said line a hinge is formed along the remaining non-separated peripheral extent of said skin, said backing serving as a book-type cover for said package.

3,312,341 FLOTATION SEPARATION OF DRY MILLED CEREAL GRAIN COMPONENTS

Laurence A. Weinecke, Peoria, and Ronald R. Montgomery, Tremont, Ill., assignors to the United States of America as represented by the Secretary of Agriculture

Filed Aug. 2, 1965, Ser. No. 476,760
2 Claims. (Cl. 209—2)

1. A flotation process for fractionating a substantially bran-free dry-milled mixture of corn germs and corn endosperms having a combined average oil content of

about 9.75 percent into a germ fraction essentially free of endosperm which fraction is characterized by an oil content of about 34.8 percent and a plurality of endosperm fraction having respective average oil contents of 0.75 percent, 0.55 percent, and 0.38 percent, said process comprising;

- introducing the milled corn mixture into the mid-height of a vertically-disposed tubular flotation apparatus that is fully occupied by a column of water that is flowing upwardly from a bottom inlet at a constant velocity of 5.5 ft. per minute;
- separately collecting the said germ fraction from the upper discharge end of the apparatus and from the lower end thereof a crude endosperm fraction having an average oil content of 0.48 percent;



- increasing the velocity of the water column to 7.3 ft. per minute;
- reintroducing the thusly obtained crude endosperm fraction into the flotation apparatus;
- separately collecting from the upper end an endosperm fraction (prime grits) having an oil content of 0.75 percent and from the lower end an endosperm fraction having an average oil content of 0.43 percent;
- increasing the velocity of the water column to 9.2 ft. per minute;
- reintroducing the endosperm fraction last obtained from the lower outlet of the apparatus to provide at the upper outlet a minor endosperm fraction having an oil content of 0.55 percent and at the lower outlet a major endosperm fraction having an oil content of 0.38 percent.

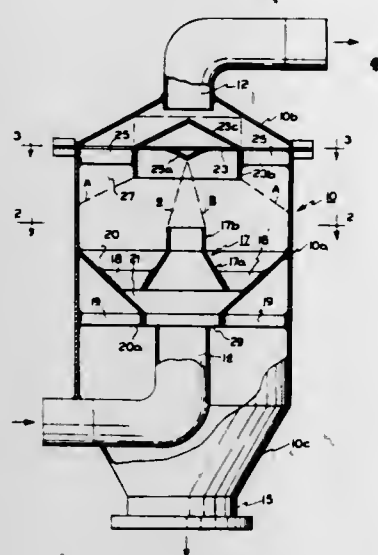
3,312,342 PROCESS AND APPARATUS FOR IMPACTING AND ELUTRIATING SOLID PARTICLES

George N. Brown, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Mar. 27, 1964, Ser. No. 355,395
6 Claims. (Cl. 209—3)

1. A solids impactor and elutriator comprising, in combination, an upright housing, an upwardly directed gas-entrained solids-introducing conduit mounted concentrically within said housing, a flow-confining chimney mounted coaxially of and superjacent the discharge opening of said conduit, a solids impact plate mounted coaxially of and superjacent the top of said chimney, a high effective density particle catch funnel having its upper edge flush with the inside wall of said housing disposed subjacent said impact plate generally concentrically of said chimney and

on the same level therewith proportioned so as to define with said chimney an annular high effective density particulate solids escape path, and outlet ports at the top and

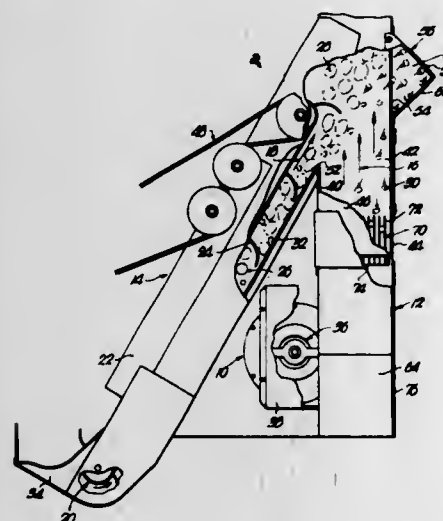


bottom of said housing for the withdrawal of low effective density and high effective density solids fractions, respectively.

3,312,343 AIR SEPARATOR

Robert L. Elder and Robert A. Waddall, Sr., Newton, Kans., assignors to Hesston Corporation, Inc., a corporation of Kansas

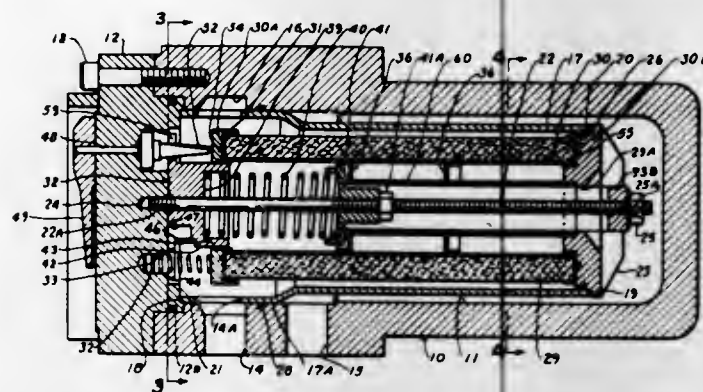
Filed May 7, 1964, Ser. No. 365,718
6 Claims. (Cl. 209-139)



2. A separator for removing the green bolls from the ripe bolls of a harvested cotton crop, said separator comprising:

- a fan for producing artificial currents of air;
- a conduit for receiving said air currents and confining the same for flow as a continuous stream in one direction along a predetermined path of travel;
- an upwardly inclined crop conveyor for feeding the ripe bolls into the airstream for movement thereby in said one direction to a point of deposit and for projecting the green bolls across said airstream; and
- a diverter disposed outside said conduit within the path of projection of the green bolls, said diverter being in communication with the conduit and including means beyond the conduit for directing the green bolls in a path toward said conduit for return to the airstream.

**3,312,344
FILTER DEVICES**
Nils O. Rosaen, Bloomfield Hills, Mich., assignor to The Rosaen Filter Company, Hazel Park, Mich., a corporation of Michigan
Original application Oct. 15, 1962, Ser. No. 230,473, now Patent No. 3,239,062, dated Mar. 8, 1966. Divided and this application Sept. 24, 1965, Ser. No. 489,973
5 Claims. (Cl. 210-90)



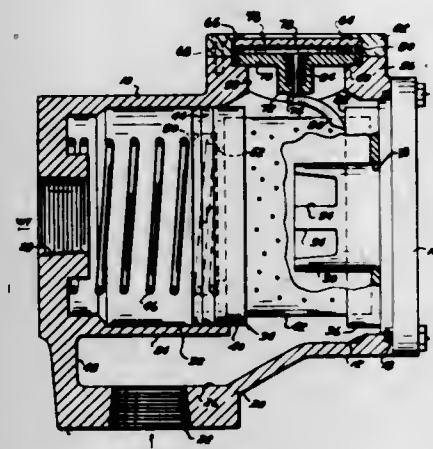
1. A filter device comprising
 - (a) a housing having a chamber, an inlet and an outlet opening to said chamber and an opening provided at one end,
 - (b) a filter carried in said housing intermediate said inlet and said outlet,
 - (c) pressure responsive means carried in said housing intermediate the inlet side and the outlet side of said filter element,
 - (d) said pressure responsive means being operable to move axially in response to changes in the pressure differential across said filter element,
 - (e) bypass means opening a fluid path between said inlet and said outlet bypassing said filter element when said pressure responsive means reaches a predetermined axial position, and
 - (f) an end cap removably mounted to said housing to close said opening and indicator means indicating the axial position of said pressure responsive means, said indicating means comprising, a slot provided in said pressure responsive means, an actuator member rotatably mounted to said cap member and engaging in said slot; said actuator member comprising a strip having a twist about its longitudinal axis from end to end thereof and extending in the direction of movement of said pressure responsive valve whereby movement of said pressure responsive means produces rotation of said actuator member and a pointer member carried exteriorly of said housing and secured to said actuator member for rotation therewith.

**3,312,345
INDICATING MEANS FOR FLUID FILTERS**
Nils O. Rosaen, Bloomfield Hills, Mich., assignor to The Rosaen Filter Company, Hazel Park, Mich., a corporation of Michigan

Filed Mar. 28, 1966, Ser. No. 537,925
4 Claims. (Cl. 210-90)

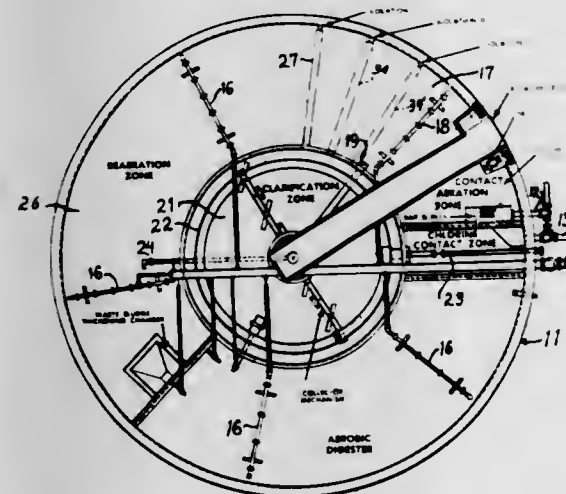
1. A filter device having a housing, a filter element carried in said housing, means movable in response to changes in the pressure differential across said element, and means for indicating the position of said movable member exteriorly of said housing, said last mentioned means comprising
 - (a) said housing being provided with an opening,
 - (b) a shaft and means rotatably mounting said shaft within said opening,
 - (c) an arm carried on one end of said shaft and engageable with said movable member to produce rotation of said shaft upon movement of said movable member, and

- (d) an indicator member fixed to the opposite end of said shaft to be visible through said opening, said indicator member comprising a disc having a pointer member formed thereon with said shaft being fixed to only one side of said disc,



- (e) said indicator member being rotatable with said said shaft whereby to assume a rotated position in accordance with the movement of said movable member, and
- (f) a transparent member sealing the exterior end of said opening.

**3,312,346
SEWAGE TREATMENT PLANTS WITH MOVABLE PARTITION**
James Donald Walker, Aurora, Ill., assignor, by mesne assignments, to Chicago Bridge & Iron Company, Chicago, Ill., a corporation of Illinois
Filed Dec. 29, 1964, Ser. No. 421,912
8 Claims. (Cl. 210-195)

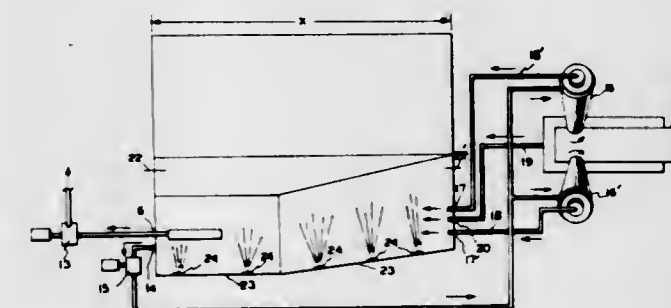


1. A sewage treatment plant including tank means forming a plurality of chambers including a contact aeration zone, a clarification zone, and an activated sludge re-aeration zone; inflow means leading to the contact aeration zone for supplying raw sewage to the plant, said plant including connecting passage means and pump means for causing flow from the contact aeration zone to the clarification zone and from the lower part of the clarification zone to the re-aeration zone, and from the re-aeration zone to the contact aeration zone; one of the partitions of said plant which separates the contact aeration zone from another zone being a movable wall, said wall having a flexible seal at its bottom and having in-

flatable seals along its sides with valves for deflating the seals to permit movement of the wall, and hanger means for supporting the movable wall at a height suitable for positioning the flexible seal in flexed condition on the tank bottom, said hanger means being unobstructed to facilitate raising the movable wall to relieve the pressure on the bottom seal and to facilitate movement of the wall.

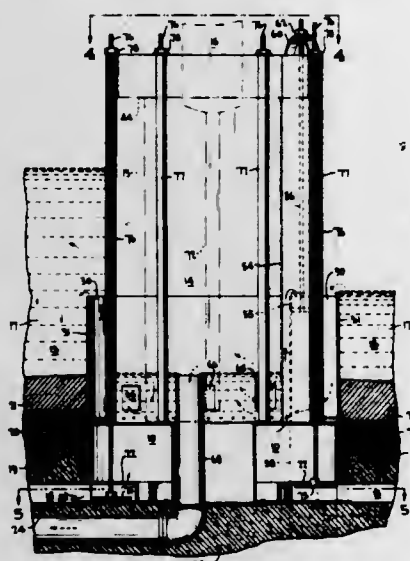
**3,312,347
APPARATUS FOR REDUCING PARTICLE CONCENTRATION IN VOLUME OF LIQUID CONTAINING SAME**
Harold E. Welsenborn, Maple Heights, Ohio, assignor to Ferro Corporation, Cleveland, Ohio, a corporation of Ohio

Filed June 2, 1965, Ser. No. 460,871
4 Claims. (Cl. 210-195)



1. In an apparatus for continuously reducing the concentration of particulate material in a continuously circulating main volume of liquid containing same, said apparatus comprising means for continuously bleeding off a fractional quantity of said main volume plus particulate material contained therein and delivering same to filtering means to substantially remove said particulate material from said bled off quantity of liquid plus particulate material, and return said bled off liquid, substantially free of particulate material to said apparatus, the improvement in said apparatus comprising a unitary concentration and separation receptacle for receiving and discharging said continuously circulating liquid, said receptacle having at least four substantially vertical side walls and a bottom bounded by said side walls, said bottom comprising a contoured monolithic surface having four generally planular surfaces, three of which reside respectively at angles of 3 to 22°, 35 to 55°, and 13 to 23° with the horizontal, at least two of said three surfaces residing at different angles from each other, each of said three surfaces intersecting the plane of at least one other of said three surfaces, the fourth surface reposing at an angle from 0° to 2° with the horizontal, first outlet means for bleeding continuously via one of said side walls bounding said fourth surface, a fractional quantity of said main volume plus concentrated particulate material from a point in close proximity to said fourth surface and delivering same to aforesaid filtering means, second outlet means, situated in a side wall bounding said fourth surface at a point above said previously mentioned first outlet means, for continuously drawing off a volume of liquid substantially free of said particulate material from said receptacle, inlet means situated in a wall opposite the side wall in which said second outlet means is situated to return to said receptacle the liquid portion of the material drawn from said receptacle via said first outlet means following removal therefrom of said particulate material by said filtering means, to provide an improved, unitary, simplified apparatus having a concentration and separation receptacle for continuously reducing the concentration of particulate material in a main volume of continuously circulating liquid containing same.

3,312,348
MULTIPLE UNIT BACKWASHING GRAVITY FLOW FILTER
 John W. Greenleaf, Jr., Coral Gables, Fla., assignor to Greenleaf Enterprises, Inc., Miami, Fla., a corporation of Florida
 Filed Oct. 31, 1963, Ser. No. 320,485
 16 Claims. (Cl. 210-264)

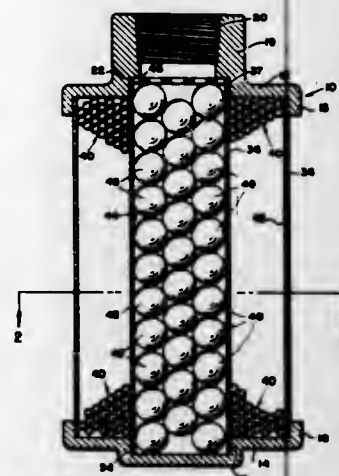


1. A multiple unit gravity backwashing filter comprising a filtered water reservoir having a plurality of separate inlet ports for filtered liquid and a common outlet controlled by an outlet weir for maintaining a constant predetermined level of liquid in said reservoir and for permitting the escape of excess liquid at all times from the reservoir, a backwash effluent liquid chamber supported on and above said reservoir, a multiplicity of relatively isolated filter units surrounding said reservoir, each said unit comprising a horizontal filter bed, said reservoir ports communicating with the respective said units at a level beneath the filter beds thereof and being open to permit free bi-directional flow of liquid therethrough both into and from the reservoir solely in accordance with changes in the levels of liquid in the respective units, in combination with influent supply means normally delivering influent liquid to said units above their respective filter beds at a sufficient rate to maintain the level of liquid over said beds appreciably higher than said level of liquid in the reservoir, and selectively controllable means including fluid conduits communicating with said chamber and with each of said units at a level above the respective filter beds and below the said liquid level within the reservoir for withdrawing liquid from above the filter bed of a given unit to a level below said pre-determined level within the reservoir to establish a gravity backwashing flow of liquid from the reservoir upwardly through the bed of said unit only, while permitting the remaining units to supply liquid to said reservoir and also to remove backwash effluent liquid from said given unit.

3,312,349
FILTER ELEMENTS
 Nils O. Rossen, Bloomfield Hills, Mich., assignor to The Rossen Filter Company, Hazel Park, Mich., a corporation of Michigan
 Filed May 18, 1964, Ser. No. 368,053
 15 Claims. (Cl. 210-283)

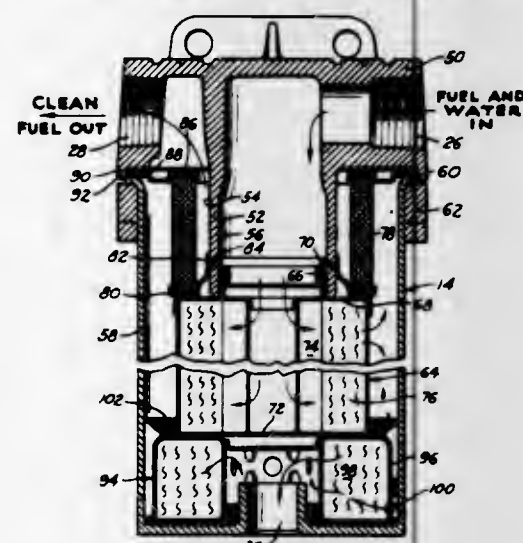
1. A filter element comprising:
 (a) a pair of spaced, substantially concentric, cylindrical perforated members positioned to define an annular space between said members and an outlet spaced defined by the innermost one of said members,
 (b) means closing the ends of said spaces,

(c) filtering means substantially filling said annular space and comprising a plurality of substantially spherical filtering members, and



(d) a support means for said filter element comprising a plurality of substantially spherical support member substantially filling said outlet space.

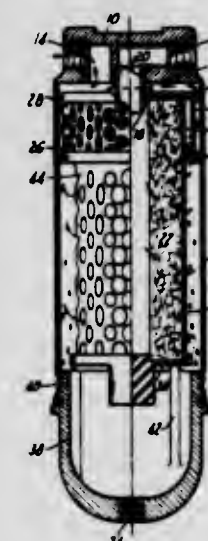
3,312,350
FILTER ASSEMBLY SUMP DRAIN FLOW REGULATOR
 Walter Kasten, Madison Heights, Mich., assignor to The Bendix Corporation, Madison Heights, Mich., a corporation of Delaware
 Filed June 19, 1964, Ser. No. 376,508
 3 Claims. (Cl. 210-307)



3. A fuel filter water separator comprising a head having inlet and outlet ports, a tubular member operatively connected to and extending from said head, said tubular member having the inner wall thereof communicating with said inlet port, a bowl operatively connected to said head, said bowl having a water sump port therein, a coalescer element of the inside-out flow type located in said bowl and interposed between said inlet and outlet ports for coalescing water contained in said fuel into relatively large droplets, upper and lower endcap means located at opposite ends of said coalescer element, said upper endcap means of said coalescer element being in sealing engagement with said tubular member, a separator element of the outside-in flow type located downstream of said coalescer element for permitting flow of fuel therethrough to said outlet port but preventing flow of said water droplets therethrough, upper and lower endcap means located at opposite ends of said separator element, said lower endcap means of said separator element being in abutment with said upper endcap means of said coalescer element and in sealing engagement with said tubular member, said upper endcap means having

a flange confined between said head and said bowl and in sealing engagement therewith, and flow regulator means located in said bowl and downstream of said coalescer element for regulating flow through said sump port, said flow regulator means comprising a casing in abutment with said lower endcap means of said coalescer element and the bottom of said bowl and having inlet and outlet passage means, said inlet passage means of said flow regulator means including a restricted flow metering orifice, and coalescer means located within said casing and interposed between said inlet and outlet passage means for demulsifying the fuel water mixture which is emulsified while passing through said orifice.

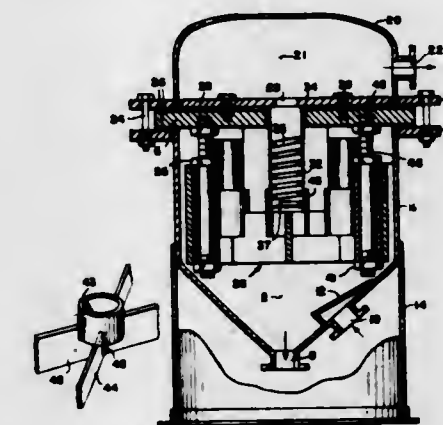
3,312,351
FUEL FILTER WATER SEPARATOR
 Walter Kasten, Madison Heights, Mich., assignor to The Bendix Corporation, Madison Heights, Mich., a corporation of Delaware
 Filed July 1, 1964, Ser. No. 379,652
 2 Claims. (Cl. 210-307)



1. A fuel filter water separator assembly comprising a head having inlet and outlet ports therein and a substantially cylindrical housing extending therefrom, a tubular member operatively connected to and extending from said head, said tubular member having the inner wall thereof communicating with said inlet port, a substantially cylindrical coalescer element of the inside-out flow type located in said housing and interposed between said inlet and outlet ports for coalescing water contained in the fuel passing therethrough into relatively large droplets, a substantially cylindrical Teflon coated wire mesh separator element of the inside-out flow type telescoped over and spaced away from said coalescer element for permitting flow of fuel therethrough but preventing flow of said water droplets therethrough, said separator element being only approximately one-third the length of the coalescer element, a first endcap common to both of said elements for unifying said elements, said first endcap having a first seal located on the inner periphery thereof for sealing engagement with the outer wall of said tubular member, a second endcap located at the other end of said coalescer element, a second seal located at the other end of said separator element for sealing engagement with the inner wall of said housing, a bowl threadedly engaging said housing, said bowl having means formed thereon for abutting said second endcap and maintaining said first seal in engagement with the outer wall of said tubular member, and partially perforate baffle means surrounding said coalescer element, said baffle means being imperforate along that portion thereof surrounded by said

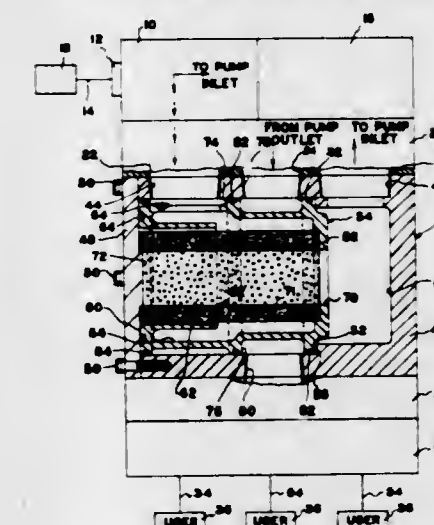
separator element to prevent direct flow across said elements and thereby provide a quiescent zone therebetween.

3,312,352
FILTER ASSEMBLY HAVING A SUPPORT GRID
 Daniel A. Shiells, San Carlos, Calif., assignor to De Laval Turbine Inc., Trenton, N.J., a corporation of Delaware
 Filed Dec. 4, 1963, Ser. No. 328,091
 1 Claim. (Cl. 210-323)



A filter comprising a vessel, a tube sheet within the vessel, a nest of foraminous mesh filter tubes supported by the tube sheet and extending downwardly therefrom to receive inward flow from the vessel, and a grid structure engaging lower portions of said tubes to maintain the tubes vertical and in substantially fixed spaced relationship to each other, said grid structure including a plurality of flat cross bars extending in substantially vertical planes in a criss-cross relationship to define a honeycomb of vertically extending passages at the lower ends of the tubes, said cross bars having a substantial vertical height to prevent cross-flow of fluid flowing vertically upwardly to enter the spaces between the tubes of the tube nest, said grid structure providing a number of intersections of its bars corresponding to the number of tubes and provided with a socket at each intersection receiving the lower end of a corresponding tube.

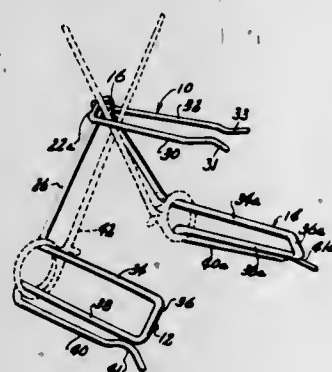
3,312,353
FLUID DEVICE WITH CARRYOVER MEANS
 Nils O. Rossen, Bloomfield Hills, Mich., assignor to The Rossen Filter Company, Hazel Park, Mich., a corporation of Michigan
 Filed Oct. 22, 1963, Ser. No. 317,937
 13 Claims. (Cl. 210-453)



1. A fluid device comprising
 (a) a housing having a wall defining a chamber and

- an inlet and an outlet communicating with said chamber,
- (b) fluid treating means carried in said chamber intermediate said inlet and said outlet,
- (c) a second inlet and a second outlet being provided in said housing on opposite sides thereof and means conducting fluid from said second inlet to said second outlet,
- (d) said conducting means comprising a substantially cylindrical member provided in said chamber, said fluid treating means being carried within said member, and an annular recess provided in said member between said member and said wall and registering with said second inlet and said second outlet, said annular recess having an axial length substantially less than the axial length of said fluid treating means, said second inlet and said second outlet each having an opening extending radially outwardly from said annular recess.

3,312,354
STERILIZING RACK
 Herman R. Grieshaber, Kenilworth, Ill.
 (7020 W. Cullom Ave., Norridge, Ill. 60634)
 Filed Dec. 21, 1964, Ser. No. 419,904
 6 Claims. (Cl. 211-59)

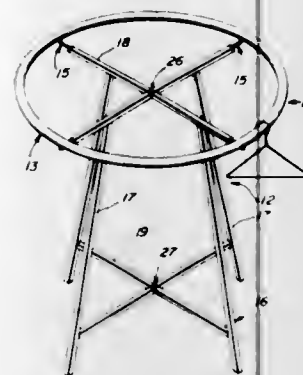


1. A rack comprising cooperating half portions pivotally engageable and movable into adjacent and spaced relationships; each of said cooperating portions having a connecting portion, the connecting portions being pivotally engageable and movable about a pivot point in a plane of movement; substantially U-shaped portions connected with an end portion of each of said connecting portions oppositely disposed to the point of pivotal engagement, said U-shaped portions being substantially normally disposed to the plane of movement; opposed arms of said U-shaped portions being slightly divergent in the direction of said plane of movement and connected by a bight portion, and arm means contiguous with one arm of each of said U-shaped portions extending away from said plane of movement and touching said one arm adjacent the bight of said U-shaped portion.

3,312,355
GARMENT RACK AND METHOD OF ASSEMBLING SAME
 Edward F. Steinmetz, Niles, Ill., assignor to Garco Corporation, a corporation of Illinois
 Filed May 21, 1965, Ser. No. 457,780
 13 Claims. (Cl. 211-177)

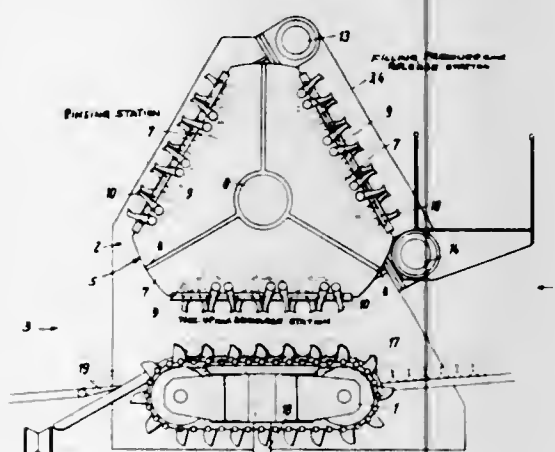
2. A garment rack comprising a circular hang rod for slidably supporting a plurality of garment hangers carrying garments to be displayed, a plurality of separate support members detachably secured to said hang rod, each of said support members comprising a vertical portion and a horizontal portion secured together, said horizontal portions being disposed radially relative to said hang rod, and means for mechanically interlocking said support

members into cooperative relationship with said hang rod to form a rigid structure in which said hang rod is



supported in elevated position relative to the surface on which the rack rests.

3,312,356
CONVEYOR FOR MULTIPLE TUBE TEST PRESS
 Richard Gerretz, Suchteln, and Werner Lehnacker, Rheydt, Germany, assignors to Mannesmann-Meer Aktiengesellschaft, a corporation of Germany
 Filed Feb. 8, 1965, Ser. No. 431,108
 3 Claims. (Cl. 214-1)



1. In a multiple tube test press, in combination, a plurality of operating stations disposed in series sequence operable to subject several tubes simultaneously to treatment, rotatable means actuatable for receiving said tubes in one station before testing and discharging them after testing, and for transporting said tubes in step-wise turning movement, placing them at each step in an operating station, the succeeding operation stations having the same length and being so inclined in relation to each other that they define substantially an extended prism with equal sides, said rotatable means conforming to said prism and comprising near each side a magazine including tube tongs operable for releasably holding said tubes, the axis of rotation lying in the prismatic center.

3,312,357
METHOD AND APPARATUS FOR LOADING PALLETS
 Frederick N. Stephens, Leawood, and Kenneth D. May, Overland Park, Kans., assignors to Honeggers & Co., Inc., Fairbury, Ill., a corporation of Illinois
 Filed Mar. 2, 1965, Ser. No. 436,448
 12 Claims. (Cl. 214-6)

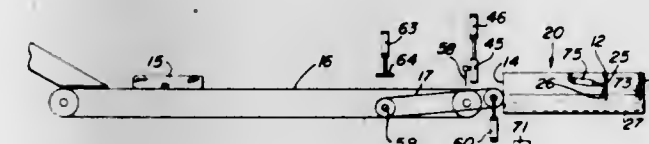
11. Apparatus for stacking articles on a pallet, said apparatus comprising:
 a dispenser;

means for supporting a pallet in a horizontal disposition with a peripheral portion of the pallet directly beneath said dispenser;

means for moving said articles in a downstream direction into said dispenser, one article at a time;

said dispenser including means defining a first article-receiving location in said dispenser;

said dispenser including means defining a second article-receiving location in aligned, lapping relation relative to said first location;



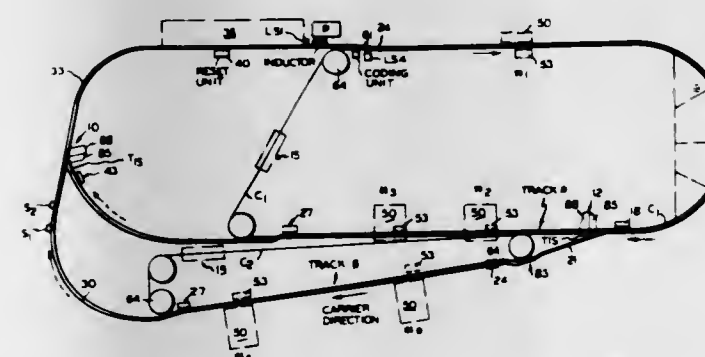
the downstream end of said first location being upstream of the downstream end of the second location and downstream of the upstream end of the second location;

said dispenser including means for dropping an article received therein in a horizontal disposition and along a vertical path extending straight down from the location of the article in the dispenser;

and means for rotating the pallet-supporting means ninety degrees after the dropping of an article from said dispenser;

said dispenser including means for stopping alternate groups of four articles, one article at a time, alternately at said first and second locations.

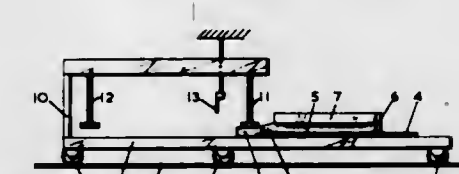
3,312,358
OVERHEAD TROLLEY SYSTEM FOR POSTAL SORTING APPARATUS
 Theodore B. Atanasoff, Frederick, and Gordon L. Morgret, Middletown, Md., assignors to Aerojet-General Corporation, El Monte, Calif.
 Filed Jan. 28, 1964, Ser. No. 340,724
 14 Claims. (Cl. 214-11)



4. In a conveying and sorting system, a track means and an associated tow cable, a load carrier movable along said track means and having a clamp device to be clamped to said cable, a loading station structure adjacent said track means at which said carrier is loaded while stationary and an operator programmed coding unit adjacent said station structure, said structure having load dropping means for dropping a load into said carrier subsequent to programming of said coding unit, inductor means comprising a moving belt adjacent said loading station, a supporting framework means for said belt and means for actuating said framework means to move said belt transversely to the direction of travel thereof into

engagement with said carrier to impart coasting movement thereto subsequent to a load being dropped into said carrier, actuator means downstream of said inductor means to actuate said clamp device to grip said tow cable subsequent to a coasting movement being given to said carrier by said inductor means.

3,312,359
APPARATUS FOR TRANSFERRING STACKS OF PAPER
 William Glover, Denton Burn, Newcastle-on-Tyne, England, assignor to Koninklijke Nederlandsche Papierfabriek N.V., Maastricht, Netherlands
 Filed Mar. 29, 1965, Ser. No. 443,544
 2 Claims. (Cl. 214-42)

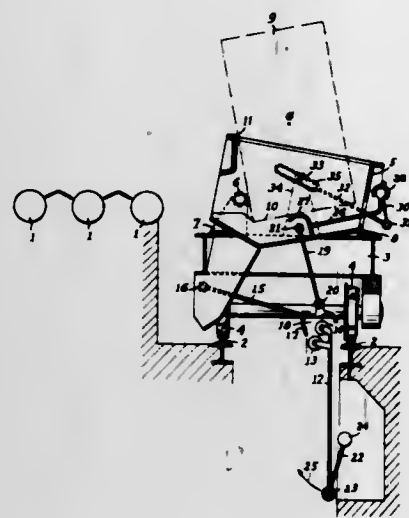


1. A device for feeding stacks of paper to another device, comprising a movable table to carry said stacks of paper, means to reciprocate said movable table horizontally between a first and a second position, clamping means, means mounting said clamping means vertically movably above said movable table, said mounting means being connected to said movable table to move said clamping means horizontally along with said movable table, actuating means to move said clamping means downwardly when said movable table is in said first position and upwardly when said movable table is in said second position, said actuating means being adapted to maintain said clamping means pressed on a stack of paper when carried by said movable table moving from said first to said second position, a stationary table arranged slightly above the top level of said movable table and forming therewith at least when said movable table is in said first position a substantially uninterrupted support horizontally for said stacks of paper, said clamping means being positioned relative to said movable table to be moved downwardly thereto when said movable table is in said first position in a location adjacent to but in front of the edge of said stationary table facing said clamping means so as to be adapted to engage an end of a stack of paper positioned on said stationary table and projecting from said edge to clamp said end to said movable table, arresting means and means mounting said arresting means horizontally stationary and vertically movably above said movable table, and actuating means to move said arresting means downwardly when said movable table is in said second position and upwardly when said movable table is in said first position.

3,312,360
CARRIAGE FOR TRANSPORTING AN INGOT TO A ROLLER TABLE
 André Nectoux, Le Creusot, France, assignor to Societe des Forges et Ateliers du Creusot, Paris, France, a company of France
 Filed Mar. 11, 1965, Ser. No. 438,958
 Claims priority, application France, Mar. 13, 1964, 967,246; Sept. 11, 1964, 987,796
 5 Claims. (Cl. 214-64)

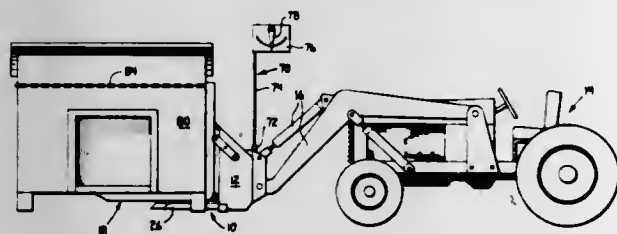
1. A carriage for transport of an ingot to a roller table comprising a chassis, a chair on said chassis for receiving the ingot, said chair being tiltable laterally relative to the long axis of said chassis to discharge the ingot onto the table, means mounted on said chassis for controlling the lateral tilt of said chair and means for urging the ingot out of said chair when said chair has completed a predetermined degree of lateral tilt, said last named means

comprising a pusher lever articulated to said chair, a control lever connected to said pusher lever, a link articulated at one end to said control lever, an elongated aperture at the other end of said link, a first spindle on said chassis



received in said aperture, the length of said aperture determining the degree of tilt of said chair and said link rotating said pusher about its point of articulation to urge an ingot out of said chair.

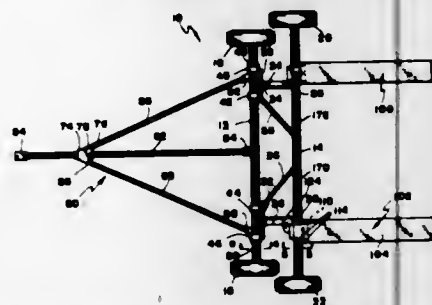
3,312,361
CONVERTER UNIT
William E. Foster, R.R. 6, Box 1038,
Kokomo, Ind. 46901
Filed May 6, 1965, Ser. No. 453,803
11 Claims. (Cl. 214-145)



1. A converter means for a utility vehicle having a power bucket, said means comprising:
 - a supporting bracket, the said bracket including:
 - a laterally-extending base-plate for lying along the bottom plate assembly of the bucket;
 - a fore-and-aft supporting member spacedly positioned above the base-plate;
 - a laterally-extending sleeve spacedly positioned above the base-plate; and
 - means spacedly supporting the said supporting member and the said sleeve above the base-plate;
 - brackets secured to the bucket side-plates and each provided with an opening co-axial with the said sleeve;
 - a pair of lift-fork members of a general L-shape having one leg extending forwardly and one leg extending upwardly;
 - a sleeve means for the upright leg of each lift-fork co-axially located with respect to said bracket sleeve;
 - a support rod extending through said sleeve means and said bracket sleeve and said openings of said side-plate brackets;
 - the said fore-and-aft supporting member being retainably engageable with a rear portion of the bucket.

3,312,362
TRANSPORT APPARATUS FOR WHEELED VEHICLE

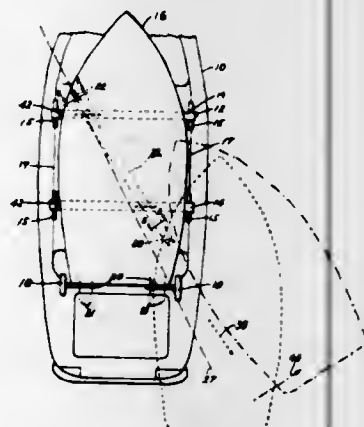
Charles L. Gilmore, Sterling Township, Rice County, Kans., assignor to Ark Manufacturing Company, Inc., Sterling, Kans., a corporation of Kansas
Filed July 2, 1965, Ser. No. 469,239
11 Claims. (Cl. 214-334)



2. In combination, a wheeled vehicle and a transport trailer therefor, said wheeled vehicle comprising a frame supported by a pair of spaced power driven front ground wheels and a rear, swivel mounted ground wheel, said transport trailer comprising elongated and parallel front and rear axles each having a pair of ground wheels rotatably mounted at its opposite ends, a forwardly extending towing tongue connected to the front axle, said axles being spaced an interval less than the diameter of the power driven ground wheels, and a pair of elongated ramps extending rearwardly of the rear axle with means intermediate the longitudinal extent of each of said ramps oscillatably supporting such ramp upon the rear axle for oscillation about the rear axle as an axis, whereby the wheeled vehicle can be driven forwardly with the power driven ground wheels advancing upon the ramps to a transport position of the wheeled vehicle wherein the power driven ground wheels overlap the space intermediate the axles and nestle downwardly between the axles to an extent limited by the spacing of the latter, with such wheels bearing downwardly against the ramps forwardly of the rear axle to hold the ramps rearwardly of the rear axle in a raised position, and wherein the swiveled ground wheel is disposed substantially rearwardly of the rear axle, with the result that the weight of the wheeled vehicle is carried by the swiveled wheel and the wheels of the transport trailer.

3,312,363
CAR TOP BOAT CARRIER AND HANDLING ASSEMBLY

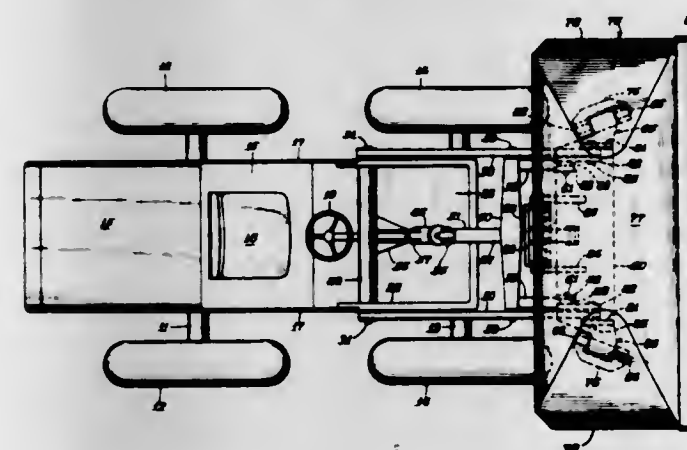
Albert H. Oldham, 3031 Silver Lake Blvd.,
Cuyahoga Falls, Ohio 44224
Filed Oct. 22, 1965, Ser. No. 501,216
4 Claims. (Cl. 214-450)



1. A one-man car top boat and carrier including a boat, a rack adapted to be secured to the top of a car and having at least two laterally extending, longitudinally spaced, substantially horizontal surfaces, of a width to

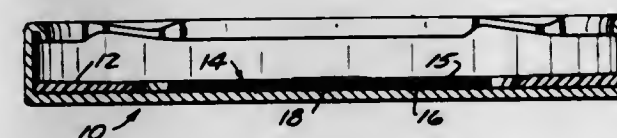
support the inverted boat with the gunnels thereof engaging the surfaces, a roller mounted on the left front gunnel of the inverted boat and extending downwardly therefrom, the roller being positioned substantially in a vertical plane extending from the inverted right rear of the boat through the center of gravity of the boat and the axis of the roller being substantially perpendicular to the plane, an open-topped channel mounted on the rack and extending from just short of the roller generally towards the right rear corner of the boat but terminating short of the corner, a stop at the rear of the channel, and wheels on the lower rear corners of the inverted boat.

3,312,364
SIDE DUMP TRACTOR LOADER
Thorvald G. Granryd, Libertyville, Ill., assignor to International Harvester Company, a corporation of Delaware
Filed Mar. 2, 1962, Ser. No. 176,934
23 Claims. (Cl. 214-768)



1. In a side dumping bucket assembly for a tractor loader, a bucket carrier, pin means mounted at a transversely spaced positions on each side of said carrier, bracket means mounted at transversely spaced positions on each side of said bucket and engaging said pin means whereby said bucket is supported by said carrier, the axes of said pin means being positioned to diverge forwardly from the longitudinal axis of the loader, and means for selectively releasing said bucket from one of said pin means whereby said bucket is pivotable about the axis of the other of said pin means.

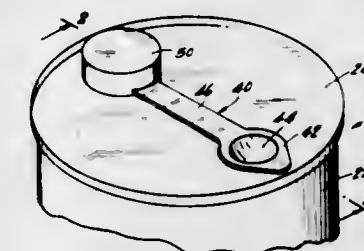
3,312,365
CAP LINER
John V. Ballint, Mahomet, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Aug. 7, 1963, Ser. No. 300,461
2 Claims. (Cl. 215-7)



1. In combination, a container closure having an inner surface adapted to cover a container opening, and a proof-of-purchase liner comprising a thin flexible sheet coated on one surface with pressure-sensitive adhesive, a thin flexible elongated non-adhesive layer having only a small fraction of the width of said sheet adhered across the sheet's adhesive surface, extending substantially perpendicularly from one edge to an opposite edge, the liner being adhered by the adhesive centrally on the inner surface of the closure, and the liner being removed by lifting the edge portion covered by said non-adhesive layer

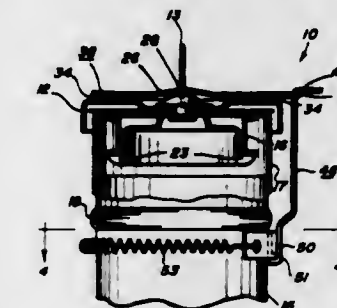
and pulling the liner from the closure whereupon it may be attached by pressure to a letter and returned to the seller.

3,312,366
MEASURING DEVICE AND COVER
Harry Portis, 165 W. 66th St., New York, N.Y. 10023
Filed Aug. 17, 1965, Ser. No. 480,341
4 Claims. (Cl. 220-23)



1. A combined measuring device and cover comprising a top for a container, said top having openings therein, a post integrally formed on said top, said post having an opening therein, a closure member having a cap portion removably rotatably mounted on said post, said closure member including a shank portion having a free end, said free end being provided with a downwardly-extending spoon-shaped projection extending into said opening for sealing said opening, said projection being upwardly concave forming a first recess of predetermined size for measuring materials disposed therein, said cap portion having a second recess of a different predetermined size from said first recess.

3,312,367
GAS CAP ATTACHMENT
Arthur C. Elsbrunner, Walrath Circle,
North Kingsville, Ohio 44068
Filed Nov. 6, 1964, Ser. No. 409,468
4 Claims. (Cl. 220-30.5)

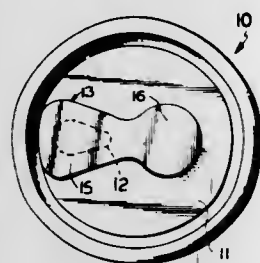


4. An attachment for a gas cap which closes the open end of a gas filling tube, including in combination a retainer secured to said gas cap and having a peripheral portion with a guide track, a member residing in said guide track and having an attaching portion extending laterally of said guide track, said retainer and member being capable of relative rotative movement, a support member secured to said tube and means connecting said attaching portion to said support member thereby mounting said gas cap for swinging movement to an open position relative to the gas filling tube when rotatably released therefrom.

3,312,368
EASY-OPEN CAN END
William G. Reynolds, Richmond, Bruce L. Baxter, Henrico County, and Robert S. Davidson, Richmond, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Sept. 9, 1964, Ser. No. 395,165
5 Claims. (Cl. 220-53)

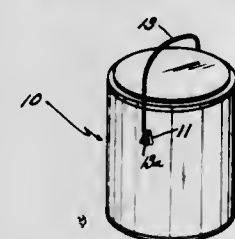
1. An easy-open end for a hermetically sealed container subject to internal pressure substantially above atmospheric on the order of 100 p.s.i., said container end

including a panel having a preformed aperture therein bounded by a smooth-faced panel portions, a pull tab having a first portion overlying said aperture and said panel portion surrounding said aperture and a second portion defining a finger grip for grasping said tab, non-metallic resinous adhesive means resistant to tension stresses bonding said first tab portion to said panel portions in a heat seal, said heat seal constituting the sole connection between said end and said tab, and with said tab and said adhesive means together constituting the sole sealing and pressure resistant closure means for said aperture,



said adhesive means comprising superimposed layers of a cross-linked polymer primer and a heat-fusible polymer overcoat provided on the contacting surfaces of both said panel and said pull tab, said first tab portion having sufficient rigidity to maintain its unstressed contour when subjected to container internal pressure substantially above atmospheric through said aperture thereby to stress said heat seal solely in tension, and said adhesive means being yieldable to peeling forces, whereby said tab may be peeled from said end upon grasping of said tab second portion to expose said aperture and said smooth-faced surrounding panel portion.

3,312,369
METAL CAN CONSTRUCTION AND BLANK FOR FORMING SAME
Andrew V. Sunday, 9904 Manor Ave.,
Cleveland, Ohio 44104
Filed Feb. 17, 1965, Ser. No. 433,278
2 Claims. (Cl. 220-91)

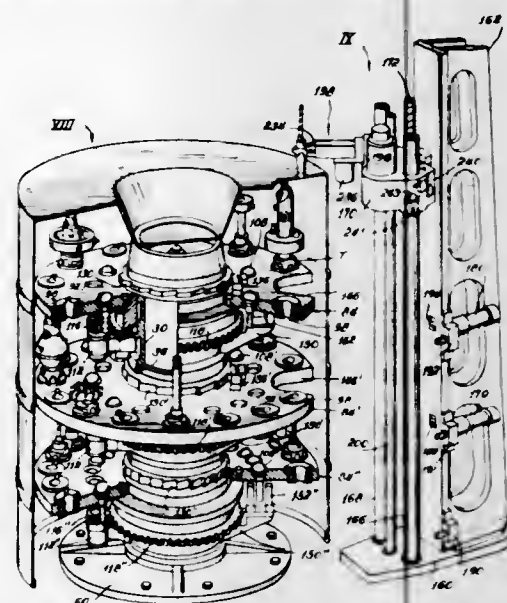


2. A metal can having a top, bottom and cylindrical side wall, and bail-receiving pockets in said side wall integral therewith, said pockets being of approximately the same gauge as said side wall, said pockets being generally V-shape with vertex upward, said pockets extending at said vertex inwardly and upwardly from said side wall, and each said pocket extending downwardly and radially outwardly from said vertex to a juncture with said side wall.

3,312,370
AUTOMATIC TOOL CHANGING APPARATUS
Stephen P. Kolarich, La Grange, Ill., and Richard A. Jerue, Birmingham, Mich., assignors to Scully-Anthony Corporation, a corporation of Illinois
Filed May 11, 1964, Ser. No. 366,453
11 Claims. (Cl. 221-13)

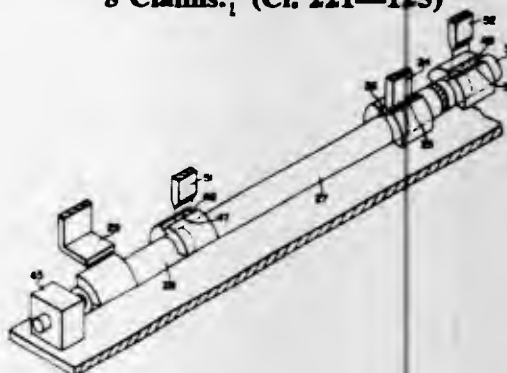
1. For use in an automatic tool changing system for a machine tool, a tool storage member comprising, in combination, a first tier member having a plurality of tool sockets for holding a first group of tools in vertically disposed positions herein, a second tier member having a

plurality of tool sockets for holding a second group of tools in vertically disposed positions therein, said first and second tier members being mounted one above the other for rotation independently of one another about a common vertical axis, first drive means for rotating said



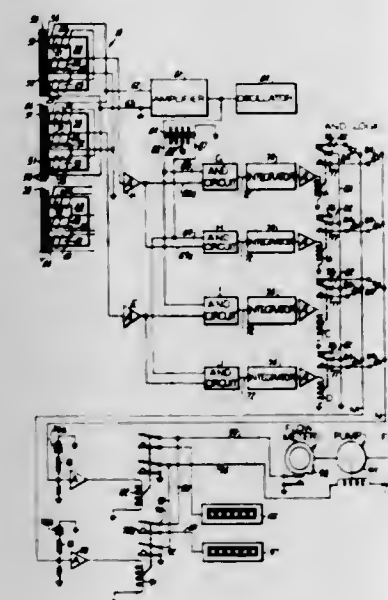
first tier member, and second drive means for rotating said second tier member, said first and second drive means being operable independently of one another and adapted to rotate said tier members to bring a selected tool therein to a predetermined tool change position.

3,312,371
VENDING MACHINE INTERLOCK MECHANISM
James L. Sharpe, Morris Plains, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 3, 1966, Ser. No. 518,472
8 Claims. (Cl. 221-125)



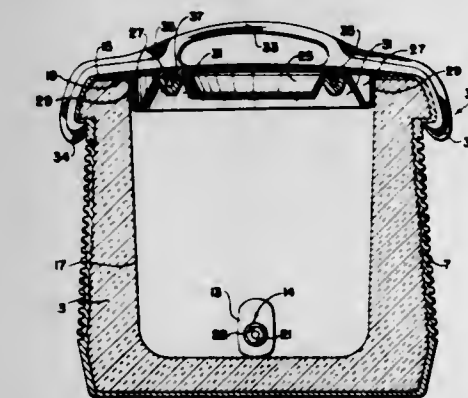
1. In a vending machine having a plurality of vending mechanisms to be interlocked, each individually operable to vend merchandise, the interlock mechanism for preventing the simultaneous operation of more than one vending mechanism comprising a plurality of interlock segments, means rotatably mounting said segments in axial alignment with each other for rotation about their axes of alignment, the abutting ends of each segment in their normal positions having interlocking projections with wedging surfaces for reception of a wedging member therebetween to cause respective rotations of the abutting segments in opposite directions and consequent rotation of all aligned segments, and a respective wedging member operatively associated with respective ones of the vending mechanisms for movement to be received between respective wedging surfaces of adjacent interlocking projections of said interlock segments whereby reception of any one wedging member upon operation of any one vending mechanism will rotate all interlock projections to positions preventing the reception of the other respective wedging members and hence the operation of all other vending mechanisms.

3,312,372
SECRET CODED CARD SYSTEM
Irving B. Cooper, Jr., Marblehead, Mass., assignor to Veeder Industries Inc., a corporation of Connecticut
Filed May 28, 1964, Ser. No. 370,843
13 Claims. (Cl. 222-2)



1. A coded card reader having an A.C. power supply and including an E-core transformer having a center leg and a pair of outer legs for providing two magnetic flux paths including the center leg in common, a flux sensing coil on said center leg and excitation windings for producing equal flux in each of the magnetic flux paths, said flux being oppositely directed in the center leg of the transformer, and a second transformer energized by said power supply in parallel with the E-core transformer, said second transformer having a secondary winding to produce signals responsive to the phase variations of the power supply to provide a reference for the polarity of any signal produced by said sensing coil upon the distortion of the flux in one of the magnetic flux paths relative to the other.

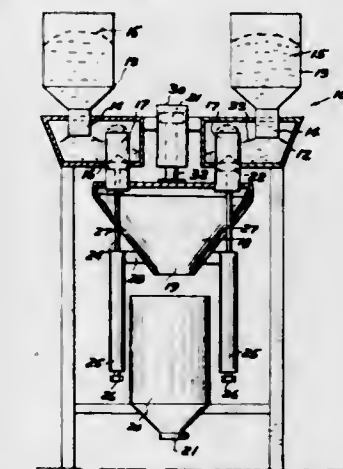
3,312,373
CONTAINER WITH COMBINATION HANDLE AND LID MEANS
Richard A. Gentry, P.O. Box 702,
Winfield, Kans. 67156
Filed Apr. 14, 1965, Ser. No. 448,044
5 Claims. (Cl. 222-131)



4. A vessel to hold liquid fluids comprising, an outer housing having an outwardly extended annular flange thereabout with transversely extended spaced grooves, an inner liner in said outer housing, a removable lid, a handle attached to said lid, said handle having downwardly depending hooks at the outer ends thereon to engage the undersurface of said annular flange on said outer housing, said lid lockable to said vessel by rotative movement by engagement of said handle hooks extended

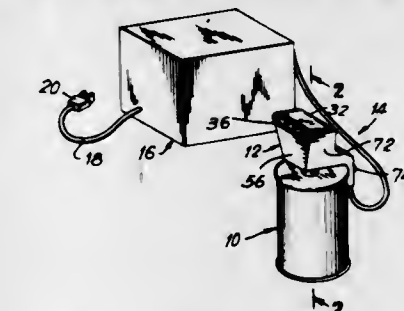
through at least two of said grooves to engage the undersurface of said outer flange of said outer housing to provide for closing, lifting and carrying said vessel.

3,312,374
METERING AND MEASURING APPARATUS
Carl H. Whitlock, Birmingham, Mich., assignor to Whitlock Associates, Inc., Oak Park, Mich.
Filed July 22, 1965, Ser. No. 474,088
8 Claims. (Cl. 222-135)



1. A metering and mixing apparatus comprising a fill chamber for containing material to be metered; a vertically arranged metering cylinder, having open upper and lower ends, extending into and having its upper end opening into said chamber through an opening formed in the bottom of said chamber; the lower end of said cylinder being fixedly secured to and opening into a mixing container; means for reciprocating the mixing container with its attached cylinder upwardly and downwardly for a distance slightly less than the height of said cylinder; a piston arranged within said cylinder for normally closing the lower end thereof, and means for lowering the piston, relative to the cylinder, for removing the piston from the cylinder, after the mixing container is moved upwardly and for raising the piston to close off the open lower end of the cylinder; whereby raising the mixing container causes the cylinder to rise within the chamber and fill with said material, and lowering the piston causes the material in the cylinder to dump into the mixing container.

3,312,375
HEATING MEANS FOR AEROSOL LATHER DISPENSERS
Jake Millard Williams, 211 E. 17th St.,
New York, N.Y. 10003
Filed Aug. 2, 1965, Ser. No. 476,311
6 Claims. (Cl. 222-146)

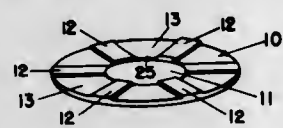


5. For use with an aerosol lather dispenser which has a discharge nozzle, an enclosure having an inlet end adapted to be releasably attached to the nozzle of the dispenser for receiving lather therefrom and directing the latter along the interior of said enclosure, said enclosure having distant from said inlet end thereof a discharge end through which the lather discharges from the enclosure to the exterior thereof, and an electrical heating element

situated in the interior of said enclosure in the path of flow of lather from said inlet to said discharge end thereof for heating the lather by direct contact therewith as it passes through to the discharge end, said heating element being in the form of an elongated strip of electrically conductive exposed metal having a zigzag configuration defining a plurality of V-shaped channels to direct the flow of lather therethrough, said V-shaped channels being disposed transversely of the direction of lather flow and with each channel extending parallel to said direction of lather flow.

3,312,376
DISPENSING CONTAINER WITH A VENTING WASHER

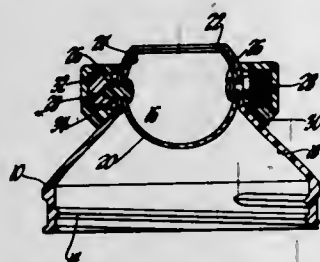
James L. Rooney, Erie, Pa., assignor to Niagara Plastics Co., Inc., Erie Pa., a corporation of Pennsylvania
Filed July 2, 1965, Ser. No. 469,178
5 Claims. (Cl. 222-320)



4. A dispensing container comprising a bottle and a dispensing means on said bottle, said container having an open end terminating in a shoulder, a venting washer resting on said shoulder, said washer having a flat surface resting on said shoulder and a hole defined by at least six flat surfaces in the center of said washer, circumferentially spaced radially extending ribs on said washer on the side thereof remote from said flat side, said ribs each having a flat side remote from said washer, said ribs extending from said hole to the outer periphery of said washer, said ribs having a width substantially equal to the space therebetween at the ends thereof adjacent said hole, and a cap on said container, said cap having a flat inside surface resting on said ribs, the outside diameter of said washer being slightly less than the inside diameter of said cap whereby a space is defined between the outside periphery of said washer and the inside periphery of said cap, said cap being made of a relatively resilient material.

3,312,377
PRODUCT DISPENSER HAVING TRAP AND ACTUATING MEANS THEREFOR

Joseph W. Chuhman, 2156 Helmsford Drive, Walled Lake, Mich. 48088
Filed Apr. 15, 1965, Ser. No. 448,416
4 Claims. (Cl. 222-359)



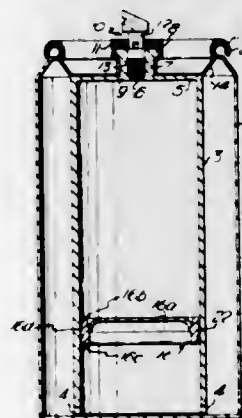
1. A product dispenser, comprising;
a cover member having an opening provided therethrough,
a hollow member in the form of a solid of revolution disposed in and closing said opening, said hollow member having rotation means, and being pivotal about a fixed pivotal axis across said opening,

an access opening provided in one side of said hollow member and pivotal about said axis to positions inside and outside said cover member, and an annular member provided on said cover member about said opening and the hollow member disposed therein and including means of operative engagement with said rotation means of said hollow member for the pivotal rotation of said access opening between said inside and outside positions.

3,312,378
DISPENSING CONTAINERS

Charles B. Featherstone, Sale, and Brian F. Hawtin, Radlett, England, assignors to Richmond Aerosols Limited, Withington, England

Filed June 8, 1965, Ser. No. 462,309
Claims priority, application Great Britain, June 10, 1964, 24,008/64
10 Claims. (Cl. 222-389)



1. A dispenser comprising inner and outer tubular containers defining between them an annular space for propellant fluid, an end wall on said inner container, means in said end wall defining an aperture therein, a boss integral with said end wall and surrounding said aperture, said boss being of smaller overall diameter than said inner container and forming a valve housing, a valve at least partially accommodated in said housing, a lip on the upper edge of said valve housing, a cap secured over said lip and forming a closure for said annular space, an inwardly projecting shoulder on the lower inside edge of the valve housing, a valve spring reacting against said shoulder, a piston within the inner container as a thrust member for the material to be expelled, means defining access between the said annular space and the underside of said piston, and a valve member mounted in the housing for controlling the discharge of the said material from the inner container when desired.

ERRATUM

For Class 222-402.13 see:
Patent No. 3,312,723

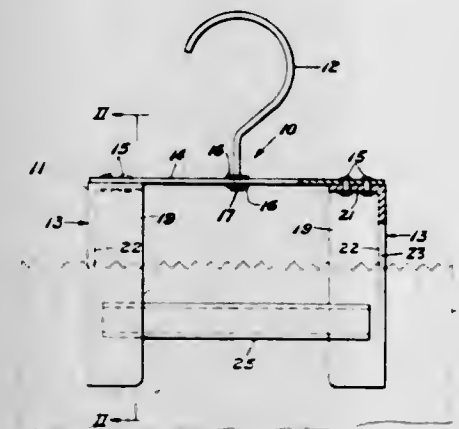
3,312,379
ARTICLE HANGER

Lawrence W. Gunzberg, Buffalo, N.Y., assignor to M. Wile & Company, Inc., Buffalo, N.Y.

Filed Mar. 8, 1966, Ser. No. 532,797
1 Claim. (Cl. 223-96)

A garment hanger comprising a generally horizontal elongated support having a pair of depending longitudinally spaced vertically elongated end brackets at the ends thereof, said brackets each having opposed converging side portions generally symmetrical on opposite sides of the horizontal elongated support with the lower ends of said side portion being flared outwardly to form a restricted garment receiving opening adjacent the lower end thereof, said brackets each including an end-retaining wall

extending inwardly from the side edges of said side portions, each end-retaining wall having a vertically extending slot formed therein, a roller member extending between said brackets and disposed between said side portions, said roller member having a diameter greater than the width of said openings and the width of each vertically extending slot whereby said roller member seats in a lowermost position against said side portions above said open-



ings, said roller member being movable upwardly upon insertion of a garment upwardly between said converging side portions whereby said roller falls between said garment and either side portion of said hanger to retain said garment against the other side portion by wedging action, said roller member being accessible through the space between said end brackets to move the roller upwardly to release said garment, and suspension means for horizontal elongated support.

3,312,380
MULTIPURPOSE SEWING KIT

Allie R. Wages, Rte. 3, Tupelo, Miss. 38801
Filed Jan. 29, 1964, Ser. No. 341,065
2 Claims. (Cl. 223-107)

1. A portable as well as wall supported sewing cabinet comprising: a flat-faced rectangular imperforate back wall panel, a flat-faced correspondingly rectangular one-piece front wall panel opposed and parallel to and aligned with said back wall panel, a one-piece assembling frame having relatively narrow component wall portions interposed between and rigidly joining marginal portions of said front and back wall panels, said frame functioning to space said front and back wall panels apart and defining a shallow cabinet, a first vertical partition positioned in the hollow portion of said cabinet midway between the vertical end walls and joined to and rising vertically from the bottom wall and fixed thereto and confined to a lower half-portion of said cabinet and providing left hand and right hand compartments in said lower half portion, the upper end of said partition terminating in a plane just below the upper limits of said lower left hand and right hand compartments, said lower left hand compartment having facilities confined therein for buttons, said front wall panel having a first door opening formed therein and a door hingedly mounted in and closing said first opening as well as said lower left hand compartment, said lower right hand compartment having a horizontal shelf therein having an inward end abutting and fixed to a median portion of said partition and accordingly residing in a plane below the upper end of said partition, a plurality of dowel pins fixed vertically atop said horizontal shelf and having their upper ends terminating in a plane below the plane of the upper free end of said vertical partition, said front wall also having a second door opening formed therein aligned with said lower right hand compartment and provided with a normally closed hingedly mounted door permitting access to be had to said lower right hand compartment, a second vertical partition of a cross-sectional

dimension less than the cross-section of said first partition and fixed in the upper central half-portion of said cabinet and aligned with said first partition but spaced vertically therefrom and contributing in transforming the upper half-portion of said space into an upper left hand compartment and an upper right hand compartment, said upper left hand compartment, having pegs fixed therein for detachably supporting insertable and removable selectively usable scissors, the upper left hand corner portion of said front wall having a door opening formed therein corresponding to and aligned with said upper left hand compartment and said door opening being provided with a normally closed hingedly mounted door permitting ac-

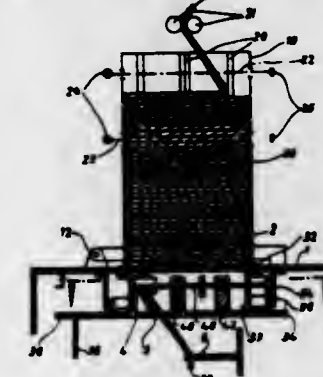


cess to be had to said scissors compartment, said upper right hand compartment being provided with vertically spaced upper and lower trays and the upper one of said trays being of a length less than said lower tray, said second vertical partition being spaced below the median portion of said top wall and situated in a plane midway between said upper and lower shelves, the upper right hand corner portion of said front wall having a door opening formed therein which in turn is provided with a normally closed hingedly mounted door permitting access to be had to said upper right hand compartment, the exterior surfaces of said doors being flush with the exterior surface of said front wall panel.

3,312,381
STORING DEVICE FOR TRANSPORTED FLEXIBLE ELEMENTS

Hermann Güttler, Goggingen-Augsburg, and Paul Krauss, Ebersbach (Fls), Germany, assignors to Zinser-Textilmaschinen Gesellschaft mit beschränkter Haftung, Ebersbach (Fls), Germany

Filed Apr. 23, 1964, Ser. No. 363,673
Claims priority, application Germany, Apr. 25, 1963, Z 10,074
19 Claims. (Cl. 226-118)



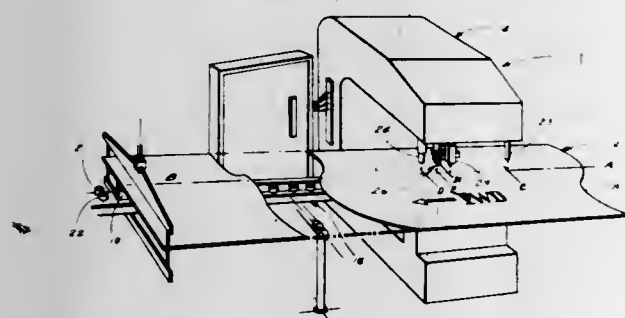
1. Storing device for a transported elongated flexible element, comprising, in combination, a stationary tubular member extending in one direction and being open at

one end; at least one rotary member located at said open end and being rotatable about an axis extending in said direction, said rotary member having guide means spaced from said axis moving along a circular path within the region of said open end; first transporting means for transporting an elongated flexible element through said guide means so that during rotation of said rotary member said element is coiled and advanced through said open end into said stationary tubular member whereby a length of said element is stored in coiled shape in said stationary tubular member; and second transporting means located at the other end of said stationary tubular member for transporting stored portions of said element out of said stationary tubular member.

3,312,382 HOLE LOCATING AND RIVET POSITIONING MEANS

Edwin A. de Voss, Torrance, Calif., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California

Filed June 28, 1965, Ser. No. 467,656
3 Claims. (Cl. 227-73)



1. The combination with a facility adapted to fabricate plate-like assemblies utilizing rivets including a frame member constituting fixed structure, a drilling head and means adapted to impart uni-directional incremental movement to the assembly during which time a plurality of equally spaced holes are drilled in the straight line in the continuously moving assembly of a hole locating and rivet positioning means, comprising:

- mounting means slidably mounted on the frame of the facility for reciprocal movement;
- a first housing means fixedly mounted on said mounting means;
- said first housing means defining a cylindrical cylinder having a first piston-piston rod combination mounted therein for movement between extended and retracted positions;
- the piston rod of said first combination having a free end adapted to be urged into a specific one of the plurality of holes at such time as said first combination is actuated;
- second housing means adjustably mounted on said mounting means in spaced relation with respect to said first housing means and carrying resiliently pressed rivet retaining finger means;
- said second housing means defining a cylindrical chamber having a second piston-piston rod combination mounted therein for movement between extended and retracted positions;
- the piston rod of said second combination having a free end adapted to urge a rivet from said finger means and into another one of the plurality of holes at such times as said second combination is actuated to its extended position;
- and a control system responsive to positions of said first and second housing means and respective piston-piston rod combination mounted therein whereby pressurized fluid is ported to the chamber defined by said first and second housing means to effect entry

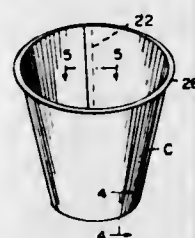
of said first piston rod into a first hole in the work followed by insertion of a rivet into a second adjacent hole in the work by said second piston rod.

3,312,383 PLASTIC CONTAINER

Arnold Shapiro, Chestnut Hill, William Hammer, Lexington, and Leo J. Kerivan, Wellesley, Mass., assignors to Sweetheart Cup Corporation, Cambridge, Mass., a corporation of Maryland

Original application Oct. 7, 1963, Ser. No. 314,362. Divided and this application Oct. 16, 1964, Ser. No. 411,959

5 Claims. (Cl. 229-1.5)

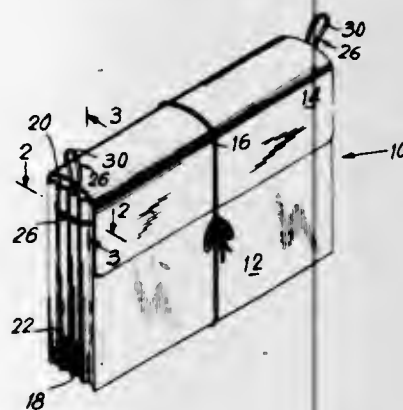


1. A disposable plastic foam hot drink cup comprising an upwardly and outwardly flared side wall .030-.040 inch in thickness made solely of a foam sheet plastic material and having a compressed welded lapped seam and with the thickness of the wall at the seam being substantially identical to the thickness of the remainder of the side wall, an overturned rim formed at the top of said side wall, surface zones provided in the side wall of substantially greater density than the interior zone, and a bottom wall welded to the side wall, said bottom wall being made of sheet material.

3,312,384 EXPANDING FILE-FOLDER CONSTRUCTION

Julius W. Heynemann, 103 E. 86th St., New York, N.Y. 10028

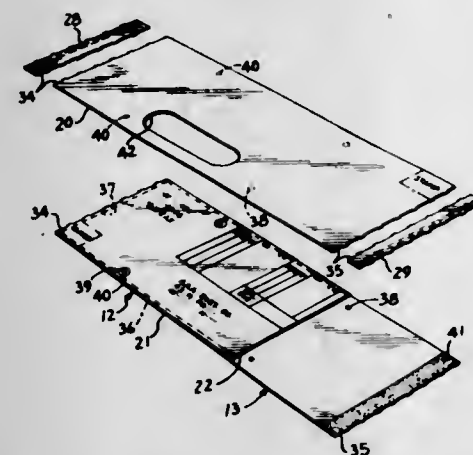
Filed July 13, 1965, Ser. No. 471,641
2 Claims. (Cl. 229-54)



1. In a portfolio having a pair of gusseted ends terminating in a top edge, each gusseted end having a pair of spaced-apart openings spaced below said top edge, a lift-member passing through the openings of each said gusseted end for securing said lift-member to said gusseted end, and each said lift-member being in the form of an elongated, endless, flexible, substantially non-stretchable element, collapsed to define a bight at each end thereof, said element extending through said openings, one of the ends of said element extending through the bight of the other end thereof and then upwardly beyond said top edge of its respective gusseted end to form a free loop capable of being engaged for lifting the portfolio.

3,312,385 ENVELOPE ASSEMBLY

Donald J. Amort, Melrose Park, Ill., assignor to Arvey Corporation, Chicago, Ill., a corporation of Delaware
Filed Apr. 12, 1965, Ser. No. 447,494
4 Claims. (Cl. 229-73)

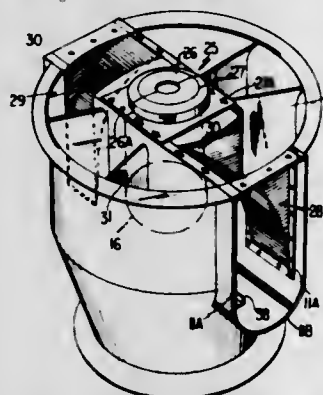


1. In a manifold assembly, a plurality of elongated rectangular envelopes comprised of adhesively joined face and back paper plies, top and bottom defining edges of adjacent envelopes being joined and severable along lines of perforation, an opposed pair of outermost side edge strip portions on said assembly extending transversely of said envelopes and formed with feed apertures, an opposed pair of parallel inner side edge strip portions joined and severable along lines of perforation from both said envelopes and said outermost strips, the back plies of said envelopes being each formed with a transverse, off-center score line dividing the envelope back ply into a long and relatively shorter portion, and an intermediate ply on each envelope overlying said long back portions and adhesively secured thereto along three edges and open at said score line, the total number of plies present in each envelope being three.

3,312,386 FAN

Richard L. Hull, Davenport, Iowa, and Frank P. Bleier, Chicago, Ill., assignors to Ametek, Inc., New York, N.Y., a corporation of Delaware

Filed Dec. 21, 1964, Ser. No. 420,050
13 Claims. (Cl. 230-117)



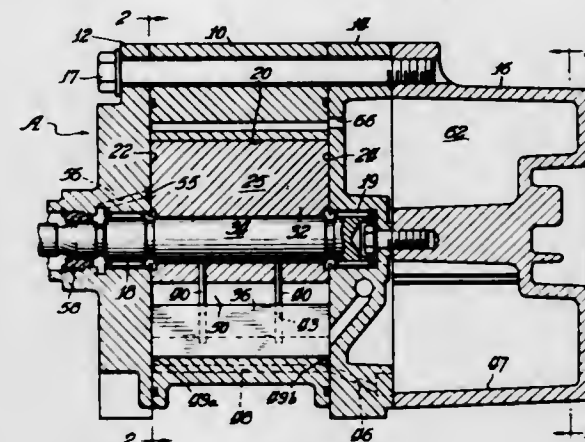
1. A fan comprising a main housing member having an inlet and outlet; a motor chamber extending transversely therethrough and having an upstream wall, downstream wall and side walls, said chamber separating the main housing member into two duct means, one on each side of said chamber and communicating with said inlet and outlet; motor means mounted in said chamber having output shaft means extending through said upstream wall of said chamber; fan wheel means connected to said shaft means adjacent to the inlet of said housing member and said upstream wall, said wheel means having a conically-shaped back plate, fan blades on said plate, said plate and blades moving gas in a divergent path from said inlet to said duct means; and trough-shaped generally arcuate side passage means having a generally curved bottom wall extending from said upstream wall to the side walls of said motor chamber on at least one side of the axis of said fan wheel and into said duct means for guiding gas from said fan wheel means to gas flowing in said duct means.

let to said duct means; and trough-shaped generally arcuate side passage means having a generally curved bottom wall extending from said upstream wall to the side walls of said motor chamber on at least one side of the axis of said fan wheel and into said duct means for guiding gas from said fan wheel means to gas flowing in said duct means.

3,312,387 LUBRICATION SYSTEM FOR ROTARY COMPRESSOR

Harry Joseph Cassidy, York, Pa., and William Donald Beck, Columbus, Ohio, assignors, by direct and mesne assignments, to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed Dec. 30, 1964, Ser. No. 422,348
1 Claim. (Cl. 230-152)



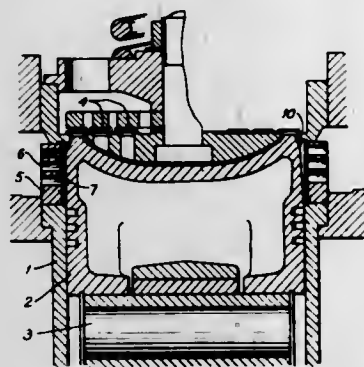
A compressor comprising a housing having a cavity therein, said cavity being defined by a generally cylindrical peripheral wall and opposed end walls; a rotor including a generally cylindrical hub having a plurality of substantially radially extending slots, and a shaft extending axially from said hub; means for rotatably journaling said rotor in said cavity, said means including at least one bearing supporting said shaft; said hub, said peripheral wall, and said opposed end walls defining a crescent-shaped compression chamber, said rotor and said end walls defining clearance spaces therebetween; means defining suction and discharge ports communicating with said compression chamber; a plurality of vanes carried by said hub, said vanes being received in said slots for reciprocative movement so that the tip portions thereof are maintained in engagement with said peripheral cavity wall, said vanes defining a plurality of movable pockets therebetween, the volume of each pocket expanding from said suction port to a point intermediate said suction and discharge ports and contracting from said intermediate point in a direction toward said discharge port; means defining a space under each of said vanes, the volume of which varies as said vanes reciprocate within said hub slots; means defining a fluid injection port opening into said compression chamber at a point circumferentially spaced from said suction port by a distance equivalent to the space between a leading vane and an adjacent trailing vane when said trailing vane passes the end of said suction port; means for supplying refrigerant diluted lubricant to said injection port, said lubricant flowing from said compression chamber through said clearance spaces to the spaces under each of said vanes to fill said spaces at a point when the volume therein is at a maximum; and fluid passage means in one of said cavity end walls, said fluid passage means having a port at one end thereof located adjacent to the discharge port and registering with the spaces under said vanes as the rotor is driven in the direction toward said discharge port, the other end of said fluid passage means being in fluid communication with said bearing, whereby the lubricant under said vanes is pumped by the contraction of said vanes through said injection port.

fluid passage means to said bearing as the spaces under said vanes are brought into registration with said fluid passage means port.

3,312,388 DEVICE FOR SUCTION VALVES FOR RECIPROCATING MACHINERY

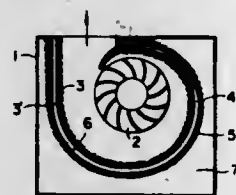
Tore Brandin and Karl Vilhelm Bertil Lundvik, both of Norrköping, Sweden, assignors to Stal Refrigeration Aktiebolag, Norrköping, Sweden, a Swedish corporation

Filed Aug. 25, 1965, Ser. No. 482,426
2 Claims. (Cl. 230-229)



1. A device for suction valves for reciprocating machines such as compressors comprising, a cylinder, a piston therein, an annular valve seat arranged as an extension of the cylinder, said seat having a plurality of passages extending through it for the passage of working medium, a ring-shaped valve band disposed on the side of the valve seat and in contact therewith, the valve band being provided with a plurality of elongated tabs that are flexed inwardly upon the descent of the piston, each of said tabs, apart from its base portion located adjacent to the band, having a configuration corresponding to a longitudinal section through a spindle, the side edges of each tab being convex from a point just above its base portion to its extremity, the convex edges near such base portion extending into a concavity, the tabs defining spaces between them which spaces increase in width in two directions from the approximate transverse center line of the tabs, the spacing between the tabs between their approximate centers and the band being droplet shape, the valve seat openings corresponding in shape substantially to the spindle-shaped portions of the tabs.

3,312,389
AIR BLOWER DEVICE WITH SILENCER
Masayuki Matsui, Tokyo, Japan, assignor to Fukuo Saeki, Fujisawa, Kanagawa, Japan
Filed Apr. 29, 1965, Ser. No. 451,771
Claims priority, application Japan, May 4, 1964, 39/25,184
8 Claims. (Cl. 230-233)

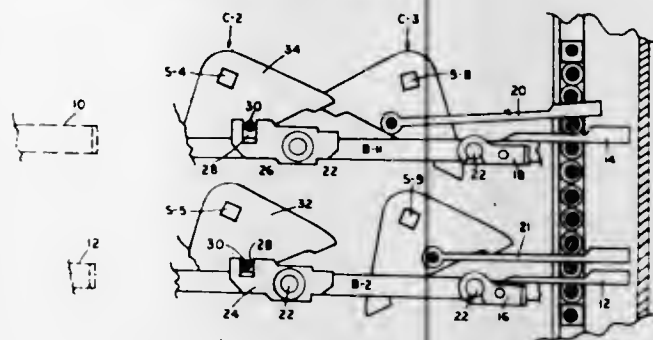


1. In an air blower device comprising a rotor member having mounted on the periphery thereof a plurality of radial blades and rotatably disposed in an operating chamber having a substantially spiral cross-section, the combination of a smooth porous screen forming the internal peripheral wall surface of said operating chamber, and sound absorbing means disposed on that side of said

screen remote from said rotor member and spaced from said screen to define a buffer air gap between said sound absorbing means and said screen.

3,312,390 VOTING MACHINE

Ransom F. Shoup, Bryn Mawr, Pa., assignor to The Shoup Voting Machine Corporation, Bala Cynwynd, Pa., a corporation of Pennsylvania
Filed Jan. 18, 1966, Ser. No. 523,501
5 Claims. (Cl. 235-45)



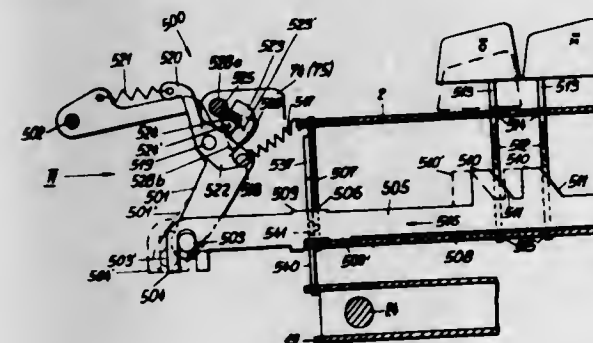
5. A voting machine of the type which includes: an interlock, a first vertical column of rotatable spindles, keys carried by one end of the spindles for rotating the same, butterfly cams carried by the other end of said spindles and rotatable therewith, horizontal pull straps connecting the butterfly cams of said first column to said interlock whereby, rotation of a spindle causes a pull strap to partially immobilize said interlock, a second vertical column of rotatable spindles, keys carried by one end of said spindles for rotating the same, butterfly cams carried by the other end of said spindles and rotatable therewith, a plurality of personal choice bars extending horizontally of said columns, horizontal personal choice pull straps connecting said personal choice bars to said interlock, whereby movement of a personal choice bar in personal choice vote casting direction causes the corresponding personal choice pull strap to partially immobilize said interlock, and clips detachably connecting selected personal choice bars to corresponding selected butterfly cams of said said second column whereby rotation of a selected butterfly cam moves the corresponding personal choice bar and its personal choice pull strap to partially immobilize said interlock.

3,312,391
DEVICE FOR LIMITING THE DECIMALS OF THE
MULTIPLICAND IN A CALCULATING MACHINE
Helmut Gelling, Dietlikon, near Zurich, Switzerland, assignor to Precisa A.G., Zurich, Switzerland
Filed June 11, 1964, Ser. No. 374,546
Claims priority, application Switzerland, June 12, 1963, 7,363/63
3 Claims. (Cl. 235-60)

1. In a calculating machine, the combination of (a) a multiplier storage provided with at least one row of storage wheels and scanning members cooperating with the same, (b) a pin carriage having a top wall, (c) a keyboard having number keys and operating keys, (d) a device associated with said calculating machine for limiting the decimal number of the multiplicand

and preventing operation of the machine when the product of the two entered factors exceed the capacity of the machine,

(e) means for returning said storage wheel to a zero position during the formation of the product, whereby for performing a multiplication first the multiplier is entered into said multiplier storage and then the multiplicand is entered into said pin carriage, and thereupon one of said operating keys is actuated which latter releases the operations of the machine for forming the product, (f) a lengthwise movable bar (527) operatively connected with said pin carriage (19) for moving said bar and pin carriage simultaneously in opposite directions, (g) means for causing said bar to cooperate on one hand with said scanning members (88) of said storage wheels (80) and on the other hand with (h) a locking member (520) which by means of a linkage (501, 505, 513) is connected with at least

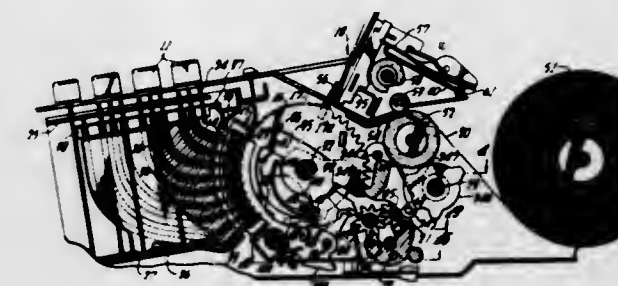


one of said operating keys ($\bar{0}$, $\bar{*}$) which latter after the entering of the multiplicand into said pin carriage permits the formation of the product, said locking member (520) being effective to prevent the actuation of said operating key when one of said scanning members is not in its zero position, in which event said bar (527) is moved in a direction at right angles to its lengthwise direction, said actuation of said operating key being prevented when the sum of the effective decimal points of the multiplier and the multiplicand exceeds the number of said scanning members (88) and a gear transmission (537, 540, 542) arranged between said lengthwise movable bar (527) and pin carriage (19) for effecting their movements in opposite directions, said gear transmission comprising a rack bar (537) movable with said movable bar, a row of equidistantly spaced openings in said top wall of said pin carriage forming gear teeth (543) on said pin carriage beneath said rack bar, and a gear wheel (540) interposed therebetween in meshing engagement with said rack bar, said gear wheel having its opposed teeth extending into driving engagement with said openings forming said gear teeth on said pin carriage.

3,312,392
CALCULATING MACHINE
Richard S. Mark, Arcadia, Calif., assignor to Addmaster Corporation, San Gabriel, Calif., a corporation of California
Filed Apr. 27, 1965, Ser. No. 451,119
14 Claims. (Cl. 235-60)

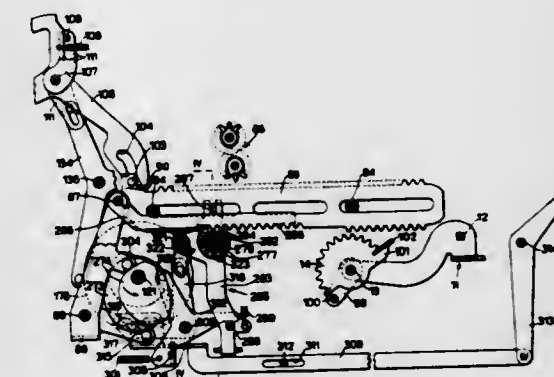
7. In a calculating machine having an accumulator, differential actuators therefor, and a pin carriage for controlling said actuators, the combination of means normally causing said actuators to advance said accumulator in one direction, means including a control member having an irregular edge movable in a first direction to cause said actuators

to advance said accumulator in a direction opposite said first direction; means responsive to an overdraft in said one direction for moving said control member in a path substantially at right angles to said first position, said last mentioned means being responsive to an overdraft in said opposite direction for moving said control member in said path to a second position, an actuating member engageable with said irregular edge, means responsive to entry of an amount in said pin carriage for moving said actuating member in a direction substantially parallel to said second direction, from one position to another,



a first depressible control key, a second depressible control key, and means responsive to depression of said first key for moving said actuating member at least substantially in said first direction a predetermined amount, said last mentioned means being responsive to depression of said second key for moving said actuating member a second predetermined amount, said actuating member being ineffective in certain combinations of positions of said control member and said actuating member and upon movement of said actuating member certain of said predetermined amounts to move said control member.

3,312,393
STORING DEVICE FOR A CALCULATING
OR LIKE MACHINE
Teresio Cassino, Ivrea, Turin, and Michele Bovio, Banchette, Turin, Italy, assignors to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy
Filed Nov. 9, 1965, Ser. No. 506,922
Claims priority, application Italy, Nov. 11, 1964, 24,427/64; Sept. 10, 1965, 20,692/65
12 Claims. (Cl. 235-60)



1. In a calculating or like machine having a multiorder set up mechanism, a register, a set of actuators differentially movable according to either the amount set up on said mechanism or the total to be taken from said register under the control of a universal bar reciprocable through a forward and a return stroke, a storing device

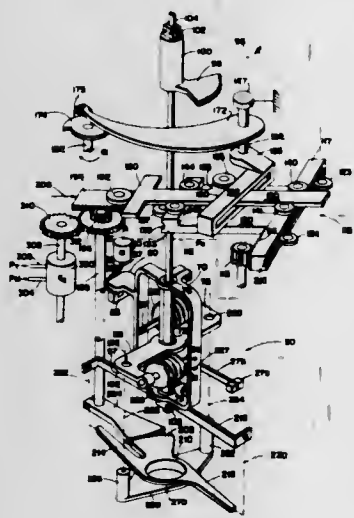
comprising a set of pinions engageable with said actuators, a shaft rotatably mounting said pinions, a zero position determining cam associated with each one of said pinions, and stop means for cooperating with said cam to stop the associated pinion at said zero position, said storing device comprising in combination:

- (a) a control means for causing said pinions to engage and disengage said actuators,
- (b) means for reciprocally oscillating said shaft concomitantly with the reciprocating movement of said universal bar,
- (c) a set of flanges bodily rotatable with said shaft, said flanges being interspersed with said pinions,
- (d) and compression springs for individually urging said pinions toward said flanges, whereby said pinions are frictionally driven by said flanges.

3,312,394

CONTROL APPARATUS

Robert W. Armstrong, Mound, Minn., assignor to Honeywell Inc., a corporation of Delaware
Original application Apr. 27, 1962, Ser. No. 191,685, now Patent No. 3,239,140, dated Mar. 8, 1966. Divided and this application Apr. 19, 1965, Ser. No. 469,956
1 Claim. (Cl. 235-61)



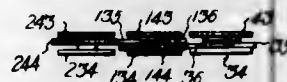
Apparatus of the class described comprising, in combination:

- a first member;
- means mounting said first member for movement in a first direction;
- a second member;
- means slidably mounting said second member directly on said first member and allowing movement of said second member with respect to said first member solely in a direction perpendicular to the first direction;
- a rotatable member having a bearing surface;
- means for biasing said second member with respect to said rotatable member;
- means carried by said second member for cooperation with the bearing surface of said rotatable member;
- first input means operable to move said first member in the first direction in accordance with a first variable, said second member moving with said first member in the first direction and also moving in the second direction to an extent depending on the angular position of said rotatable member; and
- second input means providing an angular displacement and operable to position said rotatable member at a fixed angle in accordance with a second variable, the extent of movement of said second member in the second direction being indicative of the product of the first and second variables.

3,312,395

CALCULATOR

Masaharu Nara, 9 Aoi-cho, Itabashi-ku, Tokyo, Japan
Filed Sept. 23, 1965, Ser. No. 489,490
9 Claims. (Cl. 235-114)

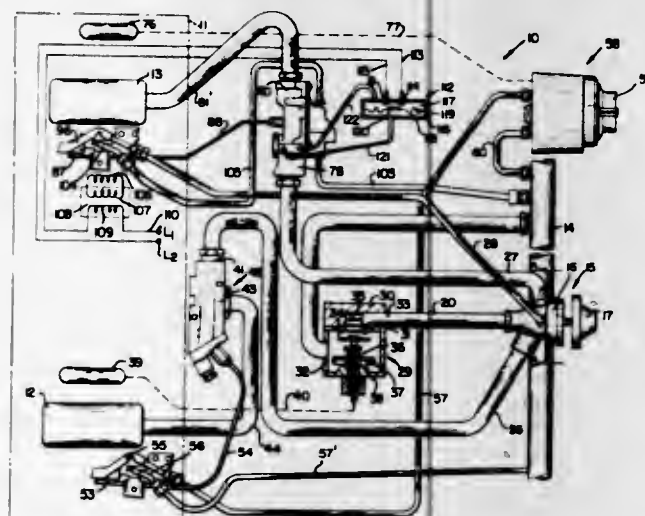


1. A calculator comprising a casing having a number of windows formed in and through the wall thereof, a number of push buttons arranged out of said casing, and a number of digit indicating mechanisms provided inside said casing, each of said windows, push buttons, and digit indicating mechanisms being provided for each of places of numerals to be calculated, said digit indicating mechanism comprising a digit indicating disk, a tens-toothed gear, and a tens-toothed ratchet wheel, said digit indicating disk, said tens-toothed gear, and said tens-toothed ratchet wheel being integrated coaxially one after another and mounted rotatably inside said casing, said digit indicating disk being adapted to expose in said window any one of digits marked on a surface of said disk, said ratchet wheel being adapted to be rotated by one tooth thereof by pushing down said push button manually so as to change an exposed digit to the adjacent digit thereto, and said digit indicating mechanism further having at least one claw lever pivotally mounted upon the digit indicating disk of said mechanism, spring means for maintaining one end of said claw lever in a normally projected position whereby said one end will engage with said gear of said one higher place digit indicating mechanism to rotate the latter by one tooth thereof at least once during a complete revolution of said disk to effect at least one 10's carry, said spring means permitting said one end of said claw lever to pivot inwardly from said projected position towards the rotation axis of said digit indicating disk whenever said one higher place digit indicating mechanism is rotated in the same direction as that of said 10's carry with the gear teeth of said mechanism in contact with said claw lever, whereby rotation of said digit indicating mechanism by rotation of said one higher place digit indicating mechanism is prevented.

3,312,396

DOUBLE BURNER OVEN CONTROL SYSTEM

James R. Willson, Greensburg, Pa., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed July 22, 1964, Ser. No. 384,437
12 Claims. (Cl. 236-15)



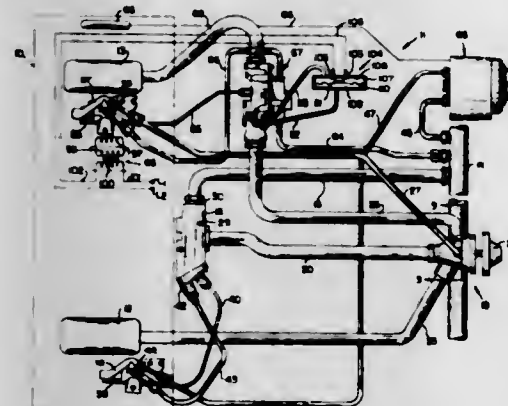
1. In combination, a bake burner means, a broil burner means, a source of fuel, a selector valve, first means interconnecting said source of fuel with said selector valve, a preset high limit thermostatic valve in said first means to

prevent communication between said source of fuel and said selector valve only when the temperature effect of said burner means exceeds a broiling temperature effect, second means interconnecting said selector valve with said bake burner means so that the baking temperature effect of said bake burner can be thermostatically controlled independently of the operation of said high limit thermostatic valve, and third means interconnecting said selector valve with said broil burner means whereby said selector valve can selectively direct fuel to either said bake burner means or said broil burner means only when said high limit thermostatic valve is open.

3,312,397

DOUBLE BURNER OVEN CONTROL SYSTEM

James R. Willson, Greensburg, Pa., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed July 22, 1964, Ser. No. 384,451
12 Claims. (Cl. 236-15)



1. In combination, a bake burner, pilot means, a broil burner, a source of fuel, a selector valve, first means interconnecting said source of fuel with said selector valve, an automatic valve disposed in said first means and being responsive to a flame at said pilot means to interconnect said source of fuel to said selector valve, said pilot means being adapted to cause cyclic operation of said bake burner to maintain a baking temperature effect and to cause cyclic operation of said broil burner to maintain a broil temperature effect, second means interconnecting said selector valve with said bake burner, and third means interconnecting said selector valve with said broil burner whereby said selector valve can selectively direct fuel to either said bake burner or said broil burner only when said automatic valve senses a flame at said pilot means.

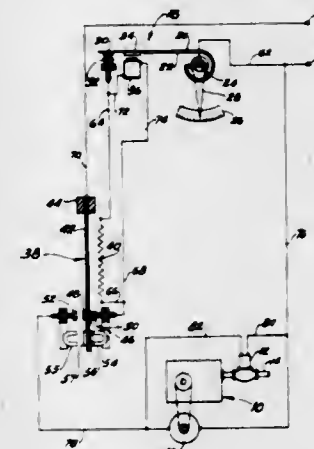
3,312,398

HUMIDITY CONTROLLER WITH THERMAL RELAY

Charles E. Markham, Afton, Mo., assignor, by mesne assignments, to Emerson Electric Co., a corporation of Missouri
Filed June 28, 1965, Ser. No. 467,259
3 Claims. (Cl. 236-44)

3. In a humidity controller, a sensitive humidity responsive switch which closes its contacts in response to decreasing humidity, an electromagnet operative when energized to increase the pressure between said humidity responsive switch contacts when closed, a double throw, snap action, thermal relay having a normal cold position and a hot position and including an electrical resistance heater which when energized heats said relay at a rate which effects its operation from its cold to hot position in a considerably shorter time than is required for it to cool sufficiently to effect its return to a cool position when said resistance heater is de-energized, said double throw relay having a first pair of contacts which are closed when said relay is in its hot position and which are adapted to

control the operation of moisture supply means and a second pair of contacts which are closed when said relay is in its normal cold position, and circuit connections in-

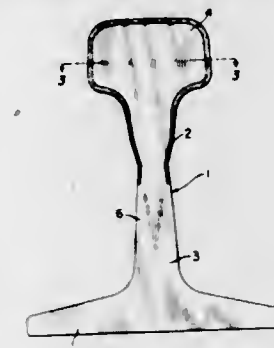


cluding said humidity responsive switch contacts and said second pair of relay contacts in series arrangement for connecting said electromagnet and said electrical resistance heater across an electrical power source.

3,312,399

INSULATING END POST

John W. Cruikshank, Northbrook, Ill., assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Apr. 30, 1965, Ser. No. 452,319
4 Claims. (Cl. 238-152)



1. An insulating end post to be placed between meeting rail ends at a rail joint comprising
 - (A) A non-conductive elastomeric core having a head portion, a web portion and a base portion, formed to the profile of a given rail section, said core having on both sides thereof an integral lip along at least a portion of the edge of the core, said lips being substantially perpendicular to the face of the core, and
 - (B) A pair of substantially identical metal face plates attached to each face of the core, said plates being of the same general contour as the core but having that portion of their edge removed which corresponds to the position of the lips on the core so that when both face sheets are positioned against each face of the core the lips enclose a portion of the edge of each face sheet and help to retain the face sheets in proper alignment on the core.

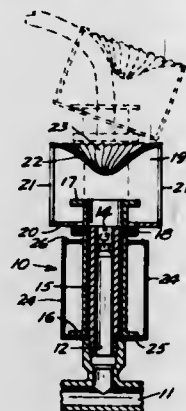
3,312,400

POP-UP SPRINKLER HAVING A ROTATING HEAD

Jack F. Clearman, 5890 Hobe Lane, White Bear Township, Ramsey County, Minn. 55110
Filed Sept. 15, 1964, Ser. No. 396,575
4 Claims. (Cl. 239-206)

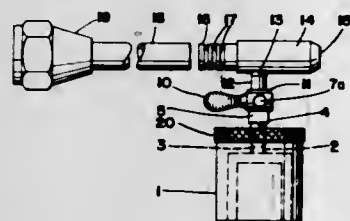
1. A disappearing lawn sprinkler which can be installed flush with or slightly below ground level and which will automatically rise above ground level when

water is supplied thereto under pressure, comprising in combination: a vertically positioned stationary tubular water supply member, a generally tubular elevating member concentrically mounted about said water supply member and freely axially slidable with respect thereto, co-operative restraining means on said members for limiting the height to which said elevating member can rise, spaced limiting means at the upper end of said elevating member, and an annular wobble plate freely mounted on said



tubular elevating member between said spaced limiting means, a diverter element rigidly supported by said wobble plate in a position spaced from one end of said elevating member and in registry therewith, said wobble plate and said diverter element adapted to effect distribution of water in a plurality of directions responsive to the impact thereof, said elevating member being lifted above ground level, in operation, by the impact of an unconfined stream of water directed through said supply member against the lower surface of said diverter element.

3,312,401
MAGNETIC HOLDER FOR COOLANT AND OTHER FLUID SUPPLY CONDUITS
John Jacobenta, 7849 McCreery Road, Cleveland, Ohio 44131
Filed Sept. 9, 1965, Ser. No. 486,059
7 Claims. (Cl. 239-283)

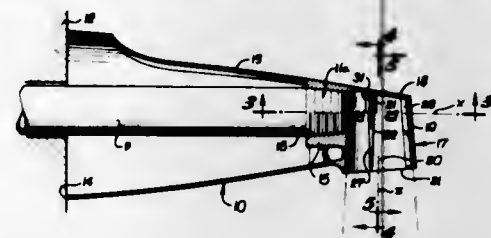


1. In combination, a permanent magnet having a central threaded aperture in its upper end, a support element having a depending stem threadedly secured in said aperture, a nozzle holder supported for pivotal movement relatively to said support element, and a nozzle extending transversely of said nozzle holder and supported by said holder.

3,312,402
TUB FILLER
John K. Lyon, Pasadena, Calif., assignor to Price-Pfister Brass Mfg. Co., Pacoima, Calif., a corporation of California
Filed Nov. 9, 1964, Ser. No. 409,785
7 Claims. (Cl. 239-552)

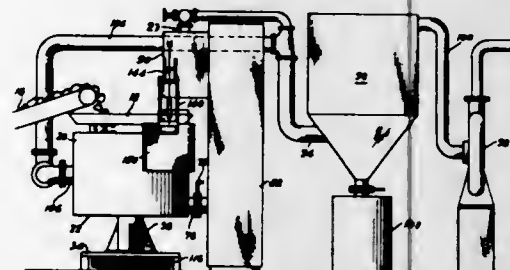
1. A tub filler or the like comprising a spout containing a chamber having a closed upper wall, an open lower end providing an outlet, and side wall means containing a lateral inlet orifice substantially above said lower end, baffle means carried by said upper wall extending downwardly into said chamber a distance below a projection of the upper edge of said orifice and terminating above a projection of the lower edge of said orifice dividing said

chamber into rearward and forward zones receiving upper and lower portions respectively of a stream emerging from said orifice, said chamber having a transverse dimension greater than that of said orifice at the elevation of the lower edge of said baffle means, the ratio of said



transverse dimensions being such that the projected stream impinging on said baffle means will be deflected downwardly and transversely with respect to said orifice to entrain air and intermingle with the remaining stream to produce an aerated stream at said lower end.

3,312,403
MACHINE AND PROCESS FOR RECLAIMING FOUNDRY SAND
Lothar Robert Zifferer, R.D. 3, Glen Rock, Pa. 17327
Filed Dec. 31, 1964, Ser. No. 422,820
22 Claims. (Cl. 241-24)

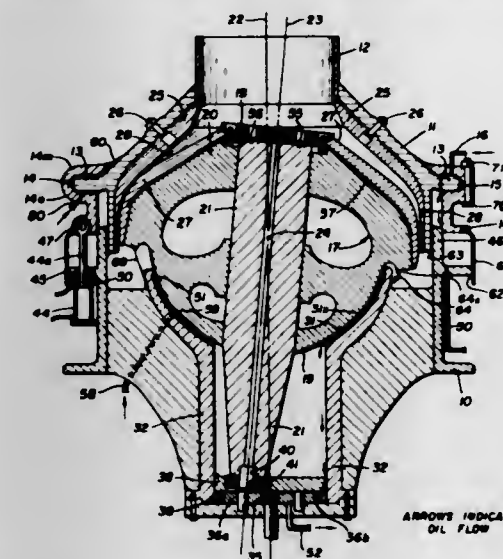


18. A process of reclaiming bonded foundry sand from lumps, pieces and particles thereof resulting from shake-out operations and comprising the steps of subjecting pieces and particles of bonded sand grains repeatedly to sharp impact made relative to a yieldable rubber-like surface to induce rebounding movement of the material and effect further impact and abrasion within the moving mass of material being subjected to said first-mentioned impact, thereby to separate the material into individual grains and simultaneously abrade the adhering bonding material therefrom, and separating the sand grains thus cleaned from the waste abraded bonding material.

3,312,404
GYRATORY CRUSHER AND METHOD OF CRUSHING AND GRINDING ORE
Walter R. Allen, P.O. Box 523, Leadville, Colo. 80461
Filed Mar. 19, 1964, Ser. No. 353,056
19 Claims. (Cl. 241-215)

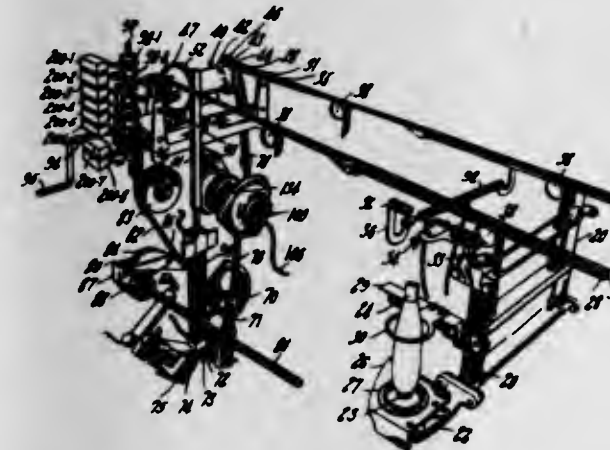
17. A gyratory crusher for wet or dry size reduction of solid material comprising a stationary upright housing for progressively passing a flow of solid material, inclusive of an inverted bowl member having a central inlet portion forming an intake of the housing and lower side walls for confining material flow, means inclusive of an outwardly extending circumferential flange on the exterior surface of the bowl member and flange-encompassing means for supporting the bowl member for rotary and lateral movement, a rotor disposed within the housing and mounted for gyratory rotation on a rotor support means disposed within the housing, said rotor having its top surface below and adjacent said central inlet portion, said rotor and bowl member having outwardly and downwardly inclined facing surface portions defining a material treatment zone with the inclined surface portion of the rotor disposed in underlying relation to the inclined

surface portions of the bowl member, a circumferentially disposed liner assembly attached to the inclined surface portion of the rotor, a circumferentially disposed liner assembly attached to the inclined surface portion of the bowl member, means for imparting rotation to the rotor, whereby the outer surfaces of the rotor liner assembly move in close clearance with the facing surfaces of the



bowl liner assembly at points in each cycle of revolution, and solids introduced through the central inlet are subjected to a progression of impacts in the upper portion of the treatment zone and substantially continuous attrition in the lower portion of the treatment zone by the gyratory movement of said rotor portion during the gravitational descent of the material to a point of discharge at the lower end of the treatment zone.

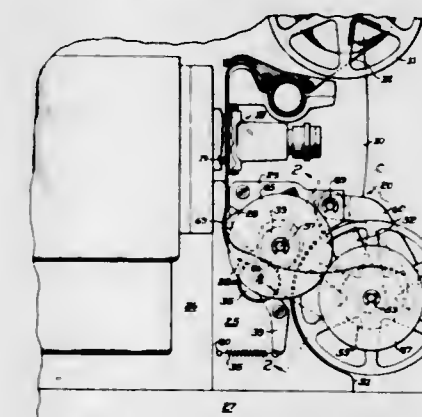
3,312,405
SPINNING FRAME CONTROL MEANS
Lester W. Fray, Gordon C. Anderson, and James Waddington, Clemson, S.C., assignors to Maremont Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 7, 1964, Ser. No. 402,108
13 Claims. (Cl. 242-26.4)



1. In a spinning frame and the like having means for building bobbins, including spindles, bobbins on said spindles, movable yarn traversing and guiding elements and means for rotating said spindles, in combination with control means and operating mechanism comprising:
means to produce traversing movement of said yarn traversing and guiding elements relative to said spindles and bobbins to build said bobbins, means operable when said bobbins are fully built automatically to shift said yarn traversing and guiding elements to a bottom winding position beyond the bobbins to wind yarn around the spindles,

means operable automatically to stop rotation of said spindles after winding yarn around said spindles, means operable automatically to shift said yarn traversing and guiding elements to a bobbin doffing position after stopping rotation of said spindles, means operable to start rotation of said spindles after replacing full bobbins with empty bobbins, means operable automatically to shift said yarn traversing and guiding elements to an initial bobbin winding position before rotation of said spindles substantially begins, and means operable automatically to jog said yarn traversing and guiding elements upon initiation of rotation of said spindles.

3,312,406
MOTION PICTURE PROJECTOR
Elmer C. Henriksen, Chicago, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 30, 1964, Ser. No. 363,816
11 Claims. (Cl. 242-55.11)

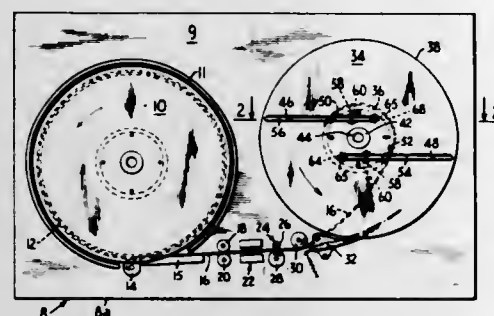


2. In a motion picture projector having means to feed film from the projection area thereof toward a take-up assembly powered solely by force exerted upon the film by said feeding means at said projection area, the take-up assembly including:
a film take-up means;
means to guide film into engagement with a rotatable member intermediate the feeding means and said take-up means;
said rotatable member being rotatable solely in response to engagement by said moving film as said film moves from said projection area; and
means operable between said rotatable member and said take-up means to transmit said rotary movement of said rotatable member to said film take-up means.

3,312,407
SELF-THREADING TAKE-UP REEL
Abraham A. Goldberg, Stamford, Conn., assignor to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York
Filed Jan. 14, 1965, Ser. No. 425,580
12 Claims. (Cl. 242-55.12)

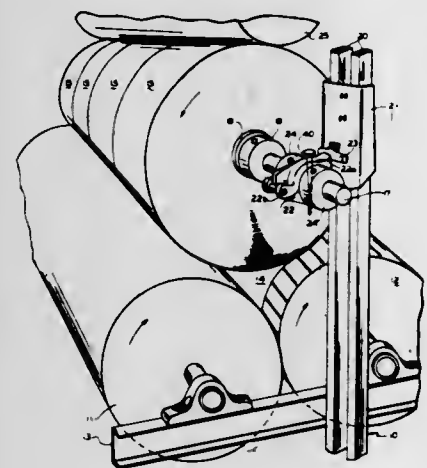
8. In a self-threading reproducing or recording apparatus, a supply reel adapted to carry a strip of tape, film or the like wound thereon, a driven take-up reel of the type described having at least one member carried by the reel and selectively movable between a first position in a strip-receiving space and a second position substantially external to said space, a leader at the lead end of the strip having a notch in an edge thereof adapted to be engaged by the member in the first position upon rotation of the take-up reel and advancement of the leader into said space and thereafter wound on the take-up reel, said member being moved to the second position by the engagement of the edge of the strip therewith, first drive

means for engaging and advancing the outer convolutions on the supply reel, capstan drive means for advancing the strip or leader, means for guiding the strip from the



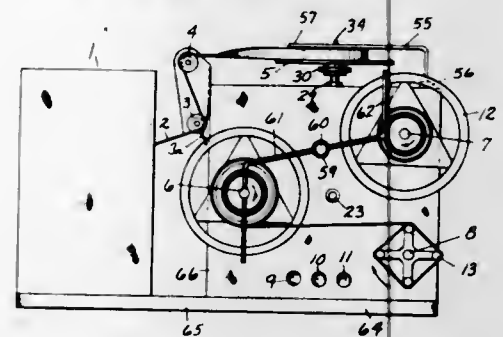
supply reel and into said strip-receiving space, and transducer means for recording or detecting the information on the strip.

3,312,408
LIVE COLLAR ASSEMBLY FOR WINDING MACHINES
Thomas M. Owens, Wanakena, N.Y. 13695
Filed Oct. 12, 1964, Ser. No. 403,317
1 Claim. (Cl. 242-66)



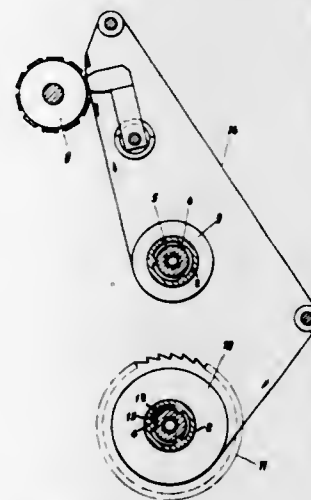
A high speed paper winding machine having a tubular core on which the paper is wound and a pair of rotatably driven winding drums for supporting the core and the paper thereon, a non-rotating shaft displaceable upward with respect to the drums; guide means at each end of the shaft for maintaining the shaft in alignment with the drums, the shaft being removably secured to the guide means; and a collar assembly at each end of the core securing the core coaxially on the shaft; each assembly including a collar member having a tubular portion frictionally and removably engaged coaxially within the core and having a radially-projecting thrust-resisting portion at the end of the core, and rolling member type bearing means having an outer race member secured coaxially within the collar member and having an inner race member slidably and coaxially mounted on the shaft, the inner race member having an annular portion projecting axially and externally of the collar member, a pair of semicircular clamp members forming a split annular ring about the shaft, screw means extending on either side of the shaft at a right angle to the shaft securing the clamp members together and removably securing them to the shaft, each clamp member having a portion overlying the projecting portion of the inner race, and pin means disposed radially on either side of the shaft and extending in a direction at a right angle to that of the screw means and pivotally securing the inner race member to the clamp members.

3,312,409
APPARATUS FOR REVIEWING PERFORATED TAPE FOR TYPESETTING MACHINES
Earl H. Hurley, 162 Maple Ave., Cotry, Pa. 16407
Filed Mar. 5, 1965, Ser. No. 437,455
4 Claims. (Cl. 242-67.1)



1. Apparatus for storing, rewinding and reviewing perforated tape for tape controlled typesetting equipment comprising a friction clutch driving member having a substantially vertical spindle and an upwardly presented friction surface, a friction clutch driven member resting on and driven by said surface, a plurality of reels, each reel having a hub adapted to be telescoped over said vertical spindle and to rest on said driven member, said driven member and hub having separable positive driving connections and said hub being driven by a friction force from said friction surface proportional to the weight of the tape wound on the reel and thereby taking up and storing the tape as received, a plurality of substantially horizontal spindles each adapted to receive the hub of any one of said reels in telescoping relation and each having a separable positive driving connection mating with the driving connection of the associated hub, clutch means for selectively driving each of the horizontal spindles in the same direction as said vertical spindle whereby tape wound on a first reel may be rewound on a second reel to place the tape in proper sequence and may then be wound from a second reel to a third reel to permit review of the tape for selecting the portions to be fed to tape controlled typesetting equipment.

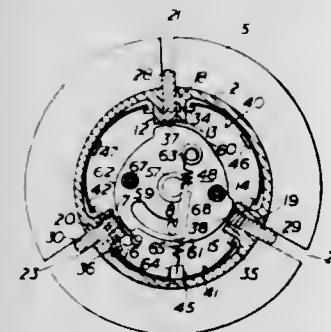
3,312,410
TAPE WINDING APPARATUS
Otto Strothmann, Ummeln, Germany, assignor to Anker-Werke Aktiengesellschaft, Bielefeld, Germany, a corporation of Germany
Continuation of application Ser. No. 340,760, Jan. 28, 1964. This application Feb. 1, 1966, Ser. No. 536,483
Claims priority, application Germany, Feb. 2, 1963, A 42,232
4 Claims. (Cl. 242-67.3)



1. Apparatus for winding data tape in business machines comprising a supply spool assembly and a take-up spool assembly spaced from said supply spool assembly

and adapted to be wound with data tape carried by said supply spool assembly, each of said spool assemblies having journal-forming structure and a tape-spool body coaxially engageable with said structure, the spool bodies of said take-up and said supply spool assemblies being of substantially similar construction and having a plurality of elastically yieldable projections extending radially inwardly from the inner surface thereof, the projections of said spool body in said supply spool assembly being in yieldable frictional engagement with the peripheral surface of the respective journal-forming structure, and the journal-forming structure in said take-up spool assembly comprising a tubular body having a plurality of radially inwardly extending depressions, the projections of the respective spool body being in locking engagement with said depressions.

3,312,411
HUB FOR RELEASABLY HOLDING A REEL
Isidorus D. M. F. Mertens, Niel, Belgium, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed June 2, 1965, Ser. No. 460,643
Claims priority, application Netherlands, July 13, 1964, 6,407,957
10 Claims. (Cl. 242-68.3)

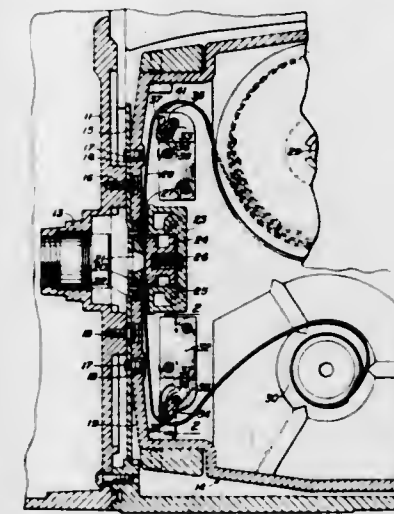


1. A hub for releasably holding a reel, such as a magnetic tape reel, comprising a housing having an external supporting surface for said reel and being adapted to be secured to a rotatable shaft, a plurality of pawls carried by said housing and capable of being moved in only a radial direction with respect to said housing, said pawls each having an outer surface for engaging a supporting surface of said reel, and resiliently-biased, snap-acting; displacement means including a rotatable knob and adapted to engage said pawls with said reel and to urge said pawls out of engagement with said reel, said resiliently-biased, snap-acting displacement means having a first stable position and a second stable position and including at least one cam able to be pivoted by said knob about a pivot axle from said first stable position to said second stable position and mounted in said housing in such a manner that when said cam is pivoted into second stable position it moves said pawls into engagement with said reels.

3,312,412
FILM CONTAINER
Arthur C. Mueller, Niles, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Feb. 17, 1964, Ser. No. 345,179
3 Claims. (Cl. 242-71.2)

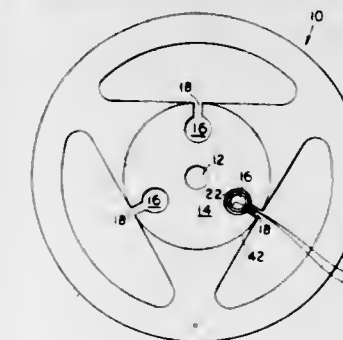
1. In a reversible film container, adapted for use in combination with a motion picture camera, using film of a size such that only one longitudinal half of the film is exposed at a particular time, said container including a casing physically co-operable with said camera in a first position as to one longitudinal half of the film and in a reversed position as to the second longitudinal half of the film, two adjacent spindle means that alternately serve as film supply and film take-up means respectively, and means in the container co-operable with means in

the camera to form a film exposure gate positioned in the film path between said spindle means, the improvement comprising: a pair of movable engaging members, means mounting said engaging members to the casing for selective movement between an active position, whereby contact with film causes a snubbing action on the film, and an inactive position, whereby the film does not normally engage said movable members, one of said film en-



gaging members being located between the film supply spindle and the entrance to the film exposure gate and being moved to said inactive position during film transport, and the other of said film engaging members being located between the exit of the film exposure gate and the film take-up spindle, and being moved to said active position during film transport, whereby reversing the position of the container effects a reversal of the respective positions of both film engaging means.

3,312,413
AUTOMATIC TAPE THREADER
Albert A. Bernstein, 49 Cranberry St., Brooklyn, N.Y. 11201
Filed June 17, 1965, Ser. No. 464,600
3 Claims. (Cl. 242-74.2)



1. An automatic tape threader for a take-up reel having a plurality of angularly spaced openings, one of said openings having a slot for receiving a tape end comprising body portion having a tape receiving slot, a pair of lips joined to said body portion and in communication with the edges of said tape receiving slot for closing said tape receiving slot, a neck portion formed at the junction of said body portion and said lips such that when a tape end is inserted in said body portion through said tape receiving slot said lips are pressed closed and the neck portion is inserted in the slot of said take-up reel with the body portion seated in said opening, and a ridge around said body portion allowing said automatic tape threader to be removed easily from said opening and said slot, said neck portion being maintained closed by the slot thereby threading said tape end in said take-up reel and fixing said tape end in position.

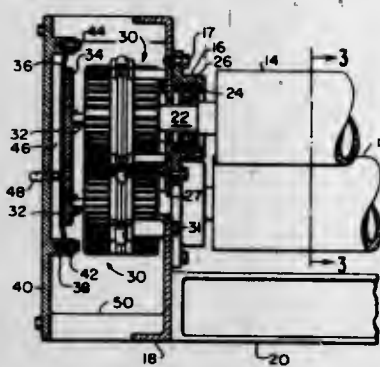
3,312,414

WEB TENSIONING DEVICE

George P. Knapp, Waban, Mass., assignor to Mount Hope Machinery Company, Taunton, Mass., a corporation of Massachusetts

Filed Jan. 21, 1965, Ser. No. 429,942

9 Claims. (Cl. 242-75.2)



1. A web tensioning device comprising in combination: three parallel tensioning rolls triangularly arranged for serial wrapping by a traveling web, a plurality of disc brakes each comprising a least one element drivingly connected with one of said rolls and at least another relatively movable element for frictionally engaging said one element, each of said brakes being aligned with the axis of the connected roll, brake-actuating means comprising a spider pivotally engaging said other element of each brake on an individual center located on the axis of the connected roll for simultaneously applying an actuating force to each of said brakes, and means engaging said spider at the center of gravity of a triangle defined by said individual centers for applying a resultant brake-actuating force at said center of gravity, whereby equal actuating forces are applied to each brake.

3,312,415

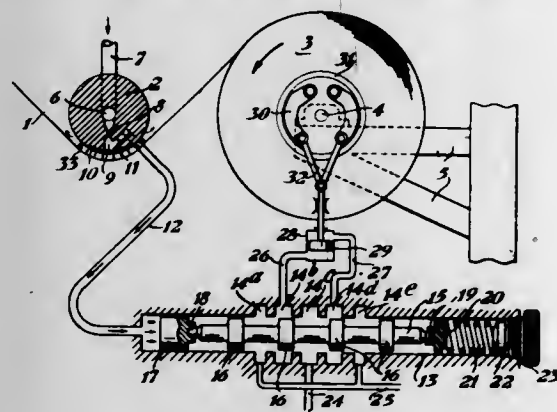
MEANS FOR CONTROLLING THE TENSION OF A WEB

Michael Anthony Jeans, Dorking, Surrey, England, assignor to The Printing, Packaging and Allied Trades Research Association, Leatherhead, Surrey, England, a corporation of the United Kingdom

Filed Mar. 3, 1965, Ser. No. 436,803

Claims priority, application Great Britain, Mar. 9, 1964, 9,837/64

10 Claims. (Cl. 242-75.43)



1. A tension sensing device which comprises a fixed elongated body, round which a travelling web is guided, formed with an opening in its surface, said opening communicating with a source of fluid under pressure through at least one restricted passage situated within said elongated body closely adjacent to said opening and being adapted to provide a fluid cushion between the web and the surface of the elongated body, thereby holding the web away from the surface, and pressure detecting means in communication with means being a part of the fluid cushion.

3,312,416

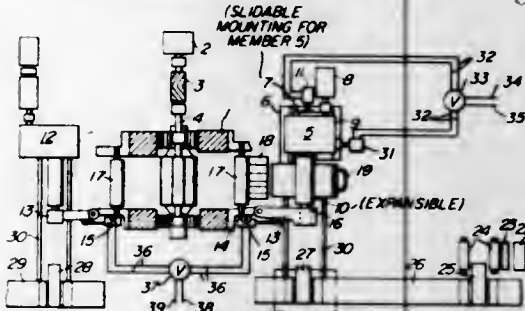
COLD ROLLING APPARATUS

Toshiyuki Kajiwara, 1654 Narumawacho, Hitachi-shi, Japan

Filed Mar. 8, 1965, Ser. No. 437,950

Claims priority, application Japan, Mar. 10, 1964, 39/13,053

5 Claims. (Cl. 242-78.1)



1. A cold rolling apparatus comprising a rolling mill, a coiler disposed on the rear side of said rolling mill, a combination coiler and uncoiler disposed on the front side of said rolling mill, a drum rotatably mounted at one end on a portion of said combination coiler and uncoiler for taking up thereon and paying off therefrom a coil by the rotation thereof, said drum including means for selectively step-wise varying its outside diameter in the radial direction, means operatively associated with said combination coiler and uncoiler for moving said drum to align the center of the coil about said drum with the center of the passage in said rolling mill, means for braking said combination coiler and uncoiler in place to prevent any vibration of said combination coiler and uncoiler during the take-up and pay-off operation of the coil, said braking means being hydraulically actuated to brake said combination coiler and uncoiler in position and to release it from the braked position, and means for supporting the other end tip of said drum against deflection.

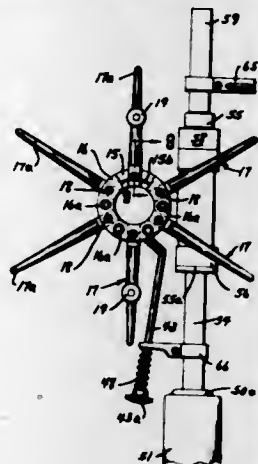
3,312,417

FISHING REEL

Adelbert L. Thompson, 2217 Bellemeade Ave., Evansville, Ind. 47714

Filed June 18, 1962, Ser. No. 205,172

1 Claim. (Cl. 242-84.1)



A rotatable casting reel for a fishing rod comprising removable line-bearing members, a hub, a clamp having spaced apart multi-sided openings therein cooperating with a surface of said hub to receive the end of each of said removable line-bearing members, said removable line-bearing members being positioned radially with respect to the axis of said hub, means retaining said hub and said clamp in assembled relationship, at least one surface of said multi-sided opening and at least one surface of said end of said removable line-bearing member having complementary locking portions, and individual means laterally extending into said hub to secure said

end of each of said removable line-bearing member within said multi-sided openings, said end of said removable line-bearing member having a shape in cross-section corresponding to said multi-sided opening.

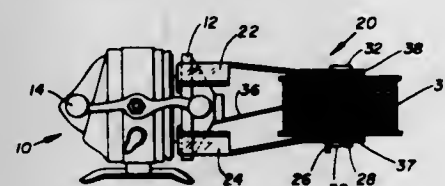
3,312,418

FISHING LINE APPLICATOR

John S. Haddock, 2646 E. 34th St., Tulsa, Okla. 74129

Filed Apr. 23, 1964, Ser. No. 362,123

6 Claims. (Cl. 242-85)



3. A device for transferring line from a bulk spool onto a stationary spinning reel spool of the type using a pickup cylinder revolvable coaxially about said spool comprising:

- a frame;
- a plurality of arm means longitudinally extending in one direction from said frame and having arcuate terminal ends arranged in a circular outline around a first axis for attachment to said pickup cylinder for rotation therewith;
- said frame carrying a shaft for said bulk spool, said shaft being generally perpendicular to said first axis and substantially within an extension of said circular outline along said first axis.

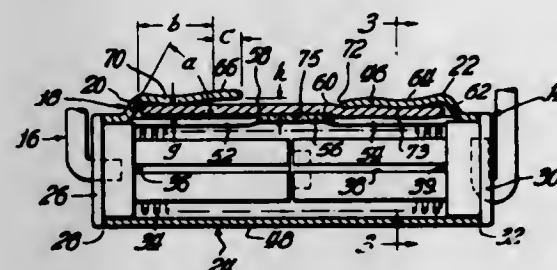
3,312,419

FASTENING MEANS FOR SEAT BELT RETRACTOR

Ernest A. Ferris, Elmhurst, and Stephen J. Zanol, Glen Ellyn, Ill., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed July 13, 1964, Ser. No. 382,300

9 Claims. (Cl. 242-107.11)



1. In a vehicle safety belt retractor of the type having an elongated energized tubular reel having means carried by the periphery of the reel for attaching the belt to the periphery of the reel, said means including tabs struck from the periphery of the reel, each of said tabs including a first base portion extending generally radially from the periphery of the reel adjacent one terminal of the said reel, said first portion being inclined toward the remote terminal of said reel and the other tab at an acute angle to the axis of the reel, a second portion generally parallel with the periphery of the reel merging with the terminal of the first portion and a third axially inwardly located terminal portion merging with said second portion and extending radially outward of said first portion, said tab being effective to receive one side of a safety belt between the inner surface of the tab and the periphery of said reel such that when said tab is moved radially inwardly to clamp said belt to the periphery of said reel said angle is reduced and said second and third portions are moved into a position closer to the general axis of

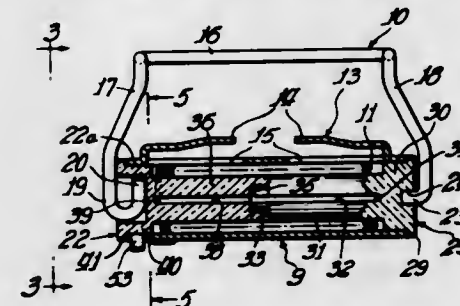
3,312,420

TORSION PRE-LOAD MEANS

Raymond J. Boedigheimer, Chicago, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Continuation of abandoned application Ser. No. 335,026, Jan. 2, 1964. This application Nov. 26, 1965, Ser. No. 514,754

9 Claims. (Cl. 242-107.11)



1. In a retractor mechanism for rolling up a section of flat belt including a reel adapted for connection to a bight portion of said belt, a reaction member mounted for rotation with respect to said reel having a portion thereof spaced from the axis of said reel adapted to bear on said belt, and a torsion spring having one end thereof anchored to said reel and having the other end thereof adapted for connection to said reaction member, the improvement comprising: drive means connected between said reaction member and said other end of said spring, said drive means being provided with a cam surface and a stop surface; and clamp means disposed about said reel and fastened against relative rotation with respect thereto, said clamp means including a stop element having sliding engagement with said cam surface permitting winding of said spring in one direction, said stop element being engageable with said stop surface in the other direction preventing unwinding of said spring.

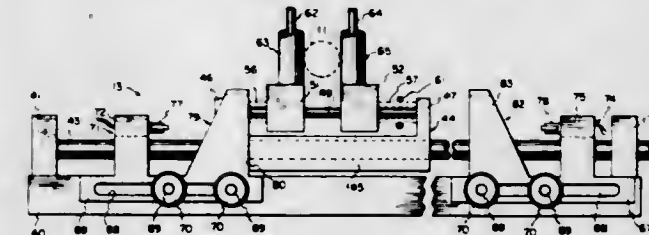
3,312,421

DELAYED RETURN DISTRIBUTOR

Robert A. Kerr, Lachine, Quebec, and Stanley G. Wickham, Montreal, Quebec, Canada, assignors to Northern Electric Company, Limited, Montreal, Quebec, Canada

Filed June 7, 1965, Ser. No. 461,991

14 Claims. (Cl. 242-158.4)



1. A machine for winding a cable in successive layers upon a rotating reel drum, comprising guide means for distributing the cable along said drum, means for driving the reel drum and the guide means in timed relationship, means for reversing the direction of motion of the guide means, and means driven solely by said reel drum for causing the guide means to dwell at the direction reversal point for rotation of the reel drum through a predetermined angular distance independently of the time required for said rotation through said predetermined angular distance in order to ensure smooth transition of the cable from layer to layer.

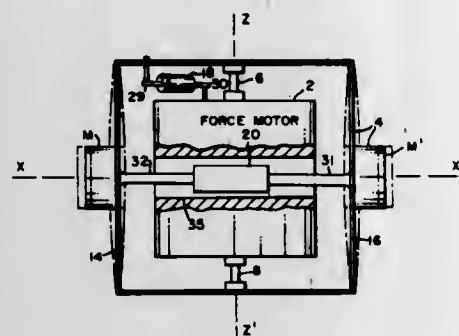
3,312,422

SATELLITE CONTROL APPARATUS

Arthur L. Simmons, David W. Roese, and John J. Buckley, Baltimore, Md., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 28, 1961, Ser. No. 127,675

5 Claims. (Cl. 244-1)



1. In satellite control apparatus for regulating either one of the angular velocity and orientation of a satellite in space the combination of, a gimbaled member rotatably mounted in relation to said satellite, means connected between said member and said satellite to provide rotation of said member with respect to said satellite in an oscillatory manner between predetermined limits of angular rotation and inertia means acting in cooperation with said member to change the angular moment of inertia of said member in correlation to the angular rotation of said member.

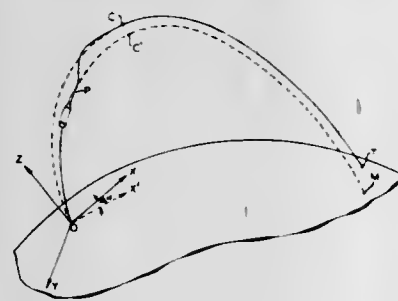
3,312,423

INERTIAL GUIDANCE SYSTEM WITH STELLAR CORRECTION

Elvin C. Welch, Culver City, Calif., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 10, 1962, Ser. No. 222,509

2 Claims. (Cl. 244-3.18)



1. The method of providing cross-range inertial guidance for a missile from a launch point to a selected target with a probable error less than a predetermined value, said missile including an inertial measurement unit including accelerometers which define a first coordinate system and including a star scanner with an optical axis which may be displaced in azimuth with reference to the measurement unit, said method including the steps of aligning the measurement unit with the vertical direction at the launch point, aligning the measurement unit in azimuth with an accuracy that may be insufficient to permit cross-range guidance with a probable error less than said predetermined value, positioning the star scanner so that its optical axis has an azimuth angle, with reference to said first coordinate system, which is equal to the azimuth of a selected star, launching the missile and steering it in accordance with signal quantities derived from

the accelerometers with reference to the first coordinate system in a desired trajectory until the earth's atmosphere has a negligible effect on the optical path between the selected star and the star scanner, displacing the star scanner in azimuth through a scanning angle sufficient to cause its optical axis to be aligned with the selected star, transforming the coordinates of the signal quantities derived from the accelerometers to a second coordinate system which is displaced in azimuth from the first coordinate system by the displacement required to cause the optical axis of the star scanner to be aligned in azimuth with the selected star, and steering the missile in accordance with the transformed coordinates of the signal quantities whereby the azimuth alignment error will be corrected to permit cross-range guidance with a probable error less than the predetermined value.

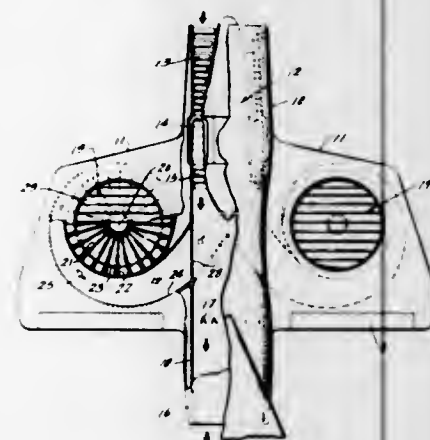
3,312,424

VTOL AIRCRAFT

Peter G. Kappus, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Original application Sept. 6, 1957, Ser. No. 682,327, now Patent No. 3,176,934, dated Apr. 6, 1965. Divided and this application Feb. 18, 1964, Ser. No. 345,713

The portion of the term of the patent subsequent to Apr. 6, 1962, has been disclaimed

1 Claim. (Cl. 244-12)



An aircraft which comprises, in combination, a supporting wing provided with a duct extending throughout it and substantially at right angles thereto, a lift producing rotor journaled in said wing coaxially with said duct and on the inside thereof, a gas operated motor operatively connected with said rotor for driving it, a reaction nozzle carried by said aircraft and extending in the fore-and-aft direction thereof, means carried by said aircraft by producing power gas, means for connecting the output of said power gas producing means either with said motor for driving said rotor or with said nozzle for jet propulsion from said nozzle, and a control flap mounted on the trailing edge of said wing, and a tail unit extending behind the rear edge of the wing and having elevator means thereon.

3,312,425

AIRCRAFT

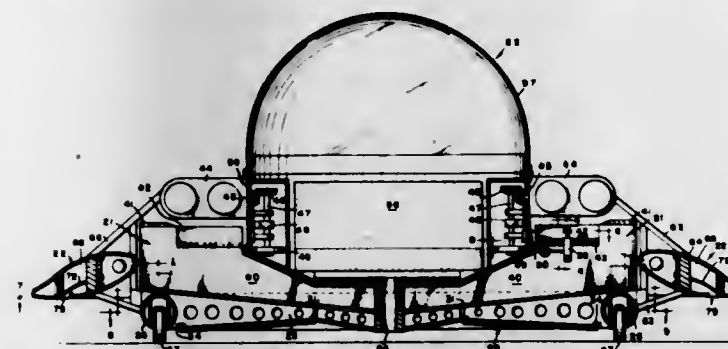
Clarence D. Lennon, 1014 12th Ave., St. Petersburg, Fla. 33705, and Robert G. Varner, Box 823, Rte. 1, Palm Harbor, Fla. 33563

Filed Oct. 12, 1965, Ser. No. 495,172

10 Claims. (Cl. 244-12)

1. An aircraft comprising a circular base, a control station mounted on said base, an impeller assembly rotatably mounted on said base, for rotation about said control station, a lift-producing air-foil circumferentially positioned around said impeller assembly, said airfoil being provided with an air intake slot inboard thereof, ad-

jacent the outer extremity of said impeller assembly, a horizontal thrust orifice in the outer periphery of said airfoil, a vertical thrust orifice in the lower portion of said airfoil, means for selectively directing air to the



horizontal thrust orifice and vertical thrust orifice, and power means for actuating said impeller assembly, to direct air substantially radially over and through said airfoil.

3,312,426

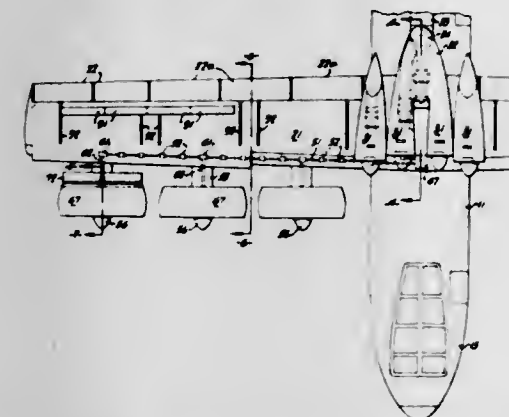
CONVERTIBLE VTOL AIRCRAFT

Harlan D. Fowler, P.O. Box 304,

Burlingame, Calif. 94010

Filed July 13, 1966, Ser. No. 564,885

20 Claims. (Cl. 244-12)



1. In a V/STOL aircraft, a fuselage, a wing extending to either side of said fuselage, at least two engines mounted centrally of said aircraft above said wing and on opposite sides of said fuselage and outside said fuselage, at least one centerbody on each side of said wing, a propeller mounted on said centerbody, a transmission system from said engines, along said wings to drive said propeller, a slotted flap movable between retracted position and projected position, each said wing heaving a cavity to receive said flap in retracted position, a rigid, pivotal deflector wing, and means pivotally mounting said deflector wing on the rearmost end of said centerbody for pivotal movement between a retracted, substantially horizontal position and a projected substantially vertical position, said flap and deflector wing when both in projected position forcing the slipstream of said propeller substantially downward.

3,312,427

BALLOON STRUCTURE WITH LAUNCHING CELLS

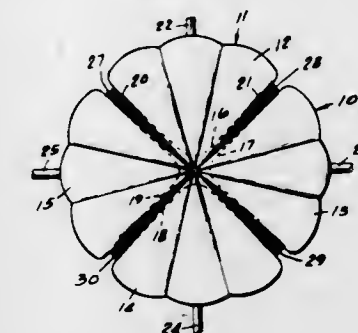
Paul E. Yost, Sioux Falls, S. Dak., assignor to Raven Industries, Inc., Sioux Falls, S. Dak., a corporation of South Dakota

Filed Mar. 8, 1965, Ser. No. 437,723

8 Claims. (Cl. 244-31)

1. A high altitude balloon structure for carrying a load aloft comprising in combination, a balloon envelope formed of a lightweight thin flexible material being of a size to support a load at high altitudes,

said envelope being inflatable with a small volume of lifting gas at the upper end to carry it aloft at launching and lower altitudes with the gas expanding to fill the balloon envelope at higher altitudes,



a plurality of separate gas containing cells spaced circumferentially apart and located laterally of the balloon axis being at the upper end of the envelope, said cells coactingly supporting a grouping of balloon envelope folds suspended between adjacent cells so that the excess material is distributed at launch preventing excess stress, and means for supporting a load from the lower end of the balloon envelope.

3,312,428

EXTENSIBLE AIRPLANE WINGS

Joel B. Guin, 148 E. 48th St., New York, N.Y. 10017

Filed Sept. 27, 1965, Ser. No. 490,449

3 Claims. (Cl. 244-43)



1. Auxiliary para-wings for airplanes to improve their safety and economy by enabling them to take off, fly, glide, maneuver, and land over a broad range of slow speeds, comprising:

two drum beams each mounted within and attached to the surface of the fuselage of an airplane near one of the walls thereof;

two drums each designed to have one para-wing wound upon it and rotatably mounted upon one of said drum beams;

two series of rollers, each series designed to have one of the para-wings roll over it as it is extended and retracted, and rotatably mounted upon one of the inner walls of the fuselage;

two horizontal wing slits, each cut through one wall of said fuselage for the passing of the para-wing through it;

two vertical beam slits for passage of telescoping beams, each cut through the wall of said fuselage near the aft end of one of said horizontal wing slits;

two telescoping beams, each extensible and retractable, each made of several telescoping sections, and rotatably mounted upon a hinged shaft within a mechanical activation unit located near the bottom of said vertical beam slits through which it swings outward as it is extended, and being fastened by its outer end to the aft end of one of two outer beams;

two mechanical activation units, electrically powered, each mounted upon the inner surface of said fuselage near the bottom of one of said vertical beams, and having attached to a hinged shaft within, the lower end of one of said telescoping beams, the unit being designed to extend and retract said telescoping support beam through said vertical beam slit;

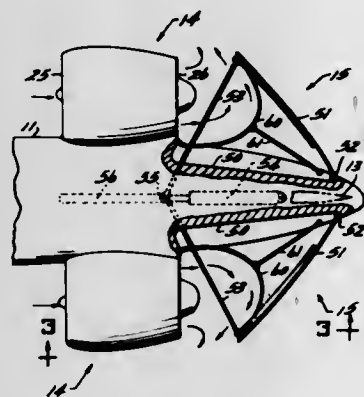
two triangular para-wings, each attached to an outer beam which is movably attached at the triangle's apex to the side of said fuselage near the front end of said horizontal wing slit, having support beams running through it from its apex to its base, having its base edge wound upon one of said drums when not extended, and having its outer beam attached to the outer section of said telescoping beam;

all components working together so that when said mechanical activation unit (one on each side) is alerted, it begins to extend said telescoping beam and through it said outer beam attached to the outer end thereof, thus unwinding said para-wing till it is fully extended and locked in position; the reverse procedure being used to retract the para-wing and rewind it on the drum.

3,312,429

LIGHTWEIGHT THRUST REVERSER

Thomas Nell Hull, Jr., Marblehead, and William Bruce Gist, Jr., Lynnfield, Mass., assignors to General Electric Company, a corporation of New York
Filed May 19, 1965, Ser. No. 456,921
9 Claims. (Cl. 244-53)



1. An aircraft assembly comprising: an airframe including a fuselage and a tail section; a pair of propulsion units of the fan type mounted on said fuselage upstream of said tail section, said units symmetrically located on opposite sides of said fuselage in a common horizontal plane, and a pair of lightweight thrust reversing means each associated with a respective one of said propulsion units for deflecting a stream of relatively low temperature and low pressure motive fluid discharged by the propulsion unit, each of said lightweight thrust reversing means comprising:

a substantially rigid panel covering a recess formed in said fuselage adjacent the propulsion unit to form with said fuselage a continuous uninterrupted aerodynamic surface,

means pivotally connecting the downstream end of said rigid panel to said fuselage, actuating means connected to said fuselage and to said rigid panel for pivoting said panel outwardly from said fuselage to an extended position extending across the normal path of an unobstructed fluid stream discharged from the propulsion unit,

a flexible panel connected to said fuselage and to the upstream end of said rigid panel,

said flexible panel forming a smoothly curved wall when said rigid panel is in said extended position and a

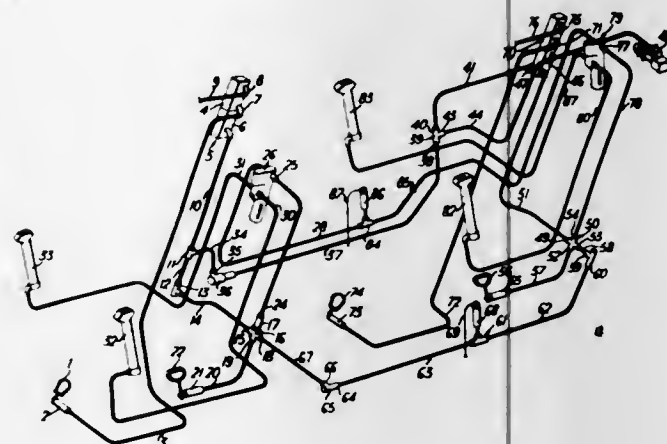
stream of motive fluid is being discharged by the propulsion unit to impinge on said flexible panel, the smoothly curved wall deflecting the stream of motive fluid from the normal rearward direction to a deflected direction having a substantial forward component to thereby produce reverse thrust on the aircraft,

and retraction means connected to said fuselage and to said flexible panel for retracting said flexible panel into said recess when said rigid panel is moved from said extended position to its position covering said recess.

3,312,430

MULTIPLE EJECTION SEAT INSTALLATIONS

James Martin, Southlands Manor, Southlands Road, Denham, near Uxbridge, England
Filed Sept. 10, 1965, Ser. No. 486,470
Claims priority, application Great Britain, Sept. 11, 1964, 37,370/64; Nov. 27, 1964, 48,232/64
7 Claims. (Cl. 244-122)



1. An ejection seat installation for ejecting a captain's ejection seat and a crew ejection seat, comprising

(1) a pressure fluid circuit having a first branch and a second branch;

(2) a first pressure fluid generating device in the first branch;

(3) a first operating means operable from the captain's ejection seat for generating pressure fluid in said device, said pressure fluid flowing into the first branch;

(4) a first coupling in the first branch having an inlet port and two outlet ports, the inlet port receiving the pressure fluid from the first pressure fluid generating device;

(5) a first conduit leading from one of the outlet ports to an ejection initiating mechanism for the captain's ejection seat;

(6) a second coupling in the first branch having two inlet ports and an outlet port, one of the inlet ports of the second coupling receiving pressure fluid from the other outlet port of the first coupling;

(7) a second conduit leading from the outlet port of the second coupling to an ejection initiating mechanism for the crew ejection seat, whereby operation of the first operating means initiates ejection of the captain's and the crew ejection seat;

(8) a second pressure fluid generating device in the second branch; and

(9) a second operating means operable from the crew ejection seat for generating pressure fluid in the second pressure fluid generating device, said pressure fluid flowing into the second branch and the other inlet port of the second coupling receiving the pressure fluid.

3,312,431

CRASH-ACTUATED CLOSURE VALVE

Clarence L. Vogt, Burbank, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Aug. 3, 1959, Ser. No. 831,426
12 Claims. (Cl. 244-135)



9. In an aircraft, the combination comprising a fluid containing cell mounted in the craft and adapted to resist rupture if torn from a predetermined portion of the craft by a crash, said cell having an opening in one of its walls through which fuel may flow, a valve operable to close said opening, means yieldingly urging said valve toward closed position; releasable holding means normally retaining said valve in open position and actuatable between active and released positions, and automatic actuating means for releasing said holding means and operatively connected to said predetermined portion of the aircraft in a relation to release the holding means and allow closure of the valve in response to crash induced displacement of the cell relative to said predetermined portion of the craft, said holding means when in said active condition being positioned and constructed to resist the valve closing force of said yielding means without transmitting said force to said actuating means, said holding means including a hollow stem projecting from said valve, at least one latch part movably mounted within an aperture in a side wall of said stem, a shoulder engageable by said latch part to hold the valve in open position, and a spring pressed plunger in said stem controlling said latch part and actuatable by said actuating means.

3,312,432

MOBILE STAND

Joseph J. Pfeiffer and Harold M. Peterson, both of Kirkland, Wash., assignors to ReDeMan Corporation, Kirkland, Wash., a corporation of Washington
Filed May 20, 1965, Ser. No. 457,267
11 Claims. (Cl. 248-13)



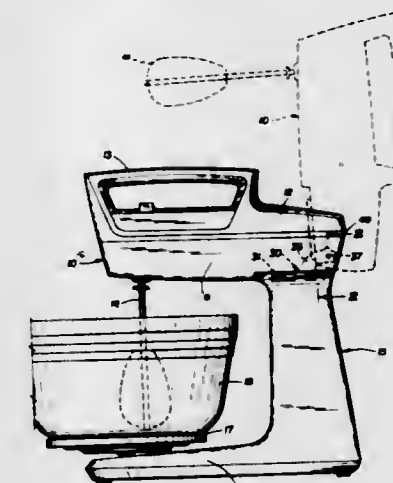
1. In combination with a standard, a mobile base therefor comprising: two sets of rings mounted upon the standard for rotating about a coinciding vertical axis, each set independently of the other, with each set comprising a lower ring located adjacent the bottom of the standard and an upper ring spaced a substantial distance above said lower ring, sets of legs for each set of rings extending radially from the rings at equidistantly spaced intervals of the circumference, each of the legs which are related to one set of rings occupying the space between two adjacent legs related to the other set of rings, each leg having an upper arm and a lower arm jointed in each instance to provide an inner section which is attached to the respective ring and an outer section which is hingedly connected to the inner section for adjusting swing motion about a vertical axis paralleling the rotary

axis of the rings, the hinge axes for said articulating sections of the upper and lower arms of a leg coinciding a respective ground-engaging foot attached to the outer ends of the two outer arm sections of each leg, means for setting the outer arm sections of each leg in a selected angularly adjusted position relative to the inner arm sections, a linking connection between the hinge of each of said legs which are related to one set of rings and the hinge of an adjacent leg related to the other set of rings, said linking connection comprising two meeting links hingedly joined for adjusting swing motion about a vertical axis paralleling the hinge axes of the linked legs, and means for setting said hingedly connected links in a selected angularly adjusted position.

3,312,433

MEANS FOR MOUNTING A FOOD MIXER ON A STANDARD

Robert M. Peterson, Racine, Wis., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Aug. 9, 1965, Ser. No. 478,082
7 Claims. (Cl. 248-13)



1. In combination with a food mixer and a standard, means for removably mounting the mixer on the standard comprising

(a) a first latching member mounted in the upper end of the standard,

(b) a second latching member mounted on the mixer,

(c) a pivot bracket having a base and an arm rising from the base,

(d) means pivotally connecting the bracket arm to the mixer,

(e) means on the bracket base engaged by said first latching member, and

(f) means on the bracket arm engaged by said second latching member for retaining the mixer in a selected position relatively to the standard.

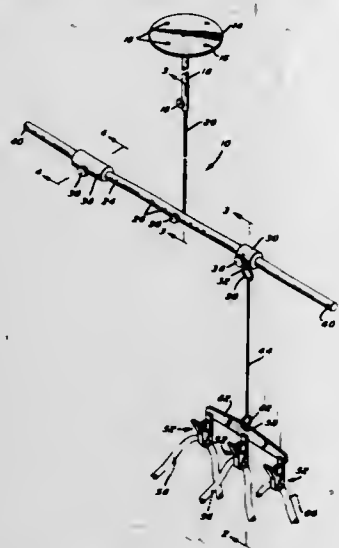
3,312,434

CORD HOLDER

Samuel Simon, Poughkeepsie, N.Y., assignor to Proxit Service Corporation, Wappingers Falls, N.Y.
Filed Apr. 28, 1965, Ser. No. 451,403
1 Claim. (Cl. 248-62)

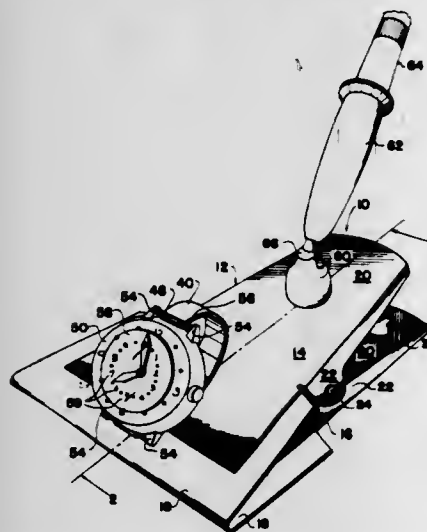
A cystoscope cord holder comprising a mounting rod, means for mounting said mounting rod in a vertical position, a supporting rod pivotally mounted between its ends on the bottom end of said mounting rod for pivotal movement in a vertical plane, a hanger sleeve surrounding and slidable on the supporting rod at one side of the axis of pivotation of the supporting rod, a set screw threaded through said hanger sleeve and engaging said supporting rod so as to secure the hanger sleeve to the supporting rod

at any desired position along the supporting rod, a hanger rod pivotally connected to said hanger sleeve, a hanger plate pivotally secured to the bottom end of the hanger rod, a plurality of cord holding clips secured to said hanger plate in spaced relation to each other, a counter-



weight sleeve slidably mounted on said supporting rod at the other side of the axis of pivotation of said supporting rod, and means for securing said counterweight to the supporting rod at any desired position along the supporting rod.

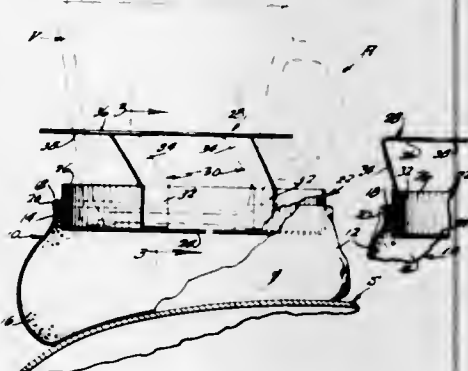
3,312,435
MOUNTING MEANS
Harold H. Malone, 702 Bitting Bldg.,
Wichita, Kans. 67202
Filed Sept. 8, 1964, Ser. No. 394,886
7 Claims. (Cl. 248-115)



1. A watch mounting device comprising, a clip having upper end lower pivotally joined opposed members, each member having a broad jaw portion, a flat extending lever portion opposite said jaw portion, and two opposite depending flanges on said extending lever portion having aligned apertures, a shaft having end portions positioned in said aperture in said flanges pivotally connecting said members in assembled relation, a U-shaped leaf spring having end portions in engagement with said flat extending portions of said opposed members urging said jaws in closed position, a watch having a case, said case having mounted thereon two pair of spaced projections with aligned apertures therein, two watch band type attaching pins positioned in the apertures in the respective pairs of spaced projections, a mounting means for said watch secured to the jaw portion of the upper member of said clip, said mounting means comprising, a bowed resilient band-like metal element having a first outwardly positioned hook, a flat portion having an aperture, a relatively

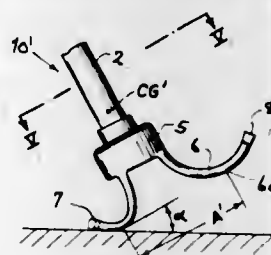
large bowed portion, and a second outwardly positioned hook, said first and said second hooks being positioned in engagement with said attaching pins of said watch, a rivet positioned in said aperture in said flat portion of said mounting means and an aperture in the jaw portion of said upper member securing said mounting member to said upper member, a holder mounted on said flat extending portion of said upper member, said holder having an upwardly extending base secured to said upper member having a ball socket, a rivet connecting said base, said upper member, and one leg of said spring in assembled relation, a tubular shaped element to receive a pen or the like having a ball element on the lower end thereof positioned in adjustable relation in said ball socket, said mounting device adapted in use to be releasably attached to a writing board, pad of paper, or the like, to maintain said watch, and a pen, pencil or the like in said holder in convenient and accessible position.

3,312,436
VESSEL HOLDER
Raymond A. Beghetto, Jr., 113 W. 6th Ave.,
Cheyenne, Wyo. 82001
Filed July 9, 1965, Ser. No. 470,855
6 Claims. (Cl. 248-145)



1. A device of the character described, comprising a pan-shaped receptacle having a bottom wall and an upstanding side wall, a vessel receiving guard supportably engaged on the receptacle and upstanding therefrom, said guard having a horizontal guard plate spaced above the receptacle, said guard plate being formed with a vessel accommodating opening which is eccentrically-located relative to the receptacle, and a base upon which the receptacle is removable mounted.

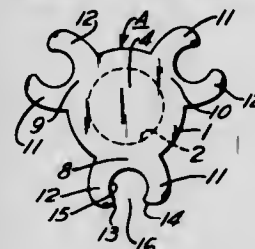
3,312,437
TILTED STOOL
Otto Barth, deceased, late of Paris, France, by Valerie Barth, legal representative, Innstrasse 15, Vienna, Austria
Filed Oct. 23, 1965, Ser. No. 504,256
Claims priority, application France, Mar. 24, 1961, 856,741, Patent 1,292,400
2 Claims. (Cl. 248-150)



1. A tiltable stool comprising a weighted base, a column rising centrally from said base and a seat supported on said column; said base being provided with a central boss having at least three peripherally spaced, generally radially extending legs with a downwardly con-

vex curvature whose nadirs normally contact the floor, said legs having substantially straight outward extensions beyond said nadirs which are tilted upwardly for supporting the stool in a semi-stable position of inclination of said column in which said base rests on the floor by the outward extensions of two adjoining legs.

3,312,438
SUPPORT FOR TABLE LEGS AND THE LIKE
Daniel A. Goetz, Mount Lebanon, and Milan Gruber, Alliquippa, Pa., assignors to Stylette Plastics, Inc., Oakdale, Pa.
Filed Nov. 29, 1965, Ser. No. 510,348
5 Claims. (Cl. 248-165)



1. In a table structure and the like having a horizontal top and at least two legs for carrying the top, each of said legs having a substantially vertically extending portion, said portions being laterally spaced apart from one another, the combination with said legs of at least one support for receiving and detachably retaining the legs in such spaced relation, said support being made of a resilient, semi-rigid material and comprising:

- (A) a base member; and
- (B) at least two socket-defining elements integral with the base member, each of said elements including a pair of arms which extend outwardly from the base member to form therebetween a substantially vertically extending socket for receiving and detachably engaging said vertically extending portion of a leg of the table, the outer ends of each pair of arms forming an opening into the socket and being spaced apart a distance not greater than the maximum cross-sectional dimension of said vertically extending portion of a leg which is to be inserted therebetween, such that when each of the legs is inserted into a socket in the support the arms of the socket detachably retain the legs therein to support the top of the structure.

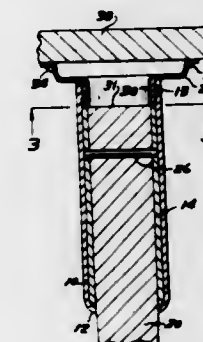
3,312,439
REMOVABLE INSERT FOR WIG CARRYING AND STORAGE CASE
Eugene A. Sweet, Bronx, and Ernest M. Kelly, Jamaica, N.Y., assignors to Miner Industries, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 25, 1964, Ser. No. 413,716
2 Claims. (Cl. 248-176)



1. A removable insert for a wig-carrying and storage case, comprising a flat base adapted alternatively to rest in the case and on a supporting surface, means on said base for supporting a wig-carrying head form, at least one suction cup, said base having an opening through which said suction cup extends for engagement with a supporting surface below the base, means attaching said suction cup to said base while permitting relative move-

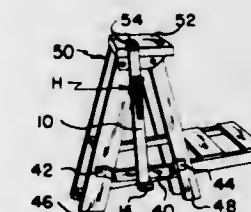
ment of said cup and base in the direction perpendicular to the plane of the flat base, said opening being substantially circular and having an edge close to said cup along a major portion of the periphery of the cup, and said edge of the opening having a recess through which the suction cup can be manually released from engagement with a supporting surface below the base.

3,312,440
ADJUSTABLE LEG
Walter Zelony, 6670 Berwyn, Dearborn Heights, Mich. 48127
Filed June 7, 1965, Ser. No. 461,798
2 Claims. (Cl. 248-188.8)



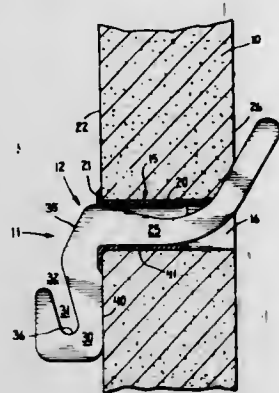
1. An adjustable leg comprising a tubular casing, a sleeve insert in the tubular casing having therein two longitudinal spiral slots and pairs of diametrically opposed longitudinally spaced bayonet slots communicating with the longitudinal slots, an elongated leg having one end thereof slidably located in the sleeve, a pin on the elongated leg slidably located in the longitudinal spiral slots, selectively engageable in a pair of the opposed bayonet slots and means for attaching the casing to a fixed support.

3,312,441
SUPPORT FOR LIQUID CONTAINER
Daniel A. Molenda, 7300 Julia Drive,
North Royalton, Ohio 44133
Filed June 13, 1966, Ser. No. 557,223
4 Claims. (Cl. 248-210)



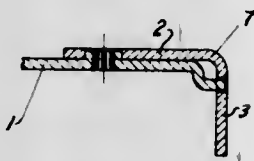
1. A holder for supporting liquid containers on ladders comprising, an elongated vertically-disposed bracket containing an outwardly extending lip on the lower portion thereof for detachably receiving the bottom flange on the lower end of an associated open-topped liquid container, an outwardly extending hook member disposed on said bracket and vertically slidable thereon for detachably hooking the upper rim of the container, attaching means for detachably securing the bracket to an associated ladder, said ladder being a step ladder, said attaching means including an elongated horizontally-disposed bar secured to the lower end of the bracket, the ends of said bar having inwardly extending offset feet for resting against the adjacent legs of the step ladder, and means at the top end of the bracket for securing the same to the top platform of the step ladder.

3,312,442
HANGER DEVICE
 Lowell J. Moeller, 6823 Pleasant Run Parkway,
 South Drive, Indianapolis, Ind. 46219
 Filed Feb. 24, 1966, Ser. No. 529,815
 10 Claims. (Cl. 248-217)



1. A mounting device for mounting an object on a support comprising a flanged tubular insert having a cylindrical portion adapted to extend into and line a hole in the support, a hook member having a proximal end portion proportioned to extend through said eyelet and to engage the eyelet portion and the support opening.

3,312,443
OVERHANGING BRACKET SYSTEM
 Michel Gabriel Armand Lévis, % Lévis M.G.A.,
 4 Square des Sablons, Marly-le-Roi, France
 Filed June 1, 1965, Ser. No. 460,344
 Claims priority, application France, June 4, 1964,
 976,981
 2 Claims. (Cl. 248-223)

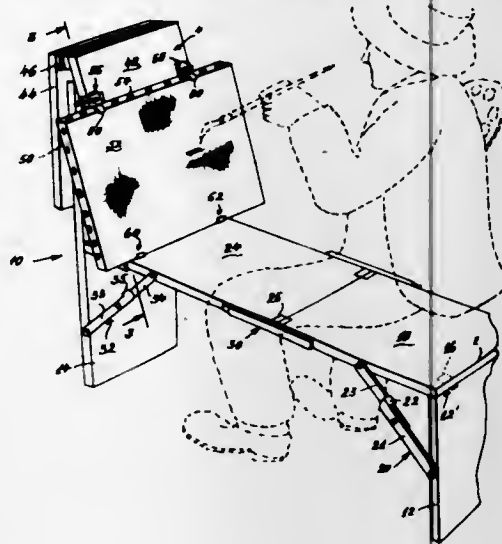


1. An overhanging bracket system comprising a right-angled bracket including a vertical section provided with a horizontal row of equally spaced perforations and a horizontal section provided with a further row of perforations and a substantially flat bracket extending in contacting relationship underneath the horizontal section of the upright and the front edge of which projects to a substantial extent beyond the free edge of said horizontal section, said bracket including along its rear edge a plurality of equally spaced downwardly offset tenons to be fitted snugly in corresponding perforations of the vertical section of the upright and upwardly directed stamped out projections adapted to engage with a hard fit corresponding perforations in the horizontal section of the upright.

3,312,444
ARTIST'S WORKBENCH AND EASEL CLAMP
 Joseph De Sena, 36-27 12th St.,
 Long Island City, N.Y. 11106
 Filed May 6, 1965, Ser. No. 453,609
 4 Claims. (Cl. 248-229)

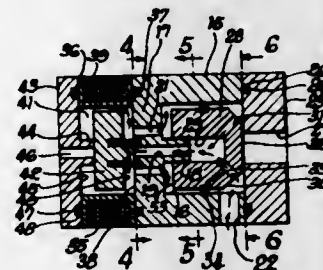
1. A clamp device for fastening a frame to an artist's combined workbench and easel, said device comprising a one-piece body formed of an elongated strip of sheet metal, said body being generally of U-shape including a bight portion and a pair of spaced legs extending perpendicularly from said bight portion, the legs tapering toward each other from the bight portion and being curled at their free ends, a lug extending perpendicularly from

one long edge of one of the legs, and a lug extending laterally from the other opposite long edge of said one leg in the same plane as the leg, said latter lug having



curled end edge, said one leg adapted to support one end of a frame with the curved edge of the last named lug hooked over the edge of the frame.

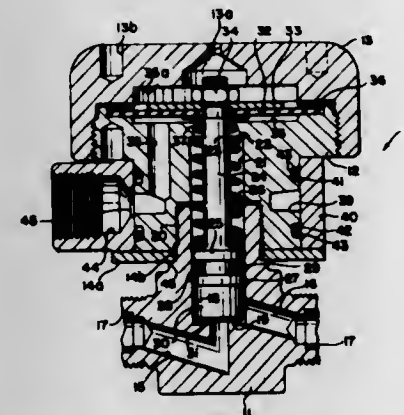
3,312,445
SOLENOID OPERATED VALVE
 Sam S. Trombatore, Des Plaines, Wilbur J. Bradtke, Park Ridge Manor, and William J. Griswold, Bridgeview, Ill., assignors to Webcor, Inc., Chicago, Ill., a corporation of Illinois
 Filed July 1, 1964, Ser. No. 379,523
 5 Claims. (Cl. 251-30)



5. A solenoid operated valve comprising,
 (a) a body having first and second end walls and an intermediate wall defining first and second axially aligned cylindrical chambers separated by said intermediate wall,
 (b) said body having an inlet port for admitting pressure fluid into said first cylindrical chamber,
 (c) said first wall having a discharge port,
 (d) said second wall having a vent port,
 (e) said intermediate wall having a central passage therethrough,
 (f) said discharge port, said vent port and said central passage being in coaxial registration with said first and second cylindrical chambers,
 (g) a main piston reciprocable within said first cylindrical chamber,
 (h) said main piston having a forward end face arranged to abut said discharge port to close the same and having an annular area concentric with said end face on which pressure fluid may act,
 (i) said main piston having an axial bore opening rearwardly and communicating with said central passage,
 (j) said main piston having a first passage affording communication between said first cylindrical chamber and said piston bore,
 (k) said intermediate wall having a second passage connecting said first cylindrical chamber with said second cylindrical chamber,

(l) a solenoid coil circumsposed about said second cylindrical chamber,
 (m) a pilot piston constituting a solenoid armature reciprocable within said second cylindrical chamber,
 (n) said main and pilot pistons being normally urged by differentials in fluid pressure acting thereon respectively in directions to close said discharge port and said vent port,
 (o) said coil when energized imposing a force on said pilot piston sufficient to overcome the pressure differential acting thereon to open said vent port and to close said central passage thereby to effect a pressure differential in an opposite direction on said main piston to urge said main piston in a direction to open said discharge port whereby pressure fluid entering into said first cylindrical chamber is discharged through said discharge port.

3,312,446
VALVE WITH ROTATING TURRET CONNECTION
 Ulrich H. Koch, Pinole, and Gary A. Soderlund, Richmond, Calif., assignors to Whaley Research Tool Co., Emeryville, Calif., a corporation of California
 Filed Oct. 12, 1964, Ser. No. 403,078
 7 Claims. (Cl. 251-61)

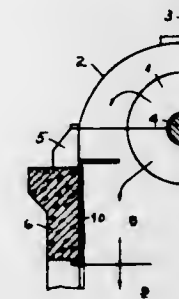


4. A valve comprising body means with a flow passage therethrough;
 flow controlling means in said body means operable to control the flow of fluid therethrough;
 diaphragm means attached to said flow controlling means;
 said diaphragm means being deflectable in the presence of fluid pressure whereby deflection of said diaphragm means causes a corresponding movement of said flow control means thereby to vary the flow of fluid through said body means;
 fluid passage means in said body means communicating with said diaphragm means; and
 adjustable inlet means for said fluid passage; and means supporting said inlet means on said body means for movement relative to said body means while in fluid tight relation with said passage.

3,312,447
BOUNDARY WALL STRUCTURE FOR EXHAUST STEAM CHAMBER
 Hans Bellati, Wetztingen, Willi Rüttli, Nussbaumen, and Pierre Meylan, Neuenhof, Switzerland, assignors to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
 Filed Sept. 8, 1964, Ser. No. 394,683
 Claims priority, application Switzerland, May 8, 1964, 6,057/64
 1 Claim. (Cl. 253-39)

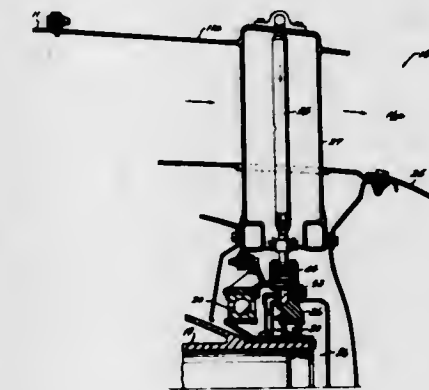
In a steam turbine installation wherein a steam turbine machine is installed on a foundation and includes a low-pressure steam turbine unit, the improvement wherein said foundation includes an opening extending down-

wardly therethrough connected to receive the exhaust steam from the low pressure turbine, said opening being provided with a steam tight lining and which serves as the boundary walls of an exhaust steam chamber, said lin-



ing being constituted by an elastic plastic material applied to the wall surface which defines said opening and which is vapour-proof, abrasion-resistant and has a low thermal conductivity characteristic.

3,312,448
SEAL ARRANGEMENT FOR PREVENTING LEAKAGE OF LUBRICANT IN GAS TURBINE ENGINES
 Thomas Nell Hull, Jr., Marblehead, and Brian Henry Rowe, Boxford, Mass., assignors to General Electric Company, a corporation of New York
 Filed Mar. 1, 1965, Ser. No. 435,924
 9 Claims. (Cl. 253-39)

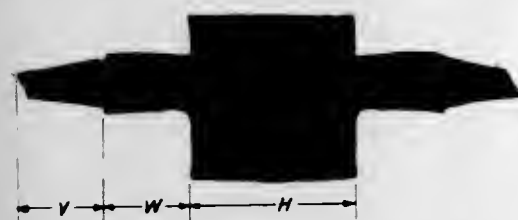


1. In a gas turbine engine assembly:
 support structure,
 bearing means carried by said support structure for supporting an engine rotor for rotation,
 a conduit for the flow of lubricant,
 connecting means carried by said support structure for slidably receiving said conduit,
 seal means between said conduit and said connecting means for preventing leakage of lubricant,
 and means forming a passageway between said connecting means and said bearing means for the flow of lubricant,
 said passageway surrounding said connecting means and said seal means.

3,312,449
TURBINE WHEEL
 George D. Chandley, Alliance, Ohio, assignor to TRW Inc., a corporation of Ohio
 Original application June 29, 1964, Ser. No. 378,643, now Patent No. 3,283,377, dated Nov. 8, 1966. Divided and this application July 20, 1966, Ser. No. 566,607
 6 Claims. (Cl. 253-77)

1. A turbine wheel comprising an integral casting composed of a relatively massive hub section, a wheel portion extending annularly about said hub section, and vanes

extending radially outwardly from said wheel portion, the grain size in said hub section being relatively large, the



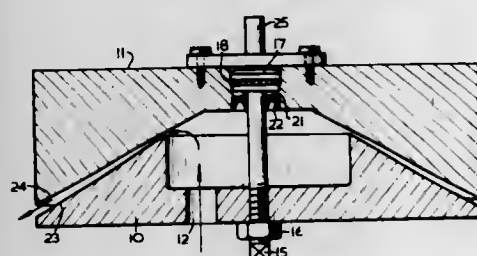
grain size in said vanes being relatively fine, and the grain size in said wheel portion being intermediate that of the vanes and said hub portion.

3,312,450

ROTARY FLUID MOTOR

Robert Henry Burgess, 259 Hume Highway, South Strathfield, New South Wales, Australia
Filed Dec. 28, 1965, Ser. No. 516,903
Claims priority, application Australia, Jan. 8, 1965, 53,686/65

7 Claims. (Cl. 253-96)



1. A rotary device, using the kinetic energy of a fluid, comprising, in combination, a stator element; a rotor element; said elements having an axis of relative rotation and being constructed and arranged to define therebetween a narrow annular space substantially concentric with said axis; means mounting said rotor element for free rotation about said axis, and for tilting about a point substantially on said axis, both relative to said stator element; means defining a fluid flow path directing fluid under pressure to flow through said narrow annular space in a substantially radial direction relative to said axis; and means at the upstream end of said annular space constituting an annular restriction of said space; whereby the vacuum downstream of said annular restriction will cause said rotor element to tilt to engage said stator element at a point blocking fluid flow, causing a progressive angular shift of said point with rolling of said rotor element about said stator element.

3,312,451

RETRACTING WEB REEL WITH WEB TENSIONING RATCHET WRENCH AND RATCHET FOR HOLDING TENSIONED WEB

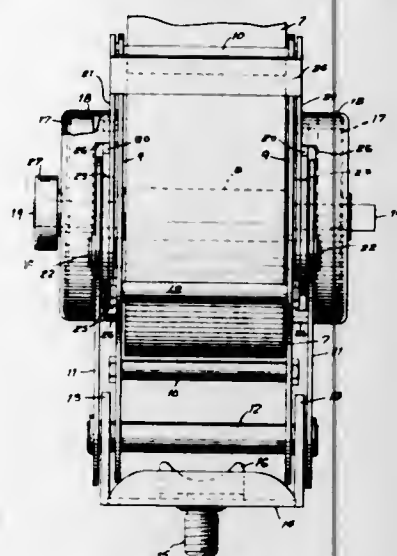
Frank L. Davis, Northport, N.Y.
(Box 760, Rte. 25A, Fort Salonga, N.Y. 11768)
Filed Mar. 2, 1966, Ser. No. 531,100

1 Claim. (Cl. 254-164)

A tiedown reel comprising:

a web winding shaft, springs for turning said shaft in a web winding direction, ratchets and cooperating releasable dogs for holding said shaft against rotation in the web unwinding direction, and web tensioning ratchet lever means for turning said shaft in the web winding direction, to be then secured by said ratchets and pawls, a frame made up of spaced side plates and load carrying links at the outer sides of said side plates, said web winding shaft being journaled in said frame between said side plates and load carrying links,

said springs being separate springs engaged with opposite end portions of said shaft, spring housings on the frame over said springs and to which said springs are connected, the opposite end portions of the shaft being non-circular and exposed at the outer sides of said spring housings, said ratchets being disposed on the opposite end portions of the shaft within said spring housings,



said ratchet holding dogs being pivoted on the frame in releasable engagement with said ratchets, said web tensioning ratchet lever means including a ratchet lever detachably engageable with said exposed non-circular opposite end portions of the shaft, a supporting base, means for detachably mounting said supporting base in angularly adjustable relation about a vertical axis, a horizontal pivot stud carried by said base and said side plates and load carrying links being engaged with said horizontal pivot stud.

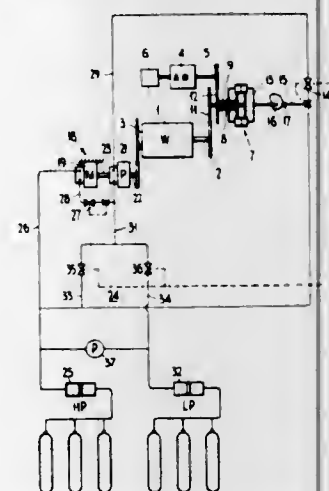
3,312,452

WINCH ARRANGEMENTS

Alan Henry Butler, Orpington, and Norman Reginald Barber, Dartford, England, assignors to The General Electric Company Limited, London, England
Filed May 10, 1965, Ser. No. 455,055

Claims priority, application Great Britain, May 8, 1964, 19,271/64

2 Claims. (Cl. 254-172)



2. A winch arrangement comprising a winch drum operable by a fluid circuit, a support cable wound on said winch drum and connectable to a support member so as to provide a line for transferring articles between the stations carrying the winch drum and support member respectively, and which stations are capable of relative movement during such transfer to vary their dis-

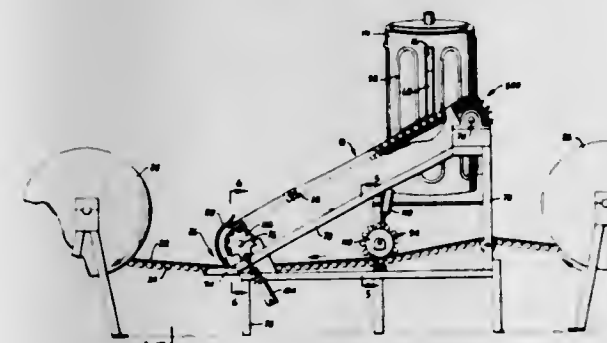
tance apart, a cable drum associated with the winch drum, a measuring cable wound on said cable drum and connectable to the support member, a constant torque motor coupled to the cable drum for maintaining a tension in the measuring cable when it is connected to the support member such that the measuring cable extends directly between the two stations whereby any variation in the distance between the stations causes a corresponding variation in the effective length of the measuring cable, a main flow control valve controlling the fluid circuit of the winch drum, a differential gear mechanically linked to the main flow control valve and to the cable drum such that the winch drum is caused to pay out or haul in the support cable in dependence upon any variation in the effective length of the measuring cable to compensate at least partly for any variation in the distance between the two stations, whereby the articles may be maintained at a substantially constant height during their transfer between the two stations.

3,312,453

SPRING HANDLING APPARATUS

Charles L. Willard and Charles V. O'Hara, San Mateo, and Arthur F. Neel, La Mirada, Calif., assignors to Connor Spring Manufacturing Company, San Francisco, Calif., a corporation of California
Filed Mar. 30, 1964, Ser. No. 355,786

3 Claims. (Cl. 263-7)



1. Spring handling apparatus for handling springs delivered from a spring coiling machine which comprises:

- (a) a furnace;
- (b) a pocket conveyor in said furnace for conveying springs separately through said furnace with said conveyor having:
 - (1) a receiving station for receiving individual springs from a spring coiling machine,
 - (2) a delivery station for delivering springs from said furnace,
 - (3) a series of spring receiving pockets moveable sequentially from said receiving station to said delivery station, and
 - (4) advancing means for moving said pockets away from said receiving station;
- (c) a cooling conveyor mounted outside of said furnace for receiving springs from said delivery station with said cooling conveyor having a series of pockets moveable sequentially away from said delivery station;
- (d) a pocketed web;
- (e) transport means for moving said pocketed web past said cooling conveyor and coiling said web after it is moved past said cooling conveyor, and;
- (f) transfer means for moving said cooling conveyor and said transport means in synchronization with each other in transferring springs from said cooling conveyor to said web;
- (g) said series of pockets of said cooling conveyor being arranged in a closed loop having upper and lower reaches with said upper reach positioned to receive springs from said delivery station at one end and

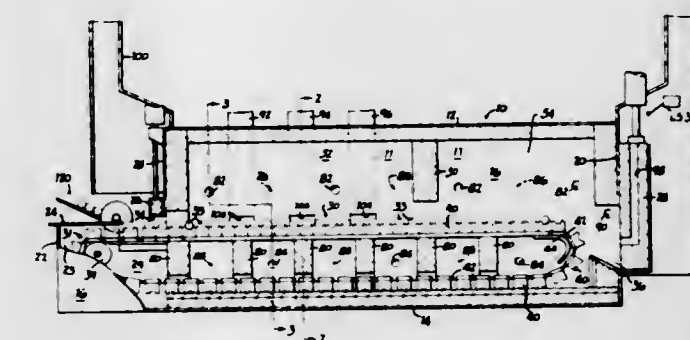
convey the springs across said upper reach with axes of the springs positioned transversely of said upper reach, and a plunger mounted adjacent to said upper reach for reciprocal movement into and out of the pockets of said cooling conveyor for sequentially engaging the springs therein in a direction axially of the spring.

3,312,454

DRIVE AND ATMOSPHERE ARRANGEMENT IN A HEAT TREATMENT FURNACE

William R. Keough, Birmingham, Mich., assignor of forty-five percent to Multifastener Company, Detroit, Mich., a partnership

Filed Jan. 22, 1965, Ser. No. 427,354
11 Claims. (Cl. 263-15)



2. A method of manipulating fluid media in a heat treatment furnace to treat metal billets being moved through a temperature and atmosphere controlled environment including a heating zone and a soaking zone of the furnace upon conveying means, without incurring of surface oxidation-scaling on the billets, comprising the steps of: consecutively introducing the raw billets into the controlled environment upon the conveying means at a selectively controllable sequence, advancing the billet-carrying conveying means through the heating and soaking zones at a selectively controllable sequence, burning a mixture of atomized hydrocarbon and air at a selectively controllable rate to (1) form oxygen-free fluid products of combustion and (2) maintain the heating and soaking zones at different temperature levels each above the ready oxidation temperature of the billets and within the hydrocarbon combustion temperature range, the temperature differential between the zones being up to on the order of 200° F., introducing exothermic gas into the controlled environment at a selectively controllable rate to thereby maintain said environment oxygen-free by continuously excluding introduction of atmospheric oxygen into the furnace, venting the products of combustion and the exothermic gas from the heating zone of the furnace through appropriately located flues at a selectively controllable rate, exhausting the products of combustion and the exothermic gas from the temperature controlled environment through the exit from the soaking zone of the furnace when closed.

3,312,455

METHOD AND APPARATUS FOR CALCINING GYPSUM IN TWO STAGES

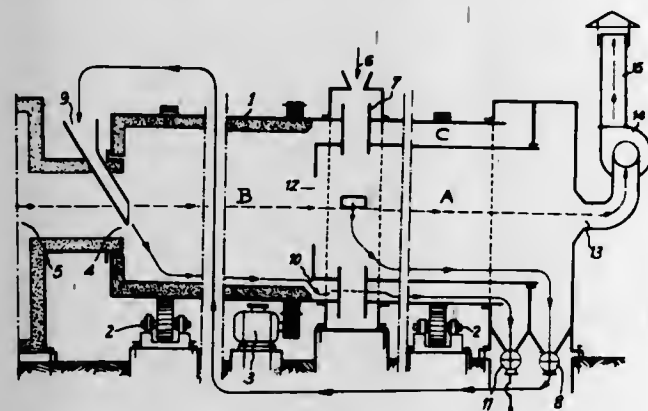
Louis Emile Chassevent, Cormeilles-en-Parisis, and Noël Goulouès, Itteville, France, assignors to Lambert Freres & Cie, Cormeilles-en-Parisis, France, a company of France

Filed Dec. 3, 1964, Ser. No. 415,623
Claims priority, application France, Dec. 12, 1963, 956,967, Patent 1,386,464

4 Claims. (Cl. 263-32)

1. A method for calcining gypsum in two stages by clean combustion gases, comprising the steps of pulverizing gypsum into a powdered condition, producing a sup-

ply of clean combustion gases from a fluid fuel, passing in a first stage the pulverized gypsum thus obtained through a drying and preheating zone together with and in the same direction as with a flow of said combustion gases taken from the second stage whereby the gas which contains water vapor does not have its temperature lowered such as to cause condensation of water onto the gypsum to be converted into plaster, subjecting the dried and preheated gypsum thus obtained to the second stage



by passing it through a further heating zone together with said combustion gases taken from the supply thereof with said combustion gases travelling in the same direction as the gypsum at a continuously decreasing temperature, whereby plaster is thus obtained nearly at the same final temperature as the combustion gases leaving said further heating zone and finally cooling the plaster obtained from said gypsum calcined in said second stage.

3,312,456

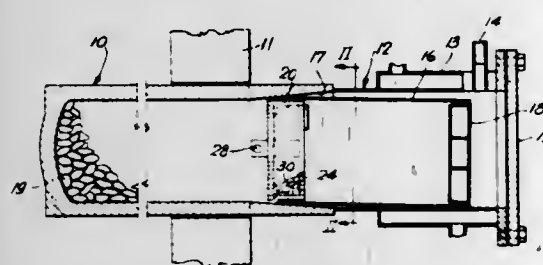
PURIFYING DEVICE FOR MAGNESIUM PRODUCTION RETORT

Desmond M. Peplinski, Haley, Ontario, Canada, assignor to Dominion Magnesium Limited, Toronto, Ontario, Canada

Filed Nov. 25, 1964, Ser. No. 413,745

Claims priority, application Canada, Oct. 26, 1964, 914,871

7 Claims. (Cl. 266—19)



1. The combination with a magnesium producing retort having a furnace section, a condenser section, and a condenser sleeve removably seated in said condenser section, said sleeve having an end portion in adjacent relation to said furnace section, of a purifying device comprising a cylindrical housing seated in said end portion of said sleeve and having a snug sliding fit in said sleeve, said housing having perforated end walls, and a composite body of material in said housing having therein a multiplicity of passages communicating with each other and with said perforated end walls, said body comprising refractory particles having a size ranging from 3/4 inch to 2 inches and being capable of withstanding temperatures in excess of 1200° C.

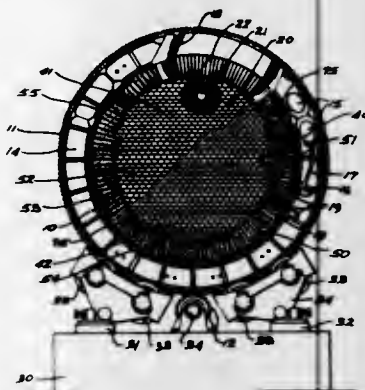
3,312,457

COPPER CONVERTER

Charles H. Schweinsberg and Harvey A. Freeman, Pittsburgh, Pa., assignors to Harblson-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 16, 1964, Ser. No. 352,000

4 Claims. (Cl. 266—36)



1. In a copper converter which includes an elongate barrel of tubular configuration extending between upright endwalls to define an enclosed refining chamber, a charging and tapping port opening through an upper portion of the barrel intermediate the ends thereof, a substantially aligned series of tuyere openings through the barrel, said series extending a major portion of the length of the barrel and lying along an axis substantially perpendicular to the endwalls, and structure interconnected with the barrel for periodically rotating it about a longitudinal axis thereof, said barrel including a tubular outer metal skin, a zoned refractory lining disposed about the inside of said skin and extending from one endwall to the other, a portion of the lining together with adjacent metal skin defining the charging and tapping port, an inner refractory lining for said endwalls, at least an intermediate zone extending across said endwalls along a substantially horizontal axis, said zone covering the area of expected end-wall slag contact, impingement with slag, and turbulence induced in a charge by air blasts from tuyeres when the vessel is in operation, zones of refractory along a side of said barrel through which the tuyeres open, said zones comprised of aligned series of tuyere blocks, an upper tuyere boundary zone and a lower tuyere boundary zone, said upper and lower boundary zones being immediately contiguous upper and lower limits of the tuyere zone and extending from one endwall to the other, a zone extending along the opposite side of the barrel opposing said series of tuyeres and upper and lower tuyere boundary zones, the arcuate extent of the said barrel side zone being sufficient to substantially cover areas of expected slag contact, slag impingement and splash, and turbulence during tuyere air blasts, a bottom barrel zone extending between respective barrel side zones, and an upper vapor contacting zone lining constituting the remainder of the lining of the tubular metal skin, all refractory shapes making up said lining being burned chrome ore-magnesia shapes, the shapes making up the barrel side zone, upper and lower tuyere boundary zones, tuyere zone and intermediate endwall zones all being made from refractory batches which include about (1) 80-60% chrome ore, (2) 20-40% dead burned magnesia, (3) less than 5% total SiO₂, and (4) 1 to 15%, by weight of very finely divided high purity green chrome sesquioxide substantially all the discrete particles of which are substantially equal in size and on the order of about 1 micron and less, all other burned chrome ore-magnesia shapes being made from batches which include about (1) 80-60% chrome ore, and (2) 20-40% magnesia, refractory mortar joining all of the refractory shapes used to make

the lining for the endwalls and the barrel, the mortar used to join brick making up said barrel side zone, tuyeres, upper and lower tuyere boundary zones, and end-wall intermediate zones characterized by a Cr₂O₃ content, by weight on an oxide basis, between about 40 and 80%, from about 10 to 40%, by weight, of said Cr₂O₃ content being green chrome sesquioxide of high purity, said brick making up said zones in the areas of expected turbulence, slag contact and slag impingement and splash, and the mortar used to join them characterized by surface area laminated coatings containing copper oxides, spinels, and ferrous silicates and predominantly magnesium silicate and ferrous chromite, said laminated coating substantially filling pores and grain interstices adjacent the exposed faces of the refractory whereby to restrict penetration by copper converter process materials.

3,312,458

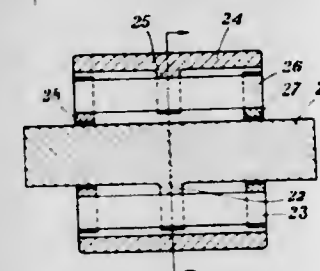
BEARING BETWEEN TWO RELATIVELY OSCILLABLE MEMBERS FOR OSCILLATING MOVEMENT

Axel Erland Bratt, Molndal, Sweden, assignor to Aktiebolaget Svenska Kullagerfabriken, Goteborg, Sweden, a corporation of Sweden

Filed Feb. 4, 1964, Ser. No. 342,557

Claims priority, application Sweden, Feb. 21, 1963, 1,880/63

9 Claims. (Cl. 267—1)



1. Means mounting a pair of members to permit limited angular movement about a predetermined axis comprising a plurality of spring blades arranged in at least three equiangularly spaced pairs about the predetermined axis, one blade of each pair being connected to one of the members and the other blade of each pair being connected to the other member, at least one connecting piece connecting the spring blades of each pair, the axial location of a connection between a blade and a connecting piece being spaced from the axial location of the connection between the blade and a member, and said connecting piece being so disposed in relation to the connections between the blades of the members so that axial movement in the system caused by the flexing of the blades during relative angular movement of the members results in axial movement of the connecting piece without relative axial movement between the members.

3,312,459

VEHICLE OVERLOAD SPRING

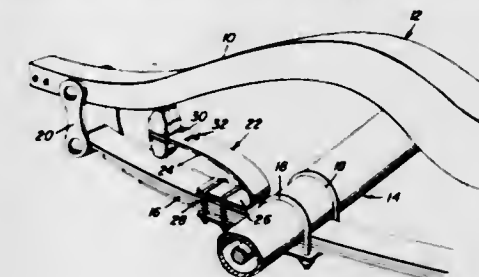
Roscoe O. Pence, Sterling, Kans. 67579

Filed Jan. 15, 1965, Ser. No. 425,791

13 Claims. (Cl. 267—45)

1. In combination with a sprung member from which an unsprung member is supported by means of a leaf spring interconnected between said unsprung member and said sprung member and including a portion toward and away from which a portion of said spring intermediate its connections with said sprung member and said unsprung member is movable upon movement of the latter relative to said sprung member, an overload spring of the leaf spring type including a first end portion, means supporting said first end portion from one of said members

independent of the connections of said leaf spring with said members for adjustable positioning of said overload spring relative to said one member along a path generally paralleling said leaf spring and with a free second end portion of said overload spring spaced between said portion of said sprung and unsprung members, said second free end portion including abutment means consecutively engageable with said portions of said sprung member and said spring upon movement of said unsprung mem-



ber toward said sprung member in a manner initially flexing said overload spring upon engagement of said abutment means with the first engaged member and establishing an abutment between said portions limiting further movement of said portions together and thereby causing, upon further movement of said unsprung member toward said sprung member, sharper flexing of said leaf spring in the area thereof extending between its point of engagement with said abutment means and said unsprung member.

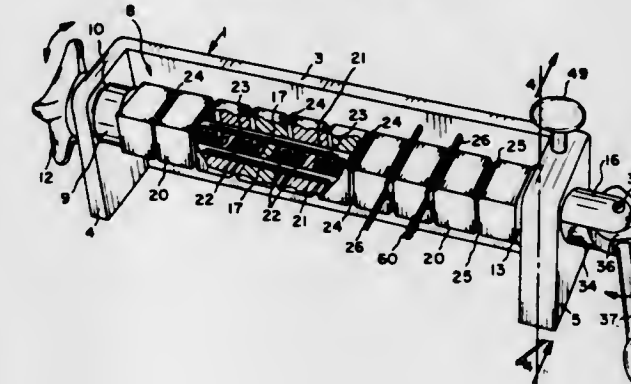
3,312,460

HOLDING DEVICE FOR TESTING CONNECTIONS

Harry Kaufman, New Rochelle, N.Y., assignor to O.K. Machine and Tool Corporation, Bronx, N.Y., a corporation of New York

Filed Nov. 15, 1963, Ser. No. 323,993

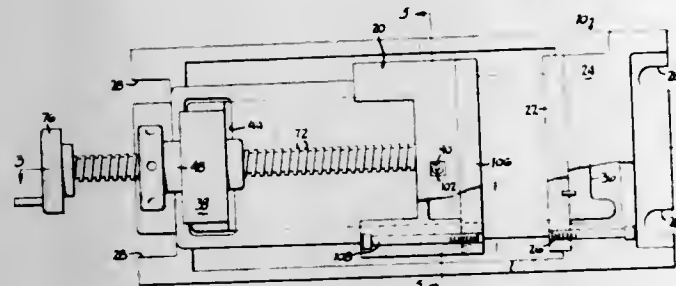
10 Claims. (Cl. 269—70)



1. A terminal holding device adapted for testing wire connections to terminals, comprising a support, a rotatable mandrel having a longitudinal axis journaled in the support, said mandrel including longitudinally extending guide means rotatable with the mandrel, an assembly of longitudinally aligned blocks mounted on said guide means and rotatable therewith and being freely slidable along the guide means, resilient means mounted between and engaging each pair of adjacent blocks and urging them apart in the absence of a clamping force to form plural receiving spaces between the blocks each for receiving a test terminal, means for urging the blocks in a longitudinal direction toward one another to clamp the test terminals therebetween, means for releasing the blocks to allow removal of the test terminals, means for rotating the mandrel and thus the assembly of blocks about the longitudinal axis, and means for locking the mandrel against rotation.

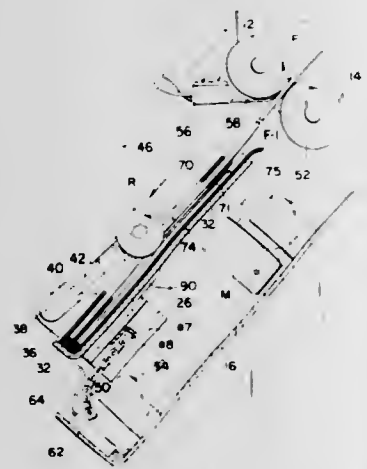
3,312,461
VISE

Glenn A. Copron, 436 E. 14-Mile Road,
Madison Heights, Mich. 48071
Filed Oct. 16, 1964, Ser. No. 404,279
8 Claims. (Cl. 269-101)



1. In combination with a work holder having a frame, means on said frame for mounting said work holder upon a support, a stationary jaw fixedly mounted on said frame, a movable jaw mounted on said frame for movement toward and away from said fixed jaw, and clamping screw means for moving said movable jaw toward or away from said fixed jaw to clampingly grip or release a work piece located between the jaws; means for isolating clamping forces applied to the jaws from said frame comprising an elongate load member loosely supported in said frame, means at one end of said load member operatively mounting said clamping screw means upon said load member to transmit clamping force reactions applied to said movable jaw to said load member, and abutment means at the opposite end of said load member disposed in abutting engagement with the side of said stationary jaw remote from said movable jaw.

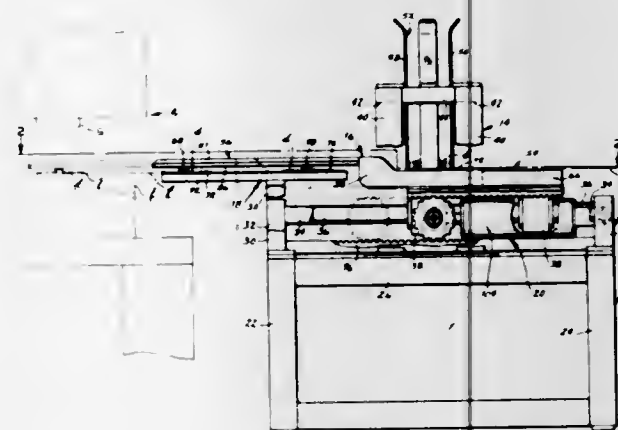
3,312,462
MACHINE FOR FEEDING X-RAY
FILM OR THE LIKE
Henry Hope, 195 Welsh Road, Huntingdon
Valley, Pa. 19006
Filed Jan. 25, 1965, Ser. No. 427,891
5 Claims. (Cl. 271-4)



1. A machine for successively feeding a thin, flexible film from a stock of films, said machine including, in combination,
a magazine consisting of a plurality of leaves secured together along one edge thereof for receiving individual films therebetween,
a fixed tray for supporting said magazine,
a carriage mounted for reciprocal movement relative to said tray,

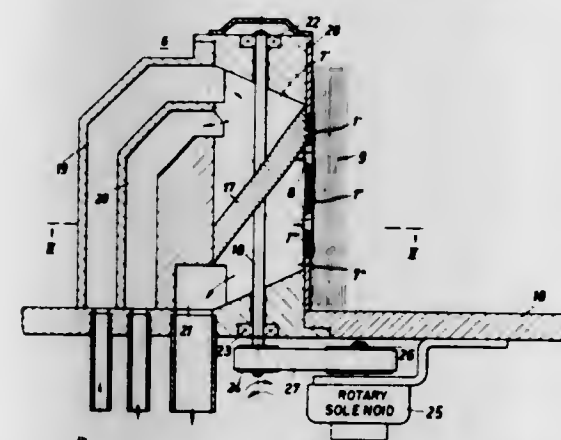
there being registering openings formed in said leaves, a motor for reciprocating said carriage, at least one roller pivotally carried by said carriage and movable with said carriage from a point near the bound edges of said leaves toward the opposite edges thereof to expel the film therebelow from said magazine, said roller passing through the openings in said leaves to contact a film therebelow, and a normally closed switch below said magazine for energizing said motor, said switch having an arm engageable by said roller in the absence of any film in said magazine to open said switch and de-energize said motor.

3,312,463
RECIPROCATING FEED APPARATUS FOR PROGRESSIVELY DELIVERING WORKPIECES TO A PRESS, OR THE LIKE
William N. Van Hoose, East St. Louis, Ill., and Robert S. Rockford, Overland, Mo., assignors to Engel Equipment, Inc., St. Louis, Mo., a corporation of Missouri
Filed Feb. 15, 1965, Ser. No. 432,712
7 Claims. (Cl. 271-10)



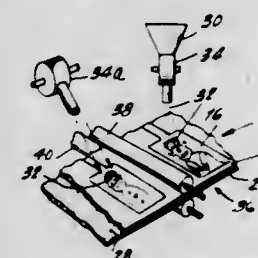
1. Apparatus for feeding metal blanks to a press or the like, comprising:
a frame,
a delivery rack reciprocally mounted on said frame and including
support table means reciprocable therewith for receiving a blank supplied thereon and supporting such blank from its under surface, whereby a delivery path is established in a plane,
further including arm means reciprocable therewith and extending longitudinally forward of said support table means and above the forward portion of such delivery path, said arm means of said rack being supported therefrom at a point spaced laterally from said path,
together with
means to reciprocate said delivery rack forward and aft in such delivery plane, thereby advancing the blank on the forward stroke of such reciprocation, means, supported by said frame at the level of said support table means and forwardly along said path, for supporting such blank from its under surface and retaining the blank from aft movement with the support table means on the aft stroke of such reciprocation, and
means, carried by said arm means and presented downwardly toward such delivery plane, to engage the upper surface of the blank there retained at an aft point of reciprocation and to advance it forwardly on the following forward stroke of reciprocation, whereby on such progressive advancement the blank so engaged from above is carried forwardly of the said supporting and retaining means and delivered into such press.

3,312,464
DEVICE FOR CONVEYING A STACK OF
FLAT ARTICLES SINGLY
Karl Rehm, Konstanz, Germany, assignor to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany
Filed Dec. 14, 1964, Ser. No. 417,898
Claims priority, application Germany, Dec. 13, 1963,
T 25,254
25 Claims. (Cl. 271-26)



1. In a device for the controlled separation of flat articles, and particularly documents, to be conveyed from a stack by means of a continuously driven conveying device provided with suction ports and wherein the particular article to be separated from the stack is, for conveying purposes, brought into engagement with the conveying device by means of suction air, while engagement between the articles and the conveying device is prevented during the remaining time while it is in the position of rest, the improvement comprising: a source of blast-forming air; said conveying device being continuously disposed adjacent said stack; and control means for allowing an air blast to act on the articles through said ports instead of the suction air, which air blast prevents the articles in their position of rest from coming into engagement with the conveying device.

3,312,465
METHOD AND APPARATUS FOR MANUFACTURING A NOVELTY ITEM
Harold N. Braumhut, 1812 Atlantic Ave.,
Brooklyn, N.Y. 11233
Filed Feb. 13, 1964, Ser. No. 344,654
5 Claims. (Cl. 272-8)



1. A method of manufacturing a novelty item comprising the steps of providing a first sheet of paper, said first sheet having at least one glossy surface, printing figures on spaced portions of said glossy surface, cutting out predetermined portions of said figures, providing a second sheet of paper, said second sheet being of highly water-absorbent paper compared to said first sheet, coating at least a portion of said second sheet with adhesive, adhesively securing said first sheet to said second sheet to expose areas of said second sheet through said cutout portions of said first sheet, said exposed areas being substantially completely coated with adhesive, spreading particles over said first sheet to adhesively secure said particles only in said cut-out portions, and cutting out said figures from said adhesively secured first and second sheets of paper.

5. A novelty item comprising a first sheet having a predetermined cut-out portion formed therein, a back-up sheet having a coating of adhesive material disposed on one surface thereof, said adhesive coating covering substantially all of said second sheet in the area underlying said cut-out portion and at least a portion of said second sheet in the area not underlying said cut-out portion, said back-up sheet being secured to said first sheet by means of said adhesive coating and grass seed disposed in the area defined by said cut-out portion and secured in position by means of the portion of said adhesive coating underlying the area defined by said cut-out, said second sheet being a sheet of bibulous paper, said first sheet being a glossy paper of lower absorbency than said second sheet.

3,312,466
MANUALLY OPERATED ELASTIC EXERCISER
WITH PROTECTIVE SHELL
James V. Melchione, 6724 Menz Lane,
Cincinnati, Ohio 45238
Filed Jan. 24, 1964, Ser. No. 340,080
2 Claims. (Cl. 272-82)



2. In combination: a pair of handles, a connecting element comprised of a central resilient means connected at opposite ends to the handles, a tubular shield means enclosing said resilient means for stopping and containing any of the resilient means that may disengage or break as the handles are pulled in opposite directions for exercise.

3,312,467
BASEBALL PITCHER'S PRACTICE DEVICE
Billie D. Dawson, Inglewood, Calif.
(1826 Searle St., Des Moines, Iowa 50317)
Filed July 14, 1964, Ser. No. 382,566
3 Claims. (Cl. 273-26)



3. A baseball practice device for defining a strike zone for pitchers, comprising, in combination: a frame structure including two generally vertically extending parallel upright members spaced apart by a distance greater than the horizontal width of said strike zone; upper and lower cross members coupled to the upper and lower ends of

said upright members respectively to define a rectangular shaped frame; left and right vertically extending parallel lines connected between said upper and lower cross members and spaced apart at a horizontal distance corresponding to the horizontal width of said strike zone; and upper and lower horizontally extending parallel elastic cords stretched between said upright members to define with said lines a smaller rectangle constituting said strike zone, the ends of said elastic cords being looped about said upright members in frictional engagement therewith whereby they may be vertically moved along said upright members to vary the height of said elastic cords and thereby enable adjustment of the vertical height of said strike zone.

3,312,468
GOLF TEE SETTER
James A. Lynch, 4108 Sunrise Way,
Louisville, Ky. 40220
Filed May 6, 1964, Ser. No. 365,389
1 Claim. (Cl. 273-33)



A portable golf tee setter adapted to be carried in a golfer's pocket, which comprises:

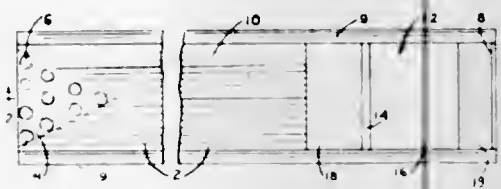
- (1) a hand piece including a palm engaging portion, a shaft portion, and a head portion,
 - (a) said palm engaging portion having sufficient surface area for receiving hand thrust,
 - (b) said head portion containing a socket adapted to engage with the surface of a golf ball,
- (2) a resilient tee gripping means of unitary one piece construction including: a transverse strap spring member, depending arcuate arms and gripping dogs located at the end of said arms,
 - (a) said transverse strap spring member being mounted in said shaft of said hand piece and bent to form bow springs which act as finger members for application of upwardly directed finger pressure to separate said depending arcuate arms,
 - (b) said depending arcuate arms depending from said bow springs and having a sufficient radius to accommodate a golf ball in coupling engagement with said socket and a tee,
 - (c) said gripping dogs being adapted for gripping a tee along its shank,

whereby the gripping dogs may be held in firm engagement with the shank of said tee to maintain the ball in coupling engagement with the socket of said hand piece and the head of the tee as thrust is applied thereto and to maintain said coupling engagement until finger pressure is applied upwardly to said bow springs to separate said arcuate arms and thereby release the gripping dogs from engagement with the shank of said tee.

3,312,469
BOWLING MAT
Donald Camillus Clayton, 3500 Weller Road,
Wheaton, Md. 20902
Filed May 6, 1964, Ser. No. 365,442
8 Claims. (Cl. 273-51)

1. A bowling alley comprising a bowling surface, means for supporting target pins at one end of said surface,

a foul line at the other end, a protective cover of a width equal to and resting on the bowling surface contiguous the foul line, a planar ramp of a length several times the



thickness of the cover connecting the cover with the bowling surface and a foul line affixed to the cover contiguous the ramp.

3,312,470
PENDULUM GAME
Alvin G. Ames, 2352 N. Vermont St.,
Arlington, Va. 22207
Filed July 10, 1964, Ser. No. 361,682
4 Claims. (Cl. 273-95)

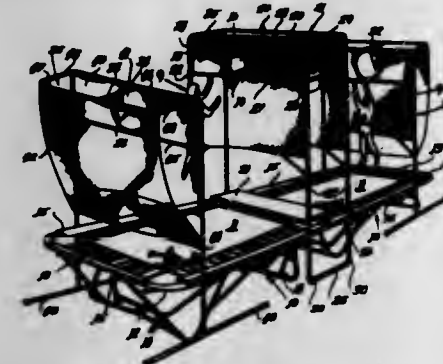


1. In a game apparatus, a horizontal base defining an area of play, a pendulum, pendulum support means supporting said pendulum above said base with the state of rest position of the pendulum being over and above said area of play, said support means being constructed and arranged to provide a large unobstructed zone of player hand access to said area of play, a set of rings, said base including a series of spaced pegs projecting upwardly from said base in said area of play, each peg being of a height to receive a ring, said rings having their openings of a diameter larger than that of said pegs whereby said rings can be readily manually removed from said pegs, a ring and peg combination presenting no interference to free oscillatory movement of the pendulum, said pendulum being a predetermined distance above said base when at said state of rest position so that when moving, the pendulum presents a moving obstacle to free entry and exit of said area of play to the player's hand.

3,312,471
TARGET FOR TRAMPOLINE GAME APPARATUS
George P. Nissen, Cedar Rapids, Iowa, assignor to Nissen Corporation, Cedar Rapids, Iowa
Application Jan. 30, 1964, Ser. No. 341,298, now Patent No. 3,201,126, dated Aug. 17, 1965, which is a continuation of application Ser. No. 198,365, May 28, 1962. Divided and this application Mar. 15, 1965, Ser. No. 461,216
4 Claims. (Cl. 273-145)

1. A target device for use with a trampoline having a horizontal bed, said device comprising a generally tubular member defining a generally rectilinear, elongated pathway for the passage of an object therethrough, said member having a central section of reduced cross-sectional

area, the remaining portions of said member flaring generally outwardly therefrom in opposite directions to the respective outer ends of said member, and supporting means effective, when operatively associated with said



trampoline, to position said tubular member with its axis disposed longitudinally of said bed and at a height thereabove greater than the upward reach of a performer standing stationary thereon.

3,312,472
THROWING DISC EMPLOYING RAISED AERODYNAMIC SECTIONS
Robert A. Kerr, 1479 Pottstown Pike,
West Chester, Pa. 19380
Filed July 5, 1963, Ser. No. 293,040
2 Claims. (Cl. 273-106)

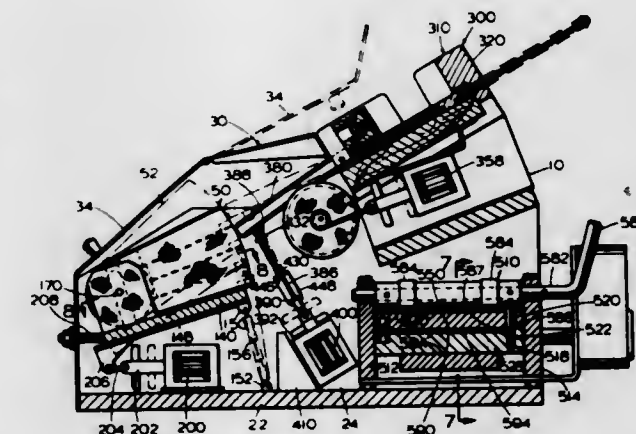


1. A device comprising an annular, substantially rigid disc which is asymmetrical with reference to its horizontal axis and which has an elevated section on its top surface and an elevated section on its bottom surface, each of said sections comprising less than one-half of the total surface area of its corresponding side and said sections having annular walls relative to the horizontal surfaces of the disc and one of said sections having a mean diameter significantly smaller than the mean diameter of the other and one of said sections having a thickness significantly greater than the thickness of the other of said sections and said disc being substantially solid in its cross section and the angle of the wall of said elevated section on said top surface being from about 100° to about 165° to the horizontal top surface of the disc and the angle of the wall of said elevated section of said bottom surface being about 100° to about 165° to the horizontal bottom surface of said disc.

3,312,473
CARD SELECTING AND DEALING MACHINE
Willard L. Friedman and Herbert Egerer, both of
4102 Farnam St., Omaha, Nebr. 68131
Filed Mar. 16, 1964, Ser. No. 352,135
5 Claims. (Cl. 273-149)

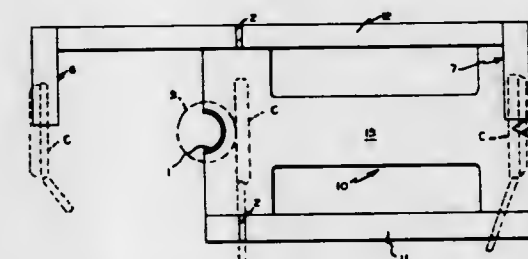
1. A card selecting and dealing machine comprising: a frame, a card motion assembly comprising: a card holding and delivery mechanism comprising a card holder and a first electrical motor means and card removal means operably correlated with said first motor means and said card holder for dealing a card from said card holder upon operation of said first motor means, and said card motion assembly further comprising a card bin assembly having a card bin having a plurality of compartments, said card holding and delivery mechanism and said bin assembly being movably mounted with respect to each other on said frame; and a card motion assembly positioning means operatively correlated with said card motion assembly and

comprising a second electrical motor means which latter when operated will cause said card delivery mechanism and said bin assembly to be disposed in a plurality of positions with respect to each other at different times for delivery of a card into a different one of said compartments at each of said times, a program card reading assembly connectable to a power source and having program card receiving means for receiving an indicia-bearing program card, and said reading assembly having circuit completing means connected to said power source and correlated with said receiving means and adapted for completing circuits from said source to said first motor means respectively when indicia on said card are posi-



tioned opposite said circuit completing means respectively, drive means operatively associated with said reading assembly for causing relative movement of said card and said card reading assembly to dispose various parts of said indicia opposite said circuit completing means, and further circuit completing means connected to said power source and correlated with said program card receiving means and adapted for completing circuits from said source to said second motor means when indicia on said card are positioned opposite said further circuit completing means respectively, said further circuit completing means being cooperative with the indicia on said card for causing said second motor means to be operated in timed relationship to said first motor means.

3,312,474
GOLF STROKE GUIDE
George E. Mitchell, 272 Walnut St.,
Brookline, Mass. 02146
Filed Jan. 10, 1964, Ser. No. 336,977
2 Claims. (Cl. 273-186)



1. An instructional golf stroke stand comprising a base plate, two parallel side rails carried by said base plate generally defining a stroke area therebetween, said base plate having a forwardly opening recess means at its forward end midway between said side rails for locating a ball and allowing a ball positioned therein to roll unobstructedly forwardly from said stand, first indicia means on said base delineating a straight line stroke path rearwardly from said recess means and parallel with said side rails, second indicia means on said side rails delineating

a ball addressing position for a club head to facilitate orienting the club head perpendicularly to said stroke path, yieldable back stroke detecting means located substantially rearwardly of said recess means and including a striker means overhanging said stroke area and spaced above said base, yieldable follow through detecting means independent of said back stroke detecting means located substantially forwardly of said recess means and including a striker means overhanging said stroke area and spaced above said base, said stroke area being free of overhanging means in the area of said recess means and for a substantial distance to either side of said recess means, and means projecting forwardly of said base plate to support the follow through detecting means, whereby to assist in guiding the stroke of the club without constraining the movement thereof or of a ball positioned in said recess, said striker means of said follow through detecting means being spaced above said base a greater distance than said striker means of said back stroke detecting means.

3,312,475

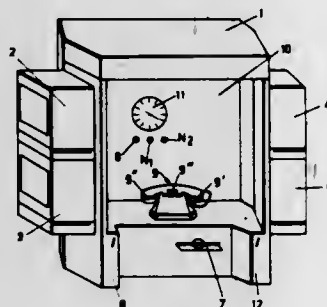
PREPAYMENT APPARATUS FOR THE DISTRIBUTION OF POSTCARDS CARRYING A SOUND RECORD

Mladen Mazuranic, also known as Mladen Mazuranic-Jankovic, Geneva, Switzerland, assignor to Pripart S.A., Geneva, Switzerland, a firm

Filed Dec. 2, 1963, Ser. No. 327,411

Claims priority, application Switzerland, Nov. 30, 1962, 14,103

13 Claims. (Cl. 274—1)



1. In combination in a prepayment apparatus for distributing postcards and acoustically recording a message thereon, stores of postcards carrying different pictures on one side and a sheet of plastic material provided with a spiral-shaped groove adapted to receive an acoustic recording on the other side by being deformed by a recording needle; means for selecting one of these postcards; means for recording a message including a turn-table adapted to carry the postcard, a recording needle co-operating with the turn-table, an acoustically controlled reading head controlling the needle, coin-operated means delivering a postcard out of a selected store and for starting operation of the recording means upon positioning of said postcard on said turn-table, and means for ejecting said postcard at the end of the recording procedure.

3,312,476

SLIDE RING SEAL

Otto Eckerle, 3 Am Bergwald, Malsch, Germany, and Helmut Weinzierl, Rastatt, Germany; said Weinzierl assignor to said Eckerle

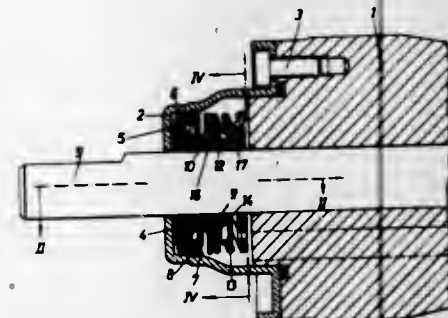
Filed Oct. 16, 1964, Ser. No. 404,405

Claims priority, application Germany, Mar. 2, 1964, E 26,523; Apr. 16, 1964, E 26,848

9 Claims. (Cl. 277—87)

1. A sealing arrangement comprising
(a) housing means having an axis,
(b) a shaft member journaled in said housing means for rotation about said axis,

- (c) a first slide ring member substantially coaxially disposed within said housing means,
(d) first resilient means axially urging said first slide ring member against a portion of said housing means and securing said first slide ring member against rotation about said axis,
(e) a second slide ring member substantially coaxially disposed within said housing means,
(f) second resilient means axially urging said second slide ring member toward said first slide ring member into sealing engagement therewith,



- (g) a motion transmitting member axially movable and rotatable with said shaft member, and
(h) complementary engaging means on said second slide ring member and said motion transmitting member, transmitting the rotary motion of said motion transmitting member to said second slide ring member.

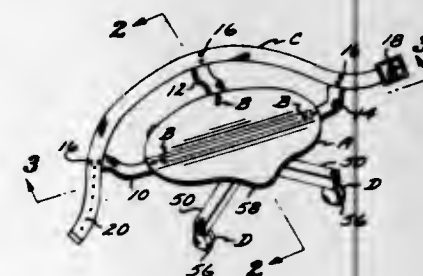
3,312,477

CARPET LAYER'S MOVABLE SUPPORT

John W. Dirksen, Bellflower, Calif.
(18906 Elaine St., Artesia, Calif. 90701)

Filed July 21, 1965, Ser. No. 473,774

5 Claims. (Cl. 280—32.5)



1. A device capable of being worn by a carpet layer for movably supporting him in a sufficiently low sitting position that he can affix carpet stripping to a floor surface, said device including:

- (a) a base;
(b) first means for movably supporting said base on a floor surface;
(c) an upright affixed to said base;
(d) a sleeve slidably mounted on said upright;
(e) second means for holding said sleeve at a desired elevation of said upright;
(f) a plurality of spaced legs that extend outwardly from the upper end of said sleeve;
(g) a contoured seat supported by said legs;
(h) a plurality of circumferentially spaced straps that have first ends thereof affixed to outer edge portions of said seat; and
(i) a belt that has second end portions of said straps affixed thereto, said belt of sufficient length to extend around the waist of a user, and said belt holding said device in a substantially fixed position relative to the user when the user is in an upright position.

3,312,478

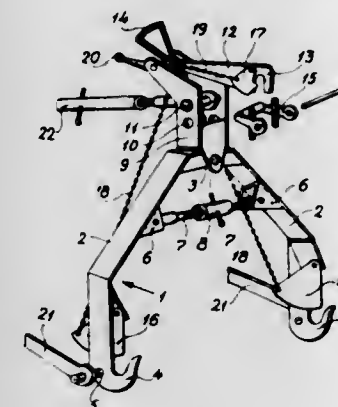
RAPID HITCH DEVICE FOR CONNECTING IMPLEMENT TO TRACTOR

Risto Jussi Knaapi, Isokyro, Finland

Filed Mar. 30, 1965, Ser. No. 443,887

Claims priority, application Finland, Apr. 1, 1964, 674/64; Dec. 2, 1964, 2,534/64; Jan. 19, 1965, 115/65

9 Claims. (Cl. 280—405)



1. A rapid hitch device for connecting an implement having an upper pushing point and two lower pulling hitch points to a tractor provided with a three-point lifting device having an upper pushing arm and two opposed lower pulling arms, said hitch device comprising a fork-like generally transverse frame having opposed legs, lower coupling elements in the form of upwardly open hooks on the lower ends of the legs adapted for releasable connection to the lower hitch points of the implement, said frame having an upper portion adapted to be connected to the pushing arm of said lifting device, an upper coupling element on the upper portion of the frame adapted to be connected to the upper hitch point of the implement, the upper coupling element being located substantially at the apex of a substantially upright isosceles triangle having the lower coupling elements located at the opposite ends of the horizontal base of the triangle, means to adjust the lower ends of the legs of the frame toward and away from each other whereby to vary the distance between the lower coupling elements, and means including a horizontal longitudinally disposed pivot pin on the frame for pivotally interconnecting the legs, said means to adjust the lower ends of the legs of the frame toward and away from each other comprising an elongated element which is adjustable in length extending between and connected to the legs at its opposite ends, adjustment of said elongated element also varying the angle between the legs.

3,312,479

LOAD DISTRIBUTING TRACTOR-TRAILER ASSEMBLY

Joseph J. Cunha, Castro Valley, Calif., assignor to Cunha Products Incorporated, Castro Valley, Calif., a corporation of California

Filed Mar. 15, 1966, Ser. No. 534,337

9 Claims. (Cl. 280—407)

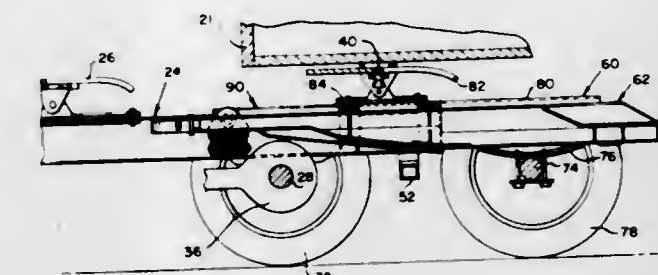
1. In combination with a wheel supported draft vehicle having a load supporting chassis extending rearwardly therefrom and a vehicular semi-trailer having a first draft connection at the forward end thereof and support wheels at the rearward end thereof, an improved load distributing assembly for coupling said first draft connection to said draft vehicle, comprising:

- (A) a wheel supported dolly having a load supporting

chassis disposed in coplanar relationship with the chassis of said draft vehicle;

(B) connecting means to connect the chassis of said draft vehicle in draft and load supporting relationship to the chassis of said dolly for limited universal movement relative thereto, said means comprising:

- (1) a carriage pivotally mounted on one of said chassis for limited universal movement relative thereto, said carriage having a coupling operatively associated therewith; and,



- (2) a carriage engageable element mounted on the other of said chassis for selective engagement with said carriage, said element having a coupling operatively associated therewith and adapted to cooperate with the coupling associated with said carriage to maintain said element and carriage in fixed engagement;

(C) a second draft connection adapted to be supported on and between said draft vehicle and dolly when the chassis thereof are interconnected, said draft connection being adapted to be coupled in engagement with said first draft connection to support the forward end of said trailer.

3,312,480

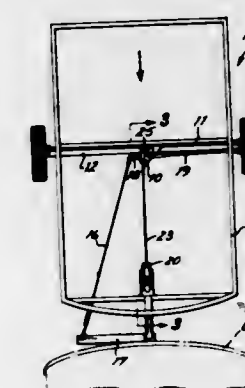
THREE WHEEL TRAILER WITH CASTER-WHEEL CONTROLLED GUIDE

Jack D. Greenstreet, 2150 Earl Ave.,

Long Beach, Calif. 90806

Filed Oct. 18, 1965, Ser. No. 496,870

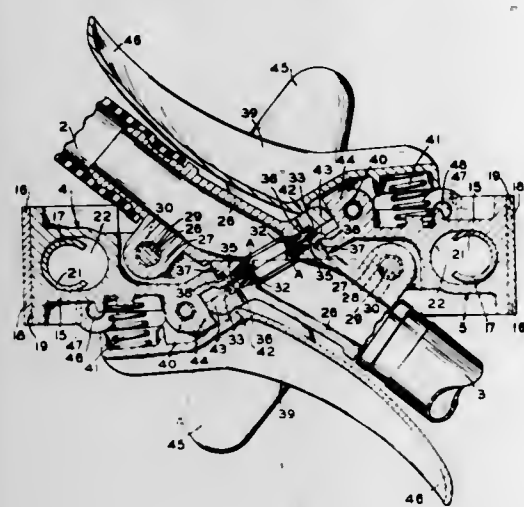
5 Claims. (Cl. 280—443)



1. A trailer guide for a trailer having steerable wheels thereon, comprising a cam plate, means pivotally mounting the cam plate on the trailer, said plate having a cam slot therein, a pin extending through the cam plate and movable in said cam slot, a horizontal arm fixedly mounted on the pulling vehicle, a rod extending from the pin to the horizontal arm, a caster wheel journaled on the trailer, a shift rod extending from the caster wheel to the cam plate to partly rotate the cam plate on its pivot, and a steering rod extending from said pin to a steerable wheel on the trailer.

3,312,481 AUTOMATIC HOSE CONNECTOR FOR RAILWAY CARS

Fred Temple, Pittsburgh, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 340,315, Jan. 27, 1964. This application Mar. 4, 1966, Ser. No. 536,546
4 Claims. (Cl. 285-12)



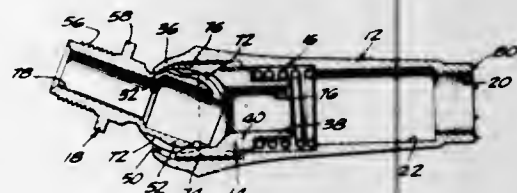
1. An automatic hose connector, for railway vehicles equipped at each end thereof with an automatic coupler whereby adjacent vehicles may be coupled together to form a train and with a hose the free end of which is connectable to the free end of the hose on an adjacent vehicle for conducting fluid under pressure between two adjacent coupled vehicles, said automatic hose connector comprising:

- (a) a first mating head flexibly supported by the coupler head on one vehicle and having arranged thereon the connecting end of the respective hose of the one vehicle,
- (b) a second mating head flexibly supported by the coupler head on the adjacent end of an adjacent vehicle and having arranged thereon the connecting end of the respective hose on the adjacent vehicle,
- (c) said mating heads being positionally aligned for making coupling engagement with each other to effect sealing contact between the connecting ends of the respective hoses upon coupling of the vehicles, each of said mating heads being provided with a recess, and
- (d) respective spring means for flexibly supporting each of said mating heads on the respective coupler heads, each of said respective spring means comprising:
 - (i) a first leaf spring, and
 - (ii) a second leaf spring complementing said first leaf spring,
 - (iii) said first leaf spring and said second leaf spring being clamped together at one end and anchored at said one end to the respective coupler head,
 - (iv) one of the leaf springs having a permanent deformity yieldable for exerting a constant biasing effect for maintaining the two leaf springs in close contact with each other, and for axially biasing the respective mating head toward the other mating head for maintaining positive sealing contact between the connecting ends of the hoses,
 - (v) one of said leaf springs being provided at the other end opposite its said one end with a flat horizontal portion on which the respective mating head associated therewith rests, and

- (vi) the other of said leaf springs being provided at the other end opposite its said one end with a cylindrical portion extending into said recess in the respective mating head,
- (vii) said flat horizontal portion and said cylindrical portion cooperating to provide a flexible support means for the respective mating head.

3,312,482 SWIVEL ASSEMBLY ROTATABLE THROUGH MORE THAN ONE REVOLUTION

Richard A. Barrett, Arcadia, and Daniel A. Polesky, Los Angeles, Calif., assignors to International Commodities, Inc., Pasadena, Calif., a corporation of California
Filed Dec. 14, 1964, Ser. No. 418,070
2 Claims. (Cl. 285-160)



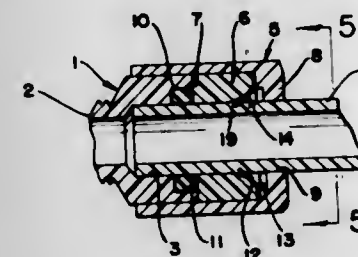
1. A swivel assembly comprising: a housing having a central axis and an opening in one end on said axis and surrounded by a generally spherically curved end wall of the housing, a cup member longitudinally disposed within said housing for axial movement along and rotation about said axis, resilient means acting between said housing and said cup member for yieldably urging the latter member axially toward said opening, said cup member having a generally spherically curved recess presented toward said opening and defining with said end wall a generally spherical socket, a generally spherical swivel member rotatably and swivelably disposed in said socket and including an extension protruding through said opening, the portion of said extension within said opening being substantially smaller in transverse cross-section than the opening to permit limited swivel movement of said swivel member in said socket, first co-acting stop means on said housing and cup member including an internal projecting stop shoulder on said housing and an external projecting stop shoulder on said cup member engageable with said housing stop shoulder for limiting relative rotation of said cup member relative to said housing in such manner that said cup member is rotatable relative to said housing through a given angle approaching 360°, and second co-acting stop means on said cup member and swivel member including a pair of diametrically opposed, axially extending grooves in the external spherically curved surface of said swivel member and a pair of diametrically opposed, axially extending tongues on said cup member engaging in and substantially narrower than said grooves, respectively, for limiting relative rotation of said swivel member relative to said cup member in such manner that said swivel member is rotatable relative to said cup member through an angle at least equal to the difference between said given angle and 360°, whereby said swivel member is rotatable through a full 360° relative to said housing.

3,312,483 PIPE CONNECTOR

Gilbert E. Leadbetter and Jim A. Rice, Mansfield, Ohio, assignors, by mesne assignments, to D and G Plastics, Co., Kent, Ohio, a corporation of Ohio
Filed Aug. 17, 1960, Ser. No. 50,274
5 Claims. (Cl. 285-340)

1. In a connector of the character described, a hollow body section terminating in a socket, the inner surface of which is cylindrical, said socket being adapted to fit closely over the end of a pipe and the like to be joined

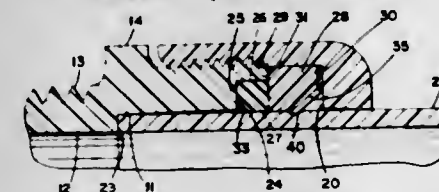
with the connector, an annular sealing ring groove being provided in the end face of such inner cylindrical surface of the socket at a region normally embracing such pipe end and the like, a clamping ring abutting such end face of the socket, the outer end of said clamping ring being formed with an inner bevel, a locking ring of frusto-conical shape with a flange at its outer end directed outwardly substantially at right angles to the axis of the ring, said locking ring being disposed against the outer beveled



end of the clamping ring, and a cap fitted over the clamping ring and socket portion of the connector body section, said cap having an apertured end wall contacting the flange of the locking ring to clamp the same, the smaller end of the ring being innermost and projecting beyond the inner periphery of the clamping ring tightly to grip a pipe end and the like inserted therethrough, the locking ring permitting forced passage of a pipe end but biting into the same upon any attempted withdrawal to preclude separation thereof from the connector.

3,312,484 TOGGLE RING TUBE COUPLING

David L. Davenport, Hudson, Ohio, assignor to D & G Plastics Co., Kent, Ohio, a corporation of Ohio
Filed Oct. 31, 1960, Ser. No. 66,014
4 Claims. (Cl. 285-340)

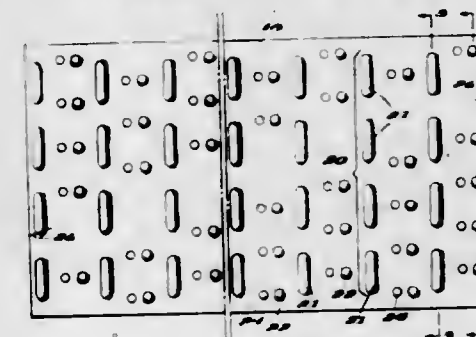


1. A coupling unit for use with tubular conduit or the like comprising a coupling body having a partially threaded cylindrical exterior, a central bore and a larger diameter counterbore concentric therewith and joined thereto by a radially extending annular wall at one end of said body; a resilient, compressible seal member disposed within and filling said counterbore, said seal having a relaxed cross sectional volume greater than the cross sectional volume defined by said wall and said counterbore; an apertured cap in threaded engagement with the coupling body; an apertured ring having a central frusto-conical surface housed within said cap; a cylindrical thrust member also housed within said cap, said thrust member having one end in engagement with said sealing member and one end in engagement with said ring, said ring and that end of the thrust member in engagement therewith including outer, annular, plane surfaces in concentric relation, said thrust member further including, at the end in engagement with said ring, a frusto-conical surface to accommodate the central frusto-conical surface of said ring, the position of the latter surface being displaced from the position of the former surface whereby the central surface of said ring is spaced from the central surface of said spacer to permit flexure of the frusto-conical surface of said ring inwardly toward the coupling body, the frusto-conical surface of the ring being flexibly yieldable and terminating in a circular gripping edge having a diameter closely approximating the diameter of the outer surface of the conduit to be coupled to facilitate insertion of the end of a conduit or the like into said coupling body

through said cap, said ring and said cylindrical spacer by flexure of said frusto-conical surface and to prevent removal of said conduit by penetrating contact of the gripping edge of said ring with the exterior of said conduit, said cap including an annular wall surrounding the aperture therein and engaging the flat annular periphery of said ring, said thrust member and said seal in assembled concentric relation with respect to the coupling body whereby as said cap is rotated on said coupling body axial movement thereof is transmitted through said ring and said spacer to compress said seal member against the outer surface of the conduit.

3,312,485 TRUSS PLATE

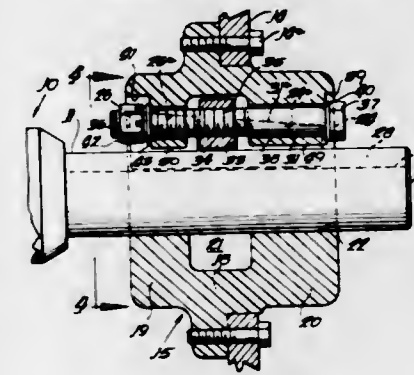
Gerald A. Koenigshof, Kensington, Md., assignor to Timber Engineering Company, District of Columbia, a corporation of Delaware
Filed May 3, 1961, Ser. No. 107,374
17 Claims. (Cl. 287-20.92)



6. A gusset plate for securing a joint of a roof truss comprising a flat plate, ridges on the plate for guiding a nailing gun across the surface of the plate, pins at spaced intervals on the plate for actuating the nailing gun at predetermined locations on the plate, said ridges extending in substantially parallel relation from adjacent one edge to adjacent the opposite edge of said plate, said pins projecting upwardly from said flat plate surface and being arranged in rows extending substantially parallel to said ridges, the remainder of said plate surface being substantially unobstructed to allow a nailing gun to be guided along said ridges and into engagement with said pins, and means on the plate for aligning the plate with the joint.

3,312,486 DEVICE FOR CLAMPING AND LOOSENING TAPERED TWIN KEY SHAFT CLAMPS

Donald R. Hartdegen, Lockport, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Apr. 5, 1965, Ser. No. 445,621
7 Claims. (Cl. 287-52.05)



1. In combination with a tractor drive axle having a hub receiving end portion and a tractor drive wheel having wheel structure provided with a central hub, means providing a driving connection between said axle and

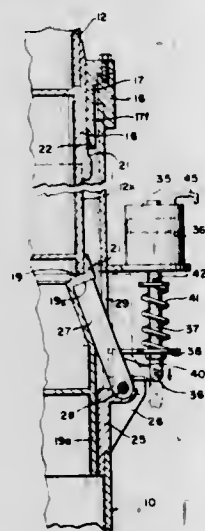
said wheel, comprising; means formed in said hub providing a plurality of recesses disposed one on each side of a diametral center line of said hub and axially extending between opposite faces of said hub and having a surface in each recess inclined relative to the axle, said hub having an axial bore extending therethrough receiving said axle therein and intersecting said recesses throughout the length thereof; said axle having a plurality of axially extending recesses therein disposed one on each side of a diametral center line of said axle; a plurality of elongated cam members tapered along one dimension of the longitudinal axial length thereof and disposed one each between a recess of said hub and a recess of said axle; adjusting means mounted in said hub including cam pusher means extending transversely of said shaft between and engageably connected with each of said cam members, and screw thread means constrained against axial displacement within said hub and axially extending therethrough and threadably connected to said pusher means and being rotatably operable for slidably urging said plurality of cam members into and out of a tight drive transmitting relation between said axle and said hub.

3,312,487

TOWER LOCKING DOGS

Maurice J. McIntyre, Sedro Woolley, Wash., assignor to The Humboldt Company, Seattle, Wash., a corporation of Washington

Filed June 15, 1964, Ser. No. 375,089
6 Claims. (Cl. 287—58)



1. In a logging tower comprising a tubular upper section telescopically adjustable into and from a tubular lower section; said upper section having a downwardly facing encircling shoulder embodied in its lower end portion as contained in the lower tower section, a plurality of locking dogs pivotally mounted in the surrounding wall of the lower section, means for swinging said locking dogs inwardly to holdingly engage with the encircling shoulder of the upper section, when extended, to support it in use and means for disengaging said dogs from the shoulder to permit the upper section to be telescoped into the lower section from its extended position of use.

3,312,488

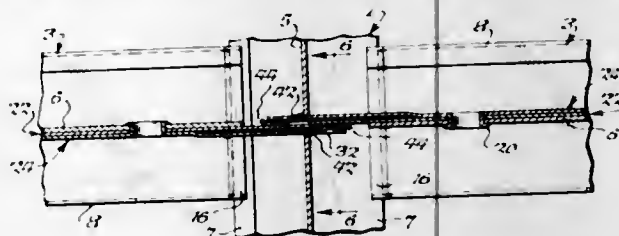
EXPANSION JOINT AND LOCKING CONNECTION FOR SUPPORTING GRID SYSTEMS

Robert P. Lickliter, 113 Buffalo St., and Earl Abbott, 81 Dudley Ave., both of Hamburg, N.Y. 14075, and John F. Reeves, Tonawanda, N.Y.; said Reeves assignor to said Lickliter and said Abbott

Filed Apr. 14, 1964, Ser. No. 359,588
11 Claims. (Cl. 287—189.36)

1. A locking connection for supporting grid systems and the like comprising a first support member having a web with a slot therein, a second support member, and a

locking connector extending from said second support member for insertion through said slot, said locking connector including a stop shoulder engaging against one side of said web and a resiliently yieldable locking part yieldably camming against an edge of said slot upon insertion through said slot and snapping back to engage



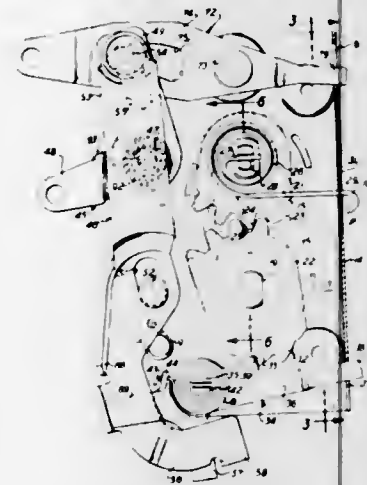
against the opposite side of said web, said second support member being spaced from said first support member web when said locking connector is so engaged therewith for lengthwise expansion of said second support member toward said first support member web, the engagement between said stop shoulder and said first support member web being yieldable to accommodate such expansion.

3,312,489

DOOR LATCH MECHANISM

Edgar G. Trudeau, Taylor, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Sept. 15, 1964, Ser. No. 396,691
12 Claims. (Cl. 292—48)



1. In a latch mechanism for a swinging door, a support plate, pivotal latch device means mounted on said support plate, detent means pivotally mounted on said support plate engageable with said latch device means for holding the same in door latching position, outer manually operable means including a lever mounted on said support plate, an elongated transmitting member, a first pin and slot means pivotally mounting said transmitting member on said support plate for swinging movement about a fixed pivot axis defined by the pin of said pin and slot means, a second pin and slot means pivotally coupling said transmitting member to said lever for swinging movement of said transmitting member by said lever, said first and second pin and slot means permitting shiftable movement of said transmitting member radially of said fixed pivot axis from a first position to a second position, said transmitting member when in said first position having a part thereof in abutting relation to part of said detent means through which said transmitting member upon being swung about said fixed axis by said lever is operative to transmit movement of

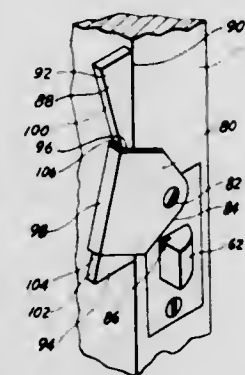
said outer manually operable means to said detent means to disengage the latter from said latch device means, said transmitting member part in the second position of said transmitting member by passing said detent means part upon said transmitting member being swung about said fixed pivot axis by said lever, said transmitting member in said second position thereby being rendered ineffective to transmit movement of the outer manually operable means to said detent means.

3,312,490

PROWLER-PROOF LATCH MEANS

Archie N. Macdonald, 1820 Hillcrest Drive, Hermosa Beach, Calif. 90254

Filed Oct. 21, 1965, Ser. No. 505,596
2 Claims. (Cl. 292—153)



1. Mechanism for holding a pivotally mounted door in the closed position relative to an adjacent door jamb, said mechanism comprising:
latch means supported on said door proximate an edge thereof,
said latch means including an elongate bolt having a distal end projecting from said door edge and translationally movable to extend into a cavity in said door jamb,
said latch means further including at least one door-knob operatively connected to withdraw said bolt from said cavity,
a shallow groove in said bolt proximate said distal end thereof,
a coverplate mounted on said door edge by at least one mounting screw, said bolt extending through said coverplate,
independent means operatively related to said bolt and mounted on said door for selectively preventing the withdrawal of said bolt from said cavity by said door-knob,
said independent means comprising a rotatable element of thin-sheet form pivotally supported on said one screw for limited pivotal movement in two opposite directions about a pivot center through said one screw,
said rotatable element having at least one edge adapted to operatively engage said shallow groove at one limit of said pivotal movement,
elongate wedge means slidably movable with respect to said door and operatively related to said rotatable element for selectively preventing withdrawal of said one edge from said shallow groove, and for selectively causing withdrawal of said one edge from said shallow groove upon the application of force to cause said slidable movement of said wedge means, said elongate wedge means including at least one sloping cam surface thereon, and
adjustably positionable bearing contact means secured to said rotatable element operatively related to said slidable wedge means so that sliding movement of

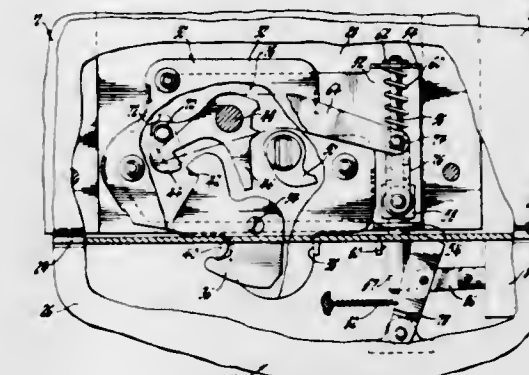
said slidable wedge means causes contact between said sloping cam surface and said bearing contact means to rotate said rotatable element and to selectively hold said rotatable element in said position of operative engagement between said edge and said groove, said bearing contact means being adjustably positionable with respect to said sloping cam surface for establishing said contact between said contact means and said cam surface.

3,312,491

CLOSURE LATCH WITH AUXILIARY LATCH RELEASE

Theodore F. Peters, Utica, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 24, 1964, Ser. No. 420,978
6 Claims. (Cl. 292—201)



6. In combination with a vehicle body closure movable between open and closed positions, and a closure latch for holding the closure in closed position and including latch means movable between latched and unlatched positions and detent means for holding the latch means in latched position, detent release means comprising, a release member operable upon said detent means, means operative to store operating energy generated by movement of said closure from said open to said closed position thereof, disableable means holding said energy stored in said operative means in the closed position of said closure, means for applying said stored operating energy to said release member, and means for selectively disabling said holding means to permit said stored operating energy to operate said release member and release said detent means.

3,312,492

DOOR LATCH INCLUDING A PERMANENT MAGNET AND A LATCHING ELECTROMAGNET

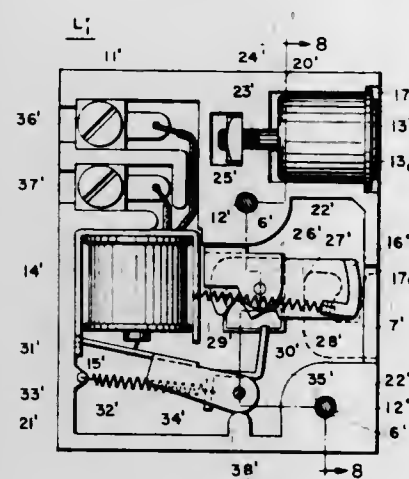
Kurt Remhof, Schalksmuhle, Germany, assignor to Albrecht Jung elektrotechnische Fabrik, Schalksmuhle, Germany

Filed Apr. 8, 1965, Ser. No. 446,747
Claims priority, application Germany, Apr. 9, 1964, J 12,582; Apr. 11, 1964, J 25,640
7 Claims. (Cl. 292—201)

4. A latching mechanism for doors comprising in combination:
(a) a housing including a pair of complementary shells defining a pair of separate enclosed spaces;
(b) a permanent magnet inside of one of said pair of spaces having a pole surface arranged substantially flush with one side of said housing;
(c) a fixed armature plate cooperating with said permanent magnet arranged substantially parallel to said pole surface thereof;
(d) a first latch supported by said armature plate and projecting from said armature plate;
(e) a second latch inside the other of said pair of spaces arranged to cooperate with said first latch,

said second latch having a predetermined fulcrum, being pivotable about said fulcrum to two limit positions and defining a pair of recesses, each to one side of said fulcrum;

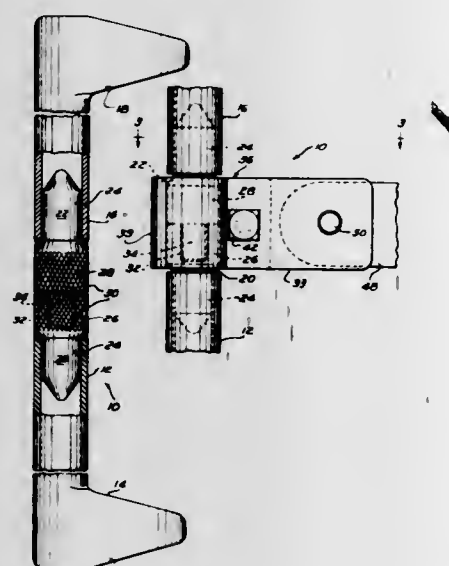
(f) an over-center spring inside said other of said pair of spaces biasing said pivotable latch to one of said two limit positions thereof; and



(g) an electromagnet inside said other of said pair of spaces including a pivotable armature having an abutment arranged to alternately engage one of said pair of recesses defined by said second latch upon any pivotal motion of said armature to pivot said second latch to either one of said two limit positions thereof.

3,312,493 DOOR FASTENER

Roland J. Olander, La Grange, Ill., assignor to W. H. Miner, Inc., Chicago, Ill., a corporation of Delaware
Filed Aug. 2, 1965, Ser. No. 476,268
10 Claims. (Cl. 292-218)

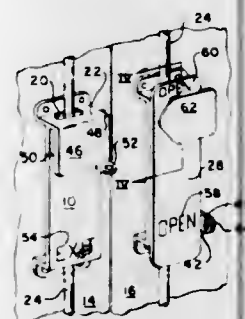


1. A door fastener comprising a pair of relatively rotatable co-axial locking bars each carrying a cam for engagement with a respective keeper to latch a door in its locked position with the relative rotation between said locking bars permitting the respective cams to be separately engaged in their limit position with their respective keepers, and a lever mount strap means encircling adjacent ends of said bars and having a single tightening means for thereafter locking said bars together to permit their

simultaneous rotation for either disengaging said cams from said keepers or engaging said cams with said keepers to latch said door with said cams in said limit positions.

3,312,494 LOCK MECHANISM

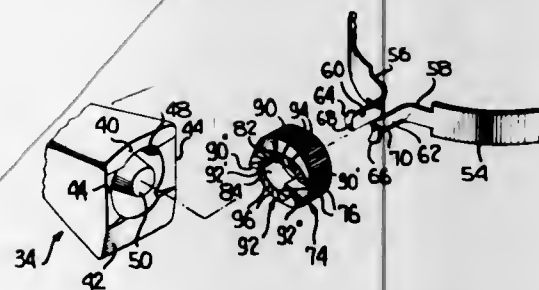
Louis A. Antoniolli, 2504 Autumn Wood Drive, Glenshaw, Pa. 15116
Filed Aug. 9, 1965, Ser. No. 478,280
8 Claims. (Cl. 292-181)



7. In a locking mechanism, the combination comprising a pair of base plates, means for mounting said base plates adjacent the confronting edges of doorway structure which are to be secured against relative movement, a latch member pivotally secured on one of said base plates for pivotal movement through a plane generally parallel to the other of said base plates when so mounted, a cover plate spacedly mounted on said other base plate at a position generally parallel thereto and to said one base plate, said cover plate being spaced sufficiently from said other base plate to receive an end portion of said latch member therebetween, a keeper on each of said cover plate and said one base plate, said keepers determining respectively the closed and open positions of said latch member, and a keeper on said latch member alignable with said cover plate and said base plate keepers at said closed and opened positions respectively.

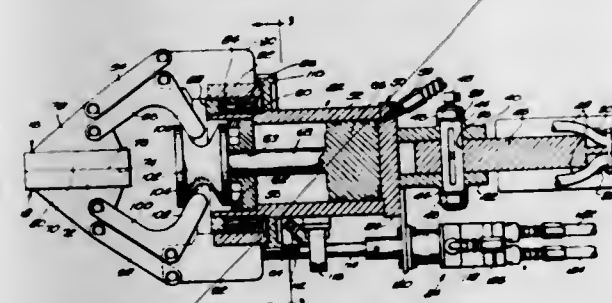
3,312,495 HANDLE APPARATUS

James W. Serio, Hillcrest Road, Elmira, N.Y. 14903
Filed Feb. 15, 1965, Ser. No. 432,517
8 Claims. (Cl. 294-31.2)



1. Handle apparatus comprising engaging means having opposite outwardly extending end portions, clamping means having a bore formed therethrough, said opposite end portions of said engaging means being received within said clamping means and extending through said bore and in engagement therewith, the wall of said bore defining a pair of inwardly facing cam surfaces, each of said cam surfaces defining a surface eccentric to the axis of said bore, said cam surfaces being engageable with the opposite end portions of said engaging means for clamping the engaging means tightly about an associated container upon relative rotation of said clamping means with respect to said end portions of the engaging means.

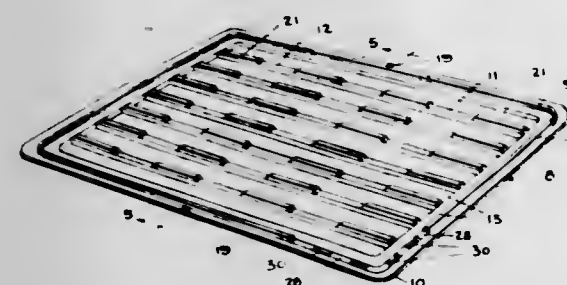
3,312,496
UNDERWATER MANIPULATOR
Albert Bouteille, P.O. Box 266, Warren, R.I. 02885, and
Howard R. Reed, 213 Warren Ave., East Providence, R.I. 02914
Filed Sept. 14, 1965, Ser. No. 487,276
8 Claims. (Cl. 294-66)



1. An underwater manipulator comprising an enclosed housing, a piston slidably carried in said housing and having a shaft extending out of said housing, means selectively propelling said piston and said shaft in either direction, a yoke carried by said shaft exteriorly of said housing, a cover rotatably carried about said housing, a pair of manipulator jaws, at least one pair of parallel arms pivotally joining at least one of said jaws to said cover, means operably coupling at least one arm of said one pair of parallel arms with said yoke whereby upon reciprocation of said yoke by said piston said jaws are parallelly moved relative to one another, and means selectively effecting rotation of said cover and jaws in either rotational direction through any degree of rotation.

3,312,497 FLOOR GRATINGS AND ACCOMPANYING DIRT AND WATER RECEPTACLES FOR MOTOR VEHICLES

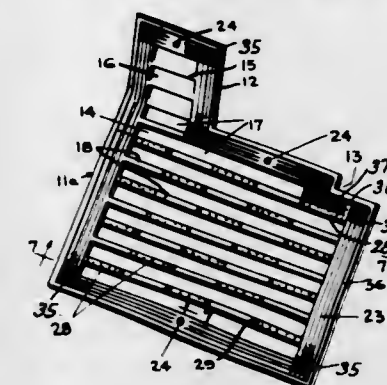
Stanley S. Stata, 301 Longwood St., Rockford, Ill. 61107
Filed Dec. 8, 1964, Ser. No. 416,870
14 Claims. (Cl. 296-1)



1. In a floor grating construction for vehicles, a substantially horizontal metallic floor supporting a layer of compressible sound-deadening and insulating material with carpeting overlying the same that is also of compressible material, a shallow pan of relatively rigid metallic material resting on the first mentioned layer of compressible sound deadening material when set in an opening provided therefor in the carpeting and having a marginal flange above the level of the bottom of the pan and overlying the carpeting, means securing said pan by its flange to said floor compressing both of the aforementioned compressible materials so that the flange lies substantially flush with the top of the carpeting surrounding the same and dirt can be swept off the carpeting into the pan conveniently, and shoe scraper grating means provided in said pan, comprising spaced parallel ribs of metallic construction in fixed relation to the pan, and elongated cleats of non-skid material secured to the tops of said ribs and extending lengthwise thereof in longitudinally spaced relationship to one another.

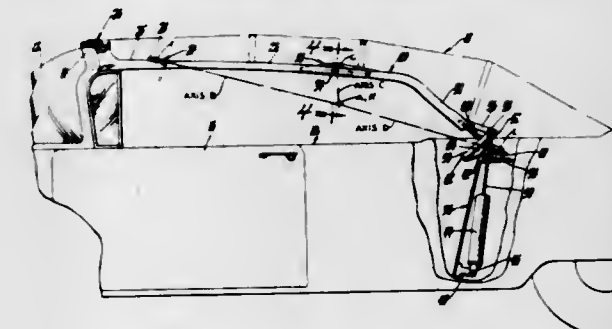
3,312,498 FLOOR GRATINGS AND ACCOMPANYING DIRT AND WATER RECEPTACLES FOR MOTOR VEHICLES

Stanley S. Stata, 301 Longwood St., Rockford, Ill. 61107
Filed Dec. 14, 1964, Ser. No. 417,888
11 Claims. (Cl. 296-1)



1. In a floor grating construction for vehicles, a substantially horizontal metallic floor supporting a layer of compressible sound deadening and insulating material with carpeting overlying the same that is also of compressible material, a generally rectangular shallow pan of relatively rigid material resting on the first mentioned layer of sound deadening material when set in an opening provided therefor in the carpeting and having a marginal flange above the level of the bottom of the pan and overlying the carpeting, means securing said pan by its flange to said floor compressing said both of the aforementioned compressible materials so that the flange lies substantially flush with the top of said carpeting surrounding the same and dirt can be swept off it into the pan conveniently, shoe scraper grating means in said pan, and a structurally independent, generally rectangular, upwardly inclined toe-board panel of less depth than said pan and having a rear edge portion abutting the front edge portion of said pan, said toe-board panel overlying carpeting on an upwardly inclined toe-board portion of said floor and extending forwardly from the front of said pan and draining into said pan, said toe-board panel having shoe scraper means thereon, there being means for separately securing said toe-board panel to the toe-board portion of said floor.

3,312,499
CONVERTIBLE TOP
Stanley Podwys, Orchard Lake, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 22, 1965, Ser. No. 466,020
8 Claims. (Cl. 296-117)

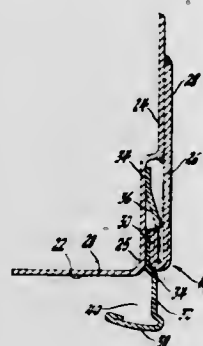


1. In combination with a vehicle body, a convertible top movable between raised and lowered positions comprising, a pair of spaced foldable side rails, each rail including a plurality of rail sections, means pivotally interconnecting the sections of each rail for movement of the sections relative to each other about a single pivotal axis, means pivotally mounting one rail section of each rail

on said body for folding each of said rails, the pivotal axes of said interconnecting means and said mounting means respective to each side rail meeting at a convergent point located short of infinity.

3,312,500 MOLDING

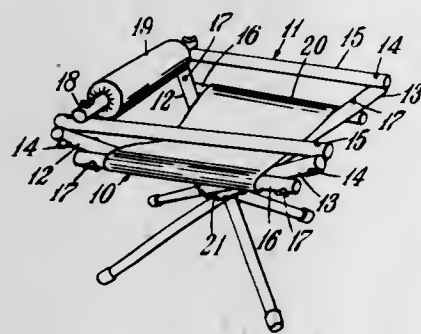
Richard J. Waldo, Mount Clemens, and William J. Flaig, Detroit, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 2, 1965, Ser. No. 476,351
4 Claims. (Cl. 296—135)



1. A drip molding assembly adapted to be secured to a panel having two faces substantially at right angles to each other, said assembly comprising: a generally J-section fastener having a long leg and a short leg recurved from one end of said long leg, said long leg being secured to one face of said panel at a location such that the junction between said long and short legs is located near the junction of the faces of said panel, said fastener being oriented so that said short leg resides between said panel and said long leg, and a generally L-section molding having a long side with a plurality of tabs lanced therefrom and a short side at roughly right angles to said long side, said long side being inserted between said one face of said panel and said fastener so that said tabs are locked behind said short leg of said fastener to secure said molding relative to the other face of said panel to form a channel between said short side of said molding and said other face of said panel.

3,312,501 COLLAPSIBLE SEATS

John Penn, Little Haddon Hall, Woodbridge, Suffolk, England
Filed Dec. 13, 1965, Ser. No. 513,348
4 Claims. (Cl. 297—42)

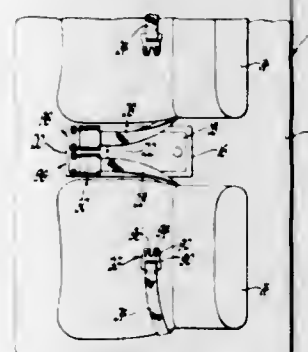


1. A collapsible seat which, in its assembled condition, comprises a pair of spaced side members, a flexible seat-forming web, interconnecting said side members, a pair of leg members arranged in X-formation pivotally connected to an arm-rest member and side member, each leg member being downwardly and inwardly directed towards the

opposite diagonal corner of the seat so that all the legs converge towards one another and cross at a position below the seating area, a back-rest member releasably interconnecting said arm rests and means encircling and retaining said legs in their X-formation adjacent the cross-over position, the arrangement being such that the seat may be collapsed by releasing said back-rest from at least one of said arm rests and then bringing said side members together.

3,312,502 STORAGE MECHANISM FOR SEAT BELT BUCKLES

Orson E. Coe, 148 E. Washington, Ionia, Mich. 48846
Continuation of application Ser. No. 297,576, July 25, 1963. This application Feb. 14, 1966, Ser. No. 536,503
10 Claims. (Cl. 297—385)

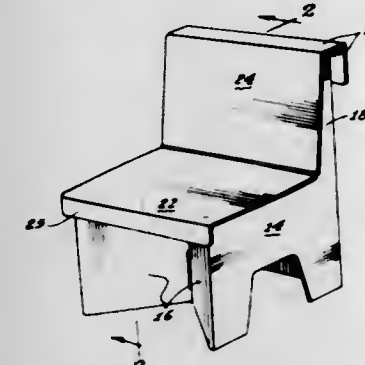


1. The combination comprising a vehicle seat, a seat belt assembly associated with said seat and including a pair of flexible belts, one end of each of said belts being anchored, a latch plate connected to the other end of one of said belts, a buckle connected to the other end of the other of said belts, said buckle comprising a floor and a pair of upstanding side walls defining a latch-receiving slot for receiving said latch plate, latch means mounted between said side walls for movement between a latched position adjacent said floor and an unlatched position away from said floor, and yieldable means continuously biasing said latch means toward said latched position, said latch plate including opposed surfaces having a peripheral configuration defined by leading edge means joining a pair of laterally spaced side edges thereof, said leading edge means being insertable into said latch-receiving slot to engage said latch means to move said latch means away from said floor and toward said unlatched position as one of said surfaces of said latch plate slides along said latch means and the other of said surfaces thereof moves along and coacts with said floor and said side edges thereof coact with said side walls of said buckle to guide said latch plate into the latter, said latch means releasably latching said latch plate upon insertion of said latch plate within said latch-receiving slot of said buckle whereby said belt assembly may confine a vehicle passenger within said seat, and a storage plate mounted in a fixed position adjacent said seat, said storage plate including opposed surfaces having a peripheral configuration defined by leading edge means joining a pair of laterally spaced side edges thereof, said leading edge means of said storage plate being insertable into said latch-receiving slot of said buckle to engage said latch means to move said latch means away from said floor and toward said unlatched position as one of said surfaces of said storage plate slides along said latch means and the other of said surfaces on said storage plate moves along and coacts with said floor and said side edges of said storage plate coact with said side walls of said buckle to guide said storage plate into the latter for supporting said buckle in a stored non-use position, said latch means being biased into engagement with said storage plate by said yieldable

means to firmly retain said buckle on said storage plate when said buckle is fully positioned on said storage plate in said stored non-use position.

3,312,503 PAPERBOARD CHAIR

Tom Suzuki, San Diego, Calif., assignor to Frank T. Ige, Los Angeles, Calif.
Filed Aug. 19, 1965, Ser. No. 480,923
2 Claims. (Cl. 297—442)



1. In a chair made of stiff sheet material, the combination of:

two side panels forming the two opposite sides of the chair, said side panels having upward extensions at their rear edges forming parts of the back rest of the chair;

a back panel interconnecting the two side panels;

a pair of support panels connected to the front edges of the side panels respectively and converging rearwardly therefrom;

a back rest panel supported by the upward extensions of the two side panels; and

a seat panel supported adjacent its side edges by the two side panels and supported centrally by the converging support panels,

said pair of support panels being formed with tongues and slots for mutual engagement at their converging ends, said seat panel having a forward flap, said flap being formed with tongues and said converging support panels being formed with slots to receive the tongues,

said back rest panel being provided with a flap to extend rearward over the back of the chair, said last mentioned flap being formed with tongues and said back panel being formed with slots to receive the tongues, said seat panel, back rest panel and the two flaps constituting a single blank of the sheet material, the remaining panels of the chair constituting a second blank of the sheet material.

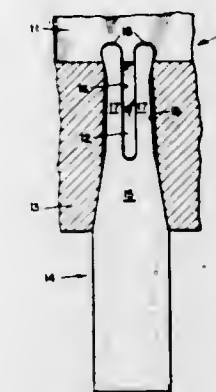
3,312,504 ATTACHMENT MEANS FOR ICE CUTTER TOOTH ON ROAD GRADER BLADE

Yrjö Mäkinen, Tampere, Finland, assignor to Lokomo Oy, Tampere, Finland
Filed Apr. 30, 1964, Ser. No. 363,770
Claims priority, application Finland, May 7, 1963, 930/63

7 Claims. (Cl. 299—24)

1. In an attachment for ice cutter teeth on road grader blades, having basic plate means as well as chuck means and intermediate plate means attached thereto, said chuck means having therein at least two spaced-apart slots, and a removable cutting tooth in each of said slots, the improvement comprising a wedge-shaped shank portion on each tooth, wall portions of said chuck means defining the respective slots, each slot having a first section narrowing in width inwardly, in substantial alignment and registering frictional engagement with a corresponding, inwardly narrowing part of said shank portion on the re-

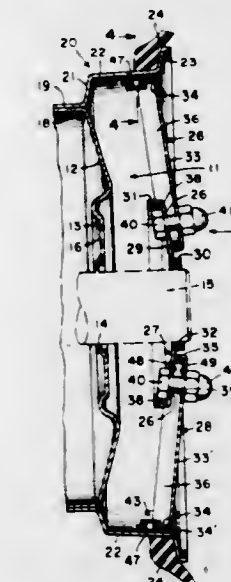
spective tooth, each slot further having a second section narrowing to a lesser degree than said first slot section, and elastic fastening means formed by part of said shank portion for immobilizing each tooth within its slot, a



portion of said fastening means protruding beyond the inner edge of said slot, the area of said shank portion adjoining said fastening means being spaced apart from said second slot section, so as to increase resiliency of said tooth with respect to said chuck means.

3,312,505 WHEEL COVER

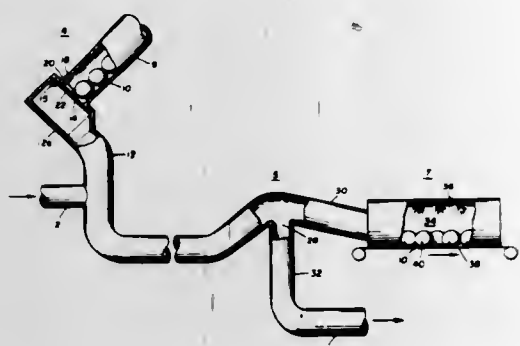
William L. Hutchins, 2672 Addie Road, Hazelwood, Mo. 63042
Filed Jan. 5, 1965, Ser. No. 423,444
6 Claims. (Cl. 301—37)



1. A wheel cover comprising a hub member having a radially disposed frusto-conical surfaced wall formed at a predetermined angle to a base plane thereof and an axially disposed outer peripheral flange, and a plurality of spoke members having inner assembly ends and outer ends, each of said spoke members having a main wall and integral assembly end and side flanges formed to space the main wall from said frusto-conical surfaced wall and abut said peripheral flange at circumferentially spaced points, and said spoke members being removably secured to said hub member by single fastening means engaging said spaced main wall and frusto-conical surfaced wall, said spoke members extending radially outwardly from said hub member at said predetermined angle to the base plane of said frusto-conical surfaced wall of said hub member, and gripper means on the outer ends of said spoke members.

3,312,506 TRANSPORTATION OF SOLIDS IN PIPELINES

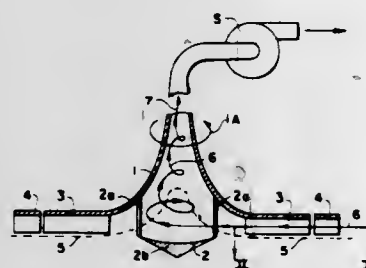
Charles Ovid Baker, Garland, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Sept. 23, 1965, Ser. No. 489,526
9 Claims. (Cl. 302-66)



1. In the transportation of a substance by a fluid-carrying pipeline, the method comprising the steps of:
 - (a) inserting into said pipeline capsules having an interior core of said substance and an outer protective coating of a material which has a melting point different from the melting point of said substance;
 - (b) moving said capsules through said pipeline by the flow of fluid therethrough;
 - (c) removing said capsules from said pipeline; and
 - (d) heating said capsules to a temperature at least as great as the melting point of one of said substance and said protective material whereby said one of said substance and said protective material is melted and removed from said capsules.

3,312,507 METHOD FOR HANDLING PULVERULENT MATERIAL

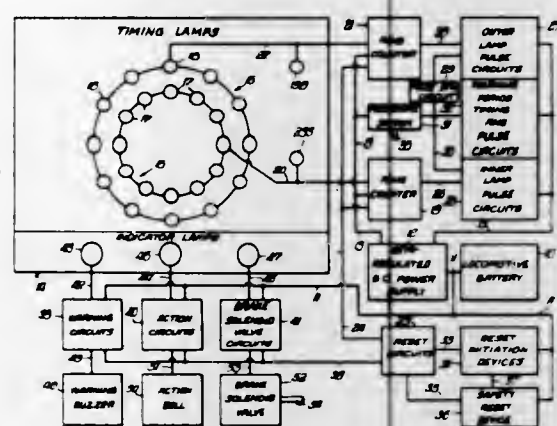
Karl-Heinz Oehrich, Marienbaderstr. 40, and Karl Rudolf Schmidt, Bissingerstr. 7, both of Erlangen, Germany
Filed Dec. 27, 1965, Ser. No. 516,616
Claims priority, application Germany, Dec. 31, 1958, S 61,211
15 Claims. (Cl. 302-66)



1. The method of handling solid particle material by entrainment in fluid, which comprises passing a primary flow of particle-laden fluid in a given flow direction and along a predetermined axis through enclosed conduit means having a solid ground transverse to said given primary flow direction, applying a suction to said fluid to create radial flow forces in said fluid toward said axis, agitating said fluid to create rotation thereof about said axis so as to create radial centrifugal forces in said fluid in a direction away from said axis, and controlling said radial flow forces relative to each other to create a sink in said fluid, whereby the entrained particle material travels in a helical path through said conduit means.

3,312,508 ELECTRONIC ALERTNESS CONTROL

William M. Keller, 8864 E. Prairie Road, Skokie, Ill. 60077, and Robert F. Breese, 1609 W. Sherwin Ave., Chicago, Ill. 60626
Filed Dec. 30, 1964, Ser. No. 422,331
16 Claims. (Cl. 303-19)



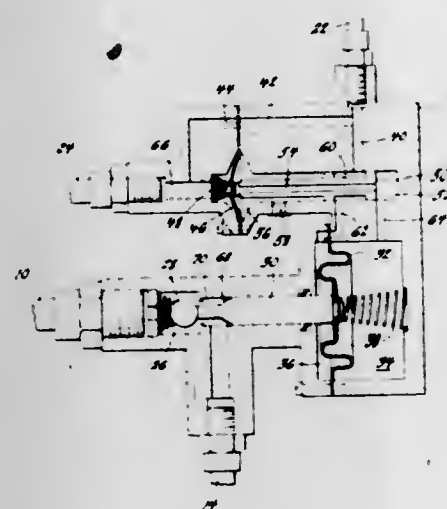
1. In a timing device, visual display means including two separate series of electrical lamps, first and second circuit means adapted to sequentially energize and de-energize each lamp in the first and second series respectively, said first and said second circuit means being so synchronized that the lamps in one series are thereby sequentially illuminated at a rate different from that of the other series, a third circuit means associated with said first and second circuit means and effective to energize signal means when the complete set of lamps in one series has been illuminated a predetermined number of times more than the complete set of lamps in the other series, fourth circuit means effective a predetermined time after said signal means are energized to energize a second signal means, manually operated means associated with the circuits of the timing device to reinitiate the simultaneous commencement of the sequential energization of the lamps in each of the two series and de-energize said signal means at any time prior to the energization of the said second signal means.

3,312,509 ANTI-SKID BRAKE PRESSURE MODULATOR

Frank H. Highley, Franklin, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 13, 1965, Ser. No. 479,486
9 Claims. (Cl. 303-21)

1. A modulating valve for a brake anti-skid device operating to shut off braking pressure increases during an impending skid condition of a vehicle, said modulating valve comprising: a valve body carried by a vehicle; an inlet to said body from a brake master cylinder and an outlet from said body to vehicle brakes whose braking is being controlled, said inlet and said outlet being isolatable from one another by a spring loaded ball check valve; first control means including a chamber having a diaphragm disposed therein operatively carrying a slidable valve engageable with said ball check valve; a control pressure source communicating positive and negative pressure into said valve body; second control means in fluid communication with said control pressure source and including a spool valve adapted to selectively direct negative pressure assisted by a positive pressure input from said control pressure source to opposite sides of said diaphragm; and means for transmitting an impulse from an anti-skid device to said second control means thereby shifting said control means to direct negative pressure from said control pres-

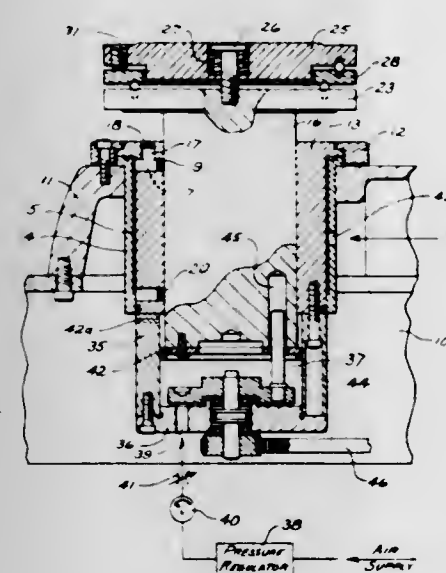
sure source to one side of said diaphragm to cut off and relieve braking pressure to selected vehicle wheels and directing positive pressure to an opposite side of said diaphragm to assist the negative pressure; said spool valve being reversibly shiftable by said control pressure source as the impulse from the anti-skid device is cancelled there-



by directing negative pressure assisted by positive pressure to positively driving said diaphragm engaged shiftable member into said ball check valve to reestablish free pressure communication between said inlet and said outlet into said valve body from the vehicle braking system.

3,312,510 PRECISION SPINDLE

Paul Donald Brehm, 3 Phil Lane, Keene, N.H. 03431
Filed Oct. 18, 1965, Ser. No. 497,390
6 Claims. (Cl. 308-9)

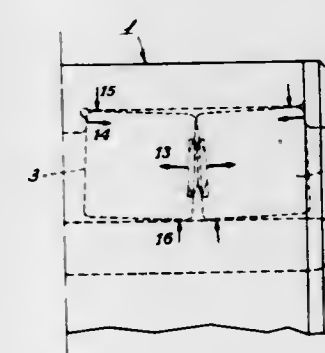


1. A device for staging, rotating and axially translating workpieces comprising, a housing, a spindle rotatable and slidable within said housing, a pressure chamber in said housing and surrounding said spindle, a plurality of passages circumferentially placed around said spindle and connecting said chamber with the surface of said spindle, a second pressure chamber defined by said housing and one end of said spindle, and means for supplying fluid under pressure to said pressure chambers whereby said spindle is centered and moved axially within said housing.

3,312,511 ROLLING BEARINGS

Viktor Synek, Goteborg, Sweden, assignor to Aktiebolaget Svenska Kullagerfabriken, Goteborg, Sweden, a corporation of Sweden
Filed July 7, 1964, Ser. No. 380,828
Claims priority, application Sweden, July 30, 1963, 8,374/63

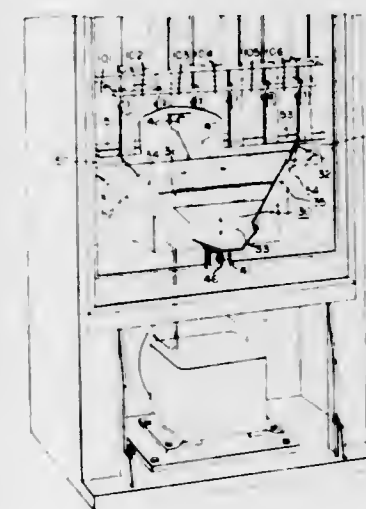
1. A cylindrical roller bearing assembly comprising inner and outer rings having confronting raceways which are spaced apart, a plurality of rollers in the annular space between the raceways arranged in at least two rows of rollers, a guide flange confronting outer axial end faces of the rollers in each of said rows, biasing means comprising at least one disc spring disposed between inner axial end faces of the confronting rollers in adjacent



rows providing a resilient force to urge the rollers away from one another and against the guide flanges thereby to subject the rollers to a tilting force in a radial plane of a magnitude to maintain the rollers in contact with the raceways to prevent sliding of the rollers in the unloaded zone of the bearing.

3,312,512 VENDING MACHINE ARTICLE DELIVERY CHUTE ARRANGEMENT

Francis A. Gasparini, Longmeadow, Mass., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 28, 1965, Ser. No. 451,575
5 Claims. (Cl. 312-45)



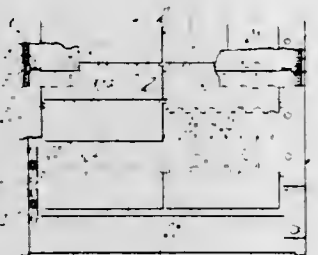
1. A vending machine comprising, a cabinet, a vending opening in a face wall of said cabinet, a plurality of side-by-side article storage columns within said cabinet, an article delivery chute interconnecting the delivery ends of said columns and said vending opening, means pivotal-

ly supporting said chute intermediate its width along a pivot axis in general alignment with the chute longitudinal axis within said cabinet, and resilient means interconnecting said chute and said cabinet at points spaced from said pivotal supporting means to resiliently constrain said chute to a predetermined position while permitting motion of said chute during delivery of an article being vended.

3,312,513

LID ARRANGEMENT FOR VERTICAL STORAGE FILING CABINET

Graham Irving Barker, 208 Golden Oaks, Corlett Drive, Johannesburg, Transvaal, Republic of South Africa
Filed Dec. 1, 1965, Ser. No. 511,294
2 Claims. (Cl. 312-184)



1. In a filing cabinet having a frame and a pair of laths each having mounted thereon a multiplicity of pins for suspending filed articles, said pins on each of said laths being directed toward the opposite lath, at least one of said laths being movable toward and away from the other said lath between a fully closed position in which the free ends of its said pins are adjacent the mounted ends of the pins on the other lath, and a fully opened position in which said free ends are withdrawn beyond the free ends of the pins on the other lath, that improvement comprising a pair of lids mounted side by side on the lath opposite said movable lath for independent pivotal movement toward and away from said pins, each said lid having a main portion and a forward lip extending downwardly from the main portion, at least a portion of each said lip extending below said pins when said main portion is in position covering said pins from above, said lips thereby preventing removal of said filed articles from said pins even when said movable lath is in its fully opened position, whereby articles of width less than the full width of the laths can be filed side by side and one of said articles covered by one lid removed while the other of said articles is retained on said pins by the other lid.

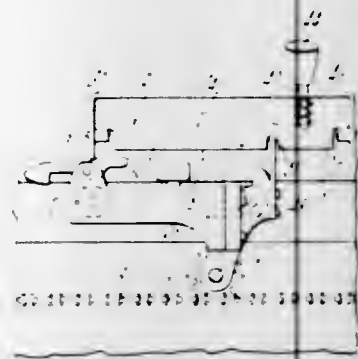
3,312,514

LATCH FOR VERTICAL STORAGE FILING CABINET

Graham Irving Barker, 208 Golden Oaks, Corlett Drive, Johannesburg, Transvaal, Republic of South Africa
Filed Dec. 1, 1965, Ser. No. 511,295
3 Claims. (Cl. 312-184)

1. In a filing cabinet having a frame and at least one pair of cooperating laths each having mounted thereon a multiplicity of pins, said pins on each of said laths being directed toward and interspersed between the pins on the other said lath, at least one of said laths being movable toward and away from the other said lath between a fully closed position in which the free ends of its said pins are adjacent the mounted ends of the pins on the other lath, and a fully opened position in which

said free ends are withdrawn beyond the free ends of the pins on the other lath, that improvement comprising a stop member mounted on said movable lath, a manually operable latch mounted on said frame adjacent said movable lath for pivotal movement toward and away from said stop member, said latch having an edge adjacent said stop running parallel to the direction of motion of said movable lath and a slot in said edge for receiving said stop member located so that when said stop member is in said

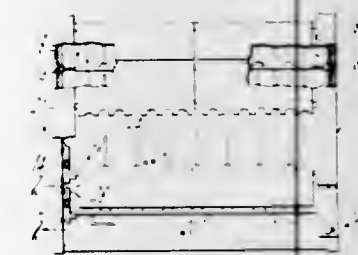


- slot said movable lath is in an intermediate partially closed position between said fully opened and fully closed position, whereby access to the stored articles is provided without disengaging the pins fully therefrom, and a spring biasing latch toward said stop member with said edge riding against said stop member when said lath is between said positions and locking said stop member in said slot when said lath is in said intermediate position.

3,312,515

TRANSVERSE ADJUSTMENT BEARING FOR VERTICAL STORAGE FILING CABINET LATH

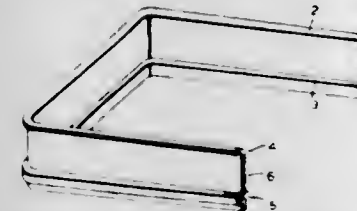
Graham Irving Barker, 208 Golden Oaks, Corlett Drive, Johannesburg, Transvaal, Republic of South Africa
Filed Dec. 1, 1965, Ser. No. 511,296
5 Claims. (Cl. 312-321)



1. In a vertical storage filing cabinet having at least one horizontal load supporting lath movably end supported at each end thereof on bearings in parallel horizontal tracks of said cabinet, that improvement which comprises: a vertical wall member in said cabinet at each end of and adjacent said lath parallel to and vertically spaced from said tracks; and a horizontally disposed bearing rotatable on a vertical axis on each end of said lath bearing against said walls; said horizontal bearing being eccentrically mounted for swinging about another vertical axis; whereby said lath may be transversely adjusted relative to said walls and tracks by swinging said bearing to different eccentric positions.

3,312,516

SLIDE FRAME OR THE LIKE
Paul Krahn, Am Knie 29, Postfach 450, Herford, Westphalia, Germany
Filed July 15, 1965, Ser. No. 472,265
Claims priority, application Germany, July 18, 1964, K 48,468; Reg. No. (utility model) 1,903,658
6 Claims. (Cl. 312-330)

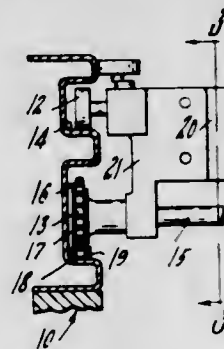


1. Drawers or the like characterized in that the side walls and rear wall are made of one continuous thermoplastic board, said board having a continuous outwardly projecting flange at the upper edge of the board and a continuous outwardly projecting channelled rib disposed above the lower edge of the said board.

3,312,517

END SUPPORT AND GUIDE MEANS FOR LOAD SUPPORTING LATHS IN VERTICAL STORAGE FILING CABINET

Graham Irving Barker, 208 Golden Oaks, Corlett Drive, Johannesburg, Transvaal, Republic of South Africa
Filed Dec. 1, 1965, Ser. No. 511,297
2 Claims. (Cl. 312-331)



1. In a vertical storage filing cabinet having at least one load bearing lath end supported by bearings in tracks of said cabinet, and having shaft connected sprocket wheels cooperatively engaging spaced apart bars in chain tracks, vertically spaced from said bearing tracks, for maintaining the orientation of said lath, that improvement in which comprises positioning the bottom surface of said bearing tracks at a distance from the upper portion of said bars greater than the distance between the bottom of said bearings and the bottom of said sprockets at the position between and most remote from the ends of the teeth of said sprockets but less than the distance between the bottom of said bearings and the bottom of said sprockets at the ends of said teeth.

3,312,518

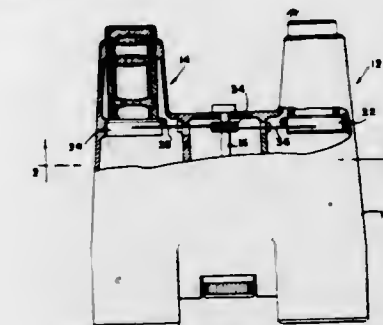
BINOCULARS HAVING HIGH AND LOW MAGNIFICATION LENS SYSTEMS AND COUPLED SELECTIVE SHUTTERS

David P. Bushnell, Altadena, Calif.
(2828 E. Foothill Blvd., Pasadena, Calif. 91107)
Filed Sept. 6, 1963, Ser. No. 307,043
3 Claims. (Cl. 350-37)

1. A binocular device comprising a casing, a first viewing means in one section of said casing having a lens system providing low magnification and wide-field, a second viewing means in another section of said casing having a second lens system providing high magnification and narrow-field,

control means to simultaneously open one of said viewing means and close the other of said viewing means,

said control means including shutters for each of said viewing means, a ring about each of said shutters, a pinion means on each of said rings, rack means mating with each of said pinion means to effect rotation of each of said rings upon linear movement of said rack means,



each of said rack means having a portion extending outwardly and generally at right angles to its casing section and positioned so that inward pressure causes operation of said shutters,

said control means further including belt means connected to each of said rings to effect simultaneous opening of one shutter and closing of the other upon inward pressure of said extending portion of one of said rack means.

3,312,519

WIDE RANGE HIGH SPEED ADJUSTABLE FOCUSING OF HIGH FREQUENCY ELECTROMAGNETIC RADIATION

Erhard Max, Wappingers Falls, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 28, 1963, Ser. No. 291,515
14 Claims. (Cl. 350-161)



1. An adjustable focusing system comprising: a source of collimated, high frequency electromagnetic radiation, a stress-optic plate which will change the status of polarization of said radiation passing through it when under stress, having mechanical wave propagation characteristics suitable to produce standing waves, means to induce mechanical vibrations in said plate, said mechanical vibrations being induced at a predetermined area so located that substantially concentric standing waves are induced in said plate at locations which define one Fresnel zone plate to said radiation, means to vary the frequency of said mechanical vibration to define a second Fresnel zone plate to said radiation which causes focusing at a point different from said first Fresnel zone plate.

CHEMICAL

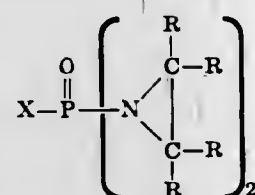
3,312,520

PROCESS OF TREATING CELLULOSE PAPER HAVING VERY LOW WATER CONTENT WITH ANHYDROUS SOLVENT SOLUTIONS OF PHOSPHOROUS COMPOUNDS CONTAINING POLY(AZIRIDINYL) GROUPS AND RESULTING PRODUCTS

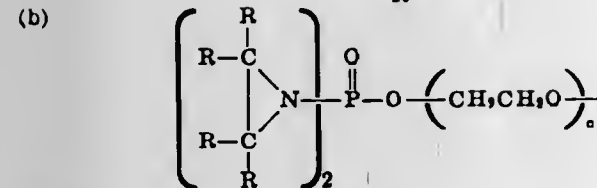
Duane L. Kenaga, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 14, 1964, Ser. No. 367,557
8 Claims. (Cl. 8-116.2)

1. A process for treating cellulose paper which comprises contacting cellulose paper having a water content of up to 10 percent by weight with a water-immiscible, inert, anhydrous solution of a water-soluble compound of the formula



wherein X is selected from the group consisting of:



and



wherein n is an integer of from 2 to 25, each R is a group of the formula $(\text{C}_k\text{H}_{2k})_n$ in which k is an integer of from 0 to 1 and R' is selected from the group consisting of a monovalent aryl group of from 6 to 7 carbon atoms and an alkyl group of from 1 to 13 carbon atoms, followed by curing the treated paper at a temperature of from ambient room temperature up to 270° C.

3,312,521

PROCESS OF CREASEPROOFING CELLULOSE FIBERS WITH BOTH GLYOXAL AND FORMALDEHYDE

John Geoffrey Stenner, Rugby, England, assignor to Courtaulds Limited, London, England, a British company

No Drawing. Filed Mar. 5, 1963, Ser. No. 263,072
Claims priority, application Great Britain, Mar. 30, 1962, 12,236/62

7 Claims. (Cl. 8-116.4)

1. A process for the manufacture of cross-linked cellulose fibres comprising impregnating the cellulose fibres with an aqueous solution of glyoxal at a pH of from about 3 to about 8 and cross-linking the cellulose fibres by dry curing the impregnated fibres at a high temperature, and further impregnating said cross-linked fibres with an aqueous solution of formaldehyde at a pH of from about 3 to about 8 in the presence of a catalyst which is an inorganic metal salt soluble to the extent of at least about 0.3 gram mole per liter in water at about 20° C. at about pH 5 and is zinc sulphate or a salt of a Group II metal with a monobasic acid ionized to the ex-

tent of at least about 50 percent in normal aqueous solution at about 18° C., there being present on said cross-linked fibres a molar ratio of at least about 1 mole of formaldehyde to about 1 mole of reacted glyoxal, drying said fibres, and dry curing the dried product at a temperature above about 100° C.

7. A process for the manufacture of cross-linked cellulose fibres comprising impregnating and reacting cellulose fibres with an aqueous solution containing glyoxal and formaldehyde in a molar ratio of at least 1 mole of formaldehyde to each mole of glyoxal, and magnesium chloride as a catalyst, the solution having a pH in the range of 3 to 8, drying the fibres, and dry curing the fibres at a temperature in the range from about 140° C. to about 180° C.

3,312,522

ACID-BASE CATALYZED MODIFICATION OF CELLULOSE WITH HYDROXYALKYL AND ALKOXYALKYL, EPOXYALKYL SULFONES

Joe T. Adams, St. Albans, and Herman F. Lykins, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed July 10, 1963, Ser. No. 294,161
12 Claims. (Cl. 8-120)

1. The method for treating a cellulosic fabric which comprises impregnating said fabric with an aqueous medium containing (a) a sulfone of the formula:



wherein R is a member selected from the group consisting of vinyl, β -hydroxyalkyl of 1 to 4 carbons, and β -(alkoxy)alkyl of 1 to 4 carbons in the alkoxy group thereof and 2 to 4 carbons in the alkylene group thereof; R¹ is a divalent alkylene group of from 1 to 3 carbons; R² is a vic-epoxyalkyl group of from 2 to 8 carbons; and n is an integer having a value of from 0 to 1; and (b) a curing catalyst selected from the group consisting of a latent acid curing catalyst and a basic curing catalyst; and thereafter drying and curing said impregnated fabric.

3,312,523

PROCESS FOR PREPARING SODIUM KURROL'S SALT

Edward J. Griffith, Manchester, and Ira J. Kodner, University City, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed May 6, 1963, Ser. No. 278,402
6 Claims. (Cl. 23-106)

1. A process for preparing sodium Kurrol's salt which comprises forming a melt containing an Na/P molar ratio in excess of 1 and no greater than about 1.05 and, in an amount less than about 1% by weight, a catalytic agent selected from the class consisting of aluminum oxide, aluminum hydroxide and mixtures thereof, maintaining said melt for about 30 minutes to about 4 hours, cooling said melt to form a super cooled liquid material with said cooling conducted at a relatively uniform rate such that a temperature of about 570° C. to 590° C. is reached in about 45 minutes to 3 hours, maintaining said material at this temperature range for a period of about 45 minutes to about 1½ hours, seeding said material with relatively pure sodium Kurrol's salt crystals, maintaining said material at a temperature range about 560° C. to about 580° C. for a period of time between about 30 minutes and about 1½ hours and allowing said material to crystallize by cooling.

APRIL 4, 1967

CHEMICAL

203

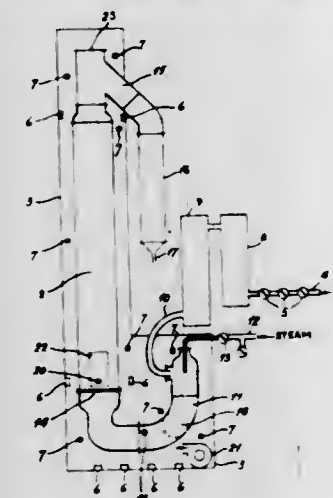
3,312,524 PRODUCTION OF CALCIUM SULPHATE HEMIHYDRATE

Henry George McArdle, Toronto, Ontario, Canada, assignor to Dominion Tar & Chemical Company, Limited, Montreal, Quebec, Canada

Filed Apr. 19, 1962, Ser. No. 188,663

5 Claims. (Cl. 23-122)

1. In the preparation of calcined gypsum consisting essentially of calcium sulphate hemihydrate from natural gypsum material, the method of controlling physical properties of said hemihydrate, thereby to obtain a preselected value C of one of said properties, comprising calcining a first sample of said material at atmospheric pressure under a first partial water vapour pressure p_1 , to obtain a first sample of hemihydrate, determining value c_1 of said one of said properties of said first sample of hemihydrate, calcining a second sample of said material at atmospheric pressure under a second partial water vapour pressure p_2 to obtain a second sample of hemihydrate p_2 being substantially greater than p_1 ,



determining value c_2 of said one of said properties of said second sample of hemihydrate, determining a partial water vapour pressure P corresponding to said preselected value C by means of the equation

$$P - p_1 = \frac{C_2 - c_1}{c - c_1} (p_2 - p_1)$$

calcining said natural gypsum material at a calcining temperature at atmospheric pressure, while maintaining an ambient partial water vapour pressure during said calcining substantially equal to P.

3,312,525 PROCESS FOR SEPARATION OF AMMONIA FROM GAS MIXTURES

Lothar Schmidt and Walter Neugebauer, Constance, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

Filed July 1, 1966, Ser. No. 568,711

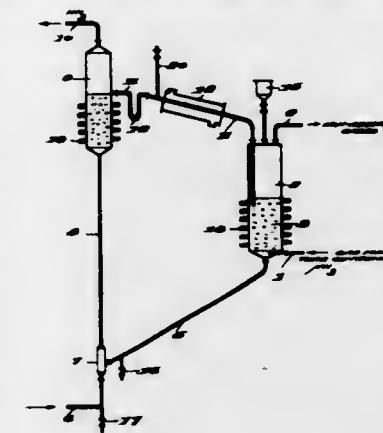
Claims priority, application Germany, July 11, 1962, D 39,363

4 Claims. (Cl. 23-196)

1. In a process for selectively separating ammonia from a gas mixture containing a minor proportion of ammonia and hydrocyanic acid, the steps comprising

(a) in a first stage contacting the gas mixture with a melt consisting of a major proportion of a component selected from the group consisting of sodium hydrogen sulfate and potassium hydrogen sulfate and a minor proportion of a component selected from the group consisting of neutral sodium sulfate, neutral potassium sulfate, and mixtures thereof at a temperature of about 125° C. to about 280° C. to pro-

duce a melt in a free flowing state containing about all the ammonia in the gas mixture, and thereafter,



(b) in a second stage desorbing the ammonia from the resulting melt by heating the resulting melt to a temperature of about 320° C. to about 480° C.,
(c) collecting desorbed ammonia and recycling the melt back to the first step.

3,312,526

METHOD AND CATALYST FOR COMBINING HYDROGEN AND OXYGEN IN THORIUM OXIDE SLURRIES

Charles K. Hanson, Salt Lake City, Utah, Ralph M. Horton, Pullman, Wash., and Milton E. Wadsworth, Salt Lake City, Utah, assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Oct. 15, 1962, Ser. No. 230,766
8 Claims. (Cl. 23-204)

1. The method of combining hydrogen and oxygen in a pressurized aqueous thorium oxide slurry which comprises heating an aqueous thorium sol and platinum acid at a thorium-to-platinum ratio of 2-3 to 1 until a flocculated suspension is formed, recovering the resulting suspended solids and dispersing said solids in said slurry.

3,312,527

CARBON MONOXIDE DETERMINATION

Paul W. McConaughy, Pittsburgh, Pa., assignor to Mine Safety Appliances Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 5, 1963, Ser. No. 292,937

5 Claims. (Cl. 23-254)



1. A device for the determination of carbon monoxide comprising a transparent sealed tube with breakable ends, an elongate bed of colorimetric indicator for carbon monoxide disposed between layers of a protective composition within said tube, at least one said layer consisting essentially of an intimate mixture of granular absorbent for interfering gases and granular absorbent for carbon monoxide containing between about ¼ and ¾ of said carbon monoxide absorbent, the carbon monoxide

absorbing capacity of said at least one layer being between about 0.2 and 8% of the carbon monoxide absorbing capacity of said elongate bed.

3,312,528

DETERMINATION OF CYANIDES

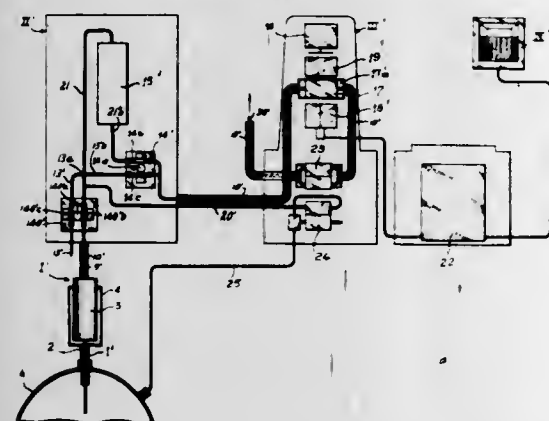
Paul W. McConnaughey, Pittsburgh, Pa., assignor to Mine Safety Appliances Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Aug. 18, 1964, Ser. No. 392,072
9 Claims. (Cl. 23—254)

1. A device for testing a gas for hydrogen cyanide comprising an elongate small cross-sectional area bed of inert granular material carrying a reagent comprising o-tolidine, a salt of the group consisting of copper sulfate and copper acetate, an acetic acid ester of an alcohol selected from the group consisting of saturated unsubstituted carbinols, alkyl substituted phenols and alkyl substituted naphthol, and water disposed in a sealed transparent tube substantially free of oxidizing atmosphere.

3,312,529

CHEMICAL PROCESS AUTOMATIC REGULATING SYSTEM

Gilbert Roger Evano, Arthez-de-Bearn, France, assignor to Société Anonyme dite: Société Nationale des Petroles d'Aquitaine, Paris, France, a French company
Filed Feb. 21, 1963, Ser. No. 260,249
Claims priority, application France, Feb. 22, 1962, 888,995
5 Claims. (Cl. 23—255)



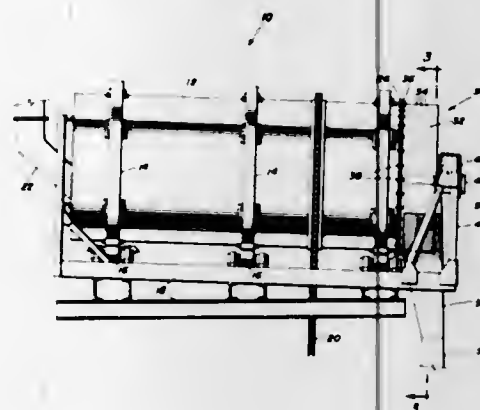
1. A regulating system for automatically monitoring a chemical process in which the sum of two effluent constituents is to be held at an extremum condition for optimum performance of the process and wherein the ratio of said constituents is greater or less than a predetermined optimum quantity which corresponds to an operating parameter of said process being on one or the other side of its optimum theoretical value, comprising; means for repeatedly removing a sample from said effluent and for conducting said sample to analyzing and control means comprising means for determining said sum of constituents in each sample; means for determining said ratio of constituents in each sample; means for determining the sense of variation in said sum as between each sample and the preceding sample; means for adjusting said parameter; means for memorizing the sense of adjustment of said parameter at each adjustment thereof; means responsive to said sense-of-variation determining means and to said memorizing means and operatively connected to said adjusting means for adjusting said parameter in the same sense as that memorized by said memorizing means if the sense-of-variation determined is of one sign; and means responsive to said sense-of-variation determining means and to said ratio-determining means and operatively connected to said adjusting means for adjusting said parameter in one sense if the sense of variation determined is

of the opposite sign and said ratio is less than said predetermined quantity and for adjusting said parameter in the opposite sense if the sense of vibration determined is of said opposite sign and said ratio is more than said predetermined quantity, whereby repeatedly to adjust said parameter to bring and thereafter hold said sum of constituents to and at its extremum condition.

3,312,530

AMMONIATOR-GRANULATOR APPARATUS

Paul J. Sackett, Baltimore, Md., assignor to The A. J. Sackett & Sons Company, Baltimore, Md., a corporation of Maryland
Filed Jan. 8, 1964, Ser. No. 836,464
7 Claims. (Cl. 23—259.1)



1. Apparatus for the sizing of granular material, comprising, structure defining a cylindrical chamber for receiving said granular material and having perforations uniformly spaced along the lateral surface thereof for sizing said granular material, means pressing said granular material against said perforations, clearing means including an element rotatably positioned within said chamber and having protuberances engaging the perforations thereof for clearing said perforations of said granular material, and means rotating said chamber on its longitudinal axis with respect to said pressing means and said clearing means.

3,312,531

COMPOSITION AND PROCESS

Margot Becke, Heidelberg, Germany, assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed Aug. 8, 1962, Ser. No. 215,507
4 Claims. (Cl. 23—357)

1. A composition of matter having the formula $\text{PNS}_2\text{O}_3\text{Cl}_4$, said composition prepared by the process of claim 2.
2. The process of preparing the compound of claim 1 which comprises reacting polymeric phosphonitric chloride with at least 1 molar proportion of SO_3 and at least 1 molar proportion of HCL per mole of monomeric unit of PNCl_2 .

3,312,532

PROCESS FOR MAKING 6,9-DIAMMONO-DECABORANE

Stanley Mutnick, Poughkeepsie, N.Y., and Marvin M. Feln, Westfield, and John E. Paustian, Whippany, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
No Drawing. Filed Jan. 8, 1965, Ser. No. 425,112
2 Claims. (Cl. 23—358)

1. A process comprising reacting bis(acetonitrilo) decaborane with hydrazine in an aqueous liquid medium to form 6,9-diammonodecaborane, causing the precipitation of the 6,9-diammonodecaborane product, and recovering said product.

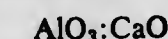
3,312,533

CERAMIC ARTICLE WITH SINTERED METALLIC LAYER AND FLUX

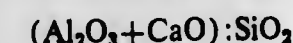
Theodoor Peter Johannes Botden, Johannes Theodorus Klomp, and Adrianus Johannes Cornelis van der Ven, all of Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed May 27, 1964, Ser. No. 370,726
Claims priority, application Netherlands, June 26, 1963, 294,599

3 Claims. (Cl. 29—182.3)

1. As an article of manufacture, a body of alumina of at least 96% purity having at least a portion of a surface thereof covered with an adherent, sintered layer consisting of 60 to 80% by weight of a high-melting point metal selected from the group consisting of platinum, tungsten, niobium and tantalum and the balance essentially a calcium-containing material consisting of calcium oxide, aluminum oxide, and silicon dioxide, the molar ratio



being less than 2.25 and the molar ratio

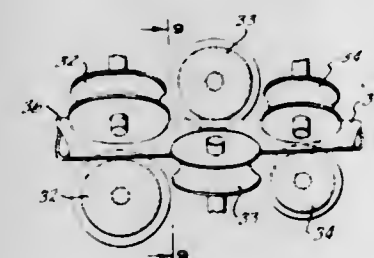


being greater than 0.35.

3,312,534

TUBE MANUFACTURE

Edward C. Chapman, Lookout Mountain, Tenn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Original application Dec. 19, 1963, Ser. No. 331,715, now Patent No. 3,259,975, dated July 12, 1966. Divided and this application Dec. 2, 1965, Ser. No. 511,151
2 Claims. (Cl. 29—183)



1. A metal tube manufactured by subjecting a tubulous casting to a cold forging operation to improve the concentricity of the tube, and the grain structure and reduce the wall thickness and increase the casting length, then subjecting the cold forged tube to a hot stretching operation to reduce the tube diameter and wall thickness and further increase the tube length.

3,312,535

ALUMINUM REFLECTORS

William A. Anderson, Verona, and Ronald Andrew, Pittsburgh, Pa., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed July 16, 1963, Ser. No. 295,517
8 Claims. (Cl. 29—183.5)

3. A light reflector having a surface composed of an aluminum base alloy consisting of 0.1 to 0.3% manganese, 0.05 to 0.2% copper, 0.1 to 0.25% magnesium, a maximum of 0.2% all impurities and balance aluminum, the surface of said reflector having a high uniform reflective quality surface and coated with a transparent artificial oxide film.

3,312,536

COMPOSITE ALUMINUM ALLOY

Irwin Broverman, Orange, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Original application June 19, 1963, Ser. No. 288,870. Divided and this application May 26, 1964, Ser. No. 377,161
4 Claims. (Cl. 29—183.5)

1. A composite aluminum alloy having a metallurgically integrated dissimilar core and cladding, said core consisting essentially of from 2 to 10% magnesium, balance essentially aluminum, said cladding consisting essentially of from 0.01 to 2.5% magnesium, balance essentially aluminum, said composite having, in the fully annealed condition, a minimum yield strength of 14,000 p.s.i., a minimum tensile strength of 35,000 p.s.i. and a minimum elongation of 15% in two inches wherein said cladding has a thickness less than 20% of the thickness of the composite.

3,312,537

APERTURED BODY FOR THE PASSAGE OF MOLTEN GLASS

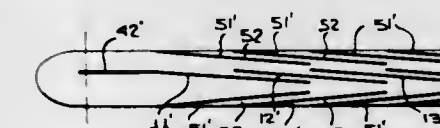
Ronald Colgan Jewell, Ormskirk, England, assignor to Fibreglass Limited, St. Helens, England, a British company
No Drawing. Filed Sept. 15, 1964, Ser. No. 396,757
Claims priority, application Great Britain, Sept. 16, 1963, 36,296/63
2 Claims. (Cl. 29—183.5)

1. A rotary centrifugal spinner for the production of mineral fibres, for example glass fibres, made of an alloy consisting essentially of the volumetric composition: nickel of about 97½%; thorium oxide of about 2½%; and a trace amount of impurities; the spinner having a surface layer of chromium of a thickness not greater than five thousandths of an inch.

3,312,538

ROLLED METAL STRIP

Ants Hansson, Evanston, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Original application Mar. 21, 1962, Ser. No. 181,347, now Patent No. 3,239,922, dated Mar. 15, 1966. Divided and this application Oct. 22, 1965, Ser. No. 501,112
2 Claims. (Cl. 29—190)



1. An article of manufacture comprising a rolled metal strip having opposed rolled surfaces and being of essentially uniform thickness and having internal angularly directed and overlapping first longitudinal discontinuities between metal portions extending from side to side of the strip, and having angularly directed longitudinal second discontinuities extending inwardly from said opposed rolled surfaces thereof, said second discontinuities defining between them integral scales having thin edges at said surface and being thicker at the region of integration with the said metal portions overlying the internal discontinuities.

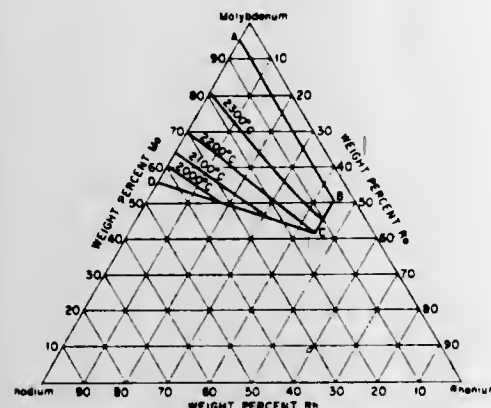
3,312,539

BRAZING ALLOYS FOR TUNGSTEN AND MOLYBDENUM

James C. Marshall and Harlos G. Smith, Cincinnati, Ohio, assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Sept. 11, 1964, Ser. No. 395,967
1 Claim. (Cl. 29—198)

A composite structure comprising at least two structural portions of refractory metals and alloys selected

from the class consisting of molybdenum, tungsten, and alloys containing predominant proportions thereof joined to one another by a brazing alloy consisting of 42 to 95 weight percent molybdenum, 5 to 44 weight percent



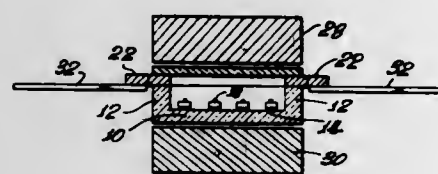
rhodium, and up to 45 weight percent rhenium, the joint formed between the structural portions by the brazing alloy being characterized in having a remelt temperature greater than the melting point of the brazing alloy.

3,312,540

METHOD OF MAKING AN INTEGRATED CIRCUIT PACKAGE

Robert Plumbo, 1301 Tropicana Lane, Santa Ana, Calif. 92705, and Robert E. Wasser, 2146 Larkstone Drive, Orange, Calif. 92667

Filed Mar. 5, 1964, Ser. No. 349,592
1 Claim. (Cl. 65—59)



A method of making a circuit package comprising: providing a pair of relatively thin, flat, glass, casing-forming parts at least one of which has an open cavity on the inner side thereof, said casing-forming parts when put together forming an enclosure for an electrical circuit device, placing the electrical circuit device within the cavity of said one casing part with terminals electrically connected thereto and exposed to the outside of the casing part, placing a frame made of a resistance forming material in direct contact between all the confronting surfaces of said glass casing-forming parts which frame heats up to a glass fusing temperature when current is passed through the frame, placing the resulting assembly between a pair of pressure applying members which form heat sinks to carry heat away to avoid damage to said electrical circuit device and simultaneously passing current through said resistance frame to heat the same to a temperature which fuses the glass casing-forming parts, and squeezing said assembly with said pressure applying members to bond the casing-forming parts to the resistance frame to form a sealed assembly of the casing-forming parts and the resistance frame, wherein the casing parts are bonded only to the resistance frame and the electrical circuit device within the resulting casing remain undamaged by the heat generated in the resistance frame because of the heat carried away by the pressure applying members.

3,312,541

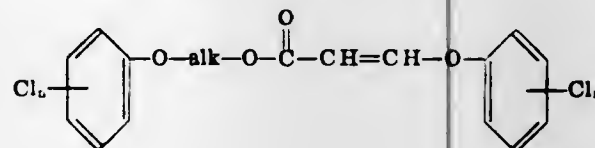
HERBICIDAL COMPOSITION AND METHOD

John E. Katon and Lee A. Miller, Dayton, Ohio, assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Original application Dec. 30, 1960, Ser. No. 79,507, now Patent No. 3,244,742, dated Apr. 5, 1966. Divided and this application Oct. 20, 1965, Ser. No. 508,182

6 Claims. (Cl. 71—2.6)

1. A preemergent herbicidal composition comprising an oil-in-water emulsion containing, as the essential effective ingredient a herbicidally effective amount of a compound of the formula



wherein n is a number of from 1 to 5 and alk is alkylene of from 2 to 4 carbon atoms.

3,312,542

ENHANCING GROWTH RATE OF PLANTS WITH POLYALKOXYLATED DERIVATIVES OF RICINOLEIC ACID TRIGLYCERIDES

Eugene D. Kitzke, South Milwaukee, and Phillip J. Neumiller, Racine, Wis., assignors to S. C. Johnson & Son, Inc., Racine, Wis.

No Drawing. Filed Nov. 1, 1963, Ser. No. 320,857

5 Claims. (Cl. 71—2.7)

1. A method of enhancing the growth rate of plants which comprises contacting the plant with a composition containing at least 0.001% by weight of a polyethoxylated derivative of ricinoleic acid triglyceride in an amount sufficient to effect said enhancement, the ethoxylate content of the derivative being from about 60% to 70% by weight.

3,312,543

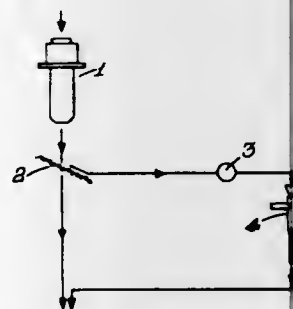
HEAVY SEPARATION MEDIA

Daniel J. N. Hoffman, 12 7th St., Menlo Park, and Thomas B. Beeton, 271 Celliers St., New Muckleneuk, both of Pretoria, Transvaal, Republic of South Africa

Filed June 24, 1965, Ser. No. 480,231

Claims priority, application Republic of South Africa, Aug. 1, 1962, 62/3,265

11 Claims. (Cl. 75—0.5)



1. A method of producing a heavy medium suspension, said method comprising forming discrete solid particles by atomizing molten material, dividing the particles into a coarse fraction and a fine fraction, comminuting particles of the coarse fraction into particles substantially

smaller in size than the average size of the particles in the fine fraction, passing comminuted particles through a high temperature flame to melt them at least at their surfaces to produce spheroidised particles, cooling the thus spheroidised particles, mixing spheroidised particles with fine fraction atomized particles to produce a solid constituent, and adding the solid constituent to a liquid to produce a heavy medium suspension.

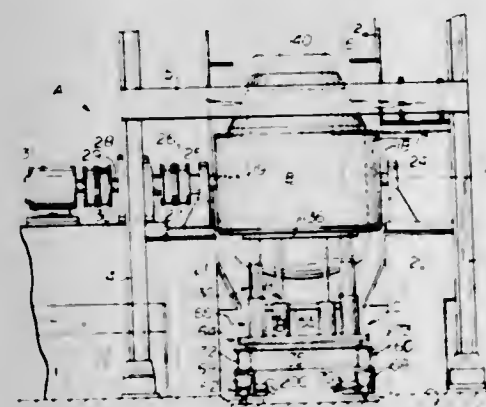
3,312,544

METHOD AND APPARATUS FOR MAKING STEEL

Ross B. McCready, Alliance, and Klaus W. Forster, Brecksville, Ohio, assignors to Kerna Corporation, Alliance, Ohio, a corporation of Ohio

Filed Dec. 16, 1965, Ser. No. 514,321

13 Claims. (Cl. 75—60)



1. In steel-making apparatus: a furnace installation comprising a discrete steel-making vessel supported therein; a trackway including a first track extending from outside of said furnace to within said furnace beneath said vessel; a second track intersecting said first track; a track vehicle operable on said trackway for moving said vessel from said furnace; said track vehicle comprising a generally horizontal frame having at least one truck pivotally connected therewith for movement about a generally vertical axis and adapted to engage said tracks of said trackway; downwardly extensible hydraulic jack means operatively connected to said frame; means to actuate said jack means to lift said vehicle and said truck from engagement with one track of said trackway; means for rotating said truck to a position above the other of said tracks; and means to actuate said jack means to lower said vehicle to engage said other of said tracks.

13. In a method of operating a steel-making furnace installation of the basic oxygen type in which the installation includes an area for service or storage of steel-making vessels, an area for making steel, a trackway from the steel-making area, and an intersecting trackway leading to the service or storage area, the steps comprising: supporting a steel-making vessel with wheels upon the first mentioned trackway, said wheels being rotatable about horizontal axes; moving the vessel along the first mentioned trackway from the steel-making area; stopping the movement directly over the intersection between the said trackways; and changing the direction of movement of the vessel by raising the wheels from the first mentioned trackway, pivoting the axis of rotating of the wheels about a vertical axis and lowering the wheels to the intersecting trackway; and then moving the vessel along the intersecting trackway to the service or storage area; and thereafter moving a different steel-making vessel from the service or storage area along the trackways to the steel-making area.

3,312,545

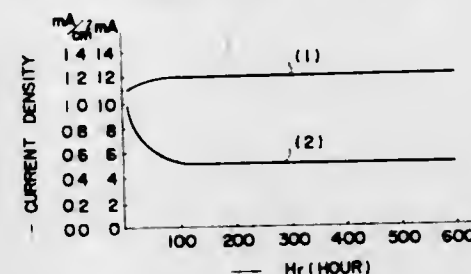
ALUMINUM ALLOY FOR GALVANIC ANODES

Takeshi Sakano, Moto-machi, and Kazuo Toda, Nakamachi, Japan, assignors to Mitsubishi Kinzoku Kogyo Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan

Filed Aug. 31, 1964, Ser. No. 393,224

Claims priority, application Japan, Sept. 6, 1963, 38/46,692

9 Claims. (Cl. 75—146)



1. An aluminum alloy for galvanic anodes consisting essentially of 0.005% to 0.1% of indium, 0.5% to 20% of zinc, 0.005% to 0.1% of cadmium, and balance being aluminum, all percentages being by weight.

3,312,546

FORMATION OF CHROMIUM-CONTAINING COATINGS ON STEEL STRIP

Edward H. Mayer and Richard M. Willison, both of Bethlehem, Pa., assignors to Bethlehem Steel Corporation, a corporation of Delaware

Filed Oct. 20, 1965, Ser. No. 505,587

23 Claims. (Cl. 75—208)



1. The method of forming a coating on steel strip which comprises applying to the surface of the strip a metal powder containing not less than 20% chromium and not more than 0.25% carbon, compacting the powder on the strip, sintering the strip and compacted metal powder in a protective environment for a time and at a temperature sufficient to cause diffusion between the strip and the powder and to thereby form an adherent stainless steel coating, and maintaining the effective carbon content of said strip at not more than 0.01% during said sintering.

3,312,547

XEROGRAPHIC PLATE AND PROCESSES OF MAKING AND USING SAME

Mortimer Levy, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed July 2, 1964, Ser. No. 380,012

22 Claims. (Cl. 96—1.5)

1. A xerographic plate member comprising a relatively thick substantially uniform layer of a wide band gap semiconducting material having good electrical resistivity in darkness and capable of conducting charge carriers injected therein, a substantially uniform layer of narrow band gap photoconductive material with a thickness of less than about 0.1 micron in electrical contact with a surface of said wide band gap material, and an insulating material in electrical contact with the surface of said narrow band layer opposite to the surface of said

layer in electrical contact with said wide band material, and a supporting conductive substrate in electrical contact with said insulating material opposite to the surface of said narrow band gap material with said narrow gap material, sufficiently thin to maintain the field thereacross when the plate member is subjected to an electrostatic charge and said plate member being characterized as capable of dissipating charge in areas exposed to light to form a xerographically developable electrostatic charge pattern.

3,312,548

XEROGRAPHIC PLATES

Virgil E. Straughan, Euclid, Ohio, assignor, by mesne assignments, to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Dec. 27, 1965, Ser. No. 516,529
15 Claims. (Cl. 96—1.5)



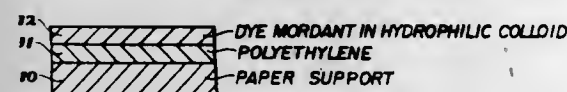
1. A xerographic plate having a photoconductive insulating layer, said layer comprising a composition of selenium, arsenic and a halogen, said halogen being present in a concentration of about 10 to 10,000 parts per million.

3,312,549

RECEIVING SHEET FOR PHOTOGRAPHIC DYES

Wilho M. Salminen and John H. Van Campen, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Dec. 12, 1962, Ser. No. 244,103
17 Claims. (Cl. 96—29)



14. In the process of transferring photographically produced dye images to a mordanted receiving sheet, the improvement which comprises utilizing a receiving sheet comprising a paper support having thereon a polyethylene coating, and coated thereover a coating of a mordant for photographic dyes in a hydrophilic organic colloid.

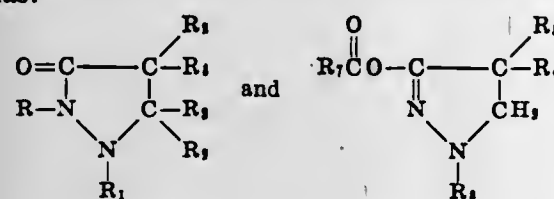
3,312,550

PROCESSING PHOTOGRAPHIC ELEMENTS CONTAINING DEVELOPING AGENT

Paul H. Stewart, George E. Fallesen, and John W. Reeves, Jr., Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

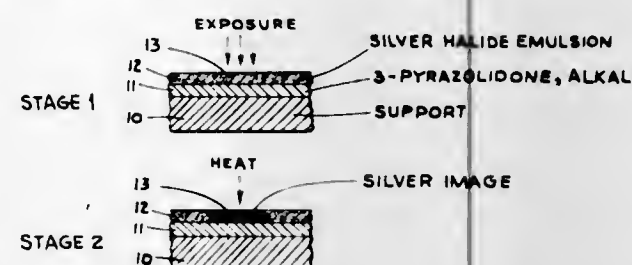
Filed Sept. 4, 1962, Ser. No. 221,031
43 Claims. (Cl. 96—63)

1. A light-sensitive, unexposed photographic element comprising a support having thereon a silver halide emulsion layer and contiguous to the said silver halide, an alkaline material and, at least about 5 g./mole of silver halide of a 3-pyrazolidone selected from those having the formulas:



wherein R represents a member selected from the class consisting of hydrogen, and an acyl group; R1 represents a substituent selected from the class consisting of an alkyl group having from 1 to 12 carbon atoms, a benzothiazolyl group and an aryl group; and R2, R3, R4, and R5 each represent a substituent selected from the class consist-

ing of hydrogen, an alkyl group having from 1 to 12 carbon atoms and an aryl group; R7 represents a group selected from the class consisting of an alkyl group having from 1 to 12 carbon atoms, and an aryl group; and R8 represents a group selected from the class consisting of an alkyl group having from 1 to 12 carbon atoms and an aryl group; and an auxiliary developing agent selected



from the class consisting of a polyhydric phenol and an ascorbic acid developing agent and when none of said auxiliary developing agent is present, at least about 15 g./mole of silver halide of said 3-pyrazolidone silver halide developing agent, said element containing a small amount of moisture that is sufficient to develop a latent image in said silver halide to a silver image upon heating to a temperature above about 50° C.

3,312,551

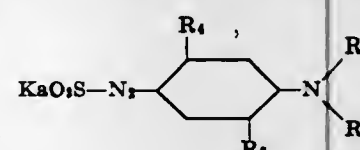
HEAT AND LIGHT SENSITIVE DIAZO SULFONATE AND AZO COUPLER COATED SHEET

Oskar Süs, Wiesbaden-Bleibach, Germany, assignor, by mesne assignments, to Keuffel & Esser Company, Hoboken, N.J.

No Drawing. Filed July 24, 1963, Ser. No. 297,235
Claims priority, application Germany, July 25, 1962, K 47,332; Oct. 5, 1962, K 47,898

21 Claims. (Cl. 96—75)

1. A reproduction material for a thermographic reflex process comprising a support transparent to heat rays and a heat-sensitive layer coated on said support, said layer comprising an azo compound and a diazo sulfonate salt sensitive to heat and light, said diazo sulfonate having the formula



where

R1 and R2 are members selected from the groups consisting of:

group A wherein R1 and R2 are alkyl groups having from 1 to 5 carbon atoms and

group B wherein R1 and R2 are members of a heterocyclic ring,

R3 is a member selected from the group consisting of: hydrogen, alkyl, and alkoxy,

R4 is a member selected from the group consisting of alkyl and alkoxy, and

Ka is a cation of an organic ammonium compound.

3,312,552

SPOT PREVENTION IN LIGHT-SENSITIVE SILVER HALIDE EMULSION LAYERS

Wolfgang Müller-Bardorff, Cologne, and Rolf Behr, Leverkusen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Aug. 10, 1964, Ser. No. 388,669
Claims priority, application Germany, Aug. 24, 1963, A 43,888

6 Claims. (Cl. 96—94)

1. A photographic material containing at least one supported light-sensitive silver halide emulsion layer, the

said material contains as an antistain agent an effective amount of an o-hydroxybenzylamine, the amino group of which is substituted by 2 alkyl radicals containing carboxyl groups.

3,312,553

PHOTOGRAPHIC MATERIALS

Fritz Derach, Binghamton, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 30, 1963, Ser. No. 319,969
8 Claims. (Cl. 96—107)

1. A light-sensitive silver halide emulsion sensitized with a water-soluble polyoxyalkylene derivative of gelatin resulting from the reaction of gelatin with an alkylene oxide.

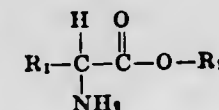
3,312,554

PHOTOGRAPHIC ELEMENTS

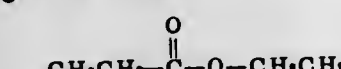
Hans Max Wagner and Thomas Peter Reginald Maynard, Harrow, Middlesex, England, assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 24, 1963, Ser. No. 318,515
3 Claims. (Cl. 96—114)

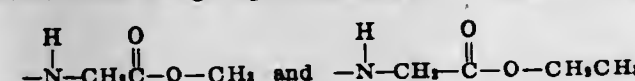
1. A photographic silver halide emulsion containing the reaction product of an amino acid ester selected from the group consisting of those represented by the following structural formula:



wherein R1 represents a substituent selected from the group consisting of H; —CH3;



—CH2CH2—S—CH3; and R2 represents a substituent selected from the group consisting of —CH3; —CH2CH3;



with a polymer selected from the group consisting of polyacrylic anhydride, polymethacrylic anhydride, copolymers of alkyl vinyl ether, the alkyl groups of which contain from 2-4 carbon atoms, with maleic anhydride, and terpolymers of alkyl vinyl ether, the alkyl groups of which contain 2-4 carbon atoms, ethyl acrylate, and maleic anhydride.

3,312,555

HANDLE-ANCHORED FORMED SUGAR BLOCK AND METHOD OF PRODUCING SAME

Emil R. Rossl, 71 Windom Ave., Staten Island, N.Y. 10305, and Aldo A. Rainero, Jr., 810 Henderson, Staten Island, N.Y. 10310

Filed May 12, 1965, Ser. No. 455,274

3 Claims. (Cl. 99—138)

1. A handle-anchored formed sugar block designed to be used for stirring a beverage in a container, comprising,

a self-supporting block of dry cane sugar crystals containing about 3% to about 20% by weight of dry sugar crystals in needle form, and about 0.2% to about 10% of an edible, dry, solid lubricant, said block having a hardness value of at least 10 kg. on the Strong Cobb-Arner hardness testing machine, and

a stick having a cylindrical portion penetrating substantially completely through the entire length of said block, and having a portion extending out of said block to serve as a handle for stirring said block in a beverage.

3,312,556

LOW TEMPERATURE FUSIBLE GLASS

Mitsuru Oikawa, Suganami-ku, Tokyo-to, and Tadao Okabe, Mobara-shi, Japan, assignors to Kabushiki Kaisha Hitachi Selsakusho, Tokyo-to, Japan, a joint-stock company of Japan

No Drawing. Filed May 15, 1963, Ser. No. 280,738

Claims priority, application Japan, May 18, 1962, 37/19,736

1 Claim. (Cl. 106—54)

A low temperature fusible glass comprising a network former composed of 60 to 70 percent of B2O3, 4 to 8 percent of SiO2, 5 to 10 percent of at least one constituent selected from the group consisting of K2O and Na2O, and 5 to 10 percent of at least one constituent selected from the group consisting of BaO and CaO, and a network modifier composed of ZnO and Li2O, the content of the said Li2O being 40 to 50 percent of the said network modifier, 13 to 16 percent of the said network modifier being caused to form the composition of the glass with 87 to 84 percent of the said network former, all stated percentages being by weight.

3,312,557

BASIC REFRACTORY PRODUCT

Peter H. Havranek and Ben Davies, Pittsburgh, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 28, 1964, Ser. No. 407,239

6 Claims. (Cl. 106—58)

1. A tar-impregnated, burned, basic refractory brick made from a grain consisting essentially of at least 88 to less than 96% MgO, from 1 to 3%, by weight, of an oxide of a metal selected from the group consisting of titanium, zinc, tin, copper, nickel, vanadium, manganese, cadmium, zirconium and iron, which selected oxide is reducible and does not react with other components of the brick to form melts below about 2700° F., there being CaO and SiO2 in a weight ratio in which there is at least 2 parts lime for each 1 part of silica, by weight, there being no more than 1% of other impurities including Al2O3, on an oxide basis, the tar-impregnation being throughout all internal void structure and about exterior surfaces of the brick.

3,312,558

CALCIUM HEXALUMINATE ARTICLES

Eldon D. Miller, Jr., 103 Marble Drive,

Bridgeville, Pa. 15017

No Drawing. Filed May 17, 1966, Ser. No. 550,602
5 Claims. (Cl. 106—63)

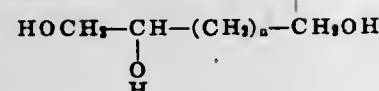
1. That method of making articles of stable calcium hexaluminate material comprising forming a mixture of 100 parts, by weight, of dry materials which yield alpha alumina and calcia on about a 6 to 1 molar oxide basis at a temperature below 2000° F. and in the form of intimately admixed particles substantially all of which are —150 mesh with the major portion thereof being finer than 325 mesh, said materials at 2000° F. analyzing at least about 99% Al2O3 + CaO, by weight, on an oxide basis, and up to 30 parts, by weight, of —28 mesh burnout material, mixing said dry ingredients with about 6 to 50 parts, by weight, of water, forming the resulting wet mixture into self-sustaining shapes, firing said shapes to a temperature in the range 2100 to no more than 3300° F., maintaining said temperature until equilibrium conditions exist such that said calcium hexaluminate material is microscopically characterized as a mass of randomly orientated hexagonal plates substantially free of vitrified phases and has a porosity between about 15 and 70% and good capillarity.

3,312,559

AMYLOSE MATERIAL PLASTICIZED WITH A MIXTURE OF TRIETHANOLAMINE AND AN ALPHA, BETA, OMEGA TRIHYDRIC ALCOHOL
Austin H. Young, Decatur, Ill., assignor to A. E. Staley Manufacturing Company, Decatur, Ill., a corporation of Delaware

No Drawing. Filed Feb. 18, 1964, Ser. No. 345,593
18 Claims. (Cl. 106-213)

1. A composition comprising an amylose material containing at least 50% by weight amylose wherein the amylose portion of said amylose material is present in the form of material selected from the group consisting of the separated amylose fraction of whole starch, whole starch containing at least 50% by weight amylose and mixtures thereof plasticized with a plasticizing concentration of triethanol amine and a straight chain 4- to 6-carbon atom alpha, beta, omega trihydric alcohol having the structural formula:



wherein n is a number from 1 to 3.

3,312,560

AMYLOSE-DIGLYCEROL COMPOSITION
Henry M. Walton, Decatur, Ill., assignor to A. E. Staley Manufacturing Company, Decatur, Ill., a corporation of Delaware

No Drawing. Filed Apr. 24, 1964, Ser. No. 362,494
6 Claims. (Cl. 106-213)

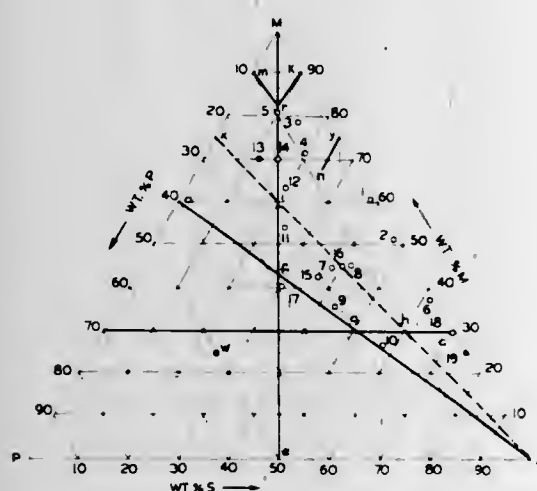
1. A continuous amylose film comprising an amylose material containing at least 50% by weight amylose wherein the amylose portion of said amylose material is present in the form of a material selected from the group consisting of the separated amylose fraction of whole starch, whole starch containing at least 50% by weight amylose and mixtures thereof plasticized with a plasticizing concentration of diglycerol.

3,312,561

MORPHOLIDES OF A MIXTURE OF EPOXIDIZED SATURATED, AND MONO-UNSATURATED FATTY ACIDS

Frank C. Magne, Evald L. Skau, and Robert R. Mod, all of New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

Original application Jan. 15, 1962, Ser. No. 166,742, now Patent No. 3,219,664, dated Nov. 23, 1965. Divided and this application Apr. 2, 1965, Ser. No. 445,285
1 Claim. (Cl. 106-316)



The morpholides of a mixture of epoxidized fatty acids, saturated fatty acids, and monounsaturated fatty acids in

which mixture of acids the weight proportions of saturated acids (S), epoxidized acids (E), and monounsaturated acids (M) are such that all of the following conditions are satisfied:

(1)

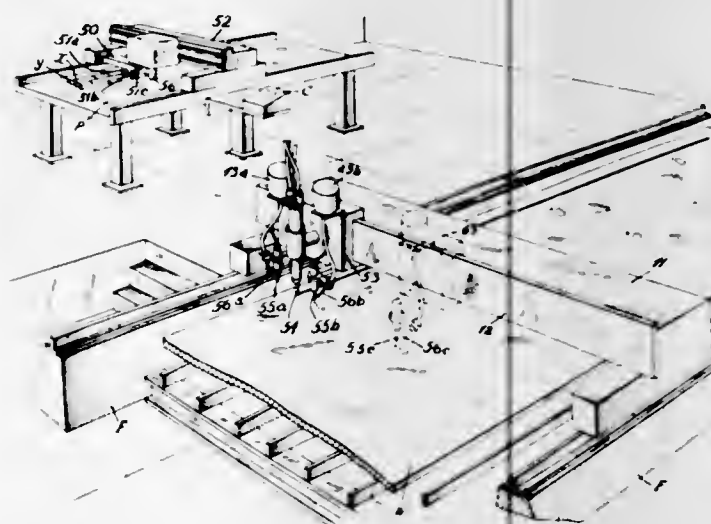
$$\frac{S}{S+M+E}$$

is less than about 50/100; (2) that the saturated fatty acids present in the said mixture of acids are saturated acids containing from 12 to 18 carbon atoms; and (3) that the percentage of saturated acids containing at least 18 carbon atoms in said mixture of fatty acids is less than about 17% of all the acids in the mixture.

3,312,562

METHOD AND APPARATUS FOR CUTTING AND MARKING METAL PLATE

Alfred J. Miller, Westfield, N.J., assignor to Union Carbide Corporation, a corporation of New York
Filed Apr. 30, 1963, Ser. No. 176,831
8 Claims. (Cl. 117-4)



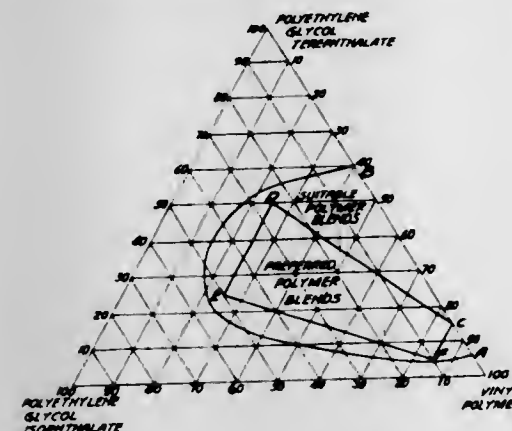
1. A method for marking points on a shaped plate simultaneous with the cutting of the shape thereof, which comprises progressing a cutting torch along the contour of the shape to be cut in response to a pattern outline tracing photocell moving over the corresponding contour on a pattern, progressing a marking tool spaced from said cutting torch simultaneously with said torch over said plate, and actuating said marking tool in response to a point responsive photocell spaced from said outline tracing photocell and moving simultaneously therewith over points on said pattern offset from the outline thereof, to mark said points on said shaped plate as the plate is being cut by said cutting torch.

4. A method for marking points on a shaped plate simultaneous with the cutting of the shape thereof, which comprises guiding a cutting torch along the contour of the shape to be cut in response to a pattern outline tracing photocell moving over the corresponding contour on a pattern, guiding a solenoid actuated center punch and a paint nozzle having a solenoid operated valve in its paint supply line simultaneously with said cutting torch over said plate, and actuating the solenoids to energize the center punch and to supply paint to said paint nozzle in response to a point responsive photocell spaced from said outline tracing photocell and moving simultaneously therewith over points on said pattern offset from the outline thereof, to mark said points on said plate and discharge a paint spot adjacent each of said points as the plate is being cut by said cutting torch.

3,312,563

DECORATIVE ADHESIVE SHEET MATERIAL WITH A CHLORINATED VINYL POLYMER-POLYESTER RESIN BLEND PRIMER

Joseph J. Rusch, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Oct. 23, 1963, Ser. No. 318,781
9 Claims. (Cl. 117-33.3)



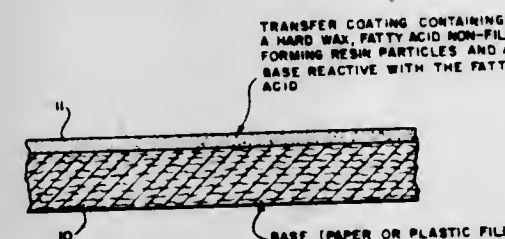
9. Transparent pressure-sensitive adhesive sheet material having one non-adhesive surface, readily silk screen-printed with acrylic process pastes to provide a weather-resistant translucent insignia, and one adhesive surface, which sheet material can be adhered to, and after a year or more of outdoor exposure removed cleanly from, internally illuminated translucent signs, said sheet material comprising in combination: a biaxially oriented polyethylene terephthalate film backing having firmly bonded over each major surface a transparent homogeneous stratum consisting essentially of approximately equal parts by weight of soluble chlorinated vinyl polymer and soluble copolyester polymer, said copolyester polymer having an intrinsic viscosity of at least about 0.3 and containing substantially equal numbers of ethylene terephthalate units and ethylene isophthalate units, said backing having a clear normally tacky and pressure-sensitive adhesive firmly adhered to one of said strata, said backing being provided, at least at the surface opposite that over which the pressure-sensitive adhesive is adhered, with an ultra-violet light-absorbent material.

3,312,564

TRANSFER SHEET, PROCESS OF MAKING AND USING

Marshall S. Barbour, Mexico, Maine, assignor to Oxford Paper Company, Rumford, Maine, a corporation of Maine

Filed Feb. 2, 1965, Ser. No. 429,912
10 Claims. (Cl. 117-36.1)



1. The method of preparing a transfer sheet which comprises coating a suitable base sheet with a coating composition comprising an aqueous emulsion of a hard wax, a non-film-forming resin, a fatty acid, and a base which is reactive with the fatty acid, and thereafter drying the coating onto the base sheet, said resin being non-film-forming under the conditions used to coat said composition to said base and to dry said coating and being capable

of deactivating the transfer coating when the transfer sheet is ultimately heated to a temperature at which the non-film-forming resin is softened.

3,312,565

FLAMMABLE BASE WITH FIRE-RETARDANT PROTECTIVE COATING

Eric T. Rayner, David A. Yeaton, Lucien L. Hopper, Jr., and Harold P. Dupuy, New Orleans, and Frank G. Dollear, Pearl River, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application Mar. 14, 1962, Ser. No. 179,818, now Patent No. 3,269,989, dated Aug. 30, 1966. Divided and this application Apr. 18, 1966, Ser. No. 543,045

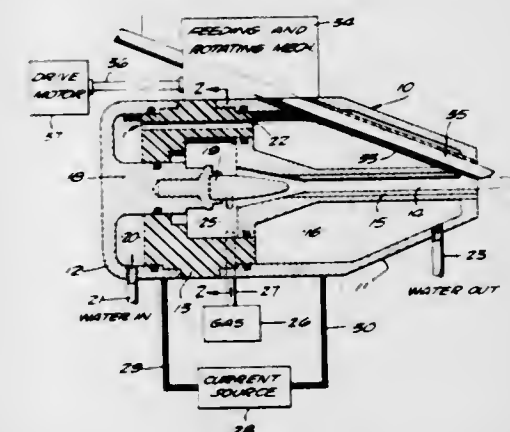
3 Claims. (Cl. 117-72)

1. A flammable base having thereon a fire-retardant undercoat comprising an oil modified alkyd resin vehicle having incorporated therein a gas-producing component consisting of a polyester of a conjugated diene-diol in which the hydroxyl groups are primary and a dibasic acid of the group consisting of oxalic, maleic, succinic, adipic, sebacic, and butylenedioic acids and a top coat comprising about 26 weight percent of an alkyd made from 100 parts tung oil, 100 parts linseed oil fatty acids, 35 parts trimethylolpropane, 43 parts chloroformic acid, and from 19 to 29 parts of a diisocyanate from the group consisting of toluene diisocyanate and trichlorophenyl diisocyanate, about 6 weight percent of 70% chlorinated paraffin, about 5 weight percent of the polyamide of dimerized linoleic acid and ethylenediamine and about 63 weight percent of a pigment component made from 12 parts titanium dioxide, 35 parts zinc borate, 2 parts magnesium silicate, 20 parts lead sulfate, 20 parts lead carbonate, and 12 parts zinc oxide.

3,312,566

ROD-FEED TORCH APPARATUS AND METHOD
John W. Winzler and James F. Tucker, Santa Ana, Calif., assignors, by mesne assignments, to Glanville Scientific Corporation, Amityville, N.Y., a corporation of Delaware

Filed Aug. 1, 1962, Ser. No. 215,220
7 Claims. (Cl. 117-93.1)

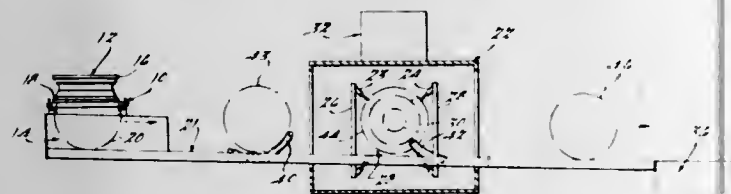


1. A method of coating a substrate, which comprises directing an electrical plasma-jet torch toward said substrate in order that the plasma jet generated by said torch will be in the vicinity of one surface of said substrate, feeding a refractory rod at an oblique angle relative to said jet and into said jet in the vicinity of the downstream end of said torch, said feeding being in a direction generally forwardly relative to the direction of said jet, simultaneously rotating said rod about the longitudinal axis thereof to cause said jet to remove discrete molten particles of said rod and apply the same to said substrate, and traversing said torch and said substrate relative to each other to form a coating on said substrate.

3,312,567

AUTOMATIC SPRAY PAINTER

Frederick P. Sharpe, Dearborn, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich.

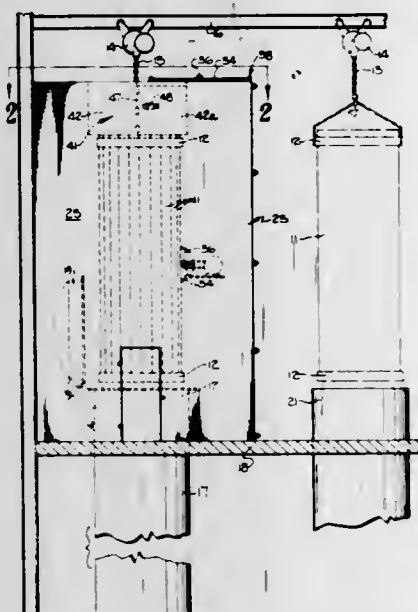
Filed Jan. 25, 1962, Ser. No. 168,776
13 Claims. (Cl. 117-105.4)

1. Apparatus for applying a coating to an article having annular portions which may be used to rollably support said article and by which rolling movement of said article may be induced, and comprising: an inclined track means upon which said article is adapted to roll from one location to another, coating means mounted along said track means, control means to stop rolling movement of said article along said track means at a predetermined position thereon adjacent said coating means, separating means provided at said predetermined position to disengage said article from said track means prior to the application of a coating thereto and to replace said article on said track means after said coating has been applied thereto, serration means on the portion of said track means beyond said predetermined position upon which said article is replaced following the application of said coating thereto, and said serration means providing knife-edge contact with said article during rolling movement along said track means to prevent said coating from being marred.

3,312,568

PROCESS FOR TREATING IMPREGNATED TUBULAR ARTICLES

Richard G. Coker and James E. Whisenhunt, Hartsville, S.C., assignors to Sonoco Products Company, Hartsville, S.C., a corporation of South Carolina

Filed June 19, 1963, Ser. No. 289,002
4 Claims. (Cl. 117-119.2)

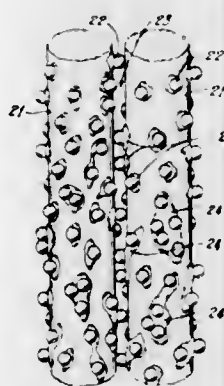
4. A process for treating pitch impregnated fibre tubes comprising the steps of, immersing a stack of fibre tubes in a bath of molten pitch to impregnate said tubes with said pitch, removing said stack of impregnated tubes from said bath to an elevated vertically extending position over said bath to permit excess pitch to drain from said tubes into said bath, enclosing the upper end portions of said elevated tubes with a chamber substantially circular

in horizontal cross-section with said tube end portions in close fitting relationship with said chamber, enclosing said chamber and said elevated tubes in an enclosure, introducing a flow of cooling air tangentially into said chamber whereby said flow of cooling air flows in an arcuate path defined by the walls of said chamber and is subsequently directed vertically downward through the interiors and over the upper surfaces of said elevated tubes in opposition to the hot air currents normally rising from the lower extremities of said tubes to quickly and uniformly chill the pitch coating throughout the surfaces of said tubes and removing from said enclosure the air introduced into said chamber.

3,312,569

COMPATIBLE FIBROUS GLASS REINFORCEMENTS OF SUPERIOR BONDING AND WETTING CHARACTERISTICS

Thomas E. Philipps, Granville, Ohio, and John S. White, Portsmouth, N.H., assignors to Owens-Corning Fiberglass Corporation, a corporation of Delaware

Filed May 7, 1965, Ser. No. 454,144
2 Claims. (Cl. 117-126)

1. Coated glass fibers capable of effecting a bond with a polymerizable resin, and having a coating comprising: from between approximately 0.5% to 80.5% by weight of colloidal boehmite alumina particles, between approximately 1.64% to approximately 74.0 by weight of an organo silane coupling agent, and between approximately 11% to 97.6% by weight of a resin from the group consisting of: polyvinyl acetate, polyvinyl alcohol, polyvinyl pyrrolidone, acrylic resins, epoxy resins, polyamide resins, and polyester resins; and wherein some molecules of the organo silane have their inorganic portion attached to the glass with their organic portion projecting away from the glass, while other molecules have their inorganic portion attached to the boehmite particles with their organic portion positioned generally between the organic portions of the molecules attached to the glass; and the resin is positioned between said organic portions without being cross-linked thereto.

3,312,570

PRODUCTION OF EPITAXIAL FILMS OF SEMI-CONDUCTOR COMPOUND MATERIAL

Robert A. Ruehrwein, Dayton, Ohio, assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed May 29, 1961, Ser. No. 113,108
14 Claims. (Cl. 148-175)

1. Process for the production and deposition of epitaxial films of compounds of Group III-B elements having atomic weights of from 10 to 119 and elements selected from Group V-B having atomic weights of from 12 to 75, in the Hubbard periodic table and mixtures thereof, onto a substrate material selected from the same class of compounds comprising the epitaxial film, I-VII

compounds, II-VI compounds, germanium and silicon, which comprises reacting in the vapor phase at least one volatile compound of Group III-B elements together with at least one element selected from Group V-B in the presence of hydrogen, and contacting the resulting reaction mixture with said substrate whereby a purified single crystal form of at least one III-V compound is formed and deposited from said reaction mixture as an epitaxial film on said substrate.

3,312,571

PRODUCTION OF EPITAXIAL FILMS

Robert A. Ruehrwein, Clayton, Mo., assignor to Monsanto Company, a corporation of Delaware

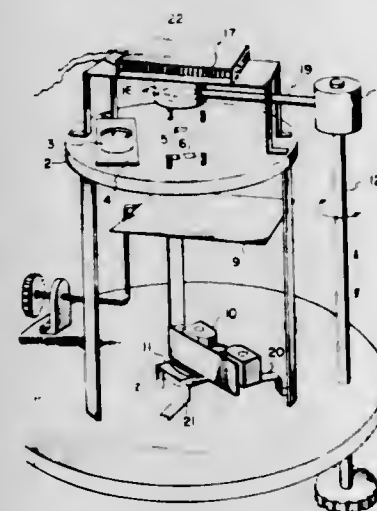
No Drawing. Original application Oct. 9, 1961, Ser. No. 143,882. Divided and this application July 30, 1965, Ser. No. 484,506
8 Claims. (Cl. 148-175)

1. Process for the production and deposition of epitaxial films comprising combinations of Group II elements selected from the class consisting of beryllium, zinc, cadmium and mercury and Group VI elements selected from the class consisting of sulfur, selenium and tellurium onto a substrate material selected from the class consisting of I-VII compounds, III-V compounds, germanium and silicon, which comprises combining in the vapor phase at least one volatile component of the class of Group II elements and compounds thereof together with at least one volatile component of the class of Group VI elements and compounds thereof in the presence of hydrogen while excluding oxidizing gases, and contacting the resulting reaction mixture with said substrate heated to the temperature of reaction to deposit a purified single crystal form of at least one II-VI compound as an epitaxial film on said substrate.

3,312,572

PROCESS OF PREPARING THIN FILM SEMI-CONDUCTOR THERMISTOR BOLOMETERS AND ARTICLES

Bruce Norton, Westport, Conn., and Henry Levinstein, Syracuse, N.Y., assignors to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware

Filed June 7, 1963, Ser. No. 286,287
14 Claims. (Cl. 117-212)

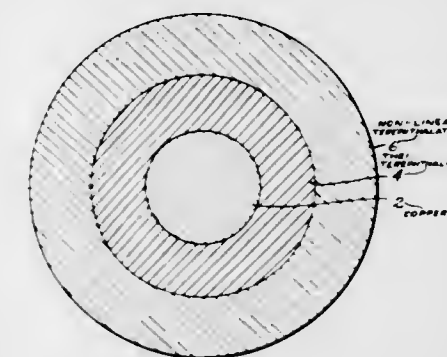
1. A process for the preparation of thin-film, semiconductor thermistor bolometers by vacuum evaporation comprising,
(a) heating a bolometer substrate to from 120° C. to 170° C. in the absence of oxygen,
(b) vacuum evaporating onto a predetermined area of the bolometer substrate a thin layer of a semiconductor selected from the group consisting of germanium and silicon,

(c) without exposing the film of the semiconductor to contact with oxygen, vacuum evaporating on predetermined portions of the film contacts consisting of thin layers of a metal selected from the group consisting of antimony and bismuth, and
(d) annealing the bolometer produced by slow cooling in the absence of oxygen to a temperature not substantially exceeding 50° C.

3,312,573

NON-LINEAR OVERCOAT FOR COATED ELECTRICAL CONDUCTOR

Howard E. Sheffer, Burnt Hills, N.Y., assignor to Schenectady Chemicals, Inc., Schenectady, N.Y., a corporation of New York

Filed May 6, 1963, Ser. No. 278,070
12 Claims. (Cl. 117-218)

1. An electrical conductor provided with a continuous inner dielectric coating of a non-linear thermosetting resin and a thin, uniform, continuous, outer dielectric coating of a non-linear, branched polyester of an acid of the group consisting of terephthalic acid and isophthalic acid with a mixture of tris (2-hydroxyethyl) isocyanurate and a dihydric alcohol, the isocyanurate being 10-25 equivalent percent of the total alcohol component.

3,312,574

PROCESS FOR MAKING STABLE SILICONE RUBBER INTERLAYERS FOR GLASS

Thomas L. Laur, Sanford, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

Filed July 13, 1964, Ser. No. 382,084
5 Claims. (Cl. 156-106)

1. The method of forming a composite article consisting essentially of
(1) laminating to
(A) transparent, siliceous, non-elastomeric solid sheets, a layer
(B) consisting essentially of a layer of transparent, uncured silicone elastomer stock in contact with (A) containing from 0.5 to 10 weight percent, based on the weight of the elastomer stock, of an adhesive agent from the group consisting of lower alkyl orthosilicates, polysilicates and methylhydrogen polysiloxane, and a layer of from 0 to 150 mils of a transparent, uncured silicone elastomer stock containing no adhesive agent;
(2) covering (B) with
(C) a flexible, inert, sheet which will not strongly adhere to (B);
(3) vulcanizing the silicone elastomer stock under pressure;
(4) removing (C) from (B);
(5) further heating the silicone elastomer to drive off substantially all volatile materials;

- (6) laminating to (B) a layer of (D) transparent, uncured silicone elastomer stock containing substantially no adhesive agent;
- (7) assembling the laminates so that the resulting structure is composed of alternate layers in the order (A), (B), (D), (B), (A); and
- (8) thereafter heating the assembly under pressure to vulcanize the uncured silicone elastomer stock.

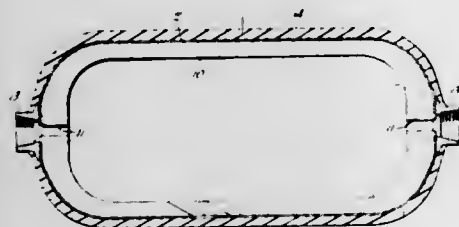
3,312,575

METHOD OF MAKING METALLIC-LINED PRESSURE VESSEL

George T. Corbin, Jr., 421 Byberry Road, Huntingdon Valley, Pa. 19006

Continuation of abandoned application Ser. No. 308,143, Sept. 11, 1963. This application Mar. 7, 1966, Ser. No. 532,476

4 Claims. (Cl. 156—151)



1. The method of making a light-weight high-pressure fluid-storage vessel, which comprises electroforming on a rigid, smooth, fluid-soluble mandrel a substantially uniform fluid-impervious jacket of ductile nickel, forming over said jacket a high-strength, light-weight vessel body of wound strands impregnated with a strong hardening adhesive while said jacket is on said mandrel, and then dissolving said mandrel to separate it from said jacket and to leave said jacket as a liner in said vessel body, said liner being electroformed to a thickness less than that required to prevent bursting thereof if filled with fluid at high pressure in the absence of said vessel body and said vessel body having a thickness sufficient to prevent bursting when said liner is filled with said fluid at high pressure.

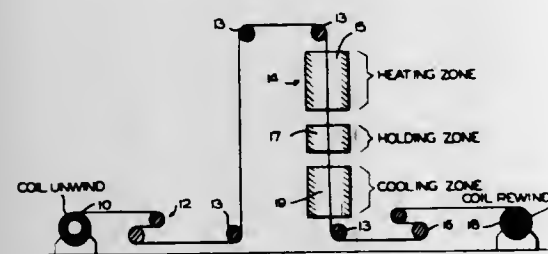
3,312,576

METHOD OF TREATING METAL

Robert Richard Palik, Henrico County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed July 3, 1963, Ser. No. 292,709

6 Claims. (Cl. 148—11.5)



3. A method of improving the mechanical properties and metallurgical characteristics of work-hardened aluminum and aluminum alloy strip which comprises continuously advancing the strip into a treatment zone and maintaining the strip under tension throughout the length of said zone by pulling the strip from said zone at a greater speed than the advancing speed; stretching the

strip by heating the strip in at least a portion of said zone to a temperature in the range from about 350° F. to about 1000° F. and by applying sufficient tension to cause plastic deformation of the strip; and cooling the stretched strip to substantially ambient temperature in said zone before the strip is pulled from said zone.

ERRATA

For Class 148—175 see:
Patent No. 3,312,570
Patent No. 3,312,571

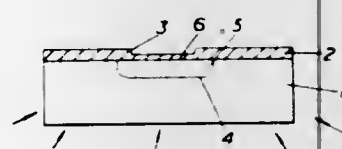
3,312,577

PROCESS FOR PASSIVATING PLANAR SEMI-CONDUCTOR DEVICES

Dave Francis Thomas Dunster and John Kenneth Arthurs, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 24, 1964, Ser. No. 413,420

5 Claims. (Cl. 148—187)



1. An improved process for manufacturing a planar semiconductor device, comprising the steps of: forming an insulating layer having at least one aperture therein on a given surface of a semiconductor body, said layer being permeable to an agent capable of oxidizing said semiconductor; selectively diffusing an impurity substance into said body through said aperture; heating said body in the presence of said oxidizing agent to form a fresh layer of semiconductor oxide contiguous with said surface and underlying said insulating layer.

3,312,578

SLURRIED BLASTING EXPLOSIVES WITH CROSS-LINKING DELAY AGENT

Joseph Francis McLean Craig, Beloeil, Quebec, Errol Linton Falconer, St. Hilaire, Quebec, Stanton Evan Jack, Kingston, Ontario, and Gordon Towell, Otterburn Heights, Quebec, Canada, assignors to Canadian Industries Limited, Montreal, Quebec, Canada, a corporation of Canada

No Drawing. Filed July 1, 1965, Ser. No. 468,967

Claims priority, application Canada, Sept. 13, 1963, 884,511

10 Claims. (Cl. 149—38)

1. A slurried blasting explosive composition resistant to segregation of its ingredients over long periods of storage, comprising at least one inorganic oxygen-supplying salt, at least one particulate organic explosive, a thickening polysaccharide, a finely divided metal selected from the group consisting of aluminum and alloys thereof, water, a metal chromate selected from the group consisting of sodium chromate and potassium dichromate in an amount ranging from 0.01 percent to 0.1 percent by weight and zinc chromate and barium chromate in an amount ranging from 0.01 percent to 2.0 percent by weight and a cross-link delaying agent selected from the group consisting of metal oxalates, metal citrate, oxalic acid, tartaric acid, gluconic acid and citric acid.

ERRATA

For Class 156—106 see:
Patent No. 3,312,574
For Class 156—151 see:
Patent No. 3,312,575

3,312,579

STRUCTURAL MATERIAL AND METHOD OF MAKING IT

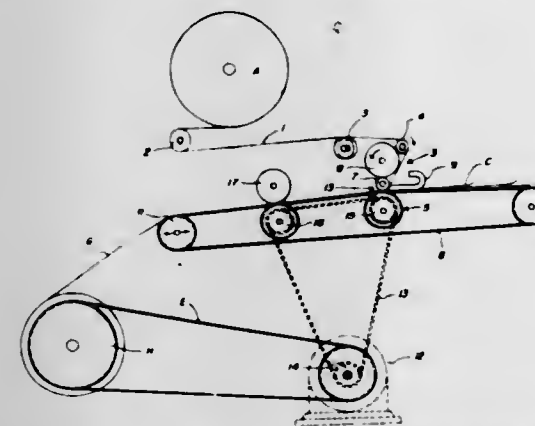
Yasha Helfetz, Rte. 81, Clinton, Conn. 06413
Filed Dec. 12, 1962, Ser. No. 244,180
3 Claims. (Cl. 156—305)

1. A method of making a structural material panel which is made up of a plurality of parallel hollow plastic tubes which are tangent to each other along lines of tangency and which are integral with each other along said lines of tangency, said method comprising the steps of placing the tubes to be formed into the panel in side by side parallel relationship with the tubes tangent along lines of tangency, applying a thin stream of liquid solvent for the plastic material along each pair of adjacent tubes as said lines of tangency to cause the plastic tubes to become at least partially liquid, and thereafter solidifying the plastic material at said lines of tangency, whereby the tubes become integral with each other.

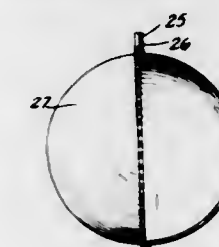
3,312,580

LAMINATING MACHINES

Robert K. Newcomb, Bound Brook, N.J., assignor to Rotobond, Inc., Northbrook, Ill., a corporation of Illinois

Filed Nov. 12, 1963, Ser. No. 322,648
5 Claims. (Cl. 156—550)

1. In a laminating machine for combining sheets or webs in overlying relation with a film of plastic in the presence of a wet adhesive, a tension controlled film unwind, pressure rolls of a diameter providing a minimum deflection at the laminating pressure and between which the film and sheet or web passes for lamination, means applying wet adhesive between said film and sheet in advance of said pressure rolls, and a smaller nip roll of a diameter which provides a lower hydraulic head in the adhesive at the nip than is the case if the pair of larger rolls formed the laminating nip, said smaller diameter roll being confined against deflection by its location between the larger diameter rolls, means for advancing the materials through the nip, and means for pressing the nip rolls together at the required laminating pressure.

3,312,581
HOLLOW DECORATIVE PLASTIC ARTICLESMax Schmidt, Brauhausstrasse 17, Auebach, Middle Franconia, Germany
Filed June 19, 1961, Ser. No. 122,371
Claims priority, application Germany, Aug. 4, 1958, Sch 24,507; July 8, 1960, Sch 28,131
2 Claims. (Cl. 161—6)

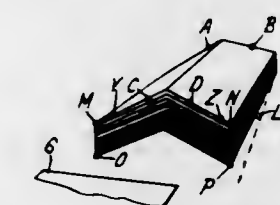
1. A hollow decorative plastic article comprising a pair of shells each having a projecting rim around its edge and each consisting of thin transparent plastic sheeting, a coating of transparent coloring material on the inside of said shell and a thin metal layer on the inside on the said coloring material, said two shells being secured to each other along and between said rims so as to form said hollow article with a peripheral rim thereon, and means on said peripheral rim of said hollow article for suspending said article.

3,312,582

METHODS OF PRODUCING SHEETS OF WOOD VENEER AND THE SHEETS OF WOOD VENEER SO PRODUCED

Morris Allan and Morris Berman, London, England, assignors to Aaronson Bros. Limited, Rickmansworth, England, a corporation of Great Britain

Filed Mar. 25, 1963, Ser. No. 267,580

Claims priority, application Great Britain, Mar. 28, 1962, 11,961/62
2 Claims. (Cl. 161—37)

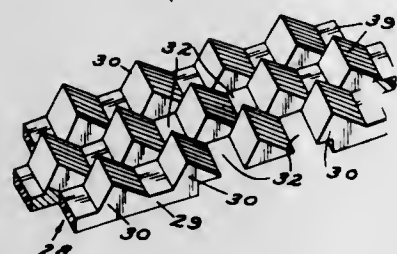
1. A method of producing a fabricated sheet of wood veneer each having a grain direction, comprising the steps of:

- cutting a plurality of natural wood veneer sheets to a selected uniform shape;
- assembling said plurality of natural wood veneer sheets in a stack;
- orientating the natural wood veneer sheets comprising the stack so that the grain direction of all of the natural wood veneer sheets lies generally in the same direction throughout the stack;
- positioning the stack of natural wood veneer sheets in relation to a press whose complementary male and female jigs each comprise a single V so that the grain direction of all of the natural wood veneer sheets in the stack is generally perpendicular to the apex of the V of the male jig of the press;
- pressing the stack of natural wood veneer sheets in the press to impose a V-shape on the stack;
- bonding the natural wood veneer sheets comprising the pressed stack and thereby producing a V-shaped block of natural veneer sheets;
- presenting the side of the block which contains the inverted V of a veneer sheet included in the said V-shaped block to the knife of a veneer slicing machine; and

slicing a fabricated sheet of wood veneer from the block by the action of the said knife to include at least several layers of the stack and at an angle to the V of the block.

3,312,583
APERTURED AND STAGGERED MOLDED PILE PRODUCT

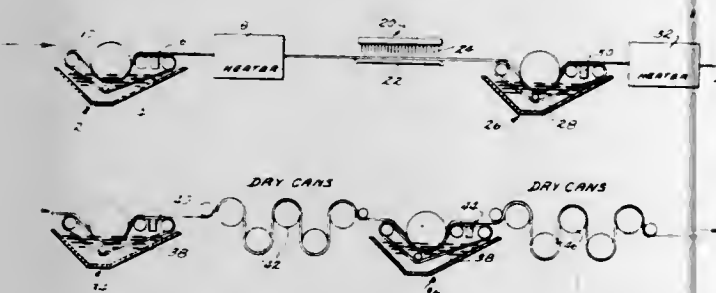
James J. Rochlis, 1862 Old Orchard Road, Abington, Pa. 19001
Filed Oct. 2, 1963, Ser. No. 313,356
1 Claim. (Cl. 161-62)



A pile-like molded product, comprising a base having a plurality of parallel rows of pile formations of pyramidal shape integrally formed on and projecting from a surface thereof, the formations of the respective transversely successive rows being staggered relative to one another in the longitudinal direction of said rows, said base having apertures therethrough separating some of the pile formations of the respective rows from one another, the apertures of a given row being in transverse alignment with pile formations of an adjacent row and being overlapped longitudinally by the ends of such pile formations, the respective pile formations of said given and adjacent rows also longitudinally overlapping one another to provide an integral connection of said respective pile formations at the overlapped portions thereof.

3,312,584
NONWOVEN FABRIC AND METHOD OF MANUFACTURING THE SAME
Richard E. Charlton, Jr., and Paul Anthony Homier, Fairfax, Ala., and Richard E. Hudson, Jr., West Point, Ga., assignors to West Point-Pepperell, Inc., a corporation of Georgia

Filed Nov. 9, 1962, Ser. No. 237,448
9 Claims. (Cl. 161-81)

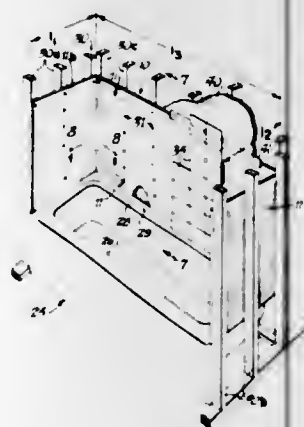


4. Process of manufacturing nonwoven fabric comprising the steps of prebonding a multidirectional fiber web with 0.5 to 5% based on the weight of fiber web of an elastomeric material, subjecting the treated web to a temperature sufficient to dry the web and cure the prebonded elastomeric material, need punching the prebonded web, rebonding the needle punched web with at least 100% based on the weight of the fiber web of an elastomeric material and subjecting the treated web to a temperature sufficient to dry the web without substantially curing the rebond elastomeric material.

5. A nonwoven fabric characterized by tire building tack, internal bond strength, extensibility and porosity, comprising a multidirectional fiber web bonded with a minor amount of a cured elastomeric material based on the total weight of elastomeric material and impregnated with a major amount of a substantially uncured elastomeric material.

3,312,585
WALLBOARD FOR BACKING WALL TILE BLOCKS
Donald G. Hamme, Tonawanda, N.Y., assignor to National Gypsum Company, Buffalo, N.Y., a corporation of Delaware

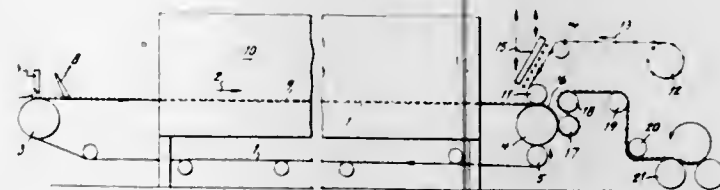
Filed Aug. 1, 1962, Ser. No. 214,064
4 Claims. (Cl. 161-104)



1. A wallboard for backing wall tile blocks forming a finished wall surface frequently contacted by water such as in bathtub enclosures and shower stalls, said wallboard comprising an elongated generally rectangular core panel including a set gypsum core enclosed on its two faces and two longitudinal edges with paper, and a water impervious film firmly adhered to said paper and extending throughout the extent of a first of said faces and at least one of said edges and extending at least partway onto the second of said faces adjacent said one of said edges throughout the length of said panel.

3,312,586
METHOD OF MAKING SYNTHETIC SUEDE AND PRODUCT THEREOF
Terrence William Barlow, 15 Ashwood Crescent, Marple, England

Filed Oct. 24, 1965, Ser. No. 504,369
14 Claims. (Cl. 161-109)



1. A method of producing synthetic suede comprising first applying a layer of plastisol containing a blowing agent onto a support surface comprising mineral particles fixed to a base and inert to said plastisol, leveling said layer to the peaks of said particles, then beating said plastisol for simultaneous gelling and blowing to form cells therein, applying a fabric on said layer to form a laminate, then stripping said laminate from said support

surface, and then abrading the exposed surface of said plastisol layer, whereby at least some of said cells are ruptured to form a suede-like surface, said laminate being perforate.

14. A synthetic suede which is the product of the process of claim 1.

3,312,587
STABLE SILICONE RUBBER INTERLAYERS FOR GLASS

John J. Wilson, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

Filed May 18, 1964, Ser. No. 368,089
8 Claims. (Cl. 161-193)

5. A laminate having outer layers of (A) transparent, nonelastomeric solid sheeting from the group consisting of glass, fused quartz, and polymethyl methacrylate, bonded with a transparent silicone elastomer, the improvement comprising

- (1) having adjacent the inner side of (A) a layer (B) of transparent siloxane elastomer having originally mixed therein from 0.5 to 10 percent by weight based on the weight of (B) of a compound selected from the group consisting of lower alkyl orthosilicates and polysilicates,
- (2) the opposite side of layers (B) being bonded to at least one layer (C) of a transparent organosilicon elastomer having originally mixed therewith no lower alkyl orthosilicates and no polysilicates, there being between any two layers of (A) a total thickness of layers (B) which are no more than twice the thickness of (C).

3,312,588
METHOD OF PRESERVING AQUEOUS ORGANIC DISPERSIONS FROM MICROBIAL ATTACK

Eric R. Larsen, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Original application Dec. 23, 1963, Ser. No. 332,954, now Patent No. 3,244,710, dated Apr. 5, 1966. Divided and this application Jan. 24, 1966, Ser. No. 522,419

2 Claims. (Cl. 167-33)

1. A process for protecting an aqueous organic dispersion from attack by destructive microbial forms of life which comprises applying to said dispersion a small but effective amount of an iodine complex of the hexamethylenetetramine quaternary salt of a halogenated allyl halide of the formula



wherein n is an integer from 2 to 3, each X is selected from the group consisting of hydrogen and halogen, at least one X being halogen, and Y is halogen of atomic number from 17 to 53 inclusive, said complex containing about 1-75 percent by weight of complexed iodine.

3,312,589
FUNGICIDAL LIQUID CONCENTRATE WITH PROPYLENE GLYCOL

William J. Entley, Charleston, and Harry A. Stansbury, Jr., South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Nov. 26, 1965, Ser. No. 510,101
3 Claims. (Cl. 167-42)

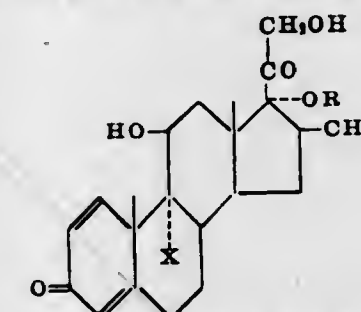
1. A fungicidal liquid concentrate formulation comprising from about 10 to about 40 percent by weight of 2-heptadecylglyoxalidine, from about 3 to about 10 percent by weight of n -dodecylguanidine acetate, and from about 50 to about 87 percent by weight of propylene glycol, provided that at least 10 parts by weight of propylene glycol are provided for every part by weight of n -dodecylguanidine acetate.

3,312,590
TOPICALLY ACTIVE ANTI-INFLAMMATORY 17-MONO- AND 17,21-DIESTERS OF BETAMETHASONE AND ITS 9-CHLORO-ANALOGS, COMPOSITIONS AND USE THEREOF

Joseph Elks, London, Peter John May, North Harrow, and Niall Galbraith Weir, Wembley, England, assignors to Glaxo Laboratories Limited, Greenford, England, a British company

No Drawing. Filed June 9, 1964, Ser. No. 373,837
Claims priority, application Great Britain, June 11, 1963, 23,223/63; Jan. 28, 1964, 3,623/64
28 Claims. (Cl. 167-58)

1. A steroid compound of the formula



wherein X is chlorine or fluorine and R is a member of the group consisting of propionyl, butyl, isobutyl, valeryl, isovaleryl and cyclopentanecarbonyl.

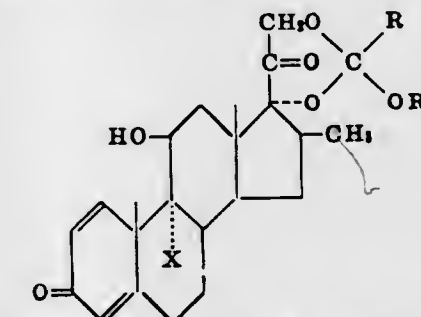
24. A method for the topical treatment of a topical inflammatory condition which comprises applying to the inflamed area a steroid compound of claim 1.

3,312,591
TOPICAL COMPOSITIONS OF 17 α ,21-ORTHO ESTERS OF BETAMETHASONE HAVING TOPICAL ANTI-INFLAMMATORY ACTIVITY AND THEIR USE

Joseph Elks, London, Peter John May, North Harrow, and Niall Galbraith Weir, Wembley, England, assignors to Glaxo Laboratories Limited, a corporation of Great Britain

No Drawing. Continuation of application Ser. No. 364,804, May 4, 1964. This application July 19, 1966, Ser. No. 567,309
Claims priority, application Great Britain, May 10, 1963, 18,641/63; Jan. 28, 1964, 3,621/64
9 Claims. (Cl. 167-58)

1. A pharmaceutical composition for use in the topical treatment of inflammation comprising a steroid of the formula:



where X is chlorine or fluorine, R is ethyl, propyl or butyl, and R^1 is methyl or ethyl, and a topical vehicle for said steroid.

3,312,592
ADMINISTRATION OF 1,4-BENZODIOXAN DERIVATIVES TO PRODUCE BETA-ADRENERGIC BLOCKADE

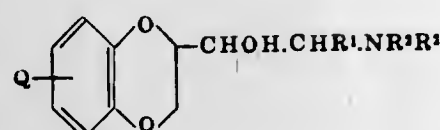
Madhukar Subraya Chodnaker, Albert Frederick Crowther, and Ralph Howe, Macclesfield, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Jan. 31, 1964, Ser. No. 341,751
Claims priority, application Great Britain, Feb. 13, 1963, 5,902/63

7 Claims. (Cl. 167-65)

1. A method for effecting β -adrenergic blockade which comprises administering to a human in need of β -adrenergic blockade

gic blockade an effective amount of at least one 1,4-benzodioxan derivative selected from the group consisting of compounds of the formula:



wherein R¹ is hydrogen or alkyl of 1-6 carbon atoms; R² is hydrogen or alkyl of 1-6 carbon atoms; R³ is hydrogen, or alkyl, hydroxyalkyl, alkoxyalkyl, cycloalkyl and alkenyl of 1-10 carbon atoms, aralkyl and haloaralkyl of 1-15 carbon atoms and alkoxy-aralkyl of 1-20 carbon atoms, or R² and R³ taken together with the adjacent nitrogen atom form a 5- or 6-membered nitrogen-containing heterocyclic ring; and Q is halogen, alkyl of 1-6 carbon atoms or hydroxy, and the esters and salts of said compounds.

3,312,593

ANTI-INFLAMMATORY COMPOSITIONS OF ASPIRIN AND NIACIN

Thomas N. Sheen, New York, N.Y., and Earl H. Tiffany, Jr., Short Hills, and Frank N. Berger, Princeton, N.J., assignors to Carter Products, Inc., New York, N.Y., a corporation of Maryland

No Drawing. Filed Mar. 10, 1965, Ser. No. 438,775

3 Claims. (Cl. 167-65)

1. A method for systemically treating and controlling inflammation and edema in a warm blooded animal which comprises administering internally to said animal a therapeutic composition comprising, as an essential active ingredient, a pharmaceutically effective amount of a mixture of aspirin and niacin, the components of said composition being present in a proportion of from about 10 to about 60 parts by weight of aspirin per part of niacin.

3,312,594

LONGLASTING TROCHE

Gilman Norman Cyr, New Brunswick, and James Ling Chen, Milltown, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 21, 1963, Ser. No. 289,707

10 Claims. (Cl. 167-82)

1. A longlasting compressed powder troche comprising pectin, gelatin and carboxymethylcellulose.

3,312,595

NUCLEAR REACTOR WITH INTERNAL PRESSURIZER

Stanley Hackney, Warrington, England, assignor to United Kingdom Atomic Energy Authority, London, England

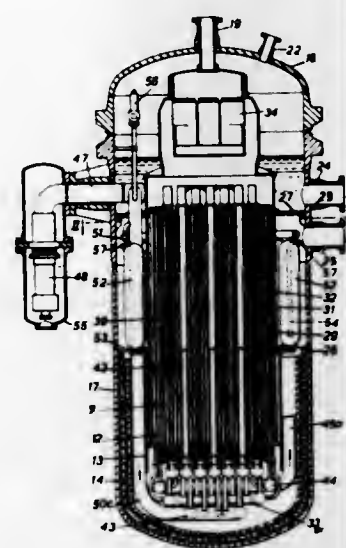
Filed Sept. 22, 1964, Ser. No. 398,224

Claims priority, application Great Britain, Oct. 11, 1963, 40,171/63; Oct. 24, 1963, 41,954/63

8 Claims. (Cl. 176-52)

1. In a nuclear reactor of the kind wherein a reactor vessel contains a reactor core and also internals which constitute both a circuit for a pressurized core-cooling liquid and a means for transferring heat from the pressurized liquid to a secondary coolant, the improvement of a pressurizer comprising a plurality of separate

chambers occupying a plurality of spaces left vacant by said internals, and conduits placing said chambers in



communication with said circuit, each of the chambers being a trap for a gaseous phase medium.

3,312,596

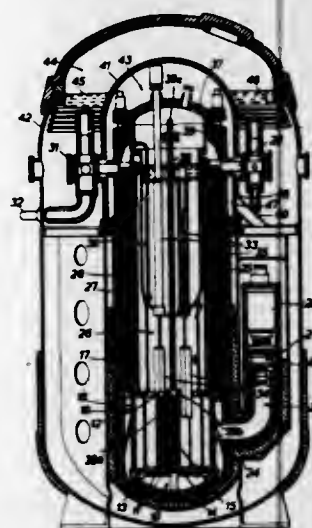
NUCLEAR REACTOR SYSTEM WITH INTERNAL PRESSURIZER

Deryk Ronald Grain, Appleton, Warrington, England, assignor to United Kingdom Atomic Energy Authority, London, England

Filed Nov. 4, 1964, Ser. No. 408,869

Claims priority, application Great Britain, Nov. 12, 1963, 44,591/63; Jan. 14, 1964, 1,714/64

7 Claims. (Cl. 176-54)



1. A nuclear reactor comprising a core, means for circulating a pressurized liquid coolant through the core, a pressuriser chamber, a flow guide extending into the core to isolate a pressurising stream of coolant in the core for delivery to the pressuriser chamber, restrictor means in the flow path defined by the flow guide whereby in operation the pressurising stream is hotter than the remaining coolant in the core and is alone capable of reducing boiling in the remaining coolant in the core, the chamber having a closed lower end, and a dip tube defining a path for flow of coolant from the inside to the outside of the chamber.

3,312,597 COATED PARTICLE FUELS FOR NUCLEAR REACTORS

Eugen Glueckauf, Didcot, England, assignor to United Kingdom Atomic Energy Authority, London, England
No Drawing. Filed Jan. 14, 1963, Ser. No. 251,074
Claims priority, application Great Britain, Jan. 30, 1962, 3,548/62

5 Claims. (Cl. 176-67)

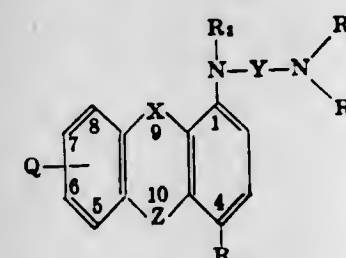
1. A fuel for nuclear reactors comprising kernels of uranium monocarbide coated with a metallic carbide compatible with uranium monocarbide and chosen from the group consisting of the carbides of silicon and zirconium, and an outer-layer of pyro-carbon disposed over the said metallic carbide.

3,312,598 FERMENTATIVE OXIDATION OF SUBSTITUTED THIOXANTHENES AND XANTHENES

David Rosi, East Green Bush, N.Y., and George P. Peruzzotti, Madison, Wis., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
No Drawing. Original application June 14, 1965, Ser. No. 463,908. Divided and this application Mar. 7, 1966, Ser. No. 558,196

5 Claims. (Cl. 195-51)

1. The process for producing a compound of the formula



where X is >C=O, >CHOH or >CH₂, Z is —O—, —S—, >SO or >SO₂, Q is hydrogen or from one to three substituents at positions 5, 6, 7 and 8 of the tricyclic ring selected from halo, lower-alkyl or lower-alkoxy, R is —CH₂OH or —CHO, Y is lower-alkylene having from two to four carbon atoms and having its two connecting linkages on different carbon atoms, R₁ is hydrogen or lower-alkyl, R₂ is lower-alkyl or lower-2-hydroxyalkyl where R₁ and R₂ taken with N also is piperidino, hexamethyleneimino, pyrrolidino, morpholino, piperazino or lower-alkylated derivatives thereof, or its 5,6,7,8-tetrahydro derivative, which comprises subjecting the corresponding 4-methyl compound to the fermentative enzymatic action of a micro-organism capable of effecting oxidation of the 4-methyl group to 4-hydroxymethyl and to 4-formyl, said organism being of an order selected from the group consisting of MONILIALES, MUCORALES and SPHAERIALES.

3,312,599 METHOD OF INTRODUCING A COLORED GROUP SENSITIVE TO pH CHANGES INTO ENZYMES BY THE REACTION WITH 2-HYDROXY-5-NITRO-BENZYL BROMIDE

Daniel E. Koshland, Jr., Bellport, and George Latham, East Patchogue, N.Y., and Yashwant D. Karkhanis, Philadelphia, Pa., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Original application Mar. 10, 1964, Ser. No. 350,924. Divided and this application Feb. 15, 1966, Ser. No. 544,324

1 Claim. (Cl. 195-68)

A method of introducing a colored group sensitive to pH changes into enzymes comprising reacting 2-hydroxy-5-nitro-benzyl bromide with an enzyme containing at least one member of the group consisting of, sulphhydryl peptides, tryptophan containing peptides, sulphhydryl containing proteins and tryptophanyl containing peptides where-

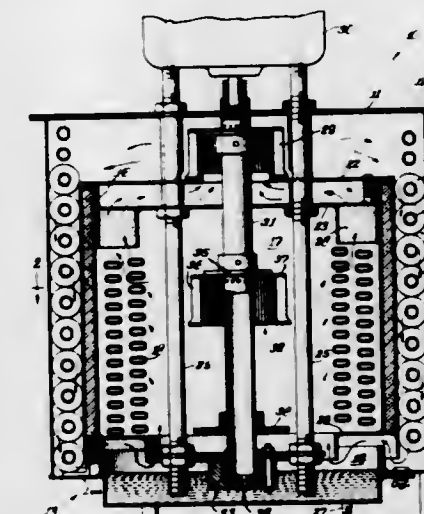
by a colored group sensitive to pH changes is added to the enzyme.

3,312,600 HEAT-PUMP COMPRESSOR TYPE DISTILLATION APPARATUS FOR PURIFYING WATER

Evans T. Morton, Milwaukee, Wis., assignor to Aqua-Chem, Inc., a corporation of Wisconsin

Filed Oct. 4, 1965, Ser. No. 495,764

7 Claims. (Cl. 202-160)



1. Apparatus for purifying water comprising a condensing chamber, a heating chamber, a hollow condenser means in the condensing chamber, a hollow heat exchange means in the heating chamber, a refrigeration compressor, means connecting the heat exchange means to the high pressure side of the refrigeration compressor, means connecting the condenser means to the low pressure side of said refrigeration compressor, conduit means connecting said heat exchange means and condenser means for completing a series cyclic circuit with said compressor, expansion valve means in said conduit means between said heat exchange means and condenser means, feed water means for directing feed water into heat exchange contact with said heat exchange means at a rate for heating said feed water to an elevated temperature below boiling to increase the vaporization thereof, motor-driven means for carrying heated water vapor to a flow path toward said condenser means, said motor-driven means including rotationally driven blade means, said flow path being adapted to block flow of water droplets while permitting flow of hot water vapor into condensing contact with said condenser means, a feed water container for containing a body of heated feed water disposed for receiving any excess water from said feed water directing means, overflow means operatively associated with said feed water container for determining the level of water in said feed water container, means responsive to the temperature of the water in the feed water container to control the introduction of fresh feed water thereinto, trough means disposed for receiving condensate from said condenser means and means for conducting said condensate to a storage receptacle as product purified water.

3,312,601 WATER IMMISCIBLE LIQUID CONDENSER IN MULTISTAGE FLASH DISTILLATION

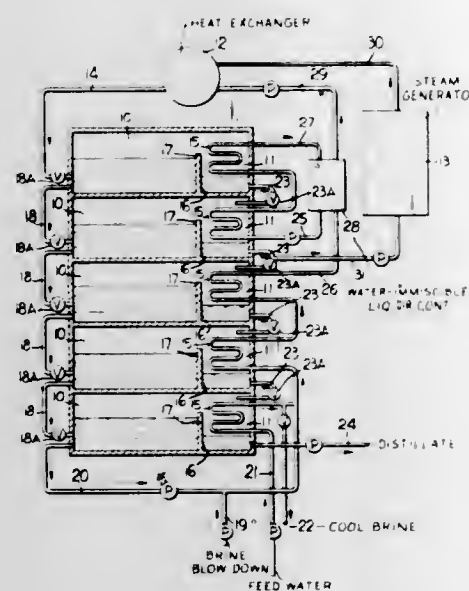
John F. Wilson, New Berlin, and William E. Littleton, Wauwatosa, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed July 21, 1964, Ser. No. 384,182

12 Claims. (Cl. 203-11)

1. A multistage flash evaporator for producing pure water from brine solutions comprising in combination; a plurality of high temperature and low temperature flash chambers, means for interconnecting said flash chambers

in series so that the brine may be conveyed in a predetermined path through all flash chambers, means for maintaining each succeeding flash chamber at a lower pressure and temperature than the flash chamber which precedes it, a first condenser circuit wherein a condenser is associated with each of said low temperature flash chambers and fresh brine is circulated as a condenser coolant in the order of increasing temperature, a second condenser circuit wherein a condenser is associated with each of

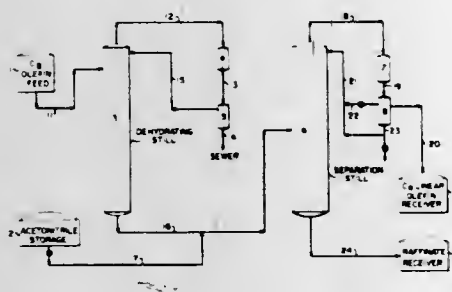


said high temperature flash chambers wherein a water immiscible liquid is circulated as condenser coolant in the order of increasing temperature, means for transferring the internal heat of the water immiscible coolant to preheat said brine coolant, means for further heating said preheated brine coolant to a temperature greater than that in the high temperature flash chambers and at saturation pressure, and means for conveying said heated brine to the highest temperature flash chamber.

3,312,602

SEPARATION OF LINEAR ALIPHATIC MONO-OLEFINS FROM HYDROCARBONS BY DISTILLING WITH A NITRILE

William Judson Mattox and Glen Porter Hamner, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Aug. 29, 1963, Ser. No. 305,397
11 Claims. (Cl. 203-53)



1. The method of separating linear aliphatic mono-olefins from mixtures thereof with close boiling corresponding branched and cyclic mono-olefins, diolefins, and aromatics which comprises distilling said mixture with a nitrile of the general formula:



wherein n is an integer of 1 to 2 and R is selected from the group consisting of C_1 to C_4 aliphatic hydrocarbon

radicals and C_1 to C_4 aliphatic hydrocarbon radicals in which at least one hydrogen atom has been replaced by at least one substituent group containing an atom selected from the group consisting of oxygen, halogen and nitrogen, said nitrile being employed as an azeotrope entrainer, distilling off an azeotrope comprising a linear aliphatic monoolefin nitrile heterogeneous azeotrope, and removing the linear aliphatic monoolefin fraction from said entrainer.

3,312,603

PRODUCTION OF OXIDIC FILMS ON GERMANIUM

Robert D. Wales, 3688 South Court, Palo Alto, Calif. 94306
Filed Apr. 6, 1964, Ser. No. 357,406
7 Claims. (Cl. 204-14)

4. A method of producing oxidic film on germanium comprising anodizing the germanium in a medium consisting essentially of acetic anhydride containing a small amount of oxygen containing electrolyte salt to increase conductivity and to supply the oxygen for film formation.

5. A method of producing oxidic film on germanium comprising anodizing the germanium in a medium consisting essentially of acetic anhydride containing small amounts of dissolved electrolytic salt, unreacted water, acetic acid and germanium dioxide.

3,312,604

ELECTRODEPOSITION OF NICKEL

Frederick Herbert Wells, Sutton Coldfield, and Peter John Worrall, Kidderminster, England, assignors to Albright & Wilson (Mfg.) Limited, Oldbury, Warwickshire, England, a British company
No Drawing. Filed Oct. 22, 1963, Ser. No. 318,109
Claims priority, application Great Britain, Oct. 25, 1962, 40,384/62; June 17, 1963, 23,987/63
12 Claims. (Cl. 204-49)

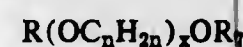
1. In an acidic aqueous electrolyte for the electrodeposition of nickel which comprises nickel sulphate and a nickel electrodeposition levelling agent, the improvement which consists in there having been added to said electrolyte a water-soluble salt of strontium in an amount within the range of 10 parts per million to 1 gram per liter (calculated as strontium), whereby the electrolyte may be operated to provide a nickel electrodeposit having a satin-like finish.

3,312,605

PREPARATION OF ORGANO METALLIC COMPOUNDS

David G. Braithwaite, Chicago, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Oct. 24, 1963, Ser. No. 505,038
16 Claims. (Cl. 204-59)

1. A process for preparing organo metallic compounds which comprises electrolyzing, using a sacrificial anode, an anhydrous solution of a Grignard reagent in a mixed solvent of tetrahydrofuran and a diether of a glycol having the following formula:



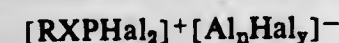
where R and R_1 are the same or different hydrocarbon radicals, n is 2 to 6, and x is at least 3, said solution being liquid under the conditions of reaction, the quantity of tetrahydrofuran being sufficient to increase the conductivity of said solution and said diether providing a liquid mixture at 20° C.

3,312,606

PROCESS FOR THE PRODUCTION OF ORGANIC PHOSPHINE HALIDES

Reinhard Schliebs, Cologne-Stammheim, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Sept. 17, 1963, Ser. No. 309,386
Claims priority, application Germany, Oct. 17, 1962, F 38,062
7 Claims. (Cl. 204-62)

1. Process for producing organic phosphine halides which comprises electrolyzing as a catholyte in an electrolysis cell having a diaphragm, a phosphorus halide-aluminum halide complex of the general formula



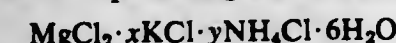
wherein R is a member of the group consisting of alkyl radicals and cycloalkyl radicals, X is a member of the group consisting of chlorine, bromine, an alkyl radical, a cycloalkyl radical and an aryl radical, Hal is a member of the group consisting of chlorine and bromine, n represents an integer selected from 1 and 2, wherein when n is 1, y is 4 and when n is 2, y is 7, and electrolyzing as an anolyte an anhydrous melt of ion-conducting inorganic compounds selected from the group consisting of alkali-tetrahalogen aluminates and mixtures of sodium chloride and ferric chloride, said electrolyzing being effected in the molten state at a temperature of 60 to 250° C. and recovering the organic phosphine halide formed.

3,312,607

METHOD OF PRODUCING SOLID SOLUTIONS OF THE CARNALLITE TYPE

Robert D. Goodenough, and Remigius A. Gaska, Midland, and Richard C. Belzki, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Nov. 4, 1963, Ser. No. 321,332
4 Claims. (Cl. 204-70)

1. The method of producing a solid solution of



wherein the sum of the mole fractions of $x(KCl)$ and $y(NH_4Cl)$ equals the number of moles of $MgCl_2$, from a brine solution containing magnesium chloride and potassium chloride in a weight proportion of at least 1.9 which comprises:

(a) adding solid ammonium chloride to the brine solution, the amount of said ammonium chloride providing a weight proportion of NH_4Cl/KCl in said solution within the range of from about 0.63 to about 3.8 and a weight proportion of the



in said solution within the range of from about 0.28 to about 1.7;

(b) precipitating $MgCl_2 \cdot xKCl \cdot yNH_4Cl \cdot 6H_2O$ product therein wherein the sum of the mole fractions of $x(KCl)$ and $y(NH_4Cl)$ equals the number of moles of $MgCl_2$; and

(c) thereafter separating the precipitation product from the residual solution.

3,312,608

ELECTROLYTIC PROCESS FOR PREPARING D-RIBOSE

Shigehiko Sugawara and Shoji Matsumoto, Tokyo, Japan, assignors to Tanabe Sanyaku Co., Ltd., Osaka, Japan
No Drawing. Filed Jan. 29, 1964, Ser. No. 341,117
1 Claim. (Cl. 204-73)

The process for preparing D-ribose, which comprises charging an electrolytic cell, having anode and cathode compartments separated by a semi-permeable diaphragm, with a non alkaline, aqueous solution of D-ribonolactone and the ammonium salt of an inorganic acid as the cath-

olyte and an aqueous solution of a strong inorganic acid as the anolyte, the acid being substantially non-reactive with the anode material, and the cathode being mercury, passing an electric current between the anode and the cathode in the respective compartments while adding acid to the catholyte until D-ribonolactone is substantially converted into D-ribose, the electrolysis being effected at a temperature below that at which D-ribonolactone decomposes in the catholyte, and recovering D-ribose from the catholyte.

3,312,609

BRINE ELECTROLYSIS

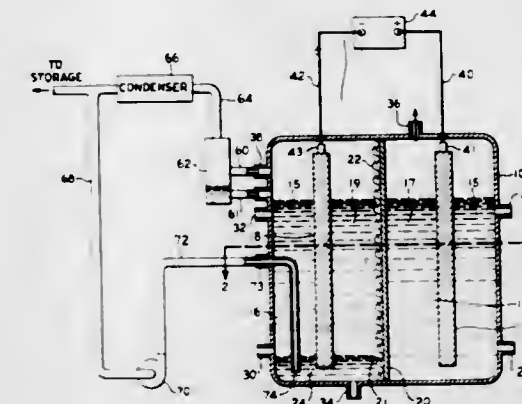
Morton S. Kircher, Vancouver, British Columbia, Canada, assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Oct. 5, 1965, Ser. No. 493,255
2 Claims. (Cl. 204-98)

1. In a method for continuously electrolyzing aqueous alkali metal chloride brine to produce chlorine, hydrogen and alkali metal hydroxide under the influence of a decomposition voltage and using a porous diaphragm type cell means, wherein brine and hydrogen chloride are being fed into the anolyte of said cell means, the improvement which comprises: maintaining the anolyte pH in a normal range between 1.4 and 4.0 and maintaining the anolyte level in said cell means at its predetermined normal level so that the said porous diaphragm is prevented from tightening up from the hydrogen chloride addition by maintaining the alkali metal hydroxide concentration in the catholyte above at least 3.725 moles per liter alkali metal hydroxide by controlling the brine and hydrogen chloride feed rates.

3,312,610

ELECTROLYTIC PROCESS FOR PRODUCING PHOSPHINE

George T. Miller, Lewiston, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
Filed Mar. 4, 1963, Ser. No. 262,496
8 Claims. (Cl. 204-101)



1. A process for preparing phosphine electrolytically comprising:

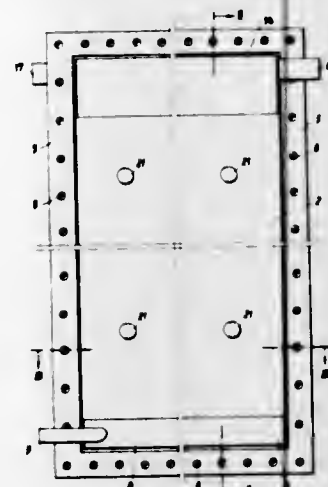
- contacting an anode and a cathode with an electrolyte, a portion of said cathode being in contact with a body of liquid phosphorus;
- maintaining a layer of said phosphorus on the surface of said cathode;
- maintaining an electric current between said anode and said cathode through said electrolyte;
- and passing a reducing gas into contact with and through said body of phosphorus so that it is maintained in liquid form and phosphine is produced in the region of the cathode.

3,312,611 IRRADIATION POLYMERIZATION OF TRIOXANE

Nelson S. Marans, Silver Spring, and Forrest A. Wessells, Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed June 14, 1963, Ser. No. 287,768
6 Claims. (Cl. 204-159.21)

1. An improved method for providing a fine size fibrous polyoxymethylene having a major dimension of less than about 50 microns and a length to diameter ratio of greater than about 10:1 which comprises heating a particulate trioxane having a maximum particle size of less than about 420 microns to a temperature of from about 50 to about 56° C., irradiating said trioxane with high energy ionizing irradiation to initiate polymerization thereof, aging said irradiated trioxane at a temperature of about 50 to about 62° C. to cause polymerization thereof, recovering polyoxymethylene formed during said polymerization, and grinding said recovered polyoxymethylene to obtain fibrous particles of said dimensions.

seal said diaphragm, at least one collecting channel for the products of electrolysis integral with the lower wall portion of one electrode, at least one electrolyte supply



3,312,612 KETOXIME PRODUCTION

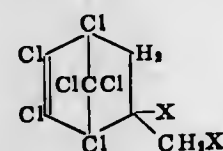
Chai Y. Choo, Paramus, N.J., assignor to Halcon International, Inc., a corporation of Delaware
No Drawing. Filed Jan. 24, 1963, Ser. No. 253,757
8 Claims. (Cl. 204-162)

1. In a process for the production of ketoxime materials wherein a normally liquid cyclic paraffinic compound is reacted with a nitrosating agent in the presence of active light, the improvement which comprises agitating the reaction mixture at a degree of agitation equal to at least 0.1 H.P. per 1000 gallons of liquid and such that objectionable filming is avoided in 10 hours' operation.

3,312,613 SUBSTITUTED HALOHEPTENES

Victor Mark, Olivette, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Oct. 18, 1962, Ser. No. 231,559
3 Claims. (Cl. 204-163)

1. The method of preparing a compound of the structure



wherein X is selected from the group consisting of chlorine and bromine, which comprises contacting 1,2,3,4,7,7-hexachloro-5-methylene-2-norbornene with a halogen of the group consisting of chlorine and bromine in the presence of actinic light.

3,312,614 DIAPHRAGM ELECTROLYSIS CELL

Josef Schick, Siegen, Germany, assignor, by mesne assignments, to Mataschem Ag., Zug, Switzerland, a Swiss corporation
Filed Sept. 14, 1962, Ser. No. 223,751
Claims priority, application Germany, Sept. 15, 1961, S 75,776; Sept. 28, 1961, S 76,001
16 Claims. (Cl. 204-266)

1. A diaphragm electrolysis cell in which electrically conductive rigid wall-electrodes form the walls of the cell casing which cell comprises two metal electrodes in the form of substantially flat thin plates disposed in spaced parallel relationship with one another, one of said plates forming an anode and the other plate a cathode, a foraminous diaphragm disposed between said electrodes, an integral frame secured to the periphery of each electrode and connected to the edges of the diaphragm to integrally

channel at the upper end of said cell, an anolyte removal channel integral with the upper wall portion of said anode and a catholyte removal channel integral with the upper wall portion of said cathode.

3,312,615 CATALYST COMPOSITION CONTAINING A CRYSTALLINE ALUMINO-SILICATE, A SILICEOUS MATRIX AND INERTS FOR THE CONVERSION OF HYDROCARBONS

Robert H. Cramer, Rifle, Abbott F. Houser, Cherry Hill, and Kenneth I. Jagel, Jr., Rifle, Colo., assignors to Mobil Oil Corporation, a corporation of New York
Filed Apr. 9, 1965, Ser. No. 447,019
20 Claims. (Cl. 208-120)

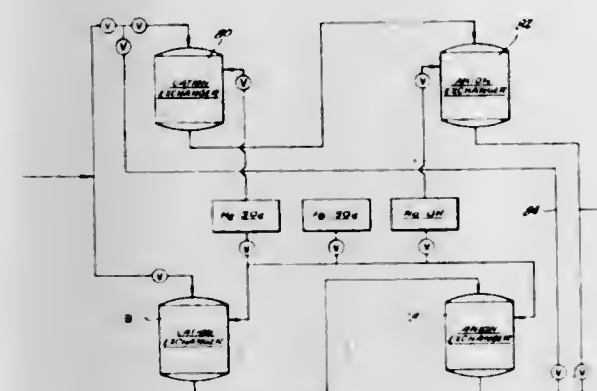
17. A process for the catalytic cracking of petroleum stocks which comprises contacting at least one petroleum charge stream under catalytic cracking conditions with a catalyst composition containing less than 4 percent sodium by weight and comprising three components: (a) between about 2 and 15 percent by volume crystalline aluminosilicate particles, having uniform pore openings of between 6 and 15 Angstrom units in diameter and a weight mean particle diameter between about 0.1 and 40 microns, said crystalline aluminosilicate selected from the group consisting of zeolites X, Y, faujasite and mordenite, and characterized by an alpha (α) greater than 2; (b) between about 50 and 75 percent by volume of a siliceous oxide matrix comprising silica and at least one inorganic oxide of the elements selected from the group consisting of Groups II, III-A, IV-B and VI-B of the Periodic Table and characterized by an alpha (α) greater than 0.1, but less than the alpha (α) of said crystalline aluminosilicate component; and (c) between about 10 and 45 percent by volume of finely divided α -alumina, having a weight mean particle diameter between about 0.1 and 3 microns, and characterized by an alpha (α) less than 0.1.

3,312,616 WATER TREATMENT

Richard C. Ulmer, Simsbury, and John J. Kurpen, Thompsonville, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed June 1, 1964, Ser. No. 371,344
8 Claims. (Cl. 210-26)

1. The method of operating an ion exchange unit containing cation exchange material comprising the steps of treating said material with a metallic salt to convert said material to a metallic form, treating said metallic form of the material with alkali to precipitate metallic hydroxide

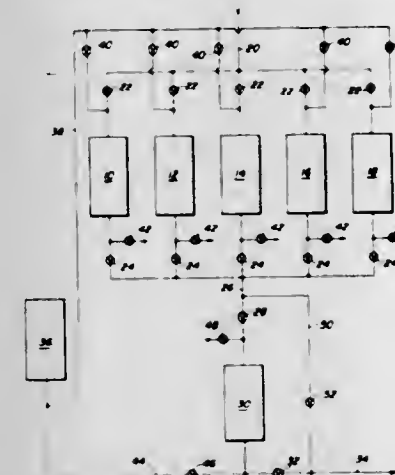
within the pores of the material, treating the resulting material with a high molecular weight acid, the anion portion of said acid being of such a size that it will not enter the pores of said resulting material and therefore will not



react with said metallic hydroxide, said acid converting said resulting material to the hydrogen form and thereafter passing water in contact with said hydrogen form of the said resulting material to remove cations and oxygen from said water.

3,312,617 ION EXCHANGE METHOD AND APPARATUS

Herschel A. Klein, Windsor, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 9, 1963, Ser. No. 329,087
8 Claims. (Cl. 210-35)



1. The method of ion exchange treatment of a solution comprising the steps of:

- passing the solution through primary ion exchange means to obtain partially treated solution,
- passing the partially treated solution from said primary ion exchange means through polishing ion exchange means,
- regenerating said primary ion exchange means to a first level of regeneration and
- regenerating said polishing ion exchange means to a second level of regeneration higher than said first level.

3,312,618 PROCESS FOR PREPARING AN OIL SOLUBLE HIGHLY BASIC METAL SALT OF AN ORGANIC ACID

William M. Le Suer, Cleveland, and George R. Norman, Lyndhurst, Ohio, assignors to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio
No Drawing. Filed July 15, 1966, Ser. No. 565,407
25 Claims. (Cl. 252-33)

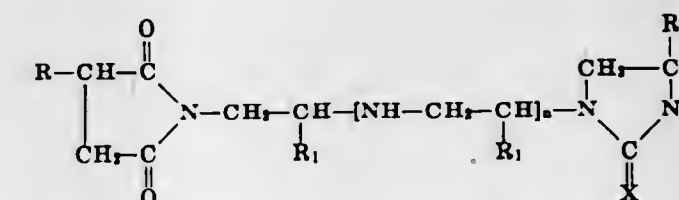
12. The process which comprises preparing a substantially anhydrous mass consisting essentially of

- an oil-soluble organic acid compound containing at least 12 carbon atoms selected from the class consisting of sulfonic acids, naphthenic acids, alkylated aromatic carboxylic acids, phosphorus thioic acids and the metal salts of any of said acids;
 - a basically reacting metal compound from which the metal cation is liberated when contacted with an acidic material having an ionization constant greater than 1.5×10^{-11} in water at 25° C. and present in an amount such that there is present in the mass substantially more than 2 equivalents of metal per equivalent of (a);
 - at least 0.1 equivalent of an alcohol per equivalent of (b); and
- treating the mass with an inorganic acidic material.

3,312,619 2-SUBSTITUTED IMIDAZOLIDINES AND THEIR LUBRICANT COMPOSITIONS

Billy Dale Vineyard, St. Louis, Mo., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Filed Oct. 14, 1963, Ser. No. 316,111
20 Claims. (Cl. 252-47.5)

1. A compound represented by the structure



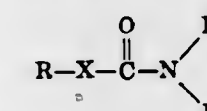
where R is a polyalkenyl radical having a molecular weight of from about 500 to about 2500; R₁ is selected from the group consisting of hydrogen and an alkyl radical containing from one to three carbon atoms; n is a whole number from 0 to 3; and X is selected from the group consisting of oxygen, sulfur and NH.

7. A composition comprising a lubricating oil and a compound of claim 1.

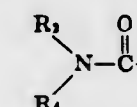
3,312,620 AMIDE LUBRICANTS

Hans Low, Bonn, Germany, and John E. Lauck, Godfrey, Ill., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 21, 1964, Ser. No. 420,165
13 Claims. (Cl. 252-47.5)

7. A lubricant composition comprising a major amount of an N,N-disubstituted amide having the formula



where X is selected from the group consisting of alkylene, arylene, alkarylene, and aralkylene having 3 to 12 carbons, R₁ and R₂ are selected from the group consisting of alkyl and aryl having 3 to 12 carbons, and R is selected from the group consisting of hydrogen and



where R₃ and R₄ are selected from the group consisting of alkyl and aryl having 3 to 12 carbons and 0.1% to 10% by weight of an organic nitrogen-containing antioxidant.

9. The lubricant of claim 7 wherein the antioxidant is phenothiazine.

3,312,621 LUBRICANTS HAVING A HIGH VISCOSITY INDEX

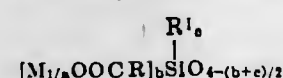
Darrell W. Brownawell, Scotch Plains, and John E. Engelhart, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Sept. 28, 1964, Ser. No. 399,866
6 Claims. (Cl. 252-59)

1. A lubricating oil composition of enhanced viscosity-temperature characteristics which comprises a major portion of a hydrocarbon lubricating oil and from about 0.1 to about 3 weight percent of a polymer of a conjugated diolefin of from 4 to 5 carbon atoms, said polymer having a number-average molecular weight in the range of from 75,000 to 300,000 and having at least 90 percent 1,4 configuration.

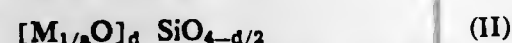
3,312,622 SILICONE-SILICATE POLYMERS AS CORROSION INHIBITORS

Arthur N. Pines, Snyder, and Eugene A. Zientek, Tonawanda, N.Y., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Original application Dec. 12, 1960, Ser. No. 75,097, now Patent No. 3,198,820, dated Aug. 3, 1965. Divided and this application Aug. 19, 1964, Ser. No. 390,727
71 Claims. (Cl. 252-75)

1. An improved inhibited alcohol composition comprising an alcohol and, as an inhibitor, a corrosion inhibiting amount of an organosilicon polymer consisting essentially of: (A) from 0.1 to 99.9 parts by weight of siloxane groups represented by the formula:



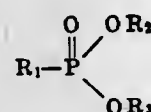
wherein M is a cation that forms a water soluble silicate, a is the valence of the cation represented by M and has a value of at least one, R is a member selected from the group consisting of the unsubstituted divalent hydrocarbon groups and $M_{1/2}OOC$ substituted divalent hydrocarbon groups, each $M_{1/2}OOC$ group is connected to the silicon atom through at least 2 carbon atoms of the group represented by R, R^1 is a monovalent hydrocarbon group, b has a value from 1 to 3 inclusive, c has a value from 0 to 2 inclusive and (b+c) has a value from 1 to 3 inclusive and (B) from 0.1 to 99.9 parts by weight of groups represented by the formula:



wherein M and a have the above-defined meanings and d has a value from 1 to 3 inclusive, said parts by weight of said groups being based on 100 parts by weight of the organosilicon polymer.

3,312,623
ANTISEPTIC DETERGENT COMPOSITIONS
Steven J. Fitch, Creve Coeur, and Riyad R. Irani, Olivette, Mo., assignors to Monsanto Company, a corporation of Delaware
No Drawing. Filed Dec. 23, 1963, Ser. No. 332,882
7 Claims. (Cl. 252-106)

1. An antiseptic detergent composition consisting essentially of a detergent selected from the class consisting of soap and organic synthetic detergents selected from the class consisting of non-soap anionic, nonionic and amphoteric surfactants and, as a bacteriostatic agent, in at least an antiseptically effective amount, a dialkyl ester of a long chain alkyl phosphonate having the following formula



wherein R_1 is a member selected from the group consisting of alkyl and halo-alkyl containing from about 8 to 18 carbon atoms and R_2 and R_3 are lower alkyl groups containing from 1 to 5 carbon atoms.

3,312,624
STABLE ALKALI SOLUBLE SURFACTANTS
Jean Dupre, Levittown, Pa., and Richard C. Mansfield, Cherry Hill, N.J., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Mar. 12, 1965, Ser. No. 439,473
17 Claims. (Cl. 252-135)

1. A stable alkali-soluble surfactant consisting essentially of a blend of about 75 percent to about 90 percent of a component "M" with about 25 percent to about 10 percent of a component "N," where "M" is a surface-active composition, which contains upwards of 85% primary phosphate esters, of the class consisting of the condensation product, and the salts of said product, of the reaction of



and polyphosphoric acid,

"N" is $R^1(CH_2CH_2O)_zR^2$,

R and R^1 are members of the class consisting of alkoxy groups having from 10 to 15 C atoms in the alkyl portion thereof, and alkylphenoxy groups having 4 to 10 C atoms in the alkyl portion thereof, R^2 is a C_1 to C_8 alkyl group, and x and z each is a number in the range of from about 5 to about 25;

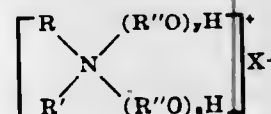
the said phosphate ester, M, being prepared by reacting from about 0.6 mol to about 2.0 mols of polyphosphoric acid with each mol of said condensation product; and the said polyphosphoric acid being a mixture of phosphoric acids with a phosphoric acid anhydride content corresponding to about 73 to 85 percent expressed as P_2O_5 .

12. A cleaning composition consisting essentially of a mixture of about 88 to 99 percent by weight of an alkali metal salt from the class consisting of caustic soda, sodium metasilicate, soda ash, trisodium phosphate, sodium tripolyphosphate, sodium orthosilicate, tetrasodium pyrophosphate and tetrapotassium pyrophosphate, and about 1 to 12 percent by weight of the surfactant of claim 1.

3,312,625
PICKLING INHIBITOR COMPOSITION
Joseph C. Peterson, 3260 Melbourne Lane, Indianapolis, Ind. 46208
Filed July 6, 1965, Ser. No. 480,216
3 Claims. (Cl. 252-149)

1. A pickling inhibitor formulation consisting of the following ingredients:

- a dialkyl thiourea wherein the alkyl groups have from 1-5 carbon atoms,
- an alkoxylated quaternary ammonium salt of the formula



wherein R is an aliphatic hydrocarbon radical having from 6-22 carbon atoms, R' is a lower alkyl radical having from one to four carbon atoms; R'' is a member of the group consisting of ethylene, 1,2-propylene and trimethylene; X^- is chloride, bromide, fluoride, phosphate, sulfate, p-toluene, or trichloroacetate; and y and z are positive integers whose sum lies in the range 28-32,

(c) a polyoxyethylene glycol esterified with isodextropimaric, dihydroabietic, tetrahydroabietic, dehydroabietic, abietic, neoabietic, dextropimaric or levopimaric

maric acids having from 6-20 oxyethylene residues in the ester portion of said molecule.

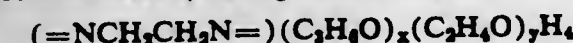
- a nonyl phenol polyoxyethylene ether having from 6-15 ethyleneoxy residues in the polyoxy ethylene glycol chain, and
- propylene glycol, each of the above ingredients being present in an amount equal to at least 0.75% by volume of the whole composition.

3,312,626
TOILET BAR
Donald T. Hooker, Green Township, Hamilton County, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Sept. 3, 1965, Ser. No. 485,086
7 Claims. (Cl. 252-152)

1. A solid toilet bar substantially free of anionic detergents and alkaline builder materials and consisting essentially of:

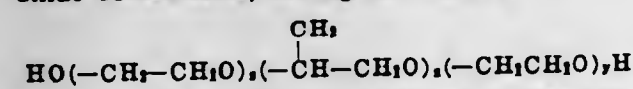
- a base of high molecular weight, normally solid, polymeric nonionic detergent of which at least about 70% by weight is oxyethylene selected from the group consisting of:

- propylene oxide-ethylenediamine-ethylene oxide condensates, having the formula



wherein x ranges from 1 to about 160 and y ranges from about 300 to about 700 and wherein the molecular weight ranges from about 20,000 to about 30,000 and the percentage by weight of oxyethylene in the condensates is at least about 70% by weight.

- propylene oxide-propylene glycol-ethylene oxide condensates, having the formula



wherein x ranges from 1 to about 100 and the sum of y and z ranges from about 160 to about 450, and wherein the molecular weight ranges from about 10,000 to about 20,000 and the percentage by weight of oxyethylene in the condensates is at least about 70% by weight,

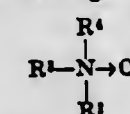
- polymerized ethylene glycol having the formula



wherein x ranges from about 100 to about 500, and

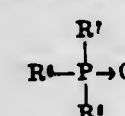
- mixtures thereof; and
- a nonionic lathering component selected from the group consisting of:

- amine oxide detergents having the formula



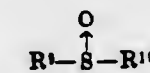
wherein R^3 is selected from the group consisting of alkyl and monohydroxyalkyl groups containing from about 10 to about 20 carbon atoms and from 0 to about 3 ether linkages, there being at least one moiety of R^3 which constitutes a carbon chain containing no ether linkages and containing from about 10 to about 14 carbon atoms, and wherein R^4 and R^5 are each selected from the group consisting of alkyl and monohydroxyalkyl groups containing from 1 to about 3 carbon atoms;

- phosphine oxide detergents having the formula



wherein R^4 is selected from the group consisting of alkyl and monohydroxyalkyl groups containing from about 12 to about 18 carbon atoms, and wherein R^7 and R^8 are each selected from the group consisting of alkyl and monohydroxyalkyl groups containing from 1 to about 3 carbon atoms;

- dialkyl sulfoxide detergents having the formula



wherein R^9 is selected from the group consisting of monohydroxyalkyl, alkoxyalkyl and alkoxy-monohydroxyalkyl groups containing from about 10 to about 18 carbon atoms, there being at least one moiety of R^9 which constitutes a carbon chain containing no ether linkage and containing from about 10 to about 14 carbon atoms, and wherein R^{10} is selected from the group consisting of alkyl and monohydroxyalkyl groups containing from 1 to about 3 carbon atoms; and

- mixtures thereof;

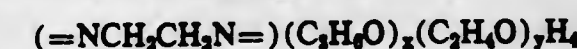
the base (1) ranging from about 30% to about 70% of the composition of the bar by weight; and the lathering component (2) ranging from about 10% to about 70% of the composition of the bar by weight; the bar being firm at room temperatures.

3,312,627
TOILET BAR
Donald T. Hooker, Green Township, Hamilton County, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Sept. 3, 1965, Ser. No. 485,087
9 Claims. (Cl. 252-152)

1. A solid toilet bar substantially free of anionic detergents and alkaline builder materials and consisting essentially of:

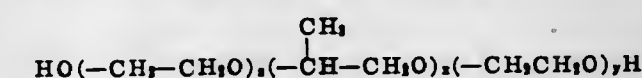
- a base of high molecular weight, normally solid, polymeric nonionic detergent of which at least about 70% by weight is oxyethylene selected from the group consisting of:

- propylene oxide-ethylenediamine-ethylene oxide condensates, having the formula



wherein x ranges from 1 to about 160 and y ranges from about 300 to about 700 and wherein the molecular weight ranges from about 20,000 to about 30,000 and the percentage by weight of oxyethylene in the condensates is at least about 70% by weight,

- propylene oxide-propylene glycol-ethylene oxide condensates, having the formula



wherein x ranges from 1 to about 100 and the sum of y and z ranges from about 160 to about 450, and wherein the molecular weight ranges from about 10,000 to about 20,000 and the percentage by weight of oxyethylene in the condensates is at least about 70% by weight,

- polymerized ethylene glycol having the formula

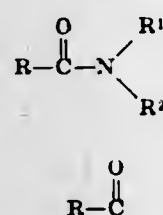


wherein x ranges from about 100 to about 500, and

- mixtures thereof;

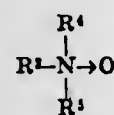
(2) a nonionic lathering component selected from the group consisting of:

- (a) polyoxyethylene ethers of an alkyl alcohol wherein said alkyl group contains from about 10 to about 16 carbon atoms and the mol ratio of ethylene oxide:alkyl alcohol is in the range of 10:1 to 25:1;
- (b) polyhydroxy amides having the formula



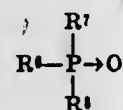
contains from about 10 to about 14 carbon atoms and wherein R^1 and R^2 are each selected from the group consisting of hydrogen and alkyl groups containing from 1 to about 6 carbon atoms, said alkyl groups containing a total number of carbon atoms of from 2 to about 7 and a total number of substituent hydroxyl groups of from 2 to about 6;

(c) amine oxide detergents having the formula



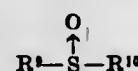
wherein R^3 is selected from the group consisting of alkyl and monohydroxy alkyl groups containing from about 10 to about 20 carbon atoms and from 0 to about 3 ether linkages, there being at least 1 moiety of R^3 which constitutes a carbon chain containing no ether linkages and containing from about 10 to about 14 carbon atoms, and wherein R^4 and R^5 are each selected from the group consisting of alkyl and monohydroxyalkyl groups containing from 1 to about 3 carbon atoms;

(d) phosphine oxide detergents having the formula



wherein R^6 is selected from the group consisting of alkyl and monohydroxyalkyl groups containing from about 12 to about 18 carbon atoms, and wherein R^7 and R^8 are each selected from the group consisting of alkyl and monohydroxyalkyl groups containing from 1 to about 3 carbon atoms;

(e) dialkyl sulfoxide detergents having the formula



where in R^9 is selected from the group consisting of alkyl monohydroxyalkyl, alkoxyalkyl and alkoxy monohydroxyalkyl groups containing from about 10 to about 18 carbon atoms, there being at least one moiety of R^9 which constitutes a carbon chain containing no ether linkages and containing from about 10 to about 14 carbon atoms, and wherein R^{10} is selected from the group consisting of alkyl and monohydroxyalkyl groups containing from 1 to about 3 carbon atoms;

- (f) stearyl N-methyl glucamide;
- (g) polyethylene glycol tertdodecyl thioether containing from about 8 to about 30 moles of ethylene oxide per mole of thioether;
- (h) mixtures thereof; and
- (3) lithium soap of fatty acids containing from about 12 to about 18 carbon atoms; the base (1) ranging from zero percent to about 70% of the composition of the bar by weight; the lathering component (2) ranging from about 10% to about 70% of the composition of the bar by weight; the lithium soap (3) ranging from about 10% to about 80% by weight of the bar, and the bar being firm at room temperatures.

3,312,628

URANIUM DIOXIDE-ZIRCONIUM DIOXIDE SOL PREPARATION

Jean G. Smith, Baltimore, Md., assignor to W. R. Grace & Co., a corporation of Connecticut
No Drawing. Filed Aug. 18, 1964, Ser. No. 390,448
7 Claims. (Cl. 252-301.1)

1. A process for preparing a stable uranium dioxide-zirconium dioxide aquasol comprising the steps of:

- (a) mixing alkaline coprecipitated hydrous uranium dioxide-zirconium dioxide containing from about 1 to 80 mole percent zirconia with water and a quantity of a water-soluble acid having a monovalent anion sufficient to bring the pH of the mixture within the range of from about 4.0 to 0.5, and
- (b) heating the acid treated aqueous dioxide-zirconium dioxide suspension at a temperature within the range of from about 80 to 120° C. until peptization occurs.

4. A process for preparing a stable uranium dioxide-zirconium dioxide sol comprising the steps of:

- (a) mixing an aqueous solution of a uranous salt and a zirconyl salt of acid having a monovalent anion with an excess of a water-soluble alkaline reagent selected from the group consisting of ammonium hydroxide, water-soluble metal hydroxides, amines having a base constant K_b of greater than 1×10^{-8} at 25° C. and mixtures thereof,
- (b) separating the precipitate from the solution and washing it,
- (c) redispersing the washed precipitate in water to a concentration up to about 15 grams of oxide per 100 ml. of suspension and mixing the suspension with a quantity of a water-soluble acid having a monovalent anion sufficient to provide a dispersion pH within the range from about 4.0 to 0.5, and
- (d) heating the acid-treated uranium dioxide-zirconium dioxide suspension at a temperature of from about 80° to 120° C. until peptization occurs.

3,312,629

URANIUM DIOXIDE SOL PROCESS

Jean G. Smith, Baltimore, Md., assignor to W. R. Grace & Co., a corporation of Connecticut
No Drawing. Filed Aug. 19, 1964, Ser. No. 390,728
7 Claims. (Cl. 252-301.1)

1. A process for preparing a stable uranium dioxide aquasol comprising the steps of:

- (a) mixing alkaline-precipitated, hydrous uranium dioxide with water and with a member selected from the group consisting of water-soluble acids having monovalent anions, uranous salts of water-soluble acids having monovalent anions, and mixtures thereof, in an amount sufficient to bring the pH of the mixture within the range of from about 4.0 to 1.5, and
- (b) heating the aqueous uranium dioxide suspension at a temperature within the range of from about 80° to 120° C. until peptization occurs.

4. A process for preparing a stable uranium dioxide sol comprising the steps of:

- (a) mixing an aqueous solution of a uranous salt of an acid having monovalent anions with a water-soluble alkaline reagent selected from the group consisting of ammonium hydroxide, water-soluble metal hydroxides, and amines having a base constant, K_b , of greater than 1×10^{-8} at 25° C. to form a uranium dioxide precipitate,
- (b) separating the precipitate from the solution and washing it,
- (c) redispersing the washed precipitate in water to a concentration of up to about 15 grams of uranium dioxide per 100 ml. of suspension and treating the precipitate by mixing the suspension with a member selected from the group consisting of soluble acids having monovalent anions, uranous salts of soluble acids having monovalent anions, and mixtures thereof, in an amount sufficient to bring the pH of the mixture within the range of from about 4.0 to 1.5, and
- (d) heating the treated uranium dioxide suspension at a temperature of from about 80° to 120° C. until peptization occurs.

3,312,630

METAL OXIDE ORGANOSOL PROCESS AND PRODUCT

Milton C. Vanik, Brookville, Moises G. Sanchez, Severna Park, and Ellsworth G. Acker, Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Feb. 19, 1965, Ser. No. 434,102
18 Claims. (Cl. 252-301.1)

1. A process for forming a metal oxide organosol comprising the steps of:

- (a) a mixing an aquasol of metal oxide selected from the group consisting of actinide oxides, rare earth oxides, alumina, zirconia, and mixtures thereof with from 7 to 20 percent, based on the weight of the metal oxide, of an organic carboxylic acid having a low water solubility to form an organic acid coating on the sol particles,
- (b) mixing the acid-treated aquasol with a water-immiscible organic liquid and allowing the sol particles to be extracted into the organic liquid phase, the temperature of the mixture being such that the water and organic liquid are in the liquid state, and
- (c) removing the water from the organic phase.

7. A process for forming a metal oxide organosol comprising the steps of:

- (a) mixing an aquasol of metal oxide selected from the group consisting of actinide oxides, rare earth oxides, alumina, zirconia, and mixtures thereof with from 7 to 20 percent, based on the weight of the metal oxide, of an organic carboxylic acid having a low water solubility to form an organic acid coating on the sol particles,
- (b) mixing the acid-treated aquasol with a water-immiscible organic liquid, and allowing the sol particles to be extracted into the organic liquid phase, the temperature of the mixture being such that the water and organic liquid are in the liquid state,
- (c) removing the water from the organic phase to form an organosol,
- (d) mixing the organosol with an organic medium selected from the group consisting of polyphenyls, polyphenols, phenyl ethers and mixtures thereof, and
- (e) removing said organic liquid from the mixture by distillation to form a stable high boiling organosol.

3,312,631

METHOD FOR MAKING METAL OXIDE MICROSPHERES

Jean G. Smith, Baltimore, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Apr. 15, 1965, Ser. No. 448,260
5 Claims. (Cl. 252-301.1)

1. A process for forming microspheres from metal oxides comprising the steps of

- (a) mixing an ammonia-releasing agent with an aqueous solution containing from about 1 g./l., expressed as the metal oxide, up to saturation quantities of salts of metal cations selected from the group consisting of U^{+4} , $(\text{UO}_2)^{+2}$, Th^{+4} , Pu^{+4} , $(\text{PuO}_2)^{+2}$, $(\text{ZrO})^{+2}$, Be^{+2} , Y^{+3} , and mixtures thereof, and containing from 0 to 5 moles of colloidal carbon per mole of metal, the quantity of ammonia-releasing agent mixed with the solution being sufficient to provide at least 70% of the stoichiometric quantity of ammonia required to react with the salts in the solution;
- (b) introducing the mixture in the form of droplets in a dehydrating solvent having a temperature sufficiently high to cause substantial decomposition of the ammonia-releasing agent, and
- (c) recovering dehydrated microspheres from the dehydrating solvent.

3,312,632

METHOD FOR MAKING METAL OXIDE MICROSPHERES

Jean G. Smith, Baltimore, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Apr. 21, 1965, Ser. No. 449,867
20 Claims. (Cl. 252-301.1)

1. A process for forming microspheres containing metal oxides comprising the steps of mixing an ammonia-releasing agent with an aquasol of a metal oxide selected from the group consisting of uranium dioxide, uranium trioxide, thorium dioxide, plutonium dioxide, plutonium trioxide, zirconium dioxide, beryllium oxide, yttrium oxide, and mixtures thereof, said aquasol containing from zero up to saturation quantities of dissolved salts of metal cations selected from the group consisting of U^{+4} , $(\text{UO}_2)^{+2}$, Th^{+4} , Pu^{+4} , $(\text{PuO}_2)^{+2}$, $(\text{ZrO})^{+2}$, Be^{+2} , Y^{+3} , and mixtures thereof, and from 0 to 5 moles of colloidal carbon per mole of metal in the mixture, the quantity of ammonia releasing agent mixed with the aquasol being at least sufficient to provide 70 percent of the stoichiometric quantity of ammonia required to precipitate the metal salts in the aquasol or to adjust the pH of the aquasol to one pH unit below the gelation pH of the sol, whichever is lower, and being insufficient to raise the pH of the aquasol above 0.1 pH units below the gelation pH of the sol; introducing the mixture in the form of droplets into a dehydrating solvent having a temperature sufficiently high to cause substantial decomposition of the ammonia-releasing agent; and recovering partially dehydrated microspheres from the dehydrating solvent.

3,312,633

URANIUM DIOXIDE-ZIRCONIUM DIOXIDE SOL PREPARATION

Jean G. Smith, Baltimore, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed May 19, 1965, Ser. No. 457,223
15 Claims. (Cl. 252-301.1)

1. A process for preparing a stable uranium dioxide-zirconium dioxide aquasol comprising the steps of

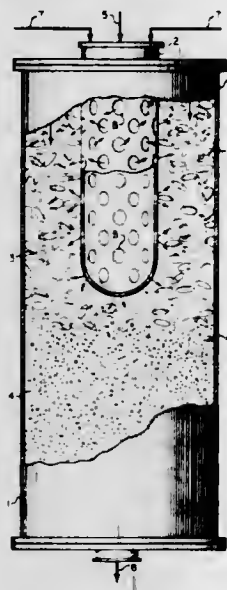
- (a) mixing alkaline-precipitated electrolyte-free hydrous uranium dioxide with water and with a member selected from the group consisting of water-soluble salts of $(\text{ZrO})^{+2}$ and mixtures of water-soluble salts of $(\text{ZrO})^{+2}$ with a member selected from the

- group consisting of U^{+4} salts, acids, and mixtures thereof sufficient to bring the pH of the mixture within the range of from about 4.0 to 0.5, and
- (b) heating the aqueous suspension at a temperature within the range of from about 80 to 120° C. until peptization occurs.
5. A process for preparing a stable uranium dioxide-zirconium dioxide aquasol comprising the steps of
- (a) mixing an aqueous solution of a uranous salt of a monovalent acid with a water-soluble alkaline reagent selected from the group consisting of ammonium hydroxide, water-soluble metal hydroxide, and amines having a base constant, K_b , of greater than 1×10^{-8} at 25° C. to form a uranium dioxide precipitate,
- (b) separating the precipitate from the solution and washing it,
- (c) redispersing the washed precipitate in water to a concentration of up to about 150 g. uranium dioxide per liter of suspension and treating the dispersed phase by mixing the suspension with a member selected from the group consisting of water-soluble salts of $(ZrO)^{+2}$ and mixtures of water-soluble salts of $(ZrO)^{+2}$ with a member selected from the group consisting of U^{+4} salts, acids, and mixtures thereof in an amount sufficient to bring the pH of the mixture within the range of from 4.0 to 0.5, and
- (d) heating the treated suspension at a temperature of from about 80 to 120° C. until peptization occurs.

3,312,634

PROCESS FOR NAPHTHA REFORMING
 Arnold R. Bernas, Nixon, and John S. Negra, South Plainfield, N.J., assignors to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware
 Original application Dec. 5, 1962, Ser. No. 242,564. Divided and this application Dec. 4, 1964, Ser. No. 418,378

9 Claims. (Cl. 252—373)



1. Process for catalytic steam reforming of a normally liquid naphtha which comprises vaporizing said liquid naphtha, combining the vaporized naphtha with steam and preheated air, contacting the resulting mixed process stream with a first catalyst bed consisting entirely of metallic nickel particles without a carrier at a temperature in the range of 1600° F. to 1675° F., said first catalyst bed having high thermal conductivity, whereby partial steam reforming of the naphtha takes place without deposition of free carbon, contacting the resulting partially reacted process stream at a temperature in the range of 1600° F. to 1675° F. with a second catalyst bed comprising active hydrocarbon reforming catalyst selected from the group consisting of nickel

oxide, zirconia, chromia and molybdenum oxide deposited on a suitable carrier, and recovering a final gas stream comprising synthesis gas substantially free of unreacted naphtha and free carbon.

3,312,635

CHEMICAL PROCESS AND CATALYST THEREFOR

Alfonso Maria Liguori, Palazzo Arcate, Naples, Italy, assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
 No Drawing. Original application Feb. 6, 1963, Ser. No. 256,555, now Patent No. 3,280,207, dated Oct. 18, 1966. Divided and this application Mar. 4, 1966, Ser. No. 531,778

6 Claims. (Cl. 252—470)

1. A catalyst comprising an association of nickel oxide and molybdenum oxide supported on a carrier, containing from about 8 to about 40 percent by weight of MoO_3 (based upon the weight of supported catalyst), and formed by thermal decomposition of



5. Process for preparing a catalytic material which comprises: impregnating a catalyst carrier with an aqueous solution of $(NH_4)_6NiMo_6O_{32} \cdot 6H_2O$; drying the impregnated carrier; and contacting the substantially dry impregnated carrier with air at a temperature from about 450° C. to about 550° C. for a period of about 10 to about 30 hours.

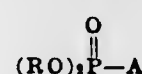
3,312,636

FLAME-RETARDANT EPOXY RESIN COMPOSITIONS

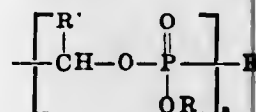
John J. Rizzo, Hopewell Township, Mercer County, N.J., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware
 No Drawing. Filed Jan. 5, 1962, Ser. No. 164,587

7 Claims. (Cl. 260—2)

1. A flame-retardant epoxy resin composition comprising the reaction product of 100 parts by weight of an epoxidized butadiene polymer of a liquid butadiene polymer having a number average molecular weight of at least 100, said epoxidized butadiene polymer containing 4–10% by weight of epoxy oxygen, 0.4–1.0 equivalent per epoxide equivalent of an aromatic diamine and 1–75 parts by weight of a phosphorus ester having the formula:



wherein A is a radical selected from the group consisting of —OR and



in which R is a haloalkyl radical containing 2–3 carbon atoms and 1–2 halogen atoms of the group consisting of chlorine and bromine, R' is a member of the group consisting of hydrogen and alkyl radicals containing 1–3 carbon atoms, and n is an integer from 1–3.

3,312,637

POLYMERIC TITANIUM COMPOUNDS, Ti-AL COMPLEXES AND THEIR USE AS CATALYSTS

Richard R. Durst, Cuyahoga Falls, and Wendell O. Phillips, Stow, Ohio, assignors to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
 No Drawing. Filed Sept. 9, 1963, Ser. No. 307,353

6 Claims. (Cl. 260—2)

1. The method comprising polymerizing at least one polymerizable organic epoxide having a ring of two car-

bón atoms and one oxygen atom and up to a total of fifty carbon atoms in contact with a benzene-soluble reaction product produced at a temperature of from about 30 to 110° C. under subatmospheric pressure of approximately equimolar amounts of a compound of the formula



in which each R is an alkyl radical of no more than about 10 carbon atoms and a compound of the formula TiX_4 in which each X is a halogen atom, said reaction product containing at least one $TiOTi$ linkage.

3,312,638

CELLULAR POLYURETHANES PREPARED USING THE REACTION PRODUCT OF A PHOSPHORIC ACID WITH AN ALKANOL AMINE

Wulf von Bonin, Schildgen, Rhineland, Hans Holtschmidt, Cologne-Stammheim, and Helmut Plechota, Leverkusen-Mathildenhof, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
 No Drawing. Filed May 14, 1963, Ser. No. 280,420

Claims priority, application Germany, May 16, 1962, F 36,818

9 Claims. (Cl. 260—2.5)

1. A cellular polyurethane plastic prepared by a process which comprises reacting, in the presence of a blowing agent, an organic polyisocyanate with a compound containing active hydrogen containing groups as determined by the Zerewitinoff method, said compound containing active hydrogen containing groups having a pH value between about 5 and about 10 and having been prepared by a process which comprises reacting a phosphoric acid corresponding to a mixture of from about 5 to about 35 percent by weight of water and the balance P_2O_5 with an alkanol amine at a temperature below about 150° C., said phosphoric acid and said alkanol amine being present in approximately stoichiometric amounts.

3,312,639

ODOR SUPPRESSION IN UREA-FORMALDEHYDE FOAMS

Ged H. Justice, Hopewell, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 12, 1965, Ser. No. 495,304

11 Claims. (Cl. 260—2.5)

1. In a process for preparing a urea-formaldehyde foam by mixing a partially resinified aqueous urea-formaldehyde resin solution with a dilute acid, the improvement which comprises adding to said resin solution prior to mixing it with said acid, between 0.5 part and 8 parts by weight ammonium carbonate or ammonium bicarbonate, per 100 parts by weight of resin solids, and letting said resin solution stand prior to mixing it with said acid, until formaldehyde odor of said resin solution is substantially reduced.

3,312,640

COLLOIDAL CLAY COATED WITH ACRYLIC ACID-POLYALLYL SUCROSE COPOLYMER

Thomas H. Ferrigno, Metuchen, N.J., assignor to Minerals & Chemicals Philipp Corporation, Menlo Park, N.J., a corporation of Maryland

No Drawing. Filed May 21, 1963, Ser. No. 282,129

13 Claims. (Cl. 260—17.4)

1. A solid particulate composition for thickening aqueous liquids comprising particles of colloidal attapulgite clay the surface of which is uniformly coated with a small amount of a colloidal dispersible polymer of acrylic acid crosslinked with from about 0.75% to about 2.0% by weight of polyallyl sucrose and a minor weight percent, as compared with the amount of said polymer, of a short chain alkyl amine.

3,312,641

POLYVINYL ALCOHOL PLASTICIZED AMYLOSE COMPOSITIONS

Austin H. Young, Decatur, Ill., assignor to A. E. Staley Manufacturing Company, Decatur, Ill., a corporation of Delaware

No Drawing. Filed June 19, 1963, Ser. No. 288,869

15 Claims. (Cl. 260—17.4)

10. A composition comprising from 5 to 90 parts by weight of a polyvinyl alcohol portion and correspondingly from 95 to 10 parts by weight of an amylose portion having more than 50% by weight amylose, said amylose portion containing an amylosic material selected from the group consisting of the amylose fraction of starch and whole starch containing at least 50% by weight amylose.

3,312,642

GRAFT POLYMERIZATION ON CELLULOSE BY REACTION OF ALKALI CELLULOSE AND VINYL MONOMERS

Robert F. Schwenker, Jr., and Eugene Pacsu, Princeton, N.J., assignors to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

Filed July 12, 1963, Ser. No. 294,613

3 Claims. (Cl. 260—17.4)

1. The etherification process which comprises suspending a cellulose substrate in a 20–40% by weight aqueous alkali solution followed by pressing the substrate wet to remove excess alkali such that the substrate has a mole ratio of alkali to cellulose in the range of about 1:1 to 3.3:1 and then:

- immersing the alkali cellulose substrate having a molal ratio of alkali to cellulose in the range of about 1:1 to about 3.3:1 in an excess of a liquid etherifying agent in an inert atmosphere and which agent is an ethylenically unsaturated monomer which may itself be anionically polymerized;
- reacting the alkali cellulose substrate and monomer at a temperature of between about 25° C. and 78° C. to form a cellulose-etherifying agent copolymer;
- removing the reacted substrate copolymer from the monomer excess; and
- recovering the copolymer reaction product by extracting the substrate with suitable solvents.

3,312,643

METHOD OF PREPARING LIGNIN REINFORCED RUBBER AND PRODUCT

Frank J. Ball, Charleston, S.C., assignor to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 20, 1961, Ser. No. 96,728

13 Claims. (Cl. 260—17.5)

1. The method which comprises coprecipitating lignin and a butadiene type rubber to form a slurry of lignin-rubber particles, mixing formaldehyde with the slurry of lignin-rubber particles, and heating said slurry thereby causing reaction between the lignin and formaldehyde.

10. In the preparation of a lignin reinforced rubber by preparing a mixture of an aqueous alkaline solution of lignin and a butadiene type rubber latex, coprecipitating the lignin and rubber from the aqueous mixture to form an aqueous slurry of lignin-rubber particles, separating said particles from the supernatant liquid, drying the lignin rubber particles and compounding and curing the dried lignin-rubber mixture, the improvement which comprises adding a lignin reactive material consisting of formaldehyde to an aqueous system containing the lignin before the separation of the supernatant liquid from the coprecipitated lignin-rubber particles and heating the resultant aqueous system containing the lignin and formaldehyde at a temperature of at least 150° F. until about 0.6 to 2.5 moles of formaldehyde have reacted per mole of lignin.

3,312,644

METHOD FOR PREPARING A POLYESTER RESIN COMPOSITION

Makio Miyairi, Ibaragi-ken, Japan, assignor to Kabushiki Kaisha Hitachi Selsakusho, Chiyoda-ku, Tokyo-to, Japan, a joint-stock company of Japan

No Drawing. Filed Nov. 26, 1962, Ser. No. 240,127

Claims priority, application Japan, Nov. 30, 1961, 36/42,609

1 Claim. (Cl. 260—22)

A process for the production of a polyester resin composition for use as an insulating varnish for electrical conductors, which comprises reacting an oil selected from the group consisting of drying and semidrying oils and mixtures thereof with a polyhydric alcohol to undergo ester interchange; adding thereto a polyhydric alcohol in an amount of substantially 13–16 weight percent, calculated on the ester formed, and up to 25 weight percent of at least one acid selected from the group consisting of saturated and unsaturated polybasic acids; subjecting the resulting mixture to polycondensation to synthesize an unsaturated alkyd; adding substantially 70–170 weight percent of dicyclopentadiene and heating the mixture to produce a cyclopentadiene unsaturated alkyd resin; dissolving therein approximately 40 p.p.m. of a compound having a vinyl radical and substantially 0.1–0.15 weight percent of a silicone resin; and incorporating therein an accelerator and a catalyst to complete the varnish.

3,312,645

OIL-MODIFIED POLYESTER REACTION PRODUCTS AND OIL-MODIFIED, PHENOL-ALDEHYDE RESIN MODIFIED REACTION PRODUCTS

Norman J. George and Alexander Kitun, St. Louis, Mo., assignors to P. D. George Company, St. Louis, Mo., a corporation of Delaware

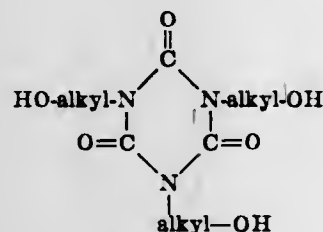
No Drawing. Filed Apr. 10, 1964, Ser. No. 358,928

22 Claims. (Cl. 260—22)

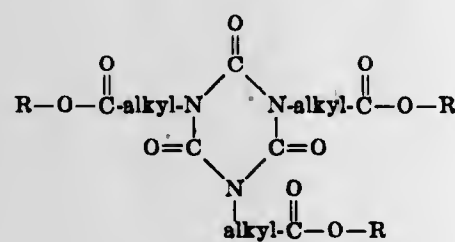
1. An oil-modified polyester reaction product derived from

(I) a polyfunctional derivative of an isocyanuric acid selected from the group consisting of

(1)



and
(2)



where R is hydrogen or the hydrocarbon-containing moiety of an alcohol,

(II) a member of the group consisting of (1) polycarboxylic acids and esters thereof, (2) glycols, (3) polyols, and (4) mixtures thereof, and
(III) a member selected from the group consisting of (1) fatty acids, (2) fatty oils, and (3) mixtures of (1) and (2).

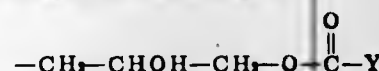
COPOLYMERS HAVING PENDANT SUBSTITUTED AMIDE RADICALS

Joseph A. Vasta, Woodbury, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

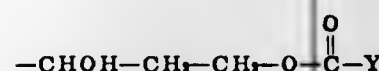
No Drawing. Filed May 23, 1966, Ser. No. 551,936

12 Claims. (Cl. 260—22)

1. A thermosetting polymer of monoethylenically unsaturated monomers, said polymer bearing pendant amido groups having hydrogen atoms replaced with a radical selected from the group consisting of



and



where Y is an aliphatic hydrocarbon radical of 4 through 18 carbon atoms.

9. A coating composition comprising from 5% through 90% (by weight) of a polymer according to claim 1, a liquid carrier, and from 5% through 40% (by weight of the polymer solids) of an alkyd resin.

3,312,647

VINYL POLYMER WITH BASIC COMPLEX LEAD COMPOUND

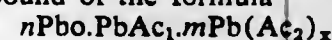
Alfred Szczepanek and Margaret Szczepanek, nee Schnoor, Niederau über Duren, Rheinland, Germany, assignors to Chemische Fabrik Hoesch K.G., Duren, Germany, a company of Germany

No Drawing. Filed Oct. 29, 1962, Ser. No. 233,898

Claims priority, application Germany, Dec. 22, 1955, C 12,311

3 Claims. (Cl. 260—23)

1. A surface coating composition comprising a film forming vehicle selected from the group consisting of a vinylchloride homopolymer and copolymer and the complex lead compound of the formula



wherein

n indicates the numerals 0 to 16;

m indicates the numerals 0.5 to 4;

Ac₁ indicates the dibasic inorganic acid residue selected from the group consisting of the sulfate group >SO₄, the carbonate group >CO₃, and the phosphite group >HPO₃;

Ac₂ indicates an organic acid residue selected from the group consisting of the residue of a saturated monobasic aliphatic acid, an unsaturated monobasic aliphatic acid, a saturated dibasic aliphatic acid, an unsaturated dibasic aliphatic acid, a monobasic aromatic acid, and a dibasic aromatic acid; and

x indicates the numeral 1 when Ac₂ is the residue of a dibasic organic acid, and the numeral 2 when Ac₂ is the residue of a monobasic organic acid,

said complex lead compound being present in said composition in an amount between about 0.5%, by weight, and about 10%, by weight, of the film forming vehicle.

3,312,648

COMPOSITION CONTAINING WAXES AND POLYETHYLENE

Arnold L. Guttman, Chicago, and John Podlipnik, Palos Heights, Ill., assignors to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 9, 1962, Ser. No. 215,788

2 Claims. (Cl. 260—28.5)

1. A wax composition consisting essentially of

(a) about 35 to 50% by weight of paraffin wax having a melting point in the range of about 125–135° F. and a viscosity SUS at 210° F. of about 35 to 40;

(b) about 20 to 35% by weight of an isoparaffin-naphthenic wax having a melting point in the range of about 105 to 125° F.; a viscosity SUS at 210° F. of about 42 to 50, an average molecular weight of about 450 minimum, a refractive index n_D^{20} of about 1.4400 minimum and a penetration at 77° F. of about 40 to 100;

(c) about 10 to 20% by weight of a microcrystalline wax having a petrolatum melting point in the range of about 160 to 180° F., a 100 gram needle penetration at 77° F. of about 15 to 40, a viscosity SUS at 210° F. of about 75 to 90 and a refractive index n_D^{20} of 1.4470 minimum;

(d) about 10 to 20% by weight of a microcrystalline wax having a petrolatum melting point of about 130–160° F., a cone penetration at 77° F. of about 50–100, a viscosity SUS at 210° F. of about 65 to 100, a refractive index n_D^{20} of 1.4490 minimum and having a cycloparaffin content of at least about 25%; and

(e) about 0.5 to 2% by weight of a branched chain polyethylene having a molecular weight of about 1500 to 7000 and a density of about 0.88 to .91.

3,312,649

PAVING ASPHALT CONTAINING CHLORINATED POLYETHYLENE

Armin C. Pitchford and Homer J. Sarrett, Jr., Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Jan. 21, 1963, Ser. No. 252,595

6 Claims. (Cl. 260—28.5)

5. Asphalt containing dispersed therein from 0.5 to 5.0% by weight of said asphalt of a normally solid polyethylene, said polyethylene being chlorinated to the extent of from about 15 to 35% by weight thereof.

3,312,650

BINDER COMPOSITION (1) A CONDENSATE OF PHENOL, FURFURYL ALCOHOL AND FORMALDEHYDE AND (2) ADDITIONAL FURFURYL ALCOHOL

Arthur J. Case, Bainbridge, and Royden C. Rinker, Sidney, N.Y., assignors to The Borden Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed May 20, 1964, Ser. No. 368,994

5 Claims. (Cl. 260—29.3)

1. An acid curable binder comprising the combination of an aqueous solution of the condensate of about 1 mole of phenol, 0.2–0.5 mole of furfuryl alcohol and 1–3 moles of formaldehyde, 0.2–1.5 moles of additional furfuryl alcohol, and a water soluble acid curing agent therefor of dissociation constant above 10⁻², the curing acid being selected from the group consisting of aliphatic acids consisting essentially of carbon, hydrogen and oxygen and halogen substitution products thereof and being used in amount to establish a pH below 5 in said solution.

3,312,651

LOW BAKED FILMS RESULTING FROM SPRAYABLE MIXTURES

Pascal B. Daniels, Trumbull, and James V. Morgia, Stratford, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

No Drawing. Filed July 17, 1963, Ser. No. 295,797

9 Claims. (Cl. 260—29.6)

1. A sprayable mixture useful in the production of a low-bake coating having a desirable combination of properties comprising: an epoxyphenolic resin, finely di-

vided polyhalocarbon particles and a dispersing medium, including an essential component, a lower alkyl acetate ester, which serves as a thinner; the ratio of solids of epoxyphenolic resin to polyhalocarbon particles being in the range of 2.0 to 5.0 parts by weight of epoxyphenolic resin per part of polyhalocarbon particles; the total solids content of the sprayable mixture being in the range of 28.4 to 38.2% by weight of the total composition and the lower alkyl acetate ester being in an amount from about 27–40% by weight of the sprayable mixture.

3,312,652

POLYVINYL ACETATE OR POLYACRYLATE CONTAINING 3-HYDROXY-2,2,4-TRIMETHYLPENTYL ISOBUTYRATE AS COALESCING AGENT

Charles H. Coney and Willie E. Draper, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed July 26, 1963, Ser. No. 297,969

6 Claims. (Cl. 260—29.6)

1. An aqueous film-forming composition comprising polyvinyl acetate or a copolymer of alkyl methacrylate with alkyl acrylate, said composition containing as a coalescing agent a compatible amount of 3-hydroxy-2,2,4-trimethylpentyl isobutyrate.

3,312,653

SOLUTION OF THE REACTION PRODUCT OF A LINEAR POLYCARBONATE, AN ORGANIC DIISOCYANATE AND WATER

Henry A. Pace, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Nov. 9, 1964, Ser. No. 410,003

5 Claims. (Cl. 260—30.8)

1. A solution of a cured polyurethane polycarbonate in a solvent selected from the class consisting of a dialkyl amide having an alkyl radical containing from about 1 to 10 carbon atoms and dialkyl sulfoxide having an alkyl radical containing from about 1 to 10 carbon atoms, said cured polyurethane polycarbonate being the foamed and cured product of a reaction mixture comprising about one mol of a hydroxyl terminated polycarbonate of about 800 to 5000 molecular weight, 1 to 6 moles of an organic polyisocyanate and a blowing agent.
5. The solution of claim 1 wherein the solvent is dimethyl sulfoxide.

3,312,654

COPOLYMERS CONTAINING HYDROXYALKYL ETHER ESTERS OF UNSATURATED ACIDS, AND COATING COMPOSITIONS CONTAINING SAME

Ivor Pratt, Avon, Ohio, and Edward T. Turpin, Oakville, Ontario, Canada, assignors to The Glidden Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Feb. 12, 1962, Ser. No. 172,753

7 Claims. (Cl. 260—33.4)

1. A thermosetting coating composition the liquid vehicle of which consists essentially of a homogeneous, single-phase solution in a volatile inert organic solvent component of: (A) at least one copolymer product prepared from copolymerizable monomeric compounds having ethylenic unsaturation and including monomeric hydroxyalkyl ether esters of acids selected from the group consisting of acrylic acid, methacrylic acid and itaconic acid, the hydroxyalkyl ether radicals of said esters conforming to the formula $\text{HOR}(\text{OR}')_n\text{O—}$, wherein R and R' are divalent hydrocarbon groups of 2–3 carbon atoms, and can be the same or different, wherein n is an integer

having an average value between 2 and 8, and wherein the HO— group of the formula is selected from the group consisting of primary and secondary hydroxyls; and (B) hydroxyl-containing resins selected from the group consisting of alkylated melamine/formaldehyde, alkylated benzoquinamine/formaldehyde resins, heat-reactive C₄-C₆ alkyl-modified phenol/formaldehyde resins, and bisphenol/epichlorohydrin epoxyhydroxypolyether resins having a 1,2 epoxide equivalency up to about 525 grams; said copolymer product consisting essentially of copolymers of (a) 5–50% by weight of said hydroxy-alkyl ether esters, (b) 0–94% by weight of 1–8 carbon alkyl esters of acids selected from the group consisting of acrylic acid and methacrylic acid, (c) 0–94% by weight of monomers having a CH₂=C< group and selected from the class consisting of styrene, vinyl toluene and acrylonitrile, and (d) 0–6% by weight of monomeric acids selected from the group consisting of acrylic acid, methacrylic acid and itaconic acid, the total of members (b), (c) and (d) in said copolymer products amounting to 50–95% by weight thereof; and the weight ratio of the copolymer product of (A) to the hydroxyl-containing resin solids of (B) being between about 70:30 and 85:15.

3,312,655

COLORING OF THERMOPLASTIC RESINS

Chi K. Dien, Buffalo, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Feb. 13, 1963, Ser. No. 258,158
12 Claims. (Cl. 260—41)

1. A colored synthetic thermoplastic resin containing 1-cyclohexylamino-anthraquinone in sufficient amount to impart color thereto.

3,312,656

REDUCTION OF COLD FLOW IN CIS-1,4 POLYBUTADIENE

Stanley Charles Elmhorn, Dover, and Hendrik Kamlie de Decker, Montclair, N.J., assignors to Texas-U.S. Chemical Company, Parsippany, N.J., a corporation of Delaware

No Drawing. Filed Jan. 15, 1964, Ser. No. 337,728
13 Claims. (Cl. 260—41.5)

1. An improved cis 1,4-polybutadiene rubber composition prepared from a cis 1,4-polybutadiene in which at least 50% of the butadiene-1,3 units are joined cis-1,4, and between 2.5 parts and 10 parts per 100 parts of polybutadiene, by weight, of thiolbenzoic acid.

3,312,657

STABILIZED HALOGEN-CONTAINING OLEFIN POLYMER COMPOSITIONS AND STABILIZERS THEREFOR

Richard B. Lund, Whippany, Hendrikus J. Oswald, Morristown, and Edith Turi, Livingston, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Feb. 27, 1964, Ser. No. 347,666
4 Claims. (Cl. 260—45.8)

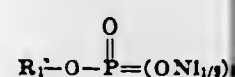
1. A thermostable polymeric composition comprising chlorinated polyethylene and 0.5 to 10 percent by weight of said chlorinated polyethylene of a compound having an α,α' -bis(oxyaryl)-2,3,5,6-tetrachloro-p-xylene nucleus with one valence of each oxygen atom of said nucleus being satisfied by a substituent selected from the group consisting of hydrogen, hydrocarbon radicals and epoxyalkyl radicals.

3,312,658
STABILIZED POLYPROPYLENE COMPOSITIONS CONTAINING (A) A NICKEL SALT OF A PHOSPHORIC ACID ESTER, (B) A PHENOLIC ANTI-OXIDANT, AND (C) OPTIONALLY AN EPICHLOROHYDRIN-AMINE CONDENSATION PRODUCT

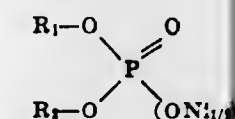
Tsutomu Kamijo, Higashiyama-ku, Kyoto, Hiroshi Hatakeyama, Shimokyo-ku, Kyoto, and Osamu Fukumoto, Ohtsu-shi, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Chuo-ku, Tokyo, Japan, a corporation of Japan
No Drawing. Filed Oct. 21, 1964, Ser. No. 405,589
Claims priority, application Japan, Oct. 22, 1963, 38/55,960; Mar. 30, 1964, 39/17,374
8 Claims. (Cl. 260—45.75)

1. A stabilized polypropylene composition comprising polypropylene and:

- (1) 0.01–1 percent by weight of an anti-oxidant having at least one alkyl-substituted phenol radical selected from the group consisting of di-tert-butyl-p-cresol, 2,2'-methylene-bis(4-methyl-6-tert-butylphenol), 2,6-bis(2'-hydroxy-3'-tert-butyl-5'-methylbenzyl)-4-methylphenol, 1,1,3-tris(2-methyl-4-hydroxy-5-tert-butylphenyl)butane, 2,2'-methylene-bis(4-methyl-6-cyclohexylphenol), di-n-octadecyl ester of (4-hydroxy-3,5-di-tert-butyl)benzylphosphonic acid, 4,4'-butylidene-bis(6-tert-butyl-3-methylphenol), and 6-(4-hydroxy-3,5-di-tert-butylphenyl)cyclohexylamine)-2,4-bis(n-octylthio)-1,3,5-triazine,
- (2) 0.05–3 weight percent of at least one nickel salt of phosphoric ester represented by the general formula:



and



where R₁ and R₂ represent a radical selected from the group consisting of alkyl, aryl, alkaryl and cycloalkyl radicals, and

- (3) 0–15 percent by weight of a condensation product of epichlorohydrin and at least one amine selected from the group consisting of ethylenediamine, diethylenetriamine, triethylene-tetramine, 1,2-propylenediamine, hexamethylenediamine, piperazine, 1,8-p-menthanediamine, N,N'-diisopropylhexamethylenediamine, 1,3-bis(n-dodecylamine)-2-propanol, and 4,4'-bis-(methylamine)diphenylmethane.

3,312,659

CATALYTIC PREPARATION OF POLYCARBONATES FROM BISPHENOL AND A CARBONATE PRECURSOR

Raymond P. Kurkly, Geneva, Switzerland, and Markus Matzner, Edison Township, and Robert J. Cotter, New Brunswick, N.J., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed July 3, 1962, Ser. No. 208,184
11 Claims. (Cl. 260—47)

1. The process for preparing polycarbonate resins which comprises heating at a temperature of between about 70° C.–220° C. which temperature is sufficient to cause the evolution of hydrogen chloride an anhydrous reaction mixture comprising as the sole reactants a dihydric phenol and a carbonate precursor selected from the group consisting of phosgene and a dichloroformate of a dihydric phenol and as the sole catalyst therefor, a catalytic amount of at least one metal salt of a dihydric phenol, the metal being selected from the group consisting of beryllium, magnesium, calcium, strontium, barium, and manganese and evolving said hydrogen chloride as a gas from said reaction mixture.

3,312,660

PROCESS FOR PREPARING POLYCARBONATES BY SELF-CONDENSATION OF BISPHENOL DICHLOROFORMATE

Raymond P. Kurkly, Geneva, Switzerland, and Markus Matzner, Edison Township, and Robert J. Cotter, New Brunswick, N.J., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed July 3, 1962, Ser. No. 208,671
13 Claims. (Cl. 260—47)

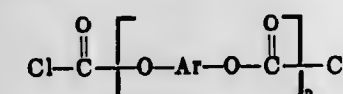
1. The process for preparing a polycarbonate resin which comprises self-condensing at elevated temperatures of between about 60° C. to 250° C. an anhydrous mixture of a bisphenol dichloroformate in the presence of about a stoichiometric quantity of a metal salt as the sole reactive materials in the reaction, said metal salt being one in which the cation is a metal ion in its highest valence state selected from groups I-A, II-A, and II-B of the Deming Periodic System of Elements and the anion is a member selected from the group consisting of CO₃²⁻, HCO₃⁻, SO₃²⁻, and HSO₃⁻.

3,312,661

PROCESS FOR PREPARING POLYCARBONATES BY SELF-CONDENSATION OF BISPHENOL DICHLOROFORMATE

Raymond P. Kurkly, Geneva, Switzerland, and Markus Matzner, Edison Township, and Robert J. Cotter, New Brunswick, N.J., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed July 3, 1962, Ser. No. 208,674
11 Claims. (Cl. 260—47)

1. The process for preparing polycarbonate resins which comprises self-condensing at elevated temperatures in the absence of water an aryl chloroformate in the presence of about a stoichiometric quantity of a metal oxide as the sole reactive materials in the reaction, said aryl chloroformate having the formula



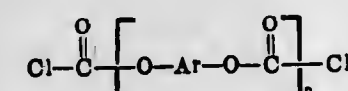
wherein Ar represents a divalent aromatic hydrocarbon radical and n has a value of from 1 to about 15, said metal oxide being of a metal selected from Groups I-B, II-A, and II-B of the Deming periodic classification of elements, said metal being in its highest oxidation state.

3,312,662

CATALYTIC PROCESS FOR PREPARING POLYCARBONATES BY SELF-CONDENSATION OF BISPHENOL DICHLOROFORMATE

Raymond P. Kurkly, Geneva, Switzerland, and Markus Matzner, Edison Township, and Robert J. Cotter, New Brunswick, N.J., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed July 3, 1962, Ser. No. 208,675
10 Claims. (Cl. 260—47)

1. The process for preparing polycarbonate resins which comprises self-condensing at elevated temperatures in the absence of water an aryl dichloroformate as the sole reactive material in the reaction, said aryl dichloroformate having the formula



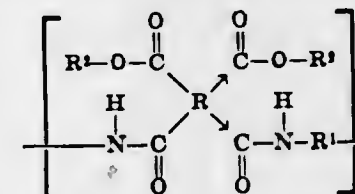
wherein Ar represents a divalent aromatic hydrocarbon radical and n has a value of from 1 to about 15, with a catalytic amount of a magnesium halide as the sole catalyst at a temperature not greater than 250° C.

3,312,663

POLYAMIDE ESTERS

Wayne Richard Sorenson, Ponca City, Okla., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed June 17, 1963, Ser. No. 288,535
10 Claims. (Cl. 260—47)

1. A polyamide-ester consisting essentially of recurring units of:



wherein

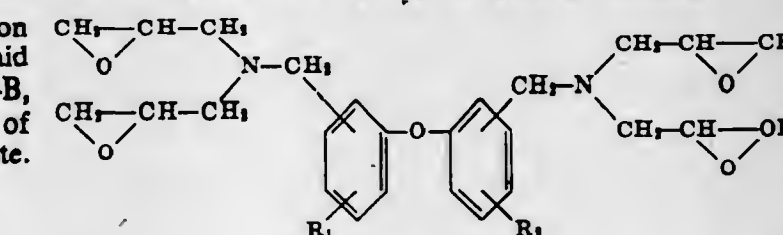
the arrows denote isomerism; R is a tetravalent radical containing at least one ring of six carbon atoms, said ring characterized by benzenoid unsaturation, the four carbonyl groups being attached directly to separate carbon atoms in the ring of the R radical and each pair of carbonyl groups being attached to adjacent carbon atoms in a ring of the R radical; R¹ is a divalent radical containing at least one ring of six carbon atoms, said ring characterized by benzenoid unsaturation, the nitrogen atoms being attached directly to separate carbon atoms in a ring of the R¹ radical; and R² is selected from the group consisting of alkyl and aryl; said polyamide-ester having an inherent viscosity of at least 0.1 as measured at 30° C. as a 0.5% solution in sulfuric acid.

3,312,664

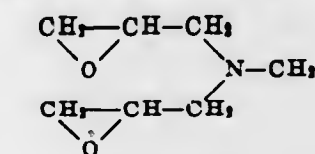
EPOXYLATED AMINOMETHYLDIPHENYL-OXIDES

Bart J. Bremmer, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed July 2, 1964, Ser. No. 380,022
9 Claims. (Cl. 260—47)

1. An epoxy resin having the general formula



where R₁ and R₂ independently may be selected from the group consisting of hydrogen and the diglycidyl amino methylene group having the formula:



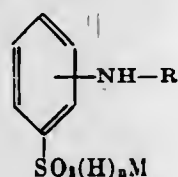
3,312,665

POLYMERS CONTAINING AROMATIC SULFONIC ACID GROUPS

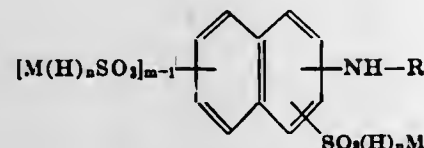
John R. Caldwell and Edward H. Hill, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Nov. 15, 1962, Ser. No. 238,010
18 Claims. (Cl. 260—79.3)

1. A cross-linked polymeric material comprising the condensation product of (1) a polymer containing active hydrogen atoms selected from the group consisting of a polymer containing hydroxyl groups, a polymer containing carboxyl groups, a polymer containing amide groups and a polymer containing sulfonamide groups, and (2) a

methylol derivative selected from the group consisting of (a) a methylol derivative which contains at least one $=N-CH_2OH$ group formed by replacing a hydrogen atom on a nitrogen atom of an aromatic aminosulfonic acid represented by the general formulas:



and



wherein n represents zero when M is a metal ion and 1 when M is a tertiary amine, m represents an integer of from 1 to 2, each R represents a member selected from the group consisting of H , $-CH_3$, $-COCH_3$,



$-CONH_2$ and



and each M represents a member selected from the group consisting of an alkali metal ion and a molecule of a tertiary organic amine containing from 3 to 18 carbon atoms, and (b) a mixture of from 10 to 90 percent by weight of the said (a) methylol derivative and from 90 to 10 percent by weight of a methylol derivative selected from the group consisting of a methylol melamine and a methylol urea.

3,312,666

POLYURETHANE POLYMERS

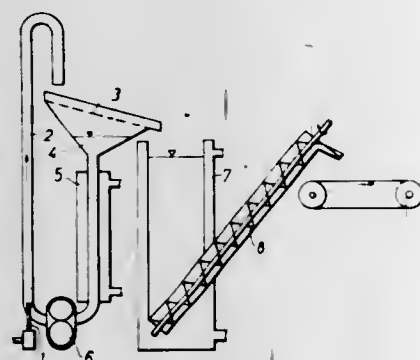
Ulrich Knipp, Leverkusen, Albert Awater, Cologne-Mulheim, Walter Oetke, Leverkusen, Erwin Weinbrenner, Opladen, and Heinrich Schönzeler, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

Filed May 22, 1963, Ser. No. 282,287

Claims priority, application Germany, June 1, 1962,

F 36,954

10 Claims. (Cl. 260-75)



1. A method of preparing polyurethane polymers processable by thermoplastic techniques which comprises intimately mixing an organic compound containing active hydrogen atoms which are reactive with $-NCO$ groups and selected from the group consisting of polyesters, polyethers, polythioethers and polyacetals and an organic diisocyanate, substantially immediately introducing said mixture into an inert liquid in which the reactive components and the resulting polyurethane polymer are substantially insoluble at operating temperatures, said inert

liquid being heated to a temperature of from about $70^\circ C.$ to about $170^\circ C.$, maintaining said mixture within said inert liquid until solidification of said polymer occurs and separating said solidified product from said inert liquid.

9. A method of preparing polyurethane polymers processable by thermoplastic techniques which comprises intimately mixing an organic compound containing active hydrogen atoms which are reactive with NCO groups and selected from the group consisting of polyesters, polyethers, polythioethers and polyacetals and an organic diisocyanate, substantially immediately introducing said mixture into an inert liquid in which the reactive components and the resulting polyurethane polymer are substantially insoluble at operating temperatures, said inert liquid being heated to a temperature of from about $70^\circ C.$ to about $170^\circ C.$, maintaining said mixture within said inert liquid until solidification of said polymer occurs, separating said solidified products from said inert liquid, passing said solidified product into a low boiling inert liquid, having a boiling point less than $100^\circ C.$ and selected from the group consisting of petroleum ether, carbontetrachloride, benzene, ethylenetrichloride, benzene, xylene, acetone and ethyl acetate and evaporating said low boiling liquid from said product.

3,312,667

SYNTHETIC LINEAR COPOLYESTERS AND SHAPED ARTICLES CONTAINING THEM

Lucien Bonnard, Villeurbanne, Rhone, France, assignor to Societe Rhodiaceta, Paris, France, a French body corporate

No Drawing. Filed Dec. 30, 1963, Ser. No. 334,592

Claims priority, application France, Jan. 3, 1963,

920,377

5 Claims. (Cl. 260-75)

1. Linear copolyesters in which a major proportion by weight of the recurring structural groups have the formula $-R.O.O.C.Ar.CO.O-$ in which R is a divalent hydrocarbon radical selected from the class which consists of saturated cycloaliphatic and linear alkylene radicals containing 2-8 carbon atoms, and Ar is a phenylene radical, and in which 0.5 to 5% by weight of the recurring structural groups have the formula



R being as defined above and R' being a linear alkylene radical containing 1-10 carbon atoms.

3,312,668

POLYMERIC COMPOUNDS OF DIBENZYLIDENE-BENZENEDIACETONITRILES AND PROCESS OF PREPARING SAME

Myron James Holm, St. Louis, and Ferdinand B. Zienty, Warson Woods, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed June 28, 1962, Ser. No. 205,881

11 Claims. (Cl. 260-78.4)

1. A homopolymer of a dibenzylidenebenzenediacyetonitrile having a molecular weight of at least about 3,000.

3,312,669

POLYTHIOPOLYMERCAPTAN BASED SEALANT COMPOSITION AND BONDING PROCESS

Joseph J. Giordano, Trenton, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Sept. 26, 1963, Ser. No. 311,661

18 Claims. (Cl. 260-79.1)

1. A curable liquid polythiopolymercaptan polymer based sealant composition comprising as an adhesive additive, about 1 to 3.5 parts by weight of at least one mercaptoalkyl polyalkoxy silane per 100 parts by weight of said polythiopolymercaptan polymer.

7. A process for bonding a curable, liquid polythiopolymercaptan polymer based sealant composition in cured form, to a substrate which comprises treating said substrate, prior to the application of said composition thereto, with a primer which is essentially a compound having the structure $HS-R-Si(-OR')_3$ in which R is an alkylene group and R' is a lower alkyl group, applying said composition containing curing agent in adhesive relationship to the primed substrate and curing said composition on said substrate.

3,312,670

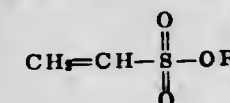
CRYSTALLIZABLE VINYL SULFONIC ESTER POLYMERS

Harry W. Coover, Jr., and Donald J. Shields, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 25, 1964, Ser. No. 354,776

7 Claims. (Cl. 260-79.3)

1. A process for preparing a crystalline polymer having an inherent viscosity of from 0.4-1.0 which comprises polymerizing at from -70° to $200^\circ C.$ monomeric material selected from the group consisting of (1) a vinylsulfonate monomer having the general formula:



wherein R represents a member selected from the group consisting of an alkyl group of from 1-4 carbon atoms and (2) a mixture consisting essentially of at least 70% by weight of said vinyl-sulfonate monomer and not more than 30% by weight of a monomer selected from the group consisting of styrene and an alkyl methacrylate wherein the said alkyl group contains from 1-4 carbon atoms, in the presence of from 0.05-10.0 based on the total weight of said monomeric material of a catalyst selected from the group consisting of (a) a metal alkyl selected from the group consisting of a trialkyl aluminum and an alkyl lithium wherein said alkyl in each instance contains from 1-6 carbon atoms, and (b) a mixture of from 1-4 parts by weight of said metal alkyl with one part by weight of a halide of a heavy metal selected from the group consisting of titanium, zirconium, chromium and vanadium.

3,312,671

COPOLYMERS OF 2-SODIOSULFOETHYL ACRYLATE AND ACRYLAMIDE

David H. Swisher, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 20, 1964, Ser. No. 383,950

4 Claims. (Cl. 260-79.3)

1. A water-soluble anionic copolymer of about 80 to 95 weight percent 2-sodiosulfoethyl acrylate and about 20 to 5 weight percent acrylamide, said copolymer being further characterized by a viscosity of about 1.4 to 5.0 cs. at $100^\circ F.$ as a 0.1 percent solution in 5 percent $NaCl$ brine.

3,312,672

ACCELERATING VULCANIZATION OF RUBBER WITH AMINOALKYL HALOPHENYL SULFIDES

Kamal Naguib Ayad, Wrexham, Wales, assignor to Monsanto Chemicals Limited, London S.W. 1, England, a British company

No Drawing. Filed Nov. 8, 1962, Ser. No. 236,441

Claims priority, application Great Britain, Nov. 23, 1961,

41,951/61

8 Claims. (Cl. 260-79.5)

1. A process of vulcanizing rubber which comprises heating at vulcanizing temperature rubber having incor-

porated therein sulfur and an accelerating amount of an aminoalkyl halophenyl sulfide in which the phenyl nucleus contains three to five halogen atoms and in which the amino group is a secondary amino group $-NHR$ or a tertiary amino group $-NRR'$, wherein the R and R' in the secondary or tertiary amino group can be aliphatic or aromatic or, in the tertiary amino group, R and R' can form a ring with the nitrogen atom.

3,312,673

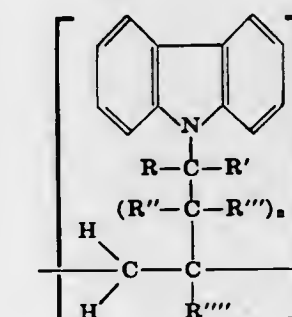
ETHYLENICALLY UNSATURATED CARBAZOLE POLYMERIC MATERIALS AND METHODS OF MAKING THE SAME

William A. Hewett, Saratoga, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 26, 1963, Ser. No. 304,697

20 Claims. (Cl. 260-80.3)

1. A new solid polymer consisting of monomeric units having the structural formula:



wherein $n=1-20$, and wherein R , R' , R'' , R''' and R'''' are substituents selected from the group consisting of hydrogen, phenyl, and lower alkyl substituents.

3,312,674

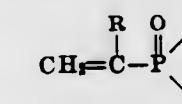
COPOLYMERS OF A MONOVINYL PHOSPHINE OXIDE AND A POLYVINYL PHOSPHINE OXIDE

Frank J. Welch, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

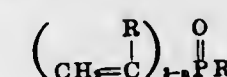
No Drawing. Filed Sept. 10, 1964, Ser. No. 395,555

3 Claims. (Cl. 260-80.3)

1. The solid, moldable copolymer of a vinylphosphoryl compound of the formula:



wherein R is selected from the group consisting of hydrogen and the methyl radical, and Z is selected from the group consisting of the $-SR'$, and $-R'$ radicals, R' being selected from the group consisting of the saturated aliphatic and monocyclic aromatic hydrocarbyl and halogen-substituted hydrocarbyl radicals containing up to 8 carbon atoms, with a compound selected from the group consisting of divinylphosphine oxides and trivinylphosphine oxides of the formula:



wherein R and R' are as above defined, and n is an integer having a value of from 0 to 1.

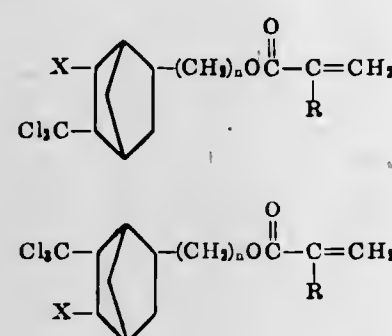
3,312,675

CHLORO (OR BROMO) TRICHLOROMETHYL-NORCAMPHANYL ESTERS OF ACRYLIC AND METHACRYLIC ACIDS AND POLYMERS THEREOF

John R. Caldwell, Winston J. Jackson, Jr., and Edward H. Hill, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Aug. 9, 1963, Ser. No. 301,186
11 Claims. (Cl. 260-80.5)

5. A copolymer of compounds of the formulas



and

wherein in each formula n is selected from the group consisting of 0 and 1, X is selected from the group consisting of Cl and Br atoms, and R is selected from the group consisting of an H atom and a CH_3 radical, and at least one other ethylenically unsaturated compound selected from the group consisting of methyl acrylate, butyl acrylate, butadiene, n -butyl methacrylate, acrylonitrile, methacrylonitrile and vinylidene chloride, said copolymer being capable of being formed into shaped articles.

3,312,676

CROSSLINKED HYDROCARBON POLYMERS HAVING INTERMOLECULAR ANHYDRIDE CROSSLINKS

Richard Watkin Rees, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 1, 1963, Ser. No. 312,857
8 Claims. (Cl. 260-80.5)

1. A crosslinked copolymer of at least 50 mol percent ethylene with from 0.2 to 25 mol percent of an ethylenically unsaturated acid selected from the group consisting of acrylic acid and methacrylic acid and from 0 to 49.8 mol percent of a third comonomer component selected from the group consisting of vinyl esters, esters of acrylic acid, esters of methacrylic acid, styrene, and 1-olefins containing from 3 to 18 carbon atoms, said crosslinked copolymer of ethylene being characterized as having intermolecular anhydride crosslinks.

3,312,677

INTERPOLYMERS OF LOWER ALKYL ACRYLATE ESTERS, OLEFIN-EPOXIDE MONOMERS AND POLYENE MONOMERS

George Rosen, Levittown, Pa., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Oct. 29, 1963, Ser. No. 319,641
11 Claims. (Cl. 260-80.5)

1. A solid curable interpolpolymer having a controllable Mooney viscosity and which may be cured to form an acrylate ester based elastomer comprising about 60 to 98.99 weight percent of at least one lower alkyl acrylate ester, up to about 30 weight percent of acrylonitrile, about 1 to 10 weight percent of at least one olefin-epoxide monomer, and about 0.01 to 1.5 weight percent of at least one polyene monomer, said olefin-epoxide monomer

being one which contains in its structure at least one polymerizable carbon to carbon double bond and at least one epoxide group and said polyene monomer being one which contains in its structure at least two non-conjugated carbon to carbon double bond groups selected from the group consisting of vinyl and allylic groups.

3,312,678

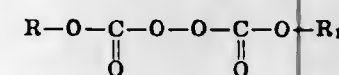
POLYMERIZATION PROCESS UTILIZING PEROXY-DICARBONATE ESTER AND AMINOAROMATIC CARBOXYLIC ACID SALT AS CATALYST

John C. Crano, Barberton, Ohio, assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

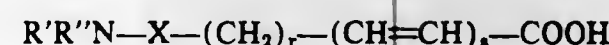
No Drawing. Filed Feb. 1, 1963, Ser. No. 255,648
19 Claims. (Cl. 260-93.5)

1. A method of polymerizing ethylenically unsaturated compounds susceptible to free-radical polymerization, which comprises polymerizing such unsaturated compounds with a catalytic amount of

(a) a peroxydicarbonate ester represented by the formula:



wherein R and R_1 are organic radicals of an alcoholic moiety containing up to 18 carbon atoms, and (b) a salt of a carboxylic acid represented by the formula:



wherein s is 0 or 1, r is a cardinal number of from 0 to 10, R' and R'' are aliphatic radicals containing up to 18 carbon atoms, and X is a divalent aromatic radical;

at temperatures of from $-35^\circ C.$ to $100^\circ C.$, the weight ratio of said carboxylic acid salt to peroxydicarbonate ester being from 0.5:1 to 250:1.

3,312,679

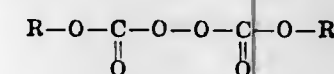
POLYMERIZATION PROCESS UTILIZING PEROXY-DICARBONATE ESTER AND AMINOAROMATIC SULFONIC ACID SALT AS CATALYST

John C. Crano, Barberton, Ohio, assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

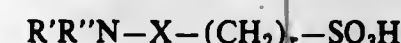
No Drawing. Filed Feb. 1, 1963, Ser. No. 255,661
19 Claims. (Cl. 260-93.5)

1. A method of polymerizing ethylenically unsaturated compounds susceptible to free-radical polymerization, which comprises polymerizing such unsaturated compound with a catalytic amount of

(a) a peroxydicarbonate ester represented by the formula:



wherein R and R_1 are organic radicals of an alcoholic moiety containing up to 18 carbon atoms, and (b) a salt of a sulfonic acid represented by the formula:



wherein r is a cardinal number of from 0 to 10, R' and R'' are aliphatic radicals containing up to 18 carbon atoms and X is a divalent aromatic radical; at temperatures of from $-35^\circ C.$ to $100^\circ C.$, the weight ratio of said sulfonic acid salt to peroxydicarbonate ester being from 0.5:1 to 250:1.

3,312,680

PROCESS FOR POLYMERIZING ISOPRENE WITH A LITHIUM CATALYST AND A HALOGEN ADJUVANT

Gerald R. Kahle, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Sept. 1, 1965, Ser. No. 484,461
16 Claims. (Cl. 260-94.2)

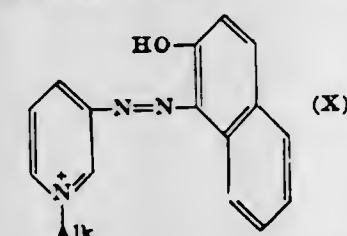
1. A process for producing a high cis polyisoprene of improved processability characteristics which comprises contacting isoprene under polymerization conditions of -100 to $150^\circ C.$ and a pressure sufficient to maintain substantially complete liquid phase conditions with an initiator in the presence of a halogen adjuvant selected from the group consisting of RX , HX , and X_2 wherein X is halogen and when X is one of Cl, Br, I, R is a radical selected from the group consisting of saturated aliphatic, saturated cycloaliphatic, and aromatic radicals and when X is F, R is a radical selected from the group consisting of saturated aliphatic and saturated cycloaliphatic radicals, when the halogen adjuvant is one of HX and X_2 said halogen adjuvant being present in an amount sufficient to lower the inherent viscosity of the final polymer without destroying the initiator, the initiator is that formed by reacting lithium with a material selected from the group consisting of polycyclic aromatic compounds, halogen derivatives of polycyclic aromatics containing from 2 to 4 halogen atoms per molecule, and polyaryl-substituted ethylenes containing from 2 to 4 aryl groups selected from the group consisting of phenyl and naphthyl, and when the halogen adjuvant is RX the initiator is formed by reacting a material selected from the group consisting of lithium and organolithium compounds with a material selected from the group consisting of polycyclic aromatics, halogen derivatives of polycyclic aromatics containing from 2 to 4 halogen atoms per molecule, polyaryl substituted ethylene, and bihalogen-containing aryl-substituted ethanes containing from 2 to 4 aryl groups selected from the group consisting of phenyl and naphthyl.

3,312,681

CATIONIC 1-ALKYL-3-(2-HYDROXY-1-NAPHTHYL)AZO PYRIDINIUM DYES

Charles E. Lewis, Somerville, N.J., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine
No Drawing. Filed Nov. 10, 1961, Ser. No. 151,443
4 Claims. (Cl. 260-156)

1. A dyestuff of the formula



where $(X)^-$ is an anion of a water-soluble quaternizing salt and (Alk) is selected from the group consisting of methyl and ethyl.

3,312,682

AZO AND ANTHRAQUINONE DYES CONTAINING ALKOXYALYL AND ARYLOXYALYL MONO- AND DIESTERS OF o - AND p -DIHYDROXYPHENYL GROUPS

Myron S. Simon, Newton Center, and Stanley H. Mervis, Newton Highlands, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
No Drawing. Filed Dec. 27, 1965, Ser. No. 516,785
2 Claims. (Cl. 260-202)

1. A dye of the formula:



wherein Z represents a radical selected from the group consisting of the alkoxyalyl and aryloxyalyl mono- and diesters of ortho- and para-dihydroxyphenyl groups, wherein the alkyl group of said alkoxyalyl radical comprises a lower alkyl group and the aryl group of said aryloxyalyl group comprises a phenyl group; Y represents an alkylene, alkyleneamino, or alkyleneamido radical, wherein said alkylene radical is a lower alkylene radical and said alkylene radical is directly attached to a nuclear carbon atom of the phenyl ring of said Z and Y is additionally directly attached to a nuclear carbon atom of an aromatic ring of D ; n represents an integer from 1 to 2; and D represents a chromophoric system selected from the group consisting of azo and anthraquinone chromophoric systems.

3,312,683

PROCESS FOR PRODUCING DERIVATIVES OF D-GLUCOSE

Walter Gerald Farkas, Upper Montclair, and Frederick H. Hemsley, North Arlington, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed June 9, 1964, Ser. No. 373,833
6 Claims. (Cl. 260-209)

1. The process which comprises treating D-glucose with an alkaline earth metal hydroxide in the presence of as a liquid reaction medium an inert organic compound which forms a minimum boiling azeotrope with water boiling within the range of about $70^\circ C.$ to about $100^\circ C.$, said treatment being effected at an elevated temperature such that the water of reaction is continuously distilled from the reaction mixture as an azeotrope with said inert organic compound.

3,312,684

OIL GLYCOSIDES OF SOPHOROSE AND FATTY ACID ESTERS THEREOF

John Francis Theodore Spencer, Alexander Patrick Tulloch, and Philip Albert James Gorin, all of Saskatoon, Saskatchewan, Canada, assignors to National Research Council, Ottawa, Ontario, Canada, a body corporate of Canada

No Drawing. Filed Mar. 17, 1965, Ser. No. 440,603
11 Claims. (Cl. 260-210)

1. The oil glycoside of the disaccharide sophorose, and fatty acids having 15 to 19 carbon atoms, hydroxylated in one of the omega, and the omega-minus-one positions.

3,312,685

SOLUBILIZING HYDROXYETHYLCELLULOSE

Reid Logan Mitchell, Morristown, Anthony A. E. Couninis, East Orange, and Charles F. Murphy, Morristown, N.J., assignors to Rayonier Incorporated, Shelton, Wash., a corporation of Delaware

Filed Oct. 30, 1962, Ser. No. 234,127
1 Claim. (Cl. 260-232)

The improved process for forming clear and filterable solutions of hydroxyethylcellulose which comprises dissolving hydroxyethylcellulose containing from 3.8 to 4.2% of substituted ethylene oxide based on the oven dry weight of the hydroxyethyl cellulose in an aqueous solution of sodium hydroxide, the concentration of hydroxyethylcellulose and the concentration of sodium hydroxide in the solution being defined by area (1) of FIG. 1 of the drawings, said solution being accomplished by use of a continuous mixing sequence in which hydroxyethyl cellulose crumb and sodium hydroxide solution are fed simultaneously into a pre-mixing stage, then into a high-shear dispersion stage, chilled short of freezing to solubilize, warmed, and filtered.

3,312,686

PROCESS FOR AGING ALKALI CELLULOSE

Joseph Sheppard James, Jr., Memphis, Tenn., assignor to The Buckeye Cellulose Corporation, Cincinnati, Ohio, a corporation of Ohio

Filed Mar. 16, 1964, Ser. No. 351,981

5 Claims. (Cl. 260-233)

1. In the aging of alkali cellulose for the preparation of cellulose derivatives, the improvement wherein aging of the alkali cellulose is accomplished in the uniformly dispersed and intimate presence of about 0.05% to about 0.5% based on the weight of the original cellulose, of at least one chemical agent selected from the group consisting of hydroxylamine, hydrazine, hydroxylamine hydrochloride, hydroxylamine sulfate, hydrazine sulfate, phenylhydrazine, semicarbazide hydrochloride and p-nitrophenylhydrazine.

3,312,687

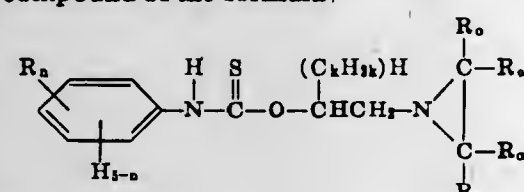
(1-AZIRIDINYL)ALKYL ARYLTHIOCARBAMATES

George E. Ham, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 14, 1963, Ser. No. 316,135

3 Claims. (Cl. 260-239)

1. A compound of the formula



wherein:

- (a) n is an integer from 0 to 3 which represents the number of R groups which replace hydrogen atoms on the aromatic nucleus,
- (b) R is an alkyl group of from 1 to 2 carbon atoms,
- (c) k is an integer from 0 to 2, and
- (d) each R_0 is independently selected from the group consisting of the hydrogen atom and a lower alkyl group of from 1 to 4 carbon atoms.

3,312,688

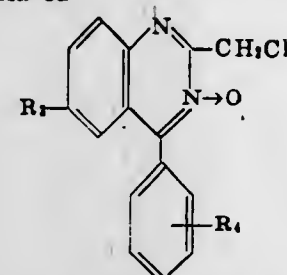
PROCESS FOR PREPARING 2-AMINO-BENZODIAZEPINES

Giles A. Archer, Essex Fells, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

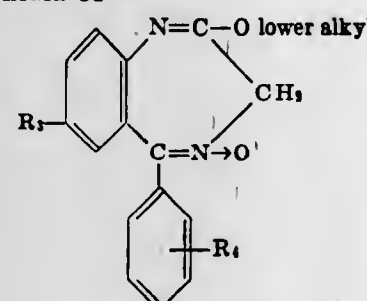
No Drawing. Filed Oct. 29, 1963, Ser. No. 319,673

13 Claims. (Cl. 260-239)

1. A process which comprises reacting a compound having the formula of

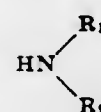


wherein R_1 and R_2 are selected from the group consisting of hydrogen, halogen, trifluoromethyl and lower alkyl with a metal lower alkylate to thereby form a product having the formula of



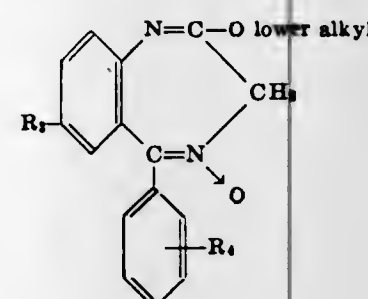
wherein R_1 and R_2 are as above,

and reacting the so-formed product with an amine having the formula



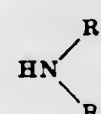
wherein R_1 and R_2 are selected from the group consisting of hydrogen, lower alkyl and lower alkenyl.

8. A process which comprises reacting a compound having the formula



wherein R_1 and R_2 are selected from the group consisting of hydrogen, halogen, trifluoromethyl and lower alkyl

with an amine having the formula



wherein R_1 and R_2 are selected from the group consisting of hydrogen, lower alkyl, and lower alkenyl.

3,312,689

10-(BASIC SUBSTITUTED)-DIBENZODIAZEPINES

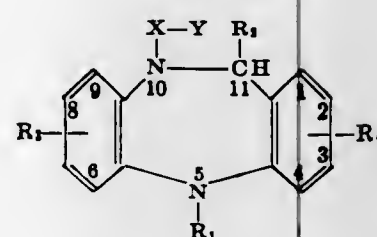
Jean Schmutz, Muri, near Bern, and Fritz Hunziker, Bern, Switzerland, assignors to Dr. A. Wander, S.A., Bern, Switzerland, a corporation of Switzerland

No Drawing. Filed Jan. 2, 1964, Ser. No. 335,344

Claims priority, application Switzerland, Sept. 22, 1959, 78,518/59, 78,521/59

19 Claims. (Cl. 260-239)

1. A compound selected from the group consisting of a 10-(basic substituted)-10,11-dihydro-5H-dibenzo[b,e][1,4]diazepine of the formula



wherein X represents alkylene having between 2 and 3 inclusive carbon atoms; Y is a member of the class consisting of dialkylamino having between 2 and 4 inclusive carbon atoms, pyrrolidino, piperidino, and morpholino; R_1 and R_2 represent, interchangeably, a member of the class consisting of hydrogen, methyl, and ethyl; and R_3 and R_4 represent, interchangeably, a member of the class consisting of hydrogen, chlorine, methyl, ethyl, methoxy, and ethoxy; and non-toxic therapeutically useful acid addition salts and lower alkyl quaternary ammonium halides, sulfates, and sulfonates thereof.

3,312,690

SYDNONIMINE DERIVATIVES

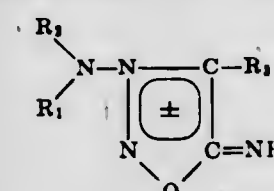
Katsutada Masuda, Ashiya, and Yoshio Imashiro, Nishinomiya, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Continuation of application Ser. No. 462,421, June 8, 1965. This application Apr. 29, 1966, Ser. No. 546,468

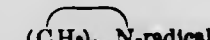
Claims priority, application Japan, June 8, 1964, 39/32,329

23 Claims. (Cl. 260-239)

1. A sydnonimine compound of the formula



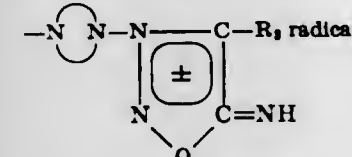
wherein R_1 is a member selected from the group consisting of H and alkyl of one to five carbon atoms, and each of R_1 and R_2 is a member selected from the group consisting of alkyl of one to five carbon atoms and alkenyl of one to five carbon atoms, and R_1 and R_2 taken together with the adjacent N-atom stand for a member selected from the group consisting of morpholino, piperidino, a



wherein n is 4, 5 or 6, and

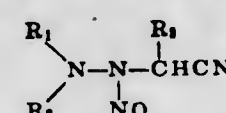


wherein R' is alkyl of one to five carbon atoms, and an



wherein R_1 has the same meaning as above.

22. A nitroso compound of the formula



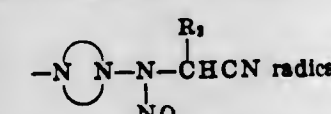
wherein R_1 is a member selected from the group consisting of H and alkyl of one to five carbon atoms, and each of R_1 and R_2 is a member selected from the group consisting of alkyl of one to five carbon atoms and alkenyl of one to five carbon atoms, and R_1 and R_2 taken together with the adjacent N-atom stand for a member selected from the group consisting of morpholino, piperidino, a



wherein n is 4, 5 or 6, and

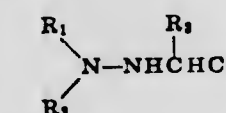


wherein R' is alkyl of one to five carbon atoms, and an



wherein R_1 has the same meaning as above.

23. An N-cyanoalkyl hydrazine compound of the formula



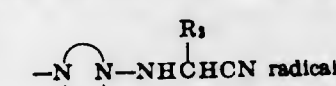
wherein R_1 is a member selected from the group consisting of H and alkyl of one to five carbon atoms, and each of R_1 and R_2 is a member selected from the group consisting of alkyl of one to five carbon atoms and alkenyl of one to five carbon atoms, and R_1 and R_2 taken together with the adjacent N-atom stand for a member selected from the group consisting of morpholino, piperidino, a



wherein n is 4, 5 or 6, and



wherein R' is alkyl of one to five carbon atoms, and an



wherein R_1 has the same meaning as above.

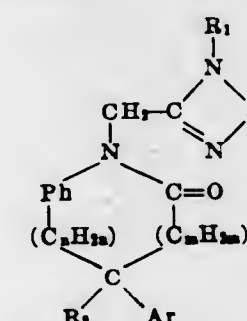
3,312,691

2,3,4,5-TETRAHYDRO-1-BENZAZEPIN-2-ONES
Lincoln Harvey Werner, Summit, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 23, 1963, Ser. No. 304,262

8 Claims. (Cl. 260-239.3)

1. A member selected from the group consisting of a compound of the formula



in which Ph is a member selected from the group consisting of 1,2-phenylene, (lower alkyl)-1,2-phenylene, (lower alkoxy)-1,2-phenylene, (lower alkenyloxy)-1,2-phenylene, (lower alkenedioxy)-1,2-phenylene, (halogeno)-1,2-phenylene, (lower alkylmercapto)-1,2-phenylene, (lower alkanoyl)-1,2-phenylene and (polyfluoro-lower alkyl)-1,2-phenylene, each of (C_nH_{2n}) and (C_mH_{2m}) is lower alkylene separating the adjacent carbon atoms by one carbon atom, Ar is a member selected from the group consisting of phenyl, (lower alkyl)-phenyl, (lower alkoxy)-phenyl, (halogeno)-phenyl, (nitro)-phenyl, (amino)-phenyl, (lower alkylamino)-phenyl, (di-lower alkylamino)-phenyl, (lower alkanoyl)-phenyl, (polyfluoro-lower alkyl)-phenyl, pyridyl, thienyl and furyl, each of R_1 and R_2 is a member selected from the group consisting of hydrogen and lower alkyl and A is lower alkylene separating the adjacent nitrogen atoms by 2 to 4 carbon atoms, and an acid addition salt thereof.

3,312,692

16-ALKYLENE PROGESTERONES AND INTERMEDIATES FORMED IN THE PRODUCTION THEREOF

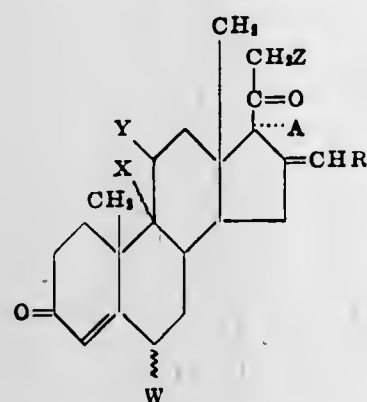
Eugene P. Oliveto, Glen Ridge, Richard Rauser, Union, and Emanuel Hershberg, West Orange, N.J., assignors to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed Dec. 22, 1959, Ser. No. 861,208

19 Claims. (Cl. 260-239.5)

1. A compound selected from the group consisting of 16-alkyleneprogesterones, the 19-nor, 1-dehydro, 6-de-

hydro, and 1,6-bis-dehydro analogs thereof, said 16-alkylideneprogesterones having the following formula:



wherein A is a member of the group consisting of hydrogen, hydroxy and acyloxy; R is a member of the group consisting of hydrogen and lower alkyl; Z is a member of the group consisting of hydrogen and halogen; W is a member of the group consisting of H, methyl, and halogen; and when W is hydrogen or methyl, X is halogen and Y is halogen; and when W is halogen, X is a member of the group consisting of hydrogen and halogen, and Y is a member of the group consisting of hydrogen, halogen, keto, hydroxy and lower alkanoyloxy, and when Y is hydrogen, X is hydrogen, and when Y is halogen, X is halogen.

12. 3-acetoxy-16 α ,17 α -pyrazolino-5,9(11)-pregnadiene-20-one.

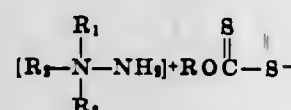
3,312,693

HYDRAZINIUM XANTHATES AND METHOD FOR THEIR PREPARATION

Paul R. Steyermark, Silver Spring, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

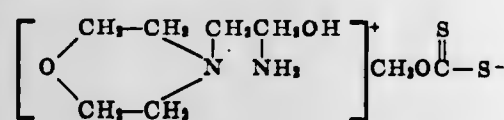
No Drawing. Filed July 16, 1964, Ser. No. 383,232
12 Claims. (Cl. 260-247.1)

1. Compounds of the formula



wherein R is lower alkyl, and R₁, R₂ and R₃ are selected from the group consisting of alkyl, alkenyl, cycloalkyl, phenyl, alkylphenyl, hydroxyalkyl, hydroxypolyethoxyethyl, and R₁ and R₂ combined to form a heterocyclic ring having 3 to 8 members selected from the group consisting of carbon and oxygen.

6. The compound



3,312,694

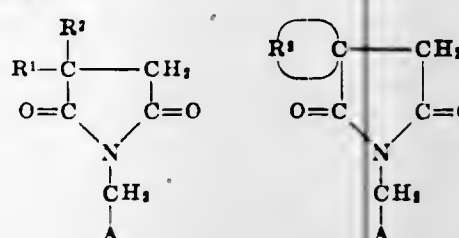
N-TERTIARY AMINOMETHYL-SUCCINIMIDES
Jenő Seres, László Tardos, and György P. Leszkovszky, Budapest, Hungary, assignors to Chinoil Gyógyszer-és Vegyszeti Termékek Gyára Rt., Budapest, Hungary, a firm

No Drawing. Filed July 5, 1963, Ser. No. 293,200
Claims priority, application Hungary, July 13, 1962;
Cl. 404

6 Claims. (Cl. 260-247.2)

2. α -Phenyl - α -methyl - N - (morpholino - methyl)-succinimide.

6. A composition of matter selected from the group consisting of:



wherein R³ is tetramethylene, R¹ is selected from the group consisting of hydrogen and methyl, R² is selected from the group consisting of phenyl and ethyl with the proviso that when R¹ is hydrogen R² is phenyl and A is selected from the group consisting of piperazino, piperidino, pyrrolidino, morpholino and ephedrine and pharmaceutically acceptable salts thereof.

3,312,695

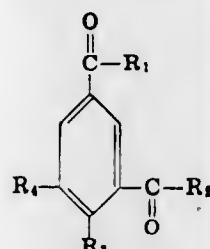
ISOPHTHALIC ACID DERIVATIVES

Herbert Mühle, Basel, Switzerland, assignor to Chemische Fabrik Schweizerhall, Basel, Switzerland, a Swiss company

No Drawing. Filed Aug. 24, 1964, Ser. No. 391,775
Claims priority, application Switzerland, Aug. 26, 1963,
10,492/63

16 Claims. (Cl. 260-247.2)

1. A compound of the formula



wherein each of R₁ and R₂ is a member selected from the group consisting of lower alkoxy, morpholino, and piperidino, and one of R₃ and R₄ is a member selected from the group consisting of unsubstituted lower alkenyl and lower alkenyl substituted by a member selected from the group consisting of lower alkyl and phenyl, and the other R₃ and R₄ is a member selected from the group consisting of hydroxyl, lower alkoxy, lower alkenyloxy and lower alkenyloxy.

5. 3 - morpholinocarbonyl - 4 - hydroxy-5-allyl-benzoic acid methyl ester.

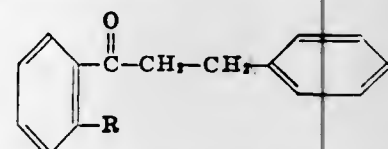
3,312,696

2-TERTIARY AMINO ALKOXY-BETA-PHENYL-PROPIOPHENONES

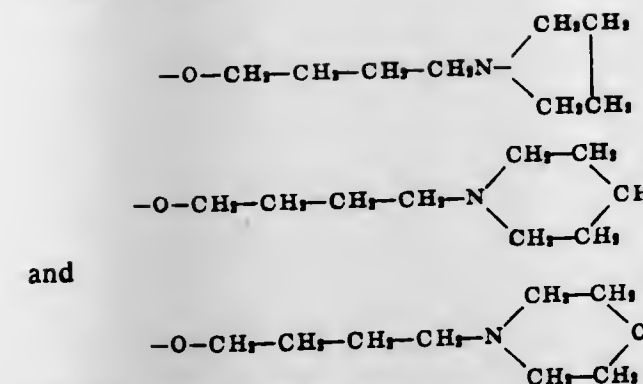
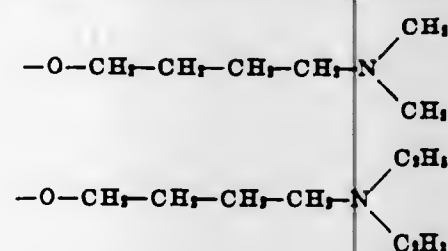
Luigi Turbanti, Via Buonaccorso da Padule 10, Pisa, Italy

No Drawing. Filed Feb. 20, 1964, Ser. No. 346,088
7 Claims. (Cl. 260-247.7)

1. A compound selected from the group consisting of compounds of the formula



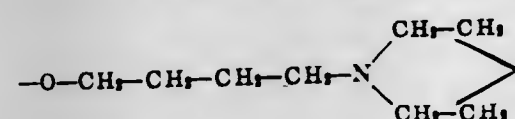
wherein R is selected from the group consisting of



and

and acid addition salts thereof.

7. A compound as defined in claim 1, wherein R is



3,312,697

PROCESS FOR THE PREPARATION OF CYANURIC CHLORIDE

Jean Riethmann, 32 Judengassein, Allschwil, Basel-Land, Switzerland, and Jörg Kallen, 1 Rheinparkstrasse, Birsfelden, Basel-Land, Switzerland

No Drawing. Filed Nov. 20, 1961, Ser. No. 153,723
Claims priority, application Switzerland, Nov. 22, 1960,
13,063/60

5 Claims. (Cl. 260-248)

1. In a process for the preparation of cyanuric chloride by passing cyanogen chloride in the vapor phase at a temperature of above 200° C. over an activated carbon which has been treated with agents selected from the group consisting of acids, alkalis and mixtures thereof and washed with distilled water until the oxides, hydroxides and salts of the metals of lithium, magnesium, cerium, titanium, vanadium, manganese, iron, nickel, platinum, copper, zinc, cadmium, tin, lead or bismuth contained therein are removed therefrom and a specific inner surface of at least 1000 square meters per gram is achieved therein, the improvement which comprises adding to the cyanogen chloride admixed with impurities selected from the group consisting of hydrocyanic acid, cyanogen, hydrogen chloride and mixtures thereof more than 0.5% and up to 10% by weight based on said cyanogen chloride of an agent selected from the group consisting of chlorine and phosgene to prolong the life of said activated carbon provided that lesser amounts of such impurities are present than of said agent and recovering cyanuric chloride as pure material without subsequent purification.

3,312,698

N-SUBSTITUTED MELAMINES

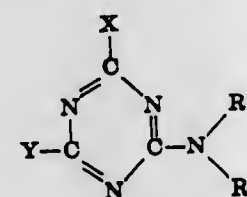
Joachim Dazzi, Riehen, near Basel, and Ernst Keller, Binningen, near Basel, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware

No Drawing. Original application July 6, 1962, Ser. No. 208,105. Divided and this application Oct. 21, 1964,
Ser. No. 411,960

Claims priority, application Switzerland, July 7, 1961,
8,130/61

5 Claims. (Cl. 260-249.6)

1. A compound of the formula



wherein

X is a di-(lower alkyl)-amino group in which each alkyl radical has from 2 to 4 carbon atoms

Y is a di-(lower alkyl)-amino group in which each alkyl radical has from 2 to 4 carbon atoms

R₁ is a member selected from the group consisting of hydrogen and lower alkyl of maximally 4 carbon atoms,

R₂ is a member selected from the group consisting of benzyl, phenyl, alkylphenyl wherein alkyl has maximally 12 carbon atoms, alkoxy-phenyl, wherein alkoxy has maximally 4 carbon atoms and phenoxy-phenyl.

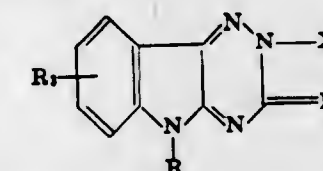
3,312,699

ASYMMETRIC TRIAZINO INDOLES

Jan Mieczyslaw Zygmunt Gladych and John Harold Hunt, London, England, assignors to Allen & Hanbury Limited, London, England, a British company

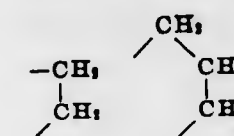
No Drawing. Filed Sept. 15, 1964, Ser. No. 396,721
Claims priority, application Great Britain, Sept. 17, 1963,
36,551/63; Feb. 20, 1964, 7,169/64
7 Claims. (Cl. 260-249.8)

1. A compound selected from the group consisting of an imidazo- pyrimido- and triazolo-as-triazino(5,6-b) indole of the formula:



(I)

wherein R is selected from the group consisting of hydrogen, lower alkyl and phenylalkyl of 7 to 9 carbon atoms, R₂ is selected from the group consisting of hydrogen, halogen, lower alkyl, benzyl, hydroxy, lower alkoxy, nitro, amino and trifluoromethyl, X is selected from the group consisting of



and



in which R₁ is selected from the group consisting of hydrogen, hydroxy, lower alkyl, halophenyl and lower alkyl phenyl, and an acid addition and quaternary ammonium salt thereof.

3,312,700

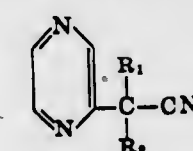
PYRAZINEACETONITRILES AND METHODS OF PREPARING

Antony M. Akkerman, Geertruida Cornelia Van Leeuwen, and Josephus F. Michels, Amsterdam, Netherlands, assignors to N.V. Nederlandsche Combinatie Voor Chemische Industrie, Amsterdam, Netherlands, a limited-liability company of the Netherlands

No Drawing. Filed May 6, 1964, Ser. No. 365,502
Claims priority, application Netherlands, May 10, 1963,
292,632

6 Claims. (Cl. 260-250)

1. A compound represented by the formula:



in which R₁ and R₂ are each selected from the group consisting of hydrogen, loweralkyl and di(loweralkyl) aminoloweralkyl.

3,312,701

3-CHLOROPYRIDAZONE-(6)-1-ACETIC ACID DIALLYLAMIDE

Helmo Stormann-Menninger-Lerchenthal, Linz (Danube), Engelbert Kloimstein, Eferding, and Rupert Schönbek, Leonding, near Linz (Danube), Austria, assignors to Österreichische Stickstoffwerke Aktiengesellschaft, Linz (Danube), Austria

No Drawing. Filed July 18, 1966, Ser. No. 565,721

Claims priority, application Austria, July 30, 1965,

A 7,047/65

1 Claim. (Cl. 260—250)

3-chloropyridazine-(6)-1-acetic acid diallylamide.

3,312,702

6-MERCAPTOPURINE 3-N-OXIDE

George B. Brown, Mamaronock, N.Y., and Gershon Levin, London, England, assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Oct. 19, 1964, Ser. No. 404,991

3 Claims. (Cl. 260—252)

3. 6-mercaptapurine 3-N-oxide.

3,312,703

2-PYRIDYL AND 2-PIPERIDINYL PHENYL BARBITURIC ACIDS AND METHOD OF PREPARING THIOBARBITURIC ACIDS

Leslie Frederick Wiggins, Wargrave, John William James, Langley, and Maurice Ward Gittos, Slough, England, assignors to Aspro-Nicholas Limited, a British company

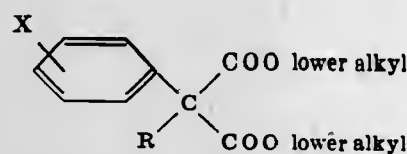
No Drawing. Filed May 2, 1963, Ser. No. 277,431

Claims priority, application Great Britain, Dec. 17, 1959,

42,969/59; Dec. 14, 1960, 43,049/60

22 Claims. (Cl. 260—256.4)

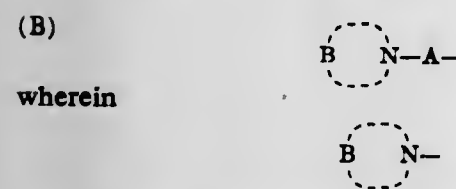
1. A method of making a barbituric acid comprising the step of condensing thiourea with a malonic ester in solution in an inert mutual solvent and in the presence of an alkali metal at a temperature up to 30° C. to form a 2-thiobarbituric acid, said malonic ester having the formula:



wherein R represents a group selected from the class consisting of:



wherein R₁ is lower alkyl, R₂ is lower alkyl and A is a group selected from the class consisting of unsubstituted and methyl-substituted straight-chain alkylene of 2 to 3 chain carbon atoms;



wherein

is a heterocyclic group of five to seven ring atoms and A is a group selected from the class consisting of unsubstituted and methyl-substituted straight-chain alkylene of 2 to 3 chain carbon atoms; and

(C) R₃—(CH₂)_n—, wherein n is a positive whole number up to 2 and R₃ is a group selected from the class consisting of 2-pyridyl and N-methyl-2-piperidinyl;

and X is selected from the class consisting of hydrogen, halogen, lower alkyl and lower alkoxy, and when R is a dimethylamino lower alkyl free from α-methyl substitution, X is selected from the class consisting of halogen, lower alkyl and lower alkoxy.

22. A 5-(2'-pyridylmethyl)-5-phenylbarbituric acid.

3,312,704

PROCESS FOR PREPARING O,S-DISUBSTITUTED THIOL-TYPE THIAMINE DERIVATIVES

Akira Takamizawa, Osaka, and Kentaro Hirai, Kyoto, Japan, assignors to Shionogi & Co., Ltd., Osaka, Japan

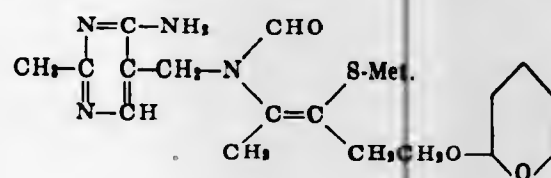
No Drawing. Filed Aug. 17, 1964, Ser. No. 390,242

Claims priority, application Japan, Aug. 19, 1963,

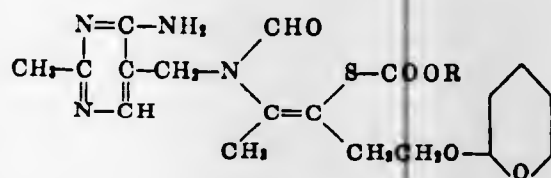
38/44,361

4 Claims. (Cl. 260—256.5)

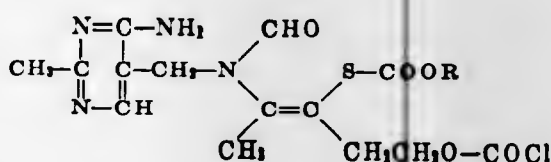
1. Process for preparing O,S-disubstituted thiol-type thiamine derivatives which comprises reacting S-alkali metal salt of O-(α-tetrahydropyranyl)-thiamine of the formula:



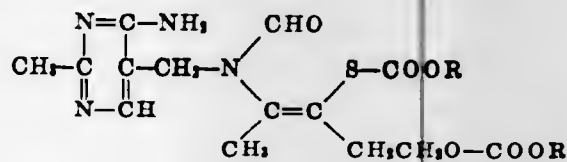
wherein Met. is an alkali metal with a member selected from the group consisting of alkyl chlorocarbonate and alkenyl chlorocarbonate in water, reacting the resultant O-(α-tetrahydropyranyl) - S - substituted thiol - type thiamine derivative of the formula:



wherein R is a member selected from the group consisting of alkyl having not more than five carbon atoms and alkenyl having not more than five carbon atoms with phosgene in an inert organic solvent and reacting the resulting O-chlorocarbonyl - S - substituted thiol-type thiamine derivative of the formula:



wherein R has the same significance as designated above with a member selected from the group consisting of alkanol and alkenol to give the O,S-disubstituted thiol-type thiamine derivative of the formula:



wherein R' is a member selected from the group consisting of alkyl having not more than five carbon atoms and alkenyl having not more than five carbon atoms and R has the same significance as designated above.

**3,312,705
2-HYDROXY-3-NAPHTHOIC ACID
PIPERAZIDES**

Oskar Süs and Hans-Dieter Dösch, Wiesbaden-Biebrich, Germany, assignors, by mesne assignments, to Keuffel & Esser Company, Hoboken, N.J.

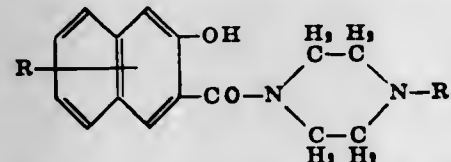
No Drawing. Original application May 3, 1962, Ser. No. 192,073, now Patent No. 3,255,010, dated June 7, 1966. Divided and this application Aug. 7, 1964, Ser. No. 395,349

Claims priority, application Germany, May 5, 1961,

K 43,651

8 Claims. (Cl. 260—268)

1. A 2-hydroxy-2-naphthoic acid piperazide having the formula



where R is a member selected from the group consist-

ing of hydrogen, halogen, and methoxy radical and R₁ is a member selected from the group consisting of hydrogen, and methyl, ethyl, benzyl, and hydroxy-ethyl radicals.

3,312,706

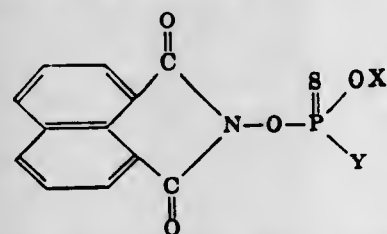
PHOSPHORAMIDOTHIOATES

Raymond H. Riegerink, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 14, 1963, Ser. No. 258,617

5 Claims. (Cl. 260—281)

1. Compound of the formula



wherein X represents loweralkyl and Y represents a member selected from the group consisting of amino and loweralkylamino.

3,312,707

SPARINGLY SOLUBLE SALTS OF THE 6,6-UREYLENE-BIS-(1-METHYLQUINOLINIUM) CATION

William Glynn Moss Jones, Macclesfield, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

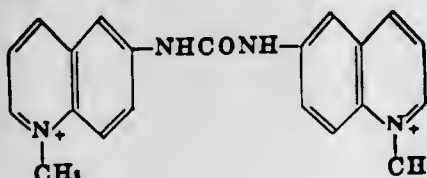
No Drawing. Filed Dec. 5, 1963, Ser. No. 328,171

Claims priority, application Great Britain, Dec. 20, 1962,

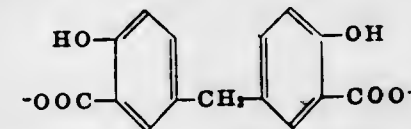
48,244/62

4 Claims. (Cl. 260—286)

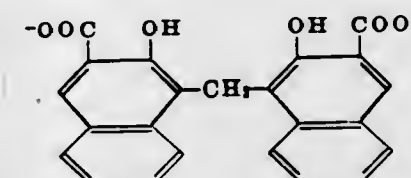
1. A salt of the 6,6-ureylene-bis-(1-methylquinolinium) cation of the formula



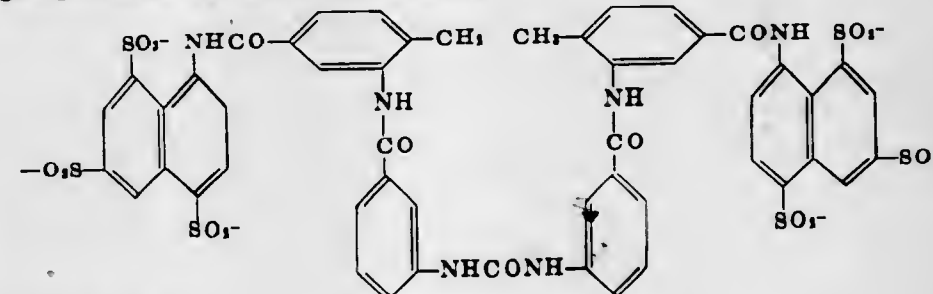
with an anion selected from the group consisting of the 5,5'-methylene-bis-salicylate anion of the formula



the 1,1'-methylene-bis-(2-hydroxy-3-naphthoate) anion of the formula



and the sym-bis - (m-aminobenzoyl-m-amino-p-methylbenzoyl - 1 - naphthylamino-4,6,8-trisulphonate) carbamide anion of the formula



3,312,708

MANUFACTURE OF AMINOQUINOLINES

Charles J. Lind, Hamburg, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Sept. 30, 1963, Ser. No. 312,365

3 Claims. (Cl. 260—288)

1. The process of preparing an ar-aminoquinoline from the corresponding ar-quinolinol which comprises the step of heating at a temperature not above 200° C. and under autogenous pressure a mixture of the ar-quinolinol and, as the sole aminating agent, an ammonium salt of sulfurous acid having the general formula M(NH₄)_x(SO₃)_x wherein M stands for a member of the group consisting of the ammonium group, alkali metals and alkaline earth metals and x stands for an integer equal to the valence of M.

3,312,709

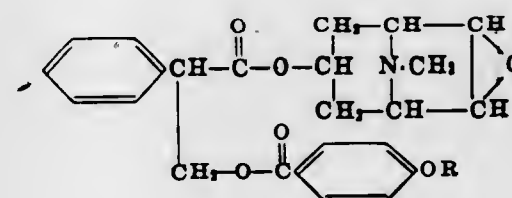
PARA-(LOWER)ALKOXYBENZYLSCOPOLAMINE

Francis S. Kilmer MacMillan, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed June 29, 1964, Ser. No. 379,023

2 Claims. (Cl. 260—292)

1. An anticholinergic compound having the structure:



wherein R is an alkyl radical having not more than about 5 carbon atoms, and the acid salts thereof.

3,312,710

METHOD OF PRODUCING AROMATIC NITRILES IN THE VAPOR PHASE IN THE PRESENCE OF MANGANESE PARATUNGSTATE AS A CATALYST

Shigeru Sakuyama, Nishinomiya, Kenzo Oda, Osaka, Takashi Ohara, Akashi-shi and Noboru Shimizu and Toshiaki Nakamura, Osaka, Japan, assignors to Nippon Shokubai Kagaku Kogyo Co., Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed July 11, 1966, Ser. No. 564,008

Claims priority, application Japan, Sept. 4, 1962, 37/37,357; Apr. 6, 1963, 38/17,297

2 Claims. (Cl. 260-294.9)

2. A method of preparing nitriles which comprises reacting a compound selected from the group consisting of methyl-substituted benzene and methyl-substituted pyridine with ammonia and molecular oxygen in a vapor phase at a temperature in the range of 350-600° C. in the presence of manganese paratungstate and at least one promoter selected from the group consisting of oxides of aluminum, magnesium cobalt, chromium, nickel, zinc, molybdenum and tin, paratungstate of these metals, and these metal salts of aluminic acid, chromic acid, molybdic acid and stannic acid.

3,312,711

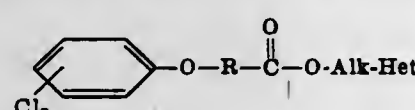
ARYLOXY ESTERS OF PYRIDINE AND FURAN ALIPHATIC ACIDS

Stanley D. Koch, Swampscott, Mass., assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Oct. 1, 1964, Ser. No. 400,876

4 Claims. (Cl. 260-295)

1. A new class of compounds of the formula



in which "n" is an integer of from 2 to 3, R is a saturated aliphatic hydrocarbon chain of from 1 to 6 carbon atoms, "Alk" is a saturated aliphatic hydrocarbon chain of 1-6 carbon atoms, and "Het" is an aromatic heterocyclic ring system chosen from the group consisting of pyridine, furan, lower alkyl substituted pyridines and lower alkyl substituted furans.

3,312,712

2-(3-CARBOXYL AND 3-CARBAMYL-PYRIDINIUM) SUCCINIC ACID BETAINES AND A METHOD FOR THEIR PREPARATION

Jean-Louis Delarue, Paris, and Yves Louis-Marie Fellon, Gagny, France, assignors to Laboratoires Torade, Paris, France, a French society

No Drawing. Filed Feb. 12, 1965, Ser. No. 432,418

Claims priority, application Great Britain, Feb. 19, 1964, 6,903/64

6 Claims. (Cl. 260-295.5)

1. A process for the preparation of a 2-(3-substituted-pyridinium) succinic acid betaine, the pyridine ring of which is substituted in the 3-position by a group selected from the group consisting of carboxyl, carbonamide, N-(lower alkyl)-carbonamide and N,N-di(lower alkyl)-carbonamide, which comprises the step of reacting a pyridine derivative selected from the group alkyl-substituted nicotinic acid, nicotinamide, N-(lower alkyl)-substituted nicotinamides and N,N-di(lower alkyl)-substituted nicotinamides, with D-1-bromosuccinic acid in the presence of silver hydroxide under conditions whereby said bromosuccinic acid is converted to maleic acid in situ.

3,312,713

DILOWERALKYL BETA 2- AND 4-PYRIDYL ETHYL SUCCINATES AND DERIVATIVES THEREOF

Manuel M. Balzer, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Original application June 18, 1963, Ser. No. 288,629, now Patent No. 3,218,245, dated Nov. 16, 1965. Divided and this application June 22, 1965, Ser. No. 466,053

3 Claims. (Cl. 260-295)

1. Compound selected from the group consisting of those represented by the formula:



in which Z is a pyridyl radical bonded at positions selected from the group consisting of 2- and 4-positions, R is a carboloweralkoxy group, and X is selected from the group consisting of carboloweralkoxy and cyano groups, and pyridinium salts thereof.

3,312,714

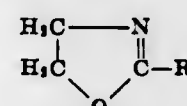
PREPARATION OF 2-OXAZOLINES FROM N-(2-HYDROXYETHYL)AMIDES

Allan A. Eisenbraun, Colonial Heights, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

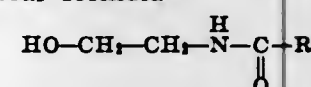
No Drawing. Filed May 13, 1965, Ser. No. 455,635

12 Claims. (Cl. 260-307)

1. A method of preparing a 2-oxazoline having the general formula



which comprises contacting an N-(2-hydroxyethyl) amide having the general formula



with a solid inorganic borate at a temperature of 150 to 500° C. to effect cyclodehydration of said amide, R in each of the above formulas being a member selected from the class consisting of hydrogen, alkyl groups, alkenyl groups, aryl groups, alkaryl groups, and aralkyl groups.

3,312,715

COLOUR COUPLERS AND THEIR PRODUCTION AND USE IN COLOUR PHOTOGRAPHY

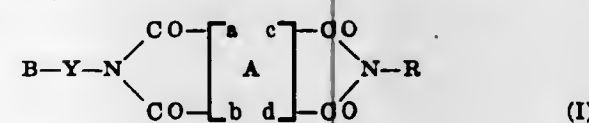
Brian Anderson, Marple, and Colin William Greenhalgh, Manchester, England, assignors to Ilford Limited, Essex, England, a British company

No Drawing. Filed June 15, 1964, Ser. No. 375,380

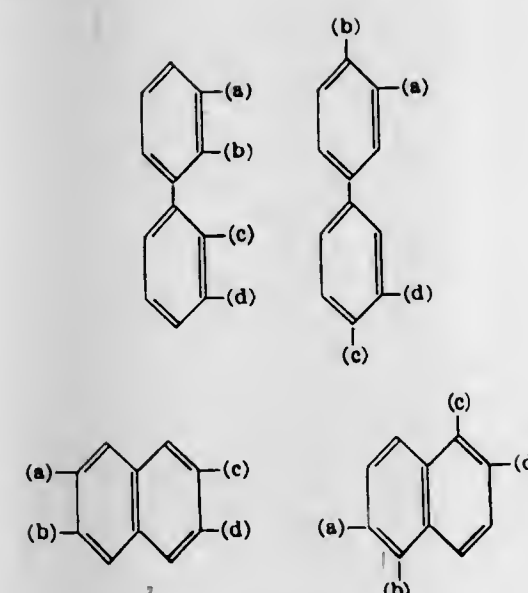
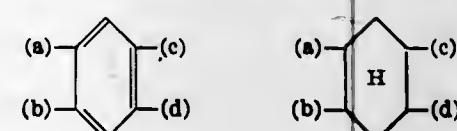
Claims priority, application Great Britain, June 17, 1963, 24,026/63

7 Claims. (Cl. 260-326)

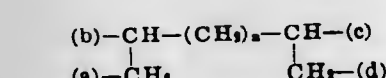
1. A colour coupler which is a compound selected from the group consisting of compounds of the formula:



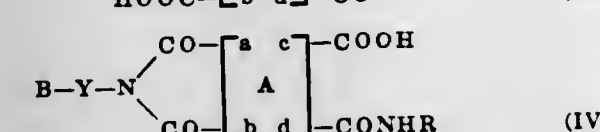
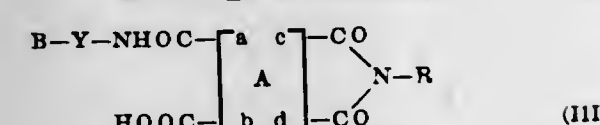
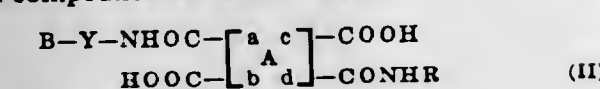
where A is tetraivalent radical having linkages (a), (b), (c) and (d) selected from the group consisting of:



and

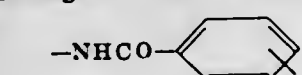


and related compounds of the formulae:

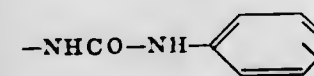


wherein n is selected from nought and one, R is selected from the group consisting of cyclohexyl, benzyl, phenyl, alkyl and alkyl phenyl, wherein the alkyl group contains about 12 to 18 carbon atoms,

Y is selected from the group consisting of the direct linkage, and the linkages -NHCOCH2-,

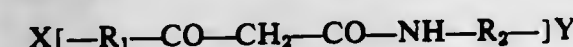


or

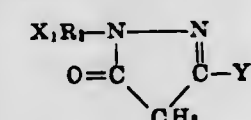


and

B is the residue of a color coupler compound BNH2 selected from the group consisting of compounds of the formula (a):



wherein R1 and R2 are independently selected from the group consisting of phenyl, methoxyphenyl, diethoxyphenyl and dicarbomethoxyphenyl, one of X and Y is -NH2 and the other H, compounds of the formula (b):



wherein R3 is selected from the group consisting of phenyl, 2,4,6-trichlorophenyl and carboethoxyphenyl, X1 is hydrogen and Y1 is selected from the group consisting of -NH2, aminophenylacetamino, aminobenzoylamino, 2-methoxy-5-aminoanilino and 2-chloro-4-aminoanilino, and

(c) compounds selected from the group consisting of

N-(β-aminoethyl)-1-hydroxy-2-naphthamide, 2-amino-4-chloro-5-methylphenol, 4-cyanoacetylaniline, 5-methyl-4-chloro-2-(3-aminobenzoylamino)phenol, 4-chloro-1-hydroxy-2-N-(3-aminobenzyl)naphthamide, N-(3-aminobenzyl)-1-hydroxy-2-naphthamide, 2-(o-amino-β-phenylethyl)-1-hydroxy-4-chloronaphthamide, 2-(p-amino-β-phenylethyl)-1-hydroxynaphthamide, 1-(1-hydroxy-2-naphthamido)-6-aminoheptane, 2-(o-amino-β-phenylethyl)-1-hydroxynaphthamide, 2-methyl-6-aminophenol, 3-methyl-6-aminophenol and 2-(2-aminobenzyl)-1-hydroxynaphthamide.

3,312,716

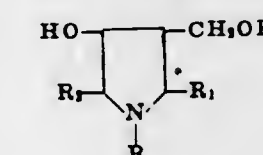
4-HYDROXY-3-PYRROLIDINEMETHANOLS

John H. Biel and Ernst Jaeger, Milwaukee, Wis., assignors to Aldrich Chemical Co., Inc., Milwaukee, Wis., a corporation of Wisconsin

No Drawing. Filed Aug. 11, 1964, Ser. No. 388,958

7 Claims. (Cl. 260-326.5)

1. A compound selected from the group consisting of (a) a compound of the formula:



where R is selected from the group consisting of hydrogen, lower alkyl, phenyl lower alkyl, lower alkenyl, lower alkynyl and benzoyl lower alkyl, and R1 and R2 are each selected from the group consisting of hydrogen, lower alkyl and lower alkenyl; (b) pharmaceutically acceptable acid addition salts thereof; and (c) quaternary salts thereof consisting of quaternary salts selected from the group consisting of lower alkyl halides and sulfates, and phenyl-lower alkyl halides and sulfates.

3,312,717

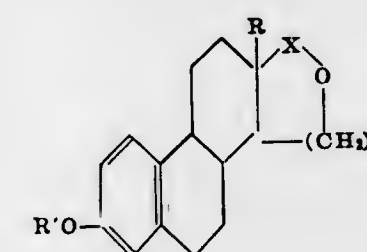
3-OXYGENATED-13β-ALKYL-16-OXAGONA-1,3,5(10)-TRIEN-17-ONES, D-HOMO COMPOUNDS CORRESPONDING, DERIVATIVES THEREOF, AND INTERMEDIATES THEREOF

John S. Baran, Morton Grove, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

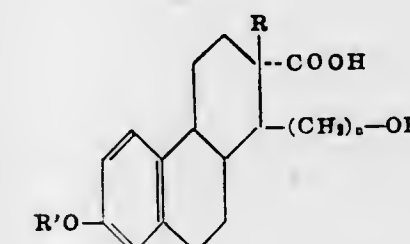
No Drawing. Filed Dec. 10, 1964, Ser. No. 417,509

21 Claims. (Cl. 260-343.2)

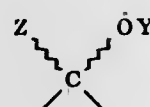
1. A member selected from the group of compounds represented by the formulas



and



wherein R' is a member of the class consisting of hydrogen, lower alkyl, and lower alkanoyl radicals, R is a lower alkyl radical, n is a positive integer less than 3, and X is selected from the group consisting of carbonyl and radicals of the formula



wherein Y is selected from the group consisting of hydrogen, lower alkyl, and lower alkanoyl radicals and Z is a member of the class consisting of hydrogen and a lower aliphatic hydrocarbon radical.

3,312,718

PREPARATION OF BUTYROLACTONE

Marvin Z. Woskow, Houston, Tex., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

No Drawing. Filed Jan. 22, 1964, Ser. No. 339,350

6 Claims. (Cl. 260—343.6)

1. A process for preparing butyrolactone which comprises hydrogenating succinic anhydride in the presence of a metal hydrogenation catalyst and silicotungstic acid at a temperature from about 200° C. to about 300° C. and a pressure of above 500 p.s.i.g.

3,312,719

PROCESS FOR OXIDIZING HYDROCARBONS

Dieter Hüllstrung and Hans Haberland, Leverkusen, Heinrich Kunze, Cologne-Stammheim, and Hermann Heinz, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

Filed Jan. 14, 1964, Ser. No. 337,556

Claims priority, application Germany, Jan. 18, 1963, F 38,793

8 Claims. (Cl. 260—348.5)

1. In the process for oxidizing an aliphatic hydrocarbon having up to 5 carbon atoms selected from the group consisting of mono-unsaturated, saturated, and mixtures of mono-unsaturated and saturated compounds with a gas-containing molecular oxygen, utilizing in said oxidizing an excess of said lower aliphatic hydrocarbon and recycling the unreacted lower aliphatic hydrocarbon after separation of the principal oxidation products therefrom, the steps of extracting at least a portion of said lower aliphatic hydrocarbon from the main gas stream with a higher boiling hydrocarbon which is at least one member selected from the group consisting of liquid aliphatic, aromatic, alkyl aromatic, and naphthenic hydrocarbons, the vapor pressure of which at room temperature does not exceed 15 torr as washing liquid, at a temperature not exceeding 50° C. and at a pressure of up to 50 atmospheres, thereafter blowing out the lower hydrocarbon dissolved in said washing liquid with a gas-containing molecular oxygen at a pressure lower than the pressure employed in said extracting, utilizing said gas-containing molecular oxygen for said blowing in an amount whereby explosive mixtures are not formed, and re-cycling the gas mixture thus obtained back to the oxidizing step following adjustment thereof to attain the composition of the initial gas mixture.

3,312,720

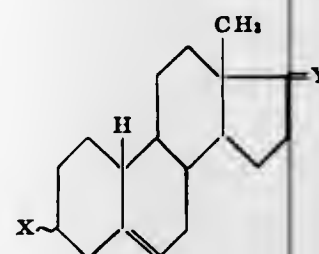
3-DESOXY-19-NOR-ANDROSTENES

Filippus Johannes Zeelen, Oss, Netherlands, assignor to Organon Inc., West Orange, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 19, 1962, Ser. No. 180,837
Claims priority, application Netherlands, Mar. 29, 1961, 262,988

14 Claims. (Cl. 260—397.5)

5. New steroid compounds of the general formula:



in which

X is selected from the group consisting of hydrogen, halogen, aliphatic sulfonyloxy, aromatic sulfonyloxy, and araliphatic sulfonyloxy, and
Y is selected from the group consisting of a keto group and $R_1(\alpha R_2)$, in which R_1 is selected from the group consisting of OH and OAcyl, and R_2 is selected from the group consisting of hydrogen, a saturated and an unsaturated hydrocarbon with 1-4 carbon atoms.

3,312,721

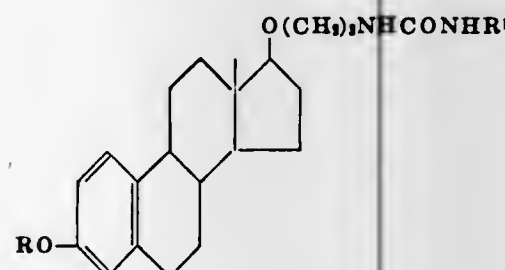
D-17 β -(3-AMINOPROPOXY)-3-ALKOXYESTRA-1,3,5(10)-TRIENES AND UREA DERIVATIVES THEREOF

Gerhard R. Wendt, Havertown, and Kurt W. Ledig, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 9, 1965, Ser. No. 486,227

4 Claims. (Cl. 260—397.5)

4. A compound of the formula



wherein R represents an alkyl group of 1 to 5 carbon atoms and R^1 is selected from the group consisting of lower alkyl, cycloalkyl, phenyl, aralkyl, lower alkoxy phenyl and halophenyl.

3,312,722

HIGHER FATTY ACID ESTERS OF ETHER AND THIOETHER GLYCEROLS

Vincent Lamberti, Teaneck, N.J., assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Mar. 13, 1963, Ser. No. 264,772

4 Claims. (Cl. 260—399)

1. A compound of the formula



wherein R is an aliphatic hydrocarbon radical containing about 4-18 carbon atoms, R_1 is a radical containing about 7-17 carbon atoms derived from long-chain fatty acids and X is selected from the group consisting of oxygen and sulfur atoms.

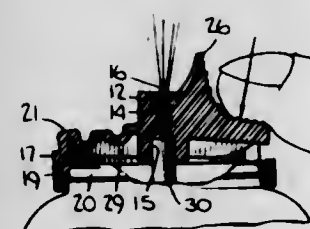
3,312,723

ACTUATOR CAP

John Jay Anderson, Kenosha, and William C. Harris, Racine, Wis., assignors to S. C. Johnson & Son, Inc., Racine, Wis.

Filed Aug. 7, 1964, Ser. No. 388,228

11 Claims. (Cl. 222—402.13)



10. A diaphragm-type actuator for an aerosol valve comprising an inverted cup-like body member having an annular side wall and a top wall, said top wall comprising a flexible diaphragm, said diaphragm having a central portion through which a discharge passageway extends, the lower end of said passageway being shaped to fit over the discharge orifice means of said aerosol valve and the upper end comprising the discharge orifice of said actuator, an offset fingerpiece integral at one end to said central portion, and a rib extending in the same direction as said fingerpiece from one side to the other of said diaphragm and terminating short of said side wall at both ends of said rib, said rib being integral with said diaphragm and said fingerpiece whereby force applied upon said fingerpiece will be evenly distributed over said diaphragm to lessen the force required to actuate said valve.

3,312,724

PREPARATION OF SYMMETRICAL 1,3-DIGLYCERIDES

James Harwood, Western Springs, Ill., assignor to The Glidden Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Mar. 4, 1964, Ser. No. 349,497

5 Claims. (Cl. 260—410.7)

1. The process for producing 1,3-diester of glycerol and saturated fatty acids obtained from natural fats which comprises:

forming a single liquid phase reaction mixture comprising glycerol-providing material and corresponding saturated fatty acid-providing material dissolved in a solvent selected from the group consisting of tetrahydrofuran, tetrahydropyran, dioxane, and 1,2-dimethoxy ethane and a low temperature interesterification catalyst; the ratio of equivalent glycerol to equivalent saturated fatty acid present being from about 1:1.75 and about 1:2.25, and being provided from glycerol and fatty acid-providing material selected from the group consisting of saturated fatty acid, saturated triglyceride fat, asymmetric saturated diglyceride, superglycerinated saturated fat and mixtures of same;

cooling said reaction mixture to a temperature below the melting point of the 1,3-diglyceride but not lower than about 50° C. until a precipitate comprising 1,3-diglyceride is formed and recovering said precipitated 1,3-diglyceride from said reaction mixture.

3,312,725

TOXIC ORGANOTIN BORATES

Gustav Weissenberger, Zurich, Switzerland, assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed May 20, 1963, Ser. No. 281,820

Claims priority, application Switzerland, May 25, 1962, 6,419/62

9 Claims. (Cl. 260—429.7)

1. A compound of the formula $(R^1R^2R^3SnO)_aB$ wherein R^1 , R^2 and R^3 are selected from the class consisting of aliphatic, araliphatic, cycloaliphatic and aromatic radicals attached through a carbon atom to the tin.

7. A process for the preparation of a compound of the formula $(R^1R^2R^3SnO)_aB(OH)_3$, wherein R^1 , R^2 and R^3 are selected from the class consisting of aliphatic, araliphatic, cycloaliphatic and aromatic radicals attached through a carbon atom to the tin, and a is an integer of from 1 to 3, comprising reacting at a temperature at which water is formed a compound selected from the class consisting of $(R^1R^2R^3Sn)_2O$ and $R^1R^2R^3SnOH$ with boric acid and continuously separating water formed from the reaction mixture.

3,312,726

STABILIZED TETRAALKYLLEAD COMPOUNDS

Shirl E. Cook, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

Filed Mar. 3, 1965, Ser. No. 436,938

The portion of the term of the patent subsequent to Mar. 12, 1980, has been disclaimed

23 Claims. (Cl. 260—437)

1. A concentrated antiknock fluid composition consisting essentially of an alkyllead antiknock agent; from about 1 to about 25 weight percent, based on the weight of the alkyllead antiknock agent, of a fused ring aromatic hydrocarbon; and from about 1.3 to about 2.5 moles of ethylene dichloride per mole of said alkyllead antiknock agent.

3,312,727

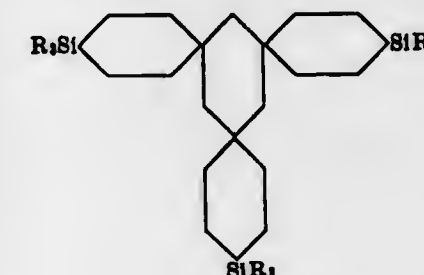
ORGANOSILICON COMPOUNDS

Robert L. Merker, Pittsburgh, Pa., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Feb. 3, 1965, Ser. No. 430,168

6 Claims. (Cl. 260—448.2)

1. A composition of the formula



in which each R is selected from the group consisting of hydrocarbon, fluorohydrocarbon, hydrogen, hydroxyl, and hydrolyzable groups.

3,312,739

N-(SUBSTITUTED AMINO ALKYL)-2-ALKOXY-SULFAMOYL BENZAMIDES

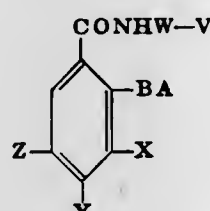
Michael Leon Thominet, Paris, France, assignor to Societe d'Etudes Scientifiques et Industrielles de l'Ile-de-France, Longjumeau, Seine-et-Oise, France, a corporation of France

No Drawing. Filed Sept. 14, 1965, Ser. No. 487,327

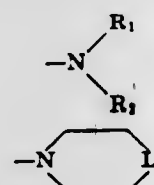
Claims priority, application France, July 25, 1961, 869,010, 869,011

4 Claims. (Cl. 260-556)

1. A compound selected from the group consisting of free bases and non-toxic salts thereof, said free bases having the formula:



in which V is a member selected from the class consisting of radicals having the formulas:



in which R₁ and R₂ are lower alkyl; L is a member selected from the class consisting of nitrogen, oxygen, methylene and the radicals having the formula: NR in which R is selected from the class consisting of hydrogen, lower alkyl and lower alkyl sulfamoyl; W is lower alkyl-ene of 1 to 4 carbon atoms; A is lower alkyl; B is selected from the class consisting of sulfur and oxygen; and X, Y and Z are selected from the class consisting of hydrogen, sulfamoyl, lower alkyl sulfamoyl and di lower alkyl sulfamoyl; only one of said groups X, Y and Z being selected from the class consisting of sulfamoyl, lower alkylsulfamoyl and di lower alkylsulfamoyl and the remaining two being hydrogen.

2. N - (2-diethylaminoethyl)-2-methoxy-5-dimethylsulfamoylbenzamide.

3,312,740

PROCESS FOR PREPARING OXAMIDE

John J. Godfrey, Silver Spring, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Dec. 16, 1963, Ser. No. 330,632

3 Claims. (Cl. 260-561)

1. In a process for preparing oxamide by the pyrolysis of diammonium oxalate in the presence of an acidic phosphate catalyst, the improvement which comprises refluxing slurry of particulate diammonium oxalate and from about 5 to about 10% by weight of a compound selected from the group consisting of mono ammonium phosphate and and diammonium phosphate in an inert reaction media having a boiling point of from about 180 to about 200° C., separating water from said slurry substantially as it is formed, continuing said heating until water ceases to evolve from said reaction mixture and filtering said reaction mixture to obtain oxamide therefrom.

3,312,741

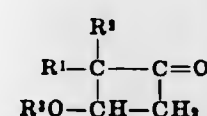
2,2-DIALKYL-3-ALKOXY CYCLOBUTANONE DERIVATIVES

James C. Martin, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 29, 1963, Ser. No. 276,177

7 Claims. (Cl. 260-586)

1. A compound of the formula:



wherein each of R¹ and R² is a saturated hydrocarbyl radical of 1 to 8 carbon atoms, R³ is a hydrocarbyl radical free of acetylenic unsaturation having from 4 to 20 carbon atoms, and R¹, R² and R³ together contain 8 to 20 carbon atoms.

3,312,742

PROCESS FOR PRODUCING MONO-OXONATION PRODUCTS OF CYCLIC DIMERS AND TRIMERS OF BUTADIENE(1,3)

Wolfgang Schneider and Willi Ziegenbein, Marl, Germany, assignors to Chemische Werke Huls Aktien-gesellschaft, Marl, Germany

No Drawing. Filed Sept. 4, 1964, Ser. No. 394,600

Claims priority, application Germany, Oct. 17, 1963, C 31,165

7 Claims. (Cl. 260-598)

1. Process for the production of mono-oxonation products of cyclic dimers and trimers of butadiene-(1,3) which comprises: subjecting at least one of said dimers and trimers to treatment with a mixture of carbon monoxide and hydrogen in a ratio of between 1:0.75 and 1:3 at elevated temperatures and pressures in the presence of a mixed catalyst comprising

(a) a catalyst selected from the group consisting of cobalt carbonyls, cobalt salts of fatty acids with an acid binding agent, palladium halides, and finely divided palladium, and

(b) a carbon monoxide-resistant hydrogenation catalyst selected from the group consisting of copper/chromium oxide catalysts, platinum, and silver/zinc/chromium oxide catalysts,

wherein the ratio of (a) and (b) is between 10:0.5 and 1:1.

3,312,743

PREPARATION OF POLYTHIOETHERS

Hans-Georg Schmelzer, Cologne-Buchforst, and Hans Holtschmidt, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Oct. 28, 1963, Ser. No. 319,520

Claims priority, application Germany, Oct. 30, 1962, F 38,186

5 Claims. (Cl. 260-609)

1. A method for the preparation of polythioethers which comprises condensing thiodiglycol at temperatures above about 150° C. in the presence of an etherifying catalyst selected from the group consisting of phosphorous acid, phosphorous acid halides, phosphorous acid esters and ester amides having from 1 to 20 carbon atoms in each ester grouping, acid ammonium phosphites, phosphorous acid amides, phosphonous acids, phosphonous acid halides, phosphonous acid esters and ester amides having from 1 to 20 carbon atoms in each ester grouping and phosphonous acid amides in a catalytic amount.

3,312,744

PRODUCTION OF HYDROXY FUNCTIONAL POLYMERS

James A. Farr, Jr., Charles R. McIntosh, and William D. Stephens, Huntsville, Ala., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Aug. 27, 1962, Ser. No. 219,781

5 Claims. (Cl. 260-635)

4. A process for the conversion of a high-molecular weight olefinic polymer having a plurality of olefinic linkages in its primary chain to hydroxy polyfunctional polymer having a molecular weight in the range from 200 to 400, comprising the steps of

(a) converting between 15 and 50 percent of the olefinic bonds of said high molecular weight polymer to ozonide linkages by passing ozone in the form of minute dispersed bubbles at a concentration of 1 to 3 percent in a non-reactive gas through a room temperature chloroform solution of said polymer, the chloroform acting as non-reactive solvent, the introduction of the ozone into the solution being at the rate of one mole of ozone for each two to six unsaturated repeating units of the polymer, removing the chloroform from the solution by vacuum evaporation, cautiously stirring the remaining solution with ethyl ether and then filtering the solution to remove insoluble matter, the ozone treatment being for a period of 45 to 75 minutes,

(b) reductively cleaving said ozonide linkages of the polyozonide thus produced by the addition of an ether solution of a light metal hydride to the ethyl ether solution of said polyozonide dropwise during a period of 1½ hours until an excess thereof is present, the polyozonide during this period being maintained at a temperature between -10 and -5° C. during the addition followed by heating under reflux conditions between 4 and 8 hours, decomposing any of the excess hydride by the cautious dropwise addition of water, and

(c) recovering hydroxy functional polymer as a product of said process.

5. The product of the process of claim 4.

3,312,745

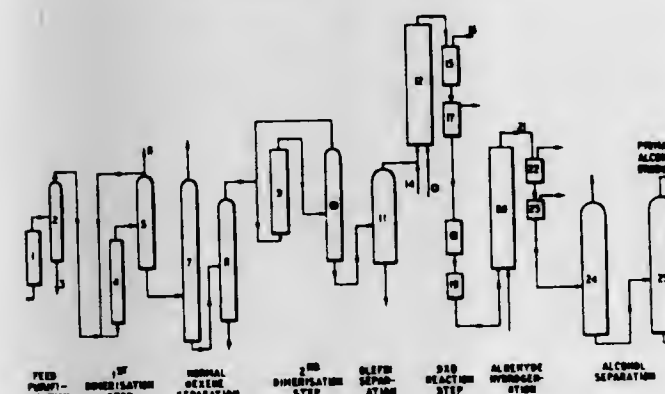
PROCESS FOR THE PRODUCTION OF PRIMARY ALCOHOLS

John Habeshaw, Dollar, and Wilfred John Oldham, Falkirk, Scotland, assignors to British Hydrocarbon Chemical Limited, London, England, a British company

Filed Sept. 30, 1963, Ser. No. 312,610

Claims priority, application Great Britain, Oct. 16, 1962, 39,131/62

18 Claims. (Cl. 260-638)



1. The process for the production of primary aliphatic alcohols which comprises dimerising in a first dimerisation step propylene in the presence of a transition metal oxide catalyst at a temperature of from 20° C. to 150° C. to form a product containing a substantial proportion of normal hexenes, separating from the product a fraction consisting substantially of normal hexenes, dimerising

in a second dimerisation step the normal hexene fraction in the presence of a catalyst which is a transition metal oxide, a synthetic petroleum cracking catalyst, or a Ziegler-type catalyst, reacting a fraction of the second dimerisation product containing the dimers of normal hexenes within the C₁₀ to C₁₆ carbon number range, but extending over a range of not more than 5 carbon numbers, with carbon monoxide and hydrogen at a temperature of from 100° C. to 200° C. and a pressure of from 100 to 300 atmospheres in an oxo-synthesis reaction, hydrogenating the resulting aldehydes, and recovering the primary alcohol product.

18. A process for the production of primary aliphatic alcohols which comprises dimerising in a first dimerisation step propylene in the presence of a catalyst selected from the group consisting of oxides of nickel, cobalt and chromium and mixtures thereof supported on a support selected from the group consisting of silica, silica gel and silica/alumina at a temperature of from 20° C. to 150° C. and at a per pass conversion of from 30 percent to 80 percent to form a product containing a substantial portion of normal hexenes, separating from the product a fraction consisting substantially of normal hexenes, dimerising in a second dimerising step the normal hexene fraction in the presence of a catalyst selected from the group consisting of (I) oxides of nickel, cobalt, manganese and chromium and mixtures thereof, supported on a support selected from the group consisting of silica, silica gel and silica/alumina, (II) synthetic petroleum cracking catalysts and (III) Ziegler-type catalysts at a temperature of from 20° C. to 150° C., reacting a fraction of the second dimerisation product containing the dimers of normal hexenes within the C₁₀ to C₁₆ carbon number range, but extending over a range of not more than 5 carbon numbers, with carbon monoxide and hydrogen at a temperature of from 100° C. to 200° C. and a pressure of from 100 to 300 atmospheres in an oxo-synthesis reaction, hydrogenating the resulting aldehydes, and recovering the primary alcohol product.

3,312,746

PREPARATION OF FLUOROCHLOROBENZENES

Harold Crosbie Fielding, Northwich, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Jan. 4, 1965, Ser. No. 423,336

Claims priority, application Great Britain, Jan. 17, 1964, 2,214/64

4 Claims. (Cl. 260-650)

1. A process for making 1,4-dichlorotetrafluorobenzene comprising heating under anhydrous conditions pentafluorochlorobenzene with an alkali metal chloride chosen from sodium chloride and potassium chloride in a polar non-proton-donating liquid organic reaction medium that is inert towards the reactants and is selected from the group consisting of tetramethylene sulphone, dimethylformamide and N-methyl-2-pyrrolidone, separating from the reaction products the fraction containing the dichlorotetrafluorobenzenes and from said fraction separating 1,4-dichlorotetrafluorobenzene.

3,312,747

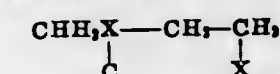
PRODUCTION OF 4-HALOBUTENE-1

Thomas C. Bissot, Grand Island, and Harry B. Copell, Niagara Falls, N.Y., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

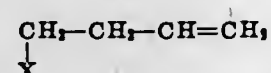
Filed Nov. 1, 1963, Ser. No. 320,626

12 Claims. (Cl. 260-654)

2. The continuous process comprising contacting a 1,3-dihalobutane of the formula



wherein X is a halogen selected from the group consisting of chlorine and bromine, with a dehydrohalogenation catalyst selected from the group consisting of palladium on alumina, rhodium or alumina, zinc oxide and activated alumina in a reaction zone at a temperature between the boiling point of the said 1,3-dihalobutane and 500° C., removing the resulting reaction products from the said reaction zone and thereafter separating from the resulting reaction products a 4-halobutene-1 of the formula



wherein X is a halogen selected from the group consisting of chlorine and bromine.

3,312,748

CATALYST FOR POLYMERIZATION, COPOLYMERIZATION AND ALKYLATION

Burnett H. Johnson, Baytown, Tex., assignor, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware
No Drawing. Filed Dec. 24, 1963, Ser. No. 333,205
10 Claims. (Cl. 260-671)

9. In a process for the alkylation of aromatics with olefins the improvement which consists of utilizing as the catalyst the reaction product formed by admixing a compound having the formula selected from the group consisting of CX₄ and RCX₃, where X is selected from the group consisting of Cl and Br and R is a C₁ to C₁₀ alkyl with a compound having the formula, AlR_{3-n}X_n, where R is selected from the group consisting of lower alkyl and aryl, X is selected from the group consisting of Cl and Br and n is selected from the numbers 0, 1 and 2.

3,312,749

REMOVAL OF AROMATIC COMPOUNDS FROM COKE OVEN GAS

Calvin J. Hess and William M. Perry, Bethlehem, Pa., assignors to Bethlehem Steel Company, a corporation of Pennsylvania
Filed July 24, 1963, Ser. No. 297,286
10 Claims. (Cl. 260-674)

1. A method of treating coke oven gas to recover a benzene product having a high freeze point which comprises scrubbing coke oven gas with an aqueous solution of a glycol of the type designated as polyoxyalkylene glycol terminal monoether having a gram molecular weight of from about 250 to 1000 at a temperature of from 20° F. to 120° F. and at a pressure of not more than 25 p.s.i.g. and thereby removing a liquid product of benzene, toluene and xylene from the gas with said solution, and separating benzene from the other constituents of the liquid.

3,312,750

HYDRODESULFURIZATION OF CRUDE ALPHA-PINENE

Lloyd Berg, Bozeman, Montana State College, Mont. 59715, and William Bruce Isaacson, North St. Paul, Minn. 55109
No Drawing. Filed Oct. 21, 1963, Ser. No. 317,806
2 Claims. (Cl. 260-675.5)

1. A method for reducing the amount of sulfur compounds in the alpha-pinene fraction of sulfate pulp mill liquor which comprises passing said fraction over a cobalt molybdate catalyst at temperatures in the range of 300° F. to 500° F., pressures from 0 to 500 pounds per square inch gage, liquid hourly space velocities in the range of 1.25 to 20 hour⁻¹, and hydrogen rates in the range of 1000 to 20,000 standard cubic feet per 42-gallon barrel of liquor feed.

3,312,751

PRODUCTION OF MERCAPTANS OR THEIR OLEFINIC DERIVATIVES

George T. Kerr, Lawrence Township, Mercer County, and Phillip S. Landis, Woodbury, N.J., assignors to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Nov. 19, 1963, Ser. No. 324,849
16 Claims. (Cl. 260-477)

1. A process for converting mercaptans to compounds having an olefinic linkage which comprises effecting dehydrosulfurization of a mercaptan in the presence of a catalyst comprising an aluminosilicate containing active cation sites within an ordered internal structure with a pore size of from at least 5 Å. to 15 Å. in diameter.

3,312,752

PRODUCTION OF LOW MOLECULAR WEIGHT LIQUID POLYMERS OF 1,3-DIOLEFINS

Bernhard Schleimer, Marl, Germany, assignor to Chemische Werke Huls A.G., Marl, Germany
No Drawing. Filed July 8, 1965, Ser. No. 470,587
Claims priority, application Germany, July 9, 1964, C 33,362
16 Claims. (Cl. 260-680)

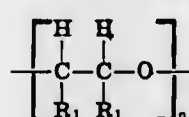
1. In a process of producing a liquid polydiene having a molecular weight of from 500 to 5,000 and a viscosity, measured at 50° C., of from 50 to 500 centipoises from the polymerization of a conjugated 1,3-diene monomer, by polymerizing one part by weight of the monomer in an inert diluent having dissolved therein a nickel compound and an aluminum halide compound, said compounds being present in catalytic quantities, the improvement which comprises regulating the polymerization reaction by incorporating in the diluent from 0.005 to 0.15 part by weight of a vinyl-cycloolefin.

3,312,753

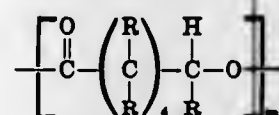
PREPARATION OF BLOCK COPOLYMERS OF A CAPROLACTONE AND OXIRANE COMPOUND

Frederick E. Bailey, Jr., Charleston, and Haywood G. France, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Jan. 13, 1964, Ser. No. 337,145
10 Claims. (Cl. 260-823)

1. A solid block copolymer characterized by a polymer block when contains a series of interconnected alkyleneoxy units of the formula:



wherein each R₁, individually, is of the group consisting of hydrogen, haloalkyl, and a monovalent hydrocarbon radical free from ethylenic and acetylenic unsaturation; wherein the oxy group of one alkyleneoxy unit is connected to an alkylene group of an adjacent alkyleneoxy unit in the series; and a polymer block which contains a series of interconnected carbonylalkyleneoxy units of the formula:



wherein each R, individually, is of the group consisting of hydrogen, alkyl, halo, and alkoxy, with the proviso that no more than 3 R substituents are groups other than hydrogen; wherein the carbonyl group of one carbonylalkyleneoxy unit is connected to an oxy group of an adjacent carbonylalkyleneoxy unit in the series; wherein n and m are numbers, the ratio of n/m being a value of

from about 0.05 to about 25; wherein the average molecular weight is at least about 20,000; and wherein the terminal oxy group at one end of the series of interconnected alkyleneoxy units is bonded to the terminal carbonyl group which is at one end of the series of interconnected carbonylalkyleneoxy units.

3,312,754

RESINOUS COMPOSITIONS COMPRISING (A) BUTADIENE-ACRYLONITRILE-CARBOXYLATED TERPOLYMER, (B) POLYEPOXIDE, (C) FLEXIBILIZING POLYMER, AND (D) DICYANDIAMIDE

Burton S. Marks, Palo Alto, Calif., and Roger S. Sedgwick, Orland Park, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
No Drawing. Filed Sept. 20, 1963, Ser. No. 310,443
14 Claims. (Cl. 260-837)

1. A method of preparing a thermosetting flexible resinous composition which comprises reacting (1) 14 to 45 parts by weight of a butadiene-acrylonitrile-carboxyl terpolymer wherein the added carboxyl groups are present in amounts ranging from 2 to 8 molar percent, (2) 55 to 86 parts by weight of a polyepoxy compound selected from the group consisting of diglycidyl ethers of polyhydric alcohols, and diglycidyl ethers of dihydric phenols, and (3) a flexibilizing copolymer in the presence of an effective amount of a dicyandiamide catalyst; said flexibilizing copolymer selected from the group consisting of copolymers of vinylchloride-vinylacetate-vinylalcohol, copolymers of butadiene-acrylic acid, copolymers of butadiene-methacrylic acid, carboxylated copolymers of butadiene-styrene and carboxylated copolymers of butadiene-acrylonitrile.

3,312,755

READILY DYEABLE COMPOSITIONS CONSISTING OF ISOTACTIC POLYPROPYLENE AND FROM 0.1 TO 20% OF A MEMBER SELECTED FROM THE GROUP CONSISTING OF POLYAMIDES, POLYURETHANES, POLYESTERS AND POLYALKYLENEIMINE REACTION PRODUCTS

Vittorio Cappuccello, Paolo Maltese, and Francesco Vacanti, Terni, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy
No Drawing. Original application Dec. 12, 1957, Ser. No. 702,430, now Patent No. 3,107,228, dated Oct. 15, 1963. Divided and this application May 21, 1963, Ser. No. 282,134
Claims priority, application Italy, Dec. 12, 1956, 18,227/56; Nov. 19, 1957, 16,501/57
16 Claims. (Cl. 260-859)

1. A readily dyeable composition adapted to be formed into shaped articles having increased receptivity for dyes, said composition consisting essentially of (1) polypropylene made up prevalently of isotactic macromolecules and (2) from 0.1% to 20% by weight based on the total weight of the composition of a water-insoluble, polymeric, dye-receptive modifier dispersible in the polypropylene when the latter is melted, said modifier having a molecular weight of at least 1,000, and 2nd order transition temperature below the melting point of the polypropylene, and being selected from the group consisting of polyamides which are polycondensates of cyclic amides, and polyamides which are polycondensates of aliphatic diamines with dicarboxylic acids, polyurethanes, polyureas, polyesters which are polycondensates of alkylene glycols with dicarboxylic acids, reaction products of polyalkyleneimines containing from 2 to 20 carbon atoms with a substance selected from the group consisting of chlorinated paraffin waxes, diisocyanates, lower aliphatic acid anhydrides, hydrohalogen acids and monobasic fatty acid chlorides.

3,312,756

BLENDS OF VINYL CHLORIDE POLYMER AND HYDROCARBON ELASTOMER CONTAINING GRAFT COPOLYMER AS COMPATIBILIZER

Massimo Baer, Longmeadow, and Ernest H. Hankey, Springfield, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed June 6, 1966, Ser. No. 555,271
9 Claims. (Cl. 260-876)

1. A composition of matter comprising an intimate fusion blend of 10-98 parts by weight of a rigid vinyl chloride polymer, said vinyl polymer comprising at least 80% by weight vinyl chloride and correspondingly, 90-2 parts by weight of a non-polar hydrocarbon elastomer selected from the group consisting of homopolymers of alpha-monoolefines, interpolymers of at least two alpha-monoolefines; interpolymers of at least 85% by weight of an alpha-monoolefine and up to 15% by weight of an interpolymerizable vinylidene monomer; homopolymers of acyclic conjugated 1,3-dienes; and interpolymers of at least 50% by weight of an acyclic conjugated 1,3-diene, up to 50% by weight of a hydrocarbon monomer selected from the group consisting of styrene, alpha-methyl styrene and ring-alkyl substituted styrenes, and up to 10% by weight of a vinylidene monomer having a polar substituent, said non-polar hydrocarbon elastomer normally being incompatible with said rigid vinyl chloride polymer; said composition also containing from about 1-10% by weight of graft-copolymer prepared by polymerizing 10-200 parts by weight of a monovinylidene aromatic hydrocarbon and a nitrile selected from the group consisting of acrylonitrile, methacrylonitrile and mixtures thereof in the presence of 100 parts by weight of a rubbery diene polymer having a second order transition temperature below about 0° C., said graft copolymer being sufficient to enhance the compatibility of the rigid vinyl chloride polymer and the non-polar hydrocarbon elastomer.

3,312,757

MAKING OF ACRYLIC ESTER CROSSLINKED ETHYLENE-PROPYLENE RUBBER COVERED PRESS ROLLS

David G. McRitchie, Mount Pleasant, S.C., assignor to Raybestos-Manhattan, Inc., Passaic, N.J., a corporation of New Jersey
No Drawing. Filed Apr. 14, 1966, Ser. No. 542,456
3 Claims. (Cl. 260-878)

1. For a paper making machine, a press roll having a rubber cover, said rubber cover being characterized by the physical properties of (a) a hardness in the semi-hard range, namely a Plastometer hardness in the range of 10 to 40, and (b) a rebound value, namely a Bashore resiliency in the range of 35 to 50%, said copolymer comprising a cured composition of ethylene-propylene rubber cross-linked with vulcanizers including an acrylic ester monomer, the acrylic ester monomer being in the range of proportion of from 10% to 40% by weight, based on the weight of the ethylene-propylene rubber in the composition.

3,312,758

BACTERIOSTATIC ACRYLONITRILE POLYMERS

Fred J. Lowe, Jr., Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Mar. 26, 1962, Ser. No. 182,620
11 Claims. (Cl. 260-895)

1. Composition of matter, the essential constituents of which are a fiber-forming acrylonitrile polymer which contains in the polymer molecule at least about 85 weight percent of acrylonitrile, the balance being another monoethylenically unsaturated monomeric material that is copolymerizable with acrylonitrile, having dispersed therein; (1) at least about 1 weight percent based on the weight

of said fiber-forming polymer of polyvinylpyrrolidone; and (2) at least about 0.5 weight percent based on the weight of said fiber-forming polymer of a bacteriostatic agent composed of predominant amounts of para-1-chloro-ethyl phenol with the remainder being ortho-1-chloro-ethyl phenol.

3,312,759

METHOD OF MAKING OPTICAL ELEMENTS FROM Ba or Mg FLUORIDE CONTAINING BORON NITRIDE

Eugene C. Letter, Walworth, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

No Drawing. Filed Sept. 23, 1963, Ser. No. 310,844
2 Claims. (Cl. 264-1)

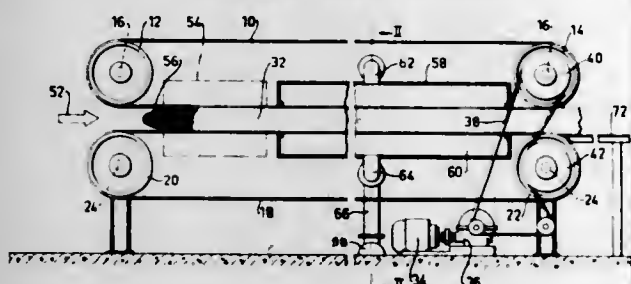
1. A method for making an infrared transmitting optical element comprising hot pressing a pulverulent mass of an alkaline earth fluoride selected from the group consisting of barium fluoride and magnesium fluoride together with boron nitride at a temperature of approximately 700 to 750° C. and a pressure of about 32,000 to 35,000 pounds per square inch.

3,312,760

METHOD FOR THE PRODUCTION OF SLABS OF FOAMED THERMOPLASTIC MATERIAL

Erling Berner, New Castle, Pa., assignor to WMB International AB, Stockholm C, Sweden, a corporation of Sweden

Continuation of application Ser. No. 168,335, Jan. 24, 1962. This application Oct. 22, 1965, Ser. No. 511,266
2 Claims. (Cl. 264-51)



1. A method for production of slabs of synthetic porous thermoplastic material from a continuously advancing body beginning with granules containing an expanding agent, the granules being fed into one end of an elongated channel open at both ends and on at least two sides bounded by endless belts and having a steam heating zone wherein the granules are introduced into the channel and caused to expand and during their expansion to agglutinate to be conveyed thereafter through a cooling zone, characterized in that the body when advancing through said cooling zone is subjected to a negative pressure exercised on two of its opposite sides extending in the direction of movement of the body, the entrance and exit sides of the body from the cooling zone being under substantially atmospheric pressure in order to cool the body while maintaining a pressure drop within the body toward said opposite sides thereby counteracting a shrinkage of the body.

3,312,761

METHOD OF MAKING BUILDING FACING MATERIAL

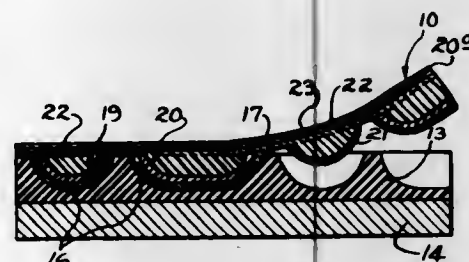
Alex Vida, 537 Kansas St., San Francisco, Calif. 94107
Original application Mar. 7, 1963, Ser. No. 263,548.
Divided and this application Oct. 23, 1965, Ser. No. 511,002

3 Claims. (Cl. 264-77)

1. A method of forming flexible mosaic-like sheets having a hard durable outer facing comprising the steps of:

providing a suitable mold with predetermined pattern composed of recessed areas separated by ridges;

coating said mold with a fluid resin mixture; spreading a layer of absorbent granular material over the fluid resin mixture; allowing said absorbent material to become embedded in and thereby form an absorbent surface mixture in said recessed areas; removing the absorbent resin mixture from the top of said ridges of the mold;



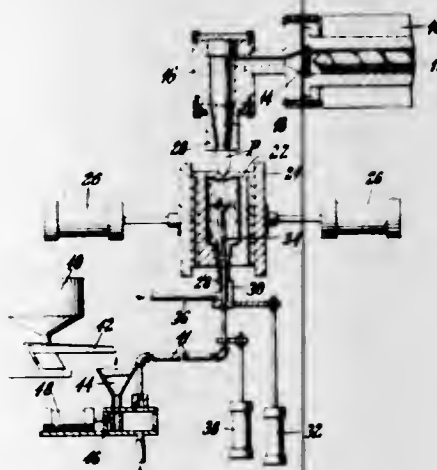
applying drops of different colored resin mixtures to at least some of said recessed areas containing the absorbent resin mixture, thereby causing the drops of colored resin to spread over these areas; applying to said entire mold including said recessed areas containing said colored resin mixtures a moldable resinous mixture which is flexible when cured; allowing all of the resinous mixtures to harden to form an integral sheet material; and removing the resultant mosaic-like sheet material from the mold.

3,312,762

INSIDE COATING DURING BLOW MOLDING

Robert L. Wechsler, Somerville, Alfred J. Guzzetti, Westfield, Norman M. Burns, Jr., Plainfield, and Theodore S. Loeser, Nixon, N.J., assignors to Union Carbide Corporation, a corporation of New York

Filed Nov. 12, 1963, Ser. No. 322,962
2 Claims. (Cl. 264-98)

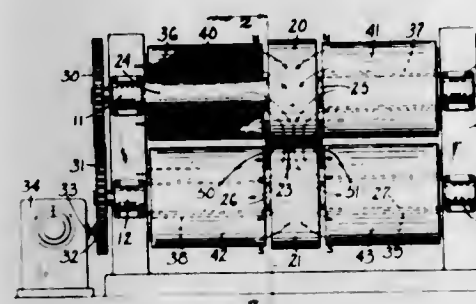


1. In line method of inside coating during molding which comprises extruding a parison, lowering said parison over a blowstick, closing and clamping molds over said parison and blowstick, opening a vent from said mold, blowing a barrier coating material from a meter injector through a spray gun inside said blowstick into said parison, traversing said spray gun up and down inside said parison, closing said vent, turning on blowing air through said blowstick, forming the cooled clamped parison into a container product within the mold, and lowering said spray gun and blowstick to free the coated container product therefrom.

3,312,763

ORIENTATION OF PARTICLES IN ELASTOMER MATERIALS

Donald Peccerilli, 37 Susquehanna Ave., West Haven, Conn., 06516, and George De Gross, West Haven, Conn.; said De Gross assignor to said Peccerilli
Filed Nov. 10, 1964, Ser. No. 410,201
9 Claims. (Cl. 264-108)



1. The method of producing continuous lengths of solid polymeric magnetic strip wherein the elemental magnets of the strip are substantially oriented in the same polar direction, comprising the step of cold rolling a moving solid polymeric strip having magnetizable particles dispersed therein while simultaneously applying an aligning and polarizing magnetic field providing unidirectional lines of force through the same portion of the strip being cold rolled.

3,312,764

COLD POWDER MOLDING OF POLYTETRAFLUOROETHYLENE

David C. Trimble, Yorklyn, Del., assignor to Haver Industries, Inc., Wilmington, Del., a corporation of Delaware

Filed Oct. 22, 1964, Ser. No. 405,792
6 Claims. (Cl. 264-127)



1. A process of preparing a polytetrafluoro-ethylene preform comprising applying pressure of at least 2000 p.s.i. to polytetrafluoroethylene particles while the particles have a temperature of not over 40° F.

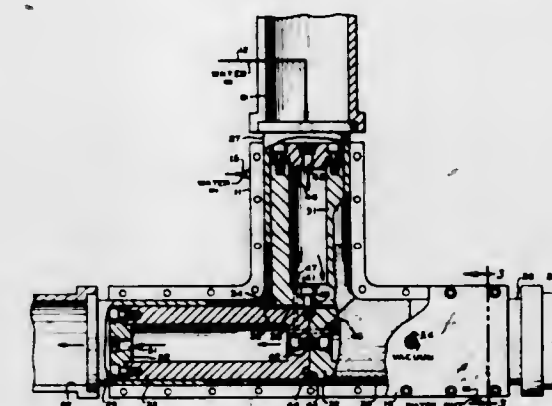
3,312,765

METHOD FOR MAKING MOLDED THERMOPLASTIC PIPE FITTINGS

John N. Scott, Jr., Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 26, 1963, Ser. No. 333,306
5 Claims. (Cl. 264-152)

2. The method of molding a pipe fitting from a thermoplastic pipe of particle form methylene polymer having a high load melt index of about 1.5 to 3.0 which comprises cutting a notch in the side of a first section of said thermoplastic pipe having an included angle of 90 degrees and a depth equal to the radius of the pipe; cutting the end of a second section of said pipe so as to fit into said notch; placing said sections together in a mold having the configuration of the fitting with the cut end of said second section fitted into the notch in said first section; subjecting said sections in said mold to molding temperature of at least about 280° F. and pressure of at least

about 2000 p.s.i. for a time sufficient to fuse the sections of said pipe together and to convert the angle generated at the intersections of the sections into an arc; and maintaining the molding pressure until shrinkage ceases.



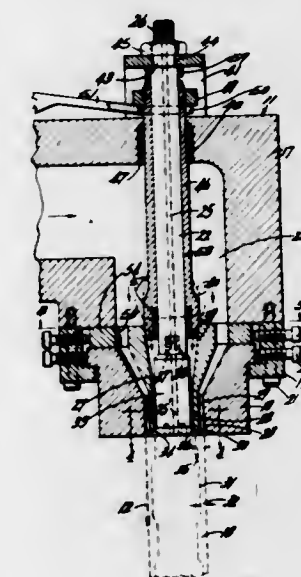
5. The method of claim 2 wherein the first section of pipe is out in two at the angle of the notch.

3,312,766

EXTRUSION OF PLASTIC TUBES OF VARYING DIAMETER

Alexander Michael Stevens, 439 Greenbay Road, Highland Park, Ill. 60035

Original application Mar. 25, 1963, Ser. No. 267,659, now Patent No. 3,221,371. Divided and this application May 5, 1964, Ser. No. 364,913
1 Claim. (Cl. 264-167)



The method of making by extrusion through a die parisons of a single plastic material throughout for the molding of hollow articles of various shapes by inflation of the parison in a mold cavity, each parison comprising a tubular body elongated to suit the length of the article and closed at opposite ends, the body being of a width dimension and wall thickness suitable for inflation to the width dimension of the article, said method consisting in continuously extruding plastic material through one orifice of the die to a single all-around uniform smaller wall thickness those portions of the length of the parison that are to be inflated to a relatively small radius, and, during extrusion of the parison body, intermittently adding by extrusion through another orifice of the die concentric with the first orifice additional plastic material to a uniform thickness all-around on one circumference of the

single wall thickness for a predetermined length of the wall, without any change in the other circumference, at those portions that are to be inflated to a greater radius, whereby an article molded from the parasin by inflation is of substantially uniform all-around wall thickness its full length regardless of different width dimensions of the article along its length.

3,312,767

METHOD OF PRODUCING A TRAVELER HAVING A WEAR RESISTANT INSERT

Louis H. Morin, Bronx, N.Y., assignor to Coats & Clark Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 22, 1962, Ser. No. 218,732
5 Claims. (Cl. 264-254)

1. The method of forming travelers of the character defined, which consists in pre-molding a thermosetting plastic wear resistant element on a metal wire reinforcement including ends protruding beyond ends of said element, then utilizing the protruding ends of said wire for positioning the insert element in the cavity of the mold for forming a hook end portion on the resulting traveler, and then molding the hook end of the traveler upon the

insert in a manner to embed the end portions of said wire reinforcement in said hook end portion of said traveler below the surface thereof and to expose part of the sur-



faces of the insert on the inner surface of the hook end of the traveler in providing on the hook end of the traveler exposed wear resistant surfaces.

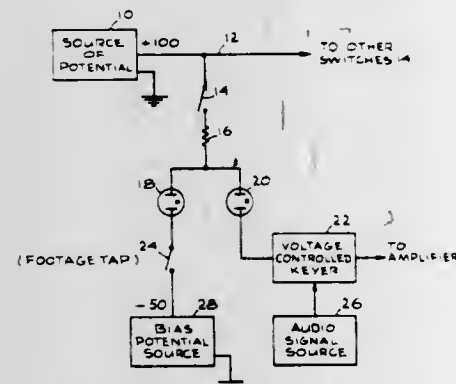
ELECTRICAL

3,312,768

NEON MATRIX CIRCUIT FOR AN ELECTRONIC ORGAN

William C. Spencer, Los Angeles, Calif., assignor, by mesne, assignments, to The Estey Musical Instrument Corporation, Hicksville, N.Y., a corporation of New York

Filed Apr. 22, 1963, Ser. No. 275,790
3 Claims. (Cl. 84-1.01)



1. In an electronic organ of the type wherein a switching matrix is employed which is operated in response to key switches and footage switches for selectively applying enabling voltages to a plurality of voltage controlled keyers whereby they can pass signals from a plurality of audio signals sources to be reproduced, the improvement in said switching matrix comprising a plurality of neon switching circuits, there being as many switching circuits in said plurality as the product of said key switches and footage switches, each said neon switching circuit comprising a resistor, a first and second neon lamp, each having an anode and a cathode, the anodes of said neon lamps being connected to one end of said resistor, means connecting the cathode of said first neon lamp to one of said plurality of voltage controlled keyers, means connecting the other end of said resistor to one of said key switches, means connecting the cathode of said second neon lamp to one of said footage switches, means for providing ignition potential to said first neon lamp when the key switch to which said other end of said resistor is operated whereby said voltage controlled keyer is enabled to pass audio signals, and means for providing ignition potential to said second neon lamp when said

key switch and the footage switch to which the cathode of said second neon lamp is connected is operated whereby said first neon lamp is prevented from being ignited.

3,312,769

R.F. SEAL FOR ELECTROMAGNETIC WAVE RADIATION SHIELDING ENCLOSURE

Edward Peter La Kaff, Corvallis, Ore., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed Oct. 29, 1965, Ser. No. 505,678
9 Claims. (Cl. 174-35)



1. Apparatus for sealing joints of adjacent panels of an electromagnetic wave radiation shielding enclosure comprising an elongated mounting member, a channel member secured to said mounting member, resilient core mounted in said channel member, a metallic mesh surrounding said resilient core, and means for biasing said channel member away from said mounting member so that said mesh-clad core is forced into conductive relation with the marginal edges of adjacent panels when said panels are brought into contact therewith.

3,312,770

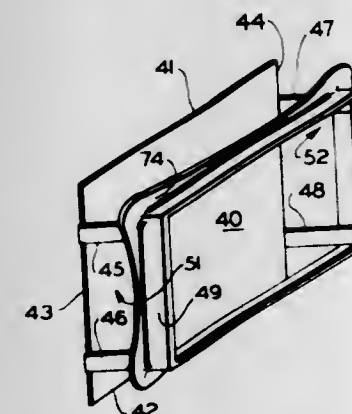
SERVICE BOX ASSEMBLY

William O. McKenna, Oakland, and Harry R. Ott, Richmond, Calif., assignors to Benner-Nawman, Inc., Oakland, Calif., a corporation of California

Filed Apr. 16, 1964, Ser. No. 360,334
1 Claim. (Cl. 174-48)

A receptacle for mounting terminal protector and connector blocks in a void defined between a pair of up-standing studs and two construction walls attached to the studs, said receptacle comprising a U-shaped member

formed to extend between a pair of studs to support terminal protector and connector blocks in said void to provide a substantially unobstructed access thereto from above and below, an enclosing framework secured to the ends of said U-shaped member and forming the walls of a casing to be carried in and extend through said opening to provide access through the wall to the protector blocks in said void, said casing being open at its inner and outer ends, the inner end of said casing terminating substantially in the plane of the inner surface of the last-named construction wall, the ends of said U-shaped member being carried by said casing to support the U-shaped member in the void a distance beyond the inner end of said casing and spaced from the construction wall opposite the opening, the outer end of said



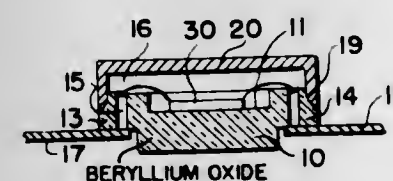
casing being dimensioned and adapted to extend beyond the outer surface of said last-named construction wall to form a coaming around the opening, and a door removably seated on the coaming and closing the outer end of the casing, said casing having portions outstanding therefrom and extending to overlie the studs for attachment thereto to mount the receptacle in said opening, the upper and lower edges of said U-shaped member extending respectively above and below horizontal planes through the uppermost and lowermost horizontal portions of said enclosing framework whereby a plurality of said receptacles can be disposed in vertical alignment with the lower edge of the upper of said U-shaped members overlapping the upper edge of the lower of said U-shaped members.

3,312,771

MICROELECTRONIC PACKAGE

Phillip S. Hessinger, West Caldwell, and Allen R. Sheets, Oak Ridge, N.J., assignors to National Beryllia Corp., Haskell, N.J., a corporation of New Jersey

Filed Aug. 7, 1964, Ser. No. 388,195
1 Claim. (Cl. 174-52)



A module-like package comprising in combination, a base formed of sintered beryllium oxide having a density of about 2.85 g./cc., said base having a recessed pocket on the upper surface thereof adapted to receive at least one microelectronic element having a plurality of electrically connecting leads, said base having edge portions containing a plurality of orifices therein,

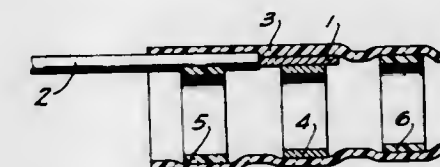
at least one microelectronic element having a plurality of electrically connecting leads within said recess, a plurality of conductor elements each extending from the outside of said base, through one of said orifices in the edge portion of the base and being exposed at the upper surface of said base in the regions adjacent the recessed pocket thereof, the portion of each of said conductor elements which extends from outside of said base through an orifice in said edge portions of the base being formed of sintered powdered metal filled and bonded to the walls of the orifice with braze metal, means establishing electrical connections between the electrically connecting leads of said microelement and said conductor elements, cover means adapted to isolate the pocket and the regions containing the exposed upper portions of said conductor elements from the atmosphere, means forming a vacuum tight seal between said cover means and said base.

3,312,772

CONNECTORS WITH HEAT RECOVERABLE MEMBERS

Hugh P. Sherlock, Menlo Park, Calif., assignor to Raychem Corporation, Redwood City, Calif., a corporation of California

Filed Aug. 23, 1963, Ser. No. 304,166
12 Claims. (Cl. 174-75)



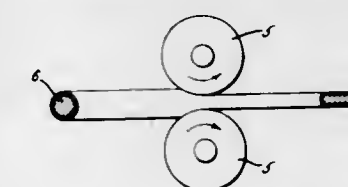
1. An article comprising a tubular heat recoverable member, a first fusible insert, a second fusible insert and a third fusible insert, all of said inserts being positioned within said member with said first fusible insert being positioned between said second and said third fusible inserts and said first fusible insert having a relatively lower viscosity than said second and third fusible inserts at the recovery temperature of said recoverable member.

3,312,773

INSULATED ELECTRIC CONDUCTOR AND METHOD OF MAKING THE SAME

Harry B. Lit, West Peabody, Mass., assignor to General Electric Company, a corporation of New York

Filed Aug. 23, 1965, Ser. No. 481,528
3 Claims. (Cl. 174-119)



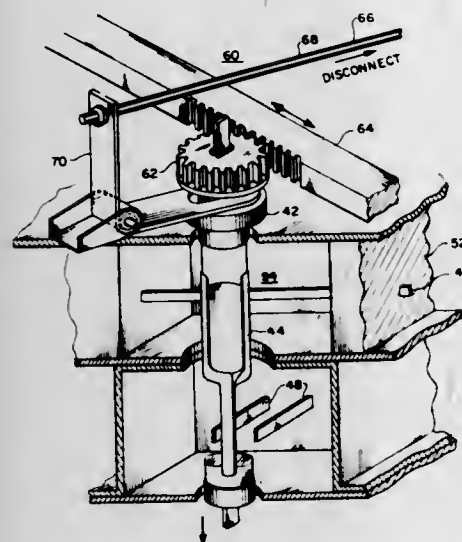
3. A work-hardened insulated electric conductor formed of a metal alloy comprising at least 94% by weight of copper and 2% to 6% by weight of cadmium and provided with a coating of flexible thermosetting resin cured in situ at a temperature above the annealing temperature of the alloy, said coated conductor being cold rolled to deform its cross sectional configuration in an amount sufficient to increase its hardness by less than one-half the maximum increase in hardness attainable by cold working.

3,312,792

MATRIX SWITCH WITH IMPROVED CONTACT ACTUATOR MEANS

Frank Machado, Jr., Robert E. Moore, and Eric R. Woods, San Diego, Calif., assignors to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware

Filed Jan. 28, 1966, Ser. No. 523,763
4 Claims. (Cl. 200-5)



1. Anti-crosstalk switching mechanism comprising: at least two ducts of conductive material mounted in crosswise relationship with one another, said two ducts being provided with an interconnecting opening at said crosswise location, a pair of conductors being supported in spaced relationship in each of said ducts, a switching contact device extending through said opening for rotatable movement, and said switching contact device comprising a pair of electrical contact means for electrically contacting and connecting each individual one of said conductors in one of said ducts to a corresponding one of each of said conductors in said other duct in one rotative position and to electrically disconnect said corresponding conductors in each of said ducts in a second rotative position.

3,312,793

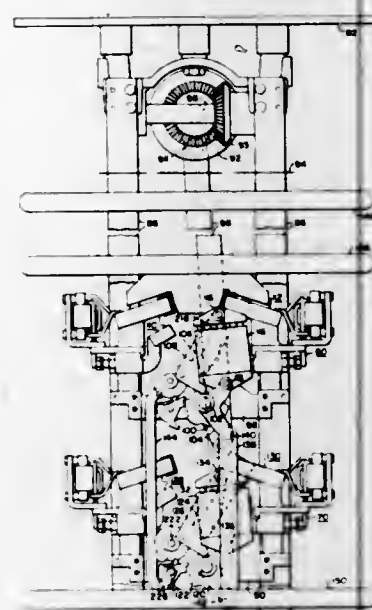
TAP CHANGER WITH SEQUENTIAL CONTACT ACTUATING MEANS

Dale White, Hickory Township, Sharpville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 24, 1965, Ser. No. 442,459
10 Claims. (Cl. 200-11)

1. A transfer switch assembly for a load tap changer comprising first and second switching means disposed in spaced superposed relation, each of said first and second switching means having two stationary positions each having electrical contacts, and a single movable contact carrier having contacts, said movable contact carrier being pivotally disposed between said two stationary positions, first and second energy storage means for pivoting said movable contact carriers of said first and second switching means, respectively; means for storing energy in said first and second energy storage means when it is desired to switch the movable contact carriers of said first and second switching means from one stationary contact position to the other, first and second latching means associated with each of said first and second switching means, respectively, for maintaining the position of said movable contact carriers of said first and second switching means until switching is desired, means tripping said first latching

means to allow said first switching means to switch when said first and second energy storage means have a predetermined amount stored therein, means responsive to



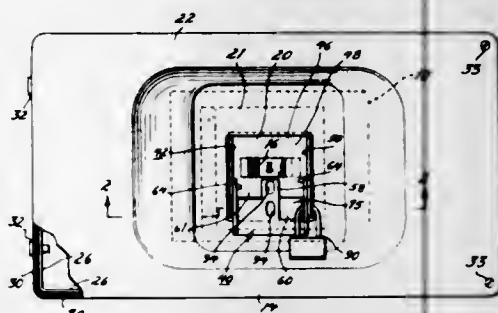
the switching of said first switching means tripping said second latching means and allowing said second switching means to switch a predetermined period of time after said first switching means has switched.

3,312,794

CIRCUIT BREAKER HANDLE WITH TRANSVERSELY SLIDABLE RESTRAINING MEANS

Joseph S. Hollyday, Pennington, N.J., assignor to Heilmann Electric Company, Trenton, N.J., a corporation of New Jersey

Filed Nov. 15, 1963, Ser. No. 324,128
16 Claims. (Cl. 200-42)



7. In combination, a circuit breaker including a case, a bracket mounted on the circuit breaker case, said circuit breaker including a handle movable to off and on positions, a slide movable transverse to the movement of said handle and having a tongue to restrain said handle from movement away from either the on or off positions, said slide being slidably connected to said bracket and movable along said bracket, a box enclosing said case, said box including a cover, and said cover having a latch trapped between said case and said slide.

3,312,795

GROUND PLANE CONTROL OF SWITCHING SURGE INSULATION CHARACTERISTICS

Arem Foti, Greensburg, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Mar. 30, 1965, Ser. No. 443,833
7 Claims. (Cl. 200-48)

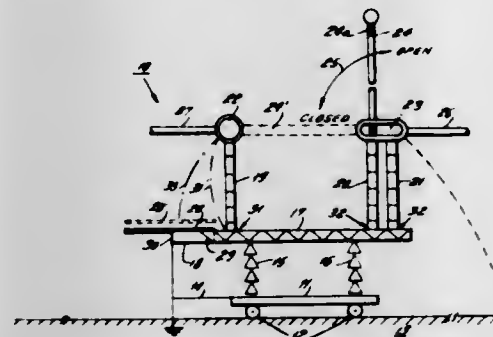
1. A disconnect switch comprising a base structure; first and second insulator support columns secured to said base structure in a spaced parallel manner; a disconnect switch jaw assembly secured atop said first column, a disconnect switch hinge assembly secured atop said second

3,312,797

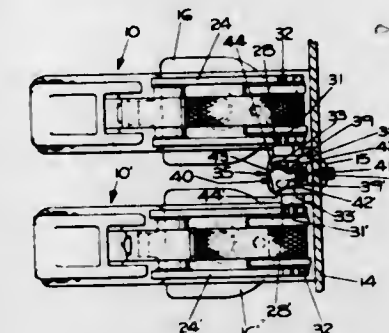
MECHANICAL INTERLOCK FOR ELECTRICAL SWITCHES

Carl M. Harrington and Harold T. Mackensen, Columbus, Ohio, assignors to Jeffrey Gallon Manufacturing Company, a corporation of Ohio

Filed Mar. 29, 1965, Ser. No. 443,584
7 Claims. (Cl. 200-50)

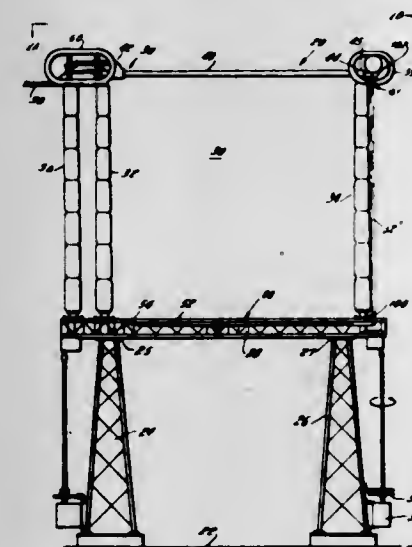


substantially planar conductive member of substantial cross-sectional area relative to portions of said disconnect switch which may become energized; means for electrically grounding said conductive member.

**3,312,796
SPLIT CORONA SHIELD FOR GROUND SWITCH ENTRY**

Joseph A. Turgeon, Toronto, Ontario, Canada, assignor to I-T-E Circuit Breaker (Canada) Limited, Port Credit, Ontario, Canada, a limited-liability company

Filed June 11, 1965, Ser. No. 463,223
6 Claims. (Cl. 200-48)



1. A disconnect switch comprising: first and second terminals, said first terminal being at a first potential; main blade means pivotally connected to said first terminal, said main blade means movable in a first plane of motion into and out of engagement with said second terminal; second blade means pivotally connected to a point at a second potential and movable in a predetermined path of movement from an open position to a closed position engaging said second terminal, said path of movement being transverse to said first plane of motion as said second blade means approaches its closed position; and shielding means positioned adjacent said second terminal, said shielding means being shaped to allow said second blade to engage said second terminal in a path of movement which is transverse to said plane of motion.

1. A first electrical contactor and a second electrical contactor arranged in adjacent disposition on a mounting structure, said first and second contactors each including a first contact and a second movable contact that are normally spaced from each other, said first contactor including a first movable armature for said movable contact that is movable from an open position to a closed position to bring the movable contact into abutment with said first contact to close a circuit, said second contactor including a second movable armature for said movable contact that is movable from an open position to a closed position to bring the movable contact into abutment with said first contact to close a circuit, an interlock for said first and second contactors, a first operator element connected to said first armature, a second operator element connected to said second armature, said interlock including a first recess to engage said first operator element and a second recess to engage said second operator element, each of said operator elements being disposed adjacent said interlock and upon movement of one armature to closed position the respective operator element being moved thereby to engage the interlock and to move the interlock towards the other operator element to engage the respective recess of the interlock with the other operator element to lock the other armature in open position, said interlock being swingable between said first operator element and said second operator element, and pivot means to swingably support said interlock.

3,312,798

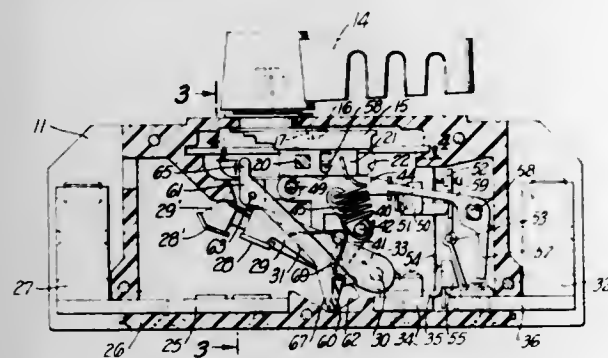
MULTIPLE UNIT SWITCH WITH IMPROVED INTERLOCKING CONTACT SUPPORT BAR

Ross E. Locher, West Covina, Calif., assignor to Zinsco Electrical Products, Los Angeles, Calif., a corporation of California

Filed Apr. 11, 1966, Ser. No. 541,581
7 Claims. (Cl. 200-50)

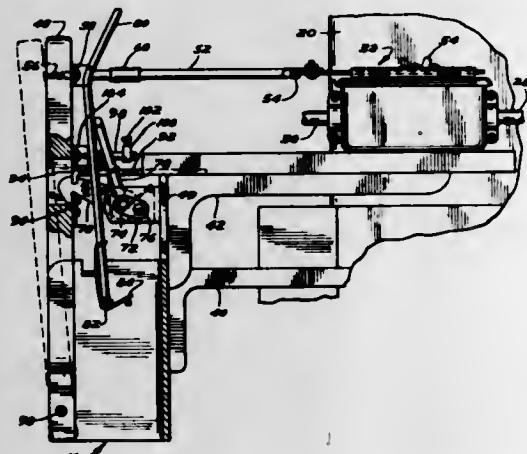
1. In a multiple unit electrical switch including: at least two switch units arranged in side-by-side relation, each switch unit having an on-off mechanism with a housing, a fixed contact mounted in the housing, a moving contact mounted on a contact carrier pivotally mounted in said housing, and an overcenter toggle mechanism for moving said contact carrier between a contact open position and a contact closed position; and a common actuating member for operating the overcenter mechanisms of said switch units in unison; the improvement comprising in combination: a support bar mounted in said side-by-side switch units for movement between a first contact carrier supporting position and a second nonsupporting position,

such that when in said first position, said support bar engages the contact carrier of each of the switch units intermediate the contact open and closed positions when the carrier is being moved from the open position toward the closed position by said actuating member and overcenter mechanism preventing further movement of the carrier; and



a release lever mounted in one of said switch units for actuation by said actuating member and engageable with said bar to move said bar to said second position after said contact carriers are moved into engagement with said bar by said actuating member, with movement of said bar to said second position permitting simultaneous movement of all of said contact carriers to the closed position.

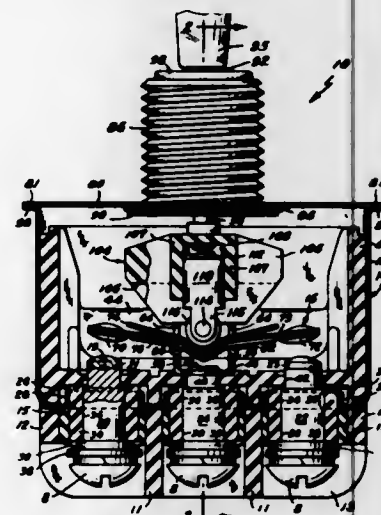
3,312,799
SWITCH ACTUATING MECHANISM FOR ELECTRICAL POWER TOOL DEVICES
John J. Reltter, 6521 Stevens Ave. S.,
Richfield, Minn. 55423
Filed May 14, 1965, Ser. No. 455,917
3 Claims. (Cl. 200—61.58)



1. In combination with a power driven tool having a work supporting surface mounted upon a support frame and a normal operator's station adjacent thereto, switch means controllably actuated by a reciprocatory to-and-fro motion for controlling the flow of energy to said power driven tool; control plate means operatively secured to said support frame and disposed adjacent said operator's station for controlling said switch means, said control plate comprising a generally upstanding substantially "U" shaped panel member pivotally secured to said support along a pivot axis adjacent the base of said panel member with each leg of said "U" shaped panel member being adapted for reciprocatory arcuate to-and-fro movement about said pivot axis toward and away from said support frame between an extended and a retracted

position and being disposed for abutting contact with the legs of an operator in said station and adjacent said tool, and means coupling the reciprocatory pivotal motion of said panel member to said switch means for permitting energy flow to said tool when said panel is in said extended position and for interrupting said flow of energy when said panel is in said retracted position, said latch means being secured to said support frame and being provided for retaining said panel in locked disposition in said retracted position, and including a pair of latch control means releasably retaining the latch means in a normal locked disposition, with one latch control means being disposed adjacent each leg of the "U" shaped panel member.

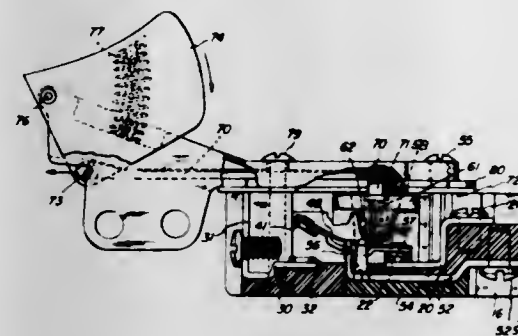
3,312,800
ELECTRICAL SWITCH EMPLOYING IMPROVED CONTACT BREAK MECHANISM
Walter A. Mascioli, Canton, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Dec. 30, 1965, Ser. No. 517,748
4 Claims. (Cl. 200—67)



1. An electric switch comprising: the combination of a base of electrically insulative material; three spaced terminal means mounted in said base; an electrically conductive U-shaped frame, the right portion of which is mounted in electrically conductive relation on one of said spaced terminal means; an elongated flexible electrically conductive contact arm having two opposite ends; two movable contacts, one mounted on each of said two opposite ends; a stiff actuator element overlaying said movable arm; said contact arm and actuator element supported in electrically conductive relation on the distal portions of said U-shaped frame, said contact arm and actuator element movable so that each movable contact mates with a respective one of the other two spaced terminal means; actuator means biasing said contact arm and actuator element against said U-shaped frame, said actuator means movable from an at-rest, open-contact position where the extended line of biasing force passes within the distal portions of said U-shaped frame to an at-rest, closed-contact position where the extended line of biasing force passes without the distal portions of said U-shaped frame, the improvement which comprises:

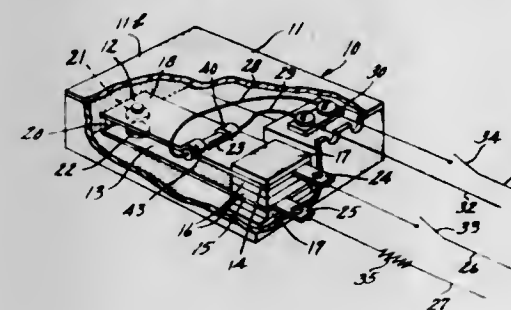
a contact break member underlaying said movable arm and said actuator element and movable therewith to force apart the contacts when said actuator element is moved toward an open-contact position.

3,312,801
TOOL HANDLE SWITCH
Harold E. Schleicher, West Hartford, Conn., assignor to the Arrow-Hart & Hegeman Electric Company, Hartford, Conn., a corporation of Connecticut
Filed Mar. 10, 1965, Ser. No. 438,583
5 Claims. (Cl. 200—68)



1. In an electric switch, fixed contacts, tiltable contact means engageable with one or another of said fixed contacts alternately, an operating member movable to cause tilting of said tiltable contact means, said tiltable means comprising a concave rigid member and a resilient member extending across the concavity of said rigid member and secured to the rigid member at its ends, a fulcrum-terminal member having a fulcrum portion supporting said contact means tiltable, said operating member engaging said resilient member and being movable from one side of said fulcrum to the other to operate said tiltable contact member and resilient means conductively attached to said terminal means and rubbing against said tiltable contact means in a direction transverse to the tilting so as to maintain a clean conductive connection between said terminal means and said tiltable contact means, said resilient means also having a portion forming a smooth rounded seat for said tiltable contact means, said seat being supported by the fulcrum portion of said fulcrum-terminal member.

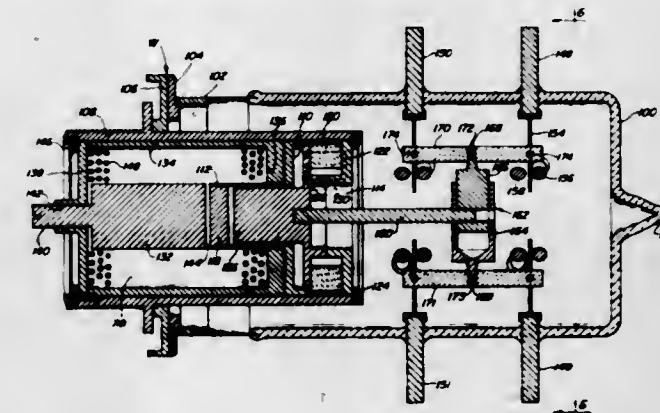
3,312,802
BIMETAL WITH HEATER MOUNTED THROUGH A CHANNEL FORMED BY ALTERNATELY SPACED PORTIONS SEPARATED BY SLITS
William D. Ryckman, Jr., Asheboro, N.C., assignor to General Electric Company, a corporation of New York
Filed Dec. 30, 1965, Ser. No. 517,580
7 Claims. (Cl. 200—122)



1. A thermally responsive switch element comprising: (a) a bimetallic strip carrying a first contact adapted to be engaged with a second contact in the switch, said strip including a plurality of integrally formed channel-defining portions separated from each other by slits and spaced alternately in opposite directions from the top and bottom surfaces of the strip; and (b) an electrical heater securely mounted on said strip in said channel, a first surface portion of said heater

confronting the top surface of said bimetallic strip in one of said channel-defining portions, and a second surface portion of said heater confronting the bottom surface of said bimetallic strip in an adjacent one of said channel-defining portions.

3,312,803
MAGNETICALLY BIASED VACUUM RELAY
John T. Perry, Melrose Park, and Chester J. Kawiecki, Chicago, Ill., assignors to Joslyn Mfg. and Supply Co., Chicago, Ill., a corporation of Illinois
Filed Aug. 19, 1964, Ser. No. 390,765
10 Claims. (Cl. 200—144)



1. In a vacuum relay an evacuated envelope including a tubular sidewall portion of dielectric material, actuator means within said envelope including an actuator member extending axially within said envelope, means at one end of said envelope for reciprocating said actuator member in a direction axially of said envelope between two axially spaced limit positions, a pair of generally diametrically opposed movable contacts, each including a rigid portion hermetically sealed to said sidewall portion of said envelope and extending outwardly and inwardly of said sidewall portion in directions generally normal to the axis of said envelope, each said movable contact including a flexible contact portion fixed at one end to said rigid portion within said envelope, and terminating at an opposite, free end spaced from a free end of the flexible contact portion of the other of said movable contacts, a pair of fixed contacts extending through and hermetically sealed in said sidewall portion at positions spaced circumferentially from one another and from the corresponding positions of both said movable contacts, each said fixed contact, when viewed from a plane normal to the axis of said envelope, extending across the free end portion of a different one of said flexible contact portions, and being positioned for engagement with an associated said free end portion within the limits of flexibility of said flexible contact portion, said actuator means including a pair of actuator arms offset laterally on opposite sides of said actuator member and being connected to said member for axial reciprocation therewith, each of said actuator arms being operatively connected to a different one of said flexible contact portions at a position intermediate the fixed and free ends of said flexible portions so that axial movement of said actuator member between said limit positions causes a corresponding and simultaneous axial movement of the free ends of both said flexible portions in the same direction for alternately engaging and disengaging said fixed contacts.

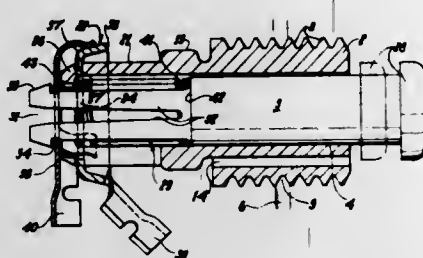
3,312,804

PLUNGER ACTUATED ELECTRICAL SWITCHES
Cyril Ernest Juggins, Sandringham, Victoria, Australia,
assignor to General Motors Corporation, Detroit,
Mich., a corporation of Delaware

Filed Feb. 1, 1965, Ser. No. 429,255

Claims priority, application Australia, Feb. 5, 1964,
40,521/64

2 Claims. (Cl. 200—159)



1. A plunger actuated electrical switch of the kind indicated characterized in that both the body member and its associated spring influenced plunger are composed of resilient electrical non-conductive material, the body member having an open ended axial hole therethrough to slidably accommodate the plunger and being provided with adjustable retaining means for securing the assembly to an apertured fixed support, said retaining means including a plurality of circumferentially spaced ribs on the exterior of said body member and which extend lengthwise thereof, the aperture in said fixed support being of complementary formation so that the ribbed body member may be inserted into said aperture and turned in relation thereto so as to move said ribs out of registry with circumferentially spaced gaps forming part of said aperture and means for opposing relative turning movement between said body member and the apertured fixed support after the former has been located in the desired operative position, said means for opposing relative turning movement including one of said ribs which is displaceable inwardly in relation to said body member in that it is partially separated from said body member by an open ended gap located between the displaceable rib and a wall defining the open ended passage through said body member, said gap extending lengthwise of the body member and being open at its outer side edge and closed at its opposite inner side edge where the adjacent portion of said displaceable rib is connected to the body portion by a web which serves as a flexible hinge, the free edge portion of the displaceable rib being provided with a laterally projecting bead which extends lengthwise thereof and is adapted to detachably engage a complementary shaped recess in the edge portion of said fixed supporting member defining the aperture therein.

3,312,805

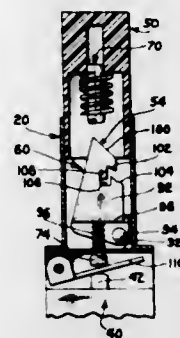
ALTERNATE ACTION MECHANISM
George J. Bury, Antioch, Ill., assignor to Illinois Tool
Works Inc., Chicago, Ill., a corporation of Delaware

Filed Mar. 31, 1965, Ser. No. 444,309

21 Claims. (Cl. 200—159)

1. A switch assembly comprising, in combination, a hollow casing having open ends, at least one switch fixedly mounted relative to said hollow casing adjacent one end thereof and having spring loaded depressor means for controlling the movement of switch contacts mounted within said switch, a push button mounted in the other end of said hollow casing, a switch actuator having spring means associated therewith for resiliently urging a portion of said push button outwardly of said hollow casing, said switch actuator extending beyond the other end of said hollow for operative engagement with said spring

loaded depressor means, and means for positioning and holding said switch actuator in operative engagement with the spring loaded depressor means of said switch including yieldable locking means mounted to said hollow casing and



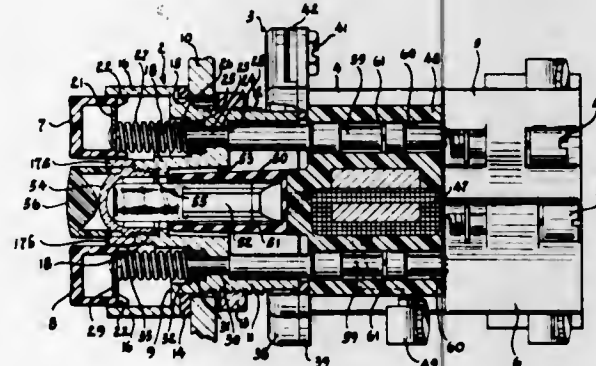
capable of being moved to a position of latching engagement with pin means associated with said push button when the latter is depressed for moving the switch actuator into operative engagement with said spring loaded depressor means.

3,312,806

ILLUMINATED MULTIPLE PUSHBUTTON OPERATING MECHANISM FOR ELECTRICAL SWITCH ASSEMBLYJoseph F. Waldorf, New Berlin, Marian M. Rzepecki,
Milwaukee, and Allan P. Charbonneau, Wauwatosa,
Wis., assignors to Cutler-Hammer, Inc., Milwaukee,
Wis., a corporation of Delaware

Filed Feb. 24, 1966, Ser. No. 529,781

6 Claims. (Cl. 200—167)



1. An illuminated unitary compact electrical switch assembly of the one-hole mounting variety comprising:
a retainer member having a front and a back, and adapted to be mounted in a hole in a mounting panel;
an illuminating unit comprising:
a housing portion fastened to the back of said retainer member;
a lamp;
a lamp base portion integrally formed with said housing portion and extending from the front thereof through an aperture in said retainer member to hold said lamp in position at the front of said retainer member; and
means in said housing for providing electrical current to said lamp;
first and second reciprocally actuatable electrical switch units mounted on the back of said illuminating unit;
first pushbutton means extending through and reciprocally mounted within said retainer and manually operable from the front of said retainer;
second pushbutton means extending through and reciprocally mounted within said retainer and manually operable from the front of said retainer;

first connecting means providing an operating connection between said first pushbutton means and said first electrical switch unit; and
second connecting means providing an operating connection between said second pushbutton means and said second electrical switch unit.

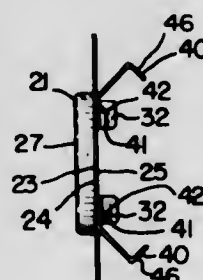
3,312,807

SWITCH MOUNTING MEANS HAVING PIVOTALLY MOUNTED SWITCH-RETAINING SPRING MEANS

Siegfried E. Manecke, Indiana, Pa., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Feb. 5, 1964, Ser. No. 342,610

19 Claims. (Cl. 200—168)



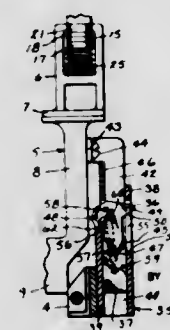
11. A switch mounting member having spring means pivotally mounted to said mounting member, said spring means being adapted to be pivoted and snap-fitted over a switch construction disposed against said mounting member to hold said switch construction to said mounting member, said mounting member having outwardly directed tangs to be respectively received in recesses provided in said switch construction to prevent sideways movement of said switch construction relative to said mounting member.

3,312,808

MECHANICALLY LATCHED CONTACTOR
William F. Dehn, Wauwatosa, Wis., assignor to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Mar. 17, 1965, Ser. No. 440,573

15 Claims. (Cl. 200—169)



1. In combination with an electrical switch device including a movable switching means, a mechanical latch assembly comprising a latch actuator means mechanically associated with said movable switching means for movement therewith, independent latch means comprising lock means at one end and a free end abutting said actuator means for movement therewith, catch means adjacent said mechanical latch assembly for accommodating said lock means in a locking position, resilient means acting to bias the lock means end of the latch means in a direction

toward the catch means when said free end is away from said catch means and to bias said lock means end of the latch means away from said catch means when said free end is toward said catch means.

**3,312,809
SPRING OPERATED SWITCH HAVING LATCHING MEANS**

James E. Hill, Prospect Heights, and Matthew C. Podgorski, Wood Dale, Ill., assignors to F & F Enterprises, Inc., Chicago, Ill., a corporation of Illinois

Filed Dec. 27, 1965, Ser. No. 516,301

14 Claims. (Cl. 200—169)



1. In a switch construction comprising a plurality of stationary contacts formed in an insulating base and including a holder for supporting sliding contacts, said holder being movable over said base for disposing said sliding contacts in at least first and second positions with respect to said stationary contacts, the improvement comprising locking means releasably retaining said holder in at least first and second positions with respect to said stationary contacts, said locking means including means including a latch member carrying latching fingers, finger receiving means associated with said construction for locking engagement with said fingers, and an over center spring means attached to said latch member, said spring means alternately urging said latch member to said first and second positions.

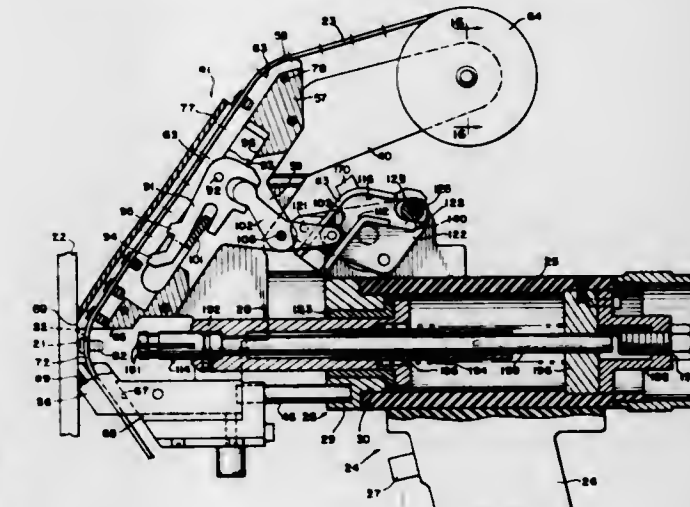
3,312,810

AUTOMATIC STUD FEEDER

Albert Neumeier, Milwaukee, Wis., assignor to Omark Industries, Inc., Portland, Oreg., a corporation of Oregon

Filed Mar. 17, 1964, Ser. No. 352,491

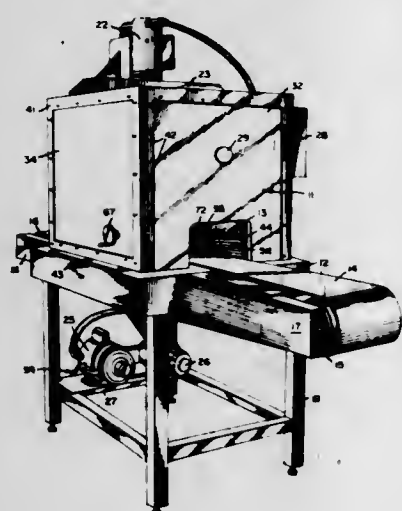
15 Claims. (Cl. 219—98)



1. In combination, a guideway for holding a supply of studs including means engaging a workpiece, ratchet means for moving studs along the guideway serially to a welding position,

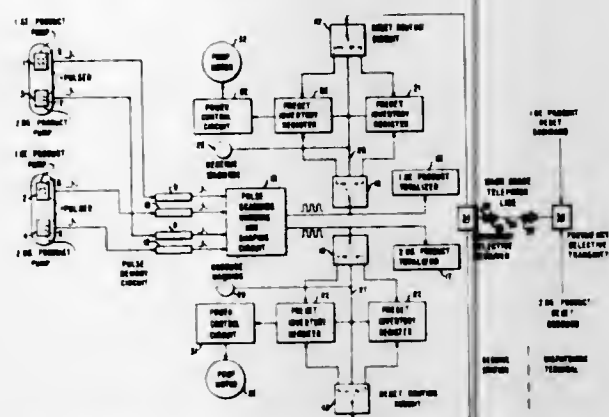
stud-engaging electrode means, means mounting the stud-engaging electrode means in alignment with a stud in the welding position and permitting movement of the electrode means between a retracted position out of engagement with the last-mentioned stud and a second position in engagement with the last-mentioned stud, and means responsive to the movement of the stud-engaging electrode means from the retracted position and operable during the initial portion of the movement toward the second position for actuating the ratchet means to feed a stud to said welding position.

3,312,811
SHRINK TUNNEL
Frank Garrett Shanklin, Hemlock Park Drive,
Groton, Mass. 01450
Filed Feb. 4, 1964, Ser. No. 342,341
8 Claims. (Cl. 219—388)



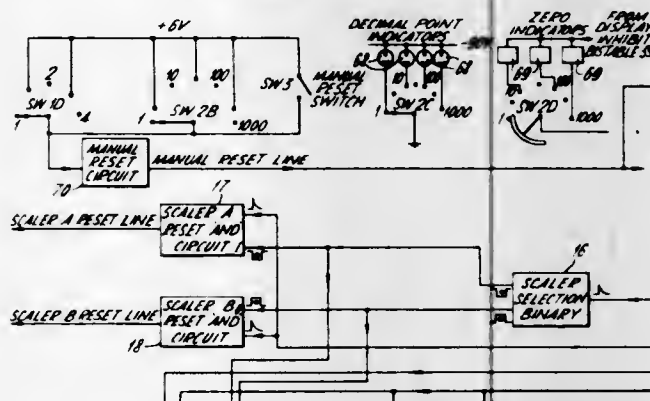
1. In a shrink tunnel for shrinking heat shrinkable film into close contact with the contents of a package formed at least in part therefrom, said tunnel including a box-like structure having a passage permitting transport of packages therethrough, means for transporting packages in a predetermined path through said passage, circulating means for circulating the air contained therein, heating means for heating the air contained therein, said circulating means having a circulating capacity expressed in terms of volume of air circulated per minute substantially in excess of the cubic capacity of said structure, a first duct means for directing the air from the circulating means to the vicinity of said passage, and a second duct means for directing the air from said passage to said circulated means, said first duct means including a stationary enclosed air feed chamber and at least one movable enclosed air feed box, one side of said box arranged parallel to and contiguous to one side of said chamber, said air feed box having an apertured baffle plate in one wall thereof, the wall of said box including said baffle plate forming a wall of said passage, the adjacent contiguous sides of said chamber and said box being provided with mating apertures for the passage of air therethrough, the effective area of said apertures being substantially greater than the total area of the apertures in said baffle plate whereby air is maintained under a substantial pressure within said chamber and said box and is forced through the apertures in said baffle plate at a high velocity, and baffle plate positioning means for adjusting the position of said box toward and away from the predetermined path whereby the clearance between the baffle plate and the packages being treated may be adjusted and the air may be directed directly onto the surface of the packages.

3,312,812
INVENTORY CONTROL SYSTEM
David L. Schmitt, Indianapolis, Ind., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed May 29, 1963, Ser. No. 284,050
11 Claims. (Cl. 235—151.34)



2. A product inventory control system comprising: a storage tank for storing said product; a plurality of pumps for delivering quantities of product from said storage tank; a separate pulsing means on each of said pumps, each of said pulsing means producing a pulse each time a preset quantity of product is delivered by its corresponding pump; a plurality of storage means for storing said pulses, each of said storage means being coupled to the output of a different one of said pulsing means; means coupled to said plurality of storage means for sequentially scanning said storage means, and producing a series of pulses related to the number of stored pulses; preset register means coupled to the output of said scanning means for producing a count related to the number of pulses received; a source of power normally connected to said pumps; and, means coupled to said register means for disconnecting said source of power from said pumps when said register means has reached a predetermined count.

3,312,813
PERIOD METER AND LOGARITHMIC RATEMETER
Charles Holmes Vincent and John Brian Rowles, Basingstoke, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed June 24, 1964, Ser. No. 377,740
Claims priority, application Great Britain, June 28, 1963, 25,806/63
10 Claims. (Cl. 235—152)



1. A period meter comprising digital scaler means for counting input pulses occurring in each of two successive time-intervals, means for repetitively subtracting from the number of pulses counted in each time-interval a fraction of the number remaining in said scaler means after each subtraction until that number has fallen to a predetermined value, and means for determining the difference between the number of subtractions required

to reduce each of the counted numbers to said predetermined number, said difference being proportional to the reciprocal of the period of the source of input pulses.

3,312,814
COLOR FILTER FOR LIGHT BULBS AND SIGN CONSTRUCTION EMBODYING SAME
Oscar W. Reading, Kansas City, Mo., assignor of forty-nine percent to Ben Berg, Kansas City, Mo.
Filed July 15, 1964, Ser. No. 382,826
1 Claim. (Cl. 240—46.57)



A color filter for a light bulb having a transverse maximum diameter at a point intermediate the free and base ends thereof, said color filter comprising:

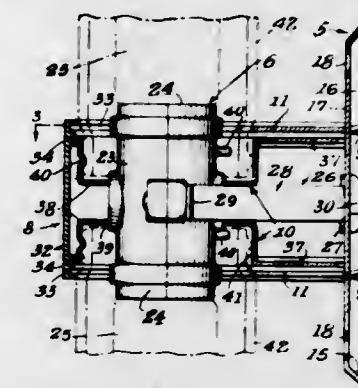
- a cup-shaped body member of translucent colored elastic material adapted to be applied over the free end of said bulb to enclose the bulb enclosed thereby, the transverse internal dimensions of said body member being larger than the exterior dimensions of the portion of the bulb enclosed thereby, whereby to provide a space therebetween for the circulation of air, and the internal depth of said body member being sufficient to enclose the maximum diameter of said bulb, and
- spacer members affixed to the inner surface of said body member and operable to engage said bulb to maintain said body member in centered relationship thereto, said spacer members traversing the maximum diameter of said bulb, the portions of said spacer members adjacent the open end of said body member defining a diameter slightly less than the maximum diameter of said bulb, whereby they may be deflected outwardly by elastic yieldability of said body member to pass over the maximum diameter of said bulb, and thereafter maintain said body member yieldably in assembly with said bulb.

3,312,815
LIGHTING FIXTURE
Dwight E. Woolever, 3671 S. Broadway,
Los Angeles, Calif. 90007
Filed Dec. 22, 1964, Ser. No. 420,375
4 Claims. (Cl. 240—73)

- A lighting fixture comprising:
 - a wall plate,
 - a lamp-socket unit extending forwardly from the face of the wall plate,
 - a U-shaped housing having ends staked to and extending from the wall plate around the mentioned unit,
 - said housing comprising a wall having a groove along each edge thereof and extending along the

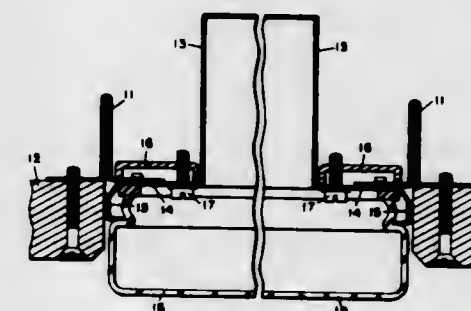
inner side of said wall from one end thereof to the other,

- two similar lampshade-holders with the edges thereof engaged in said grooves, said holders having portions engaged with opposite sides of the mentioned unit to hold the same steady,



- the housing wall having additional grooves outward of and parallel to the mentioned grooves, and
- a plate having edges engaged in the latter grooves to cover the lamp-socket unit.

3,312,816
CEILING LUMINAIRE
Josef Müller and Harald Riegler, Nehem-Husten, Germany, assignors to Trilux-Lenze K.G., Nehem-Husten, Germany, a German firm
Filed Mar. 30, 1964, Ser. No. 355,691
Claims priority, application Germany, Apr. 16, 1963, T 23,843
5 Claims. (Cl. 240—78)



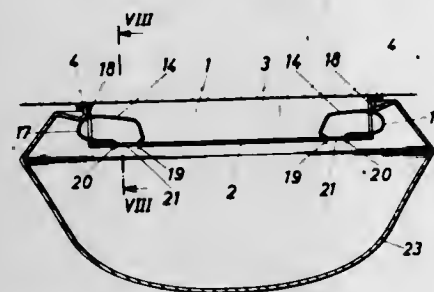
- A luminaire adapted to be recessed into a ceiling and to be arranged inside of a space bounded by a pair of luminaire supports, said luminaire comprising in combination:
 - a luminaire housing having a wall bounding a predetermined space, said wall including vertical wall portions and horizontal wall portions adjacent the lower end of said housing and projecting in opposite directions away from said vertical wall portions;
 - clamping fingers arranged above said horizontal wall portions of said luminaire housing each being provided with an abutment engaging one of said horizontal wall portions of said luminaire housing and each being provided with a screw-threaded hole;
 - screw-threaded rods extending transversely through said horizontal wall portions of said luminaire housing, each cooperatively engaging with one end thereof of said screw-threaded hole in one of said clamping fingers and each operable from the opposite end thereof, the fit of the screw-threads joining said rods and said clamping fingers being sufficiently tight to cause joint pivotal motions of said clamping fingers with said rods between limit positions of said clamping fingers; and
 - the outer surface of said wall of said luminaire housing forming abutments defining said limit positions.

3,312,817

RELEASABLE RETAINING MEANS FOR THE BOWLS OF ELECTRIC ALL-GLASS-LAMPS
Max Erhardt, Bamberg, Johann Behringer, Hallstadt, and Wolfgang Fuchs, Bamberg, Germany, assignors to Rudolf Zimmermann, o.H.G., Bamberg, Germany, a firm

Filed Dec. 28, 1964, Ser. No. 421,391
Claims priority, application Germany, Jan. 20, 1964, Z 10,591

1 Claim. (Cl. 240—128)



A releasable mounting for a surface mounted glass bowl having a radially inwardly turned lip and which bowl surrounds an electric light source comprising:

- (1) a plate member;
- (2) means including an annular ring spacing said plate member from and supporting said plate member in parallel relation to the mounting surface;
- (3) means defining a plurality of radial openings through said ring;
- (4) a plurality of spring members formed of flat sheet stock positioned between said plate and the mounting surface and supported on said plate, said spring members each including bowed portions extending radially outwardly of said openings for engagement with the inner undersurface of the turned-in lip of the bowl and urging said bowl into engagement with the mounting surface, said plate member including a plurality of slots adjacent the periphery thereof and in which the ends of said spring members are received within said slots, the extremities of one end of each spring member having an enlarged portion to engage the underside of said plate member whereby when a bowl is pressed over said spring member, the bowed portions are first forced radially inwardly, said end having the enlarged portion sliding radially inwardly in its slot to permit the bowl to be positioned beyond the bowed portions of said spring member whereupon said bowed portions return to their initial position and urge the bowl into engagement with the mounting surface by engagement with the underside of the inwardly turned lip of the bowl.

3,312,818

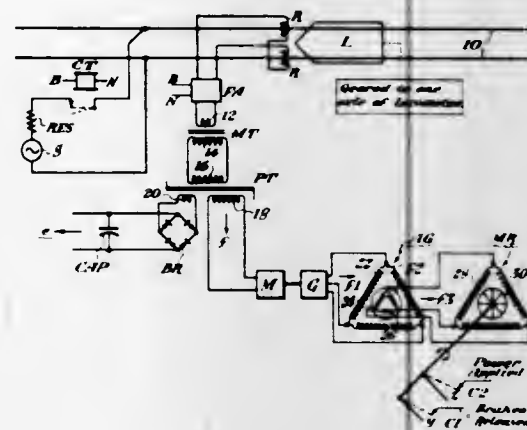
SPEED CONTROL SYSTEM
Crawford E. Staples, Edgewood, Pa., assignor to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania

Filed Oct. 12, 1964, Ser. No. 403,116
7 Claims. (Cl. 246—182)

1. A speed control system for a body having a rotating member the speed of which is to be controlled according to a coded or modulated alternating current command speed signal indicative of the desired speed, said system comprising:

- (a) means for detecting the alternating current command speed signal;
- (b) means receiving the energy from said detecting means for amplifying and translating said energy to produce a multiphase alternating current output at a frequency proportional to said command speed signal, the voltage of said multiphase output having a direct relationship to the frequency thereof;

(c) speed comparison means energized by said multiphase output and having an input proportional to the actual speed of said rotating member to produce a multiphase output at a frequency proportional to the difference between the speed indicated by said command speed signal and the actual speed;



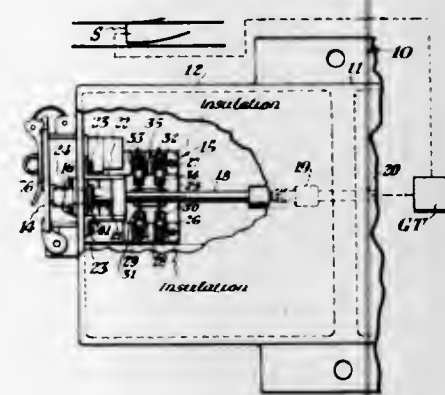
(d) a relay having a multiphase field winding and a rotor, said field winding being energized by the output of said speed comparison means to produce a torque on said relay rotor, said rotor being movable within a predetermined angle, the magnitude of said torque being proportional to the frequency of the output of said speed comparison means due to the direct relationship between the voltage and the frequency of the output of said amplifying and translating means, and a plurality of contacts actuated by the movement of said relay rotor to selectively actuate each of said contacts according to the angle of rotation of said relay rotor to thereby operate circuits controlling the speed of said rotating member.

3,312,819

SAFETY MECHANISM FOR RAILWAY SWITCH MACHINES

Ralph W. Kugler, Brookline, and Robert A. Weston, Pittsburgh, Pa., assignors to Westinghouse Air Brake Company, Swissvale, Pa.

Filed Apr. 30, 1964, Ser. No. 363,751
17 Claims. (Cl. 246—121)



1. A safety device for selectively controlling the operational state of an electrical machine comprising, a unitized bracket means movable between two extreme positions and including handle means for manually moving said unitized bracket means between said two extreme positions, contact means for establishing an electrical circuit for the electrical machine when said unitized bracket means is in a first one of said two extreme positions and for interrupting the electrical circuit when said unitized bracket means is in the second of said two extreme positions;

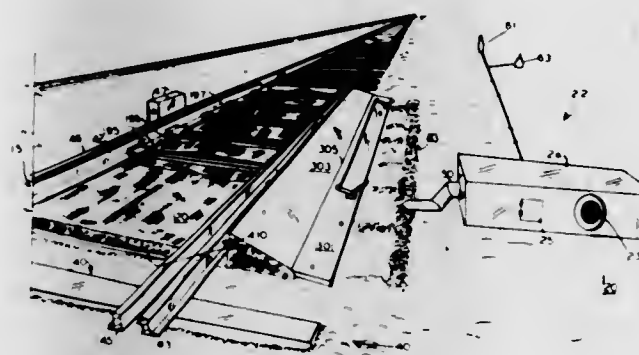
tions, and guard means for preventing manual operation of the electrical machine when said bracket is in said first extreme position.

3,312,820

RAILROAD SWITCH TURNOUT HEATING APPARATUS AND PROCESS OF OPERATION THEREOF

Ray Watkins, 4220 Albert St., Amarillo, Tex. 79106

Filed Feb. 2, 1966, Ser. No. 524,627
7 Claims. (Cl. 246—428)



2. An apparatus for heating a railroad switch, said switch comprising a roadbed, ties supported on the roadbed, crib spaces between adjacent ties, a pair of outer rails fixedly supported on the ties, a pair of tongue rails with tips slidably supported on the ties between the fixed rails, a switch actuator mechanism for moving one or the other of said tongue rail points into contact with one or the other of said fixed rails, and operatively connected to said tongue rails by connecting means therebetween, the distance between the points of said tongue rails being less than the distance between said fixed rails adjacent thereto, said apparatus comprising a hot gas producing unit spaced away from said rails, an ambient temperature sensing unit, a central shield between said tongue rails, and lateral shields each lateral of said fixed rails and operatively connected together, and a gas producing control unit, said ambient temperature sensing unit actuating said hot gas producing unit, said hot gas producing unit operatively connected to gas conduit means, said gas conduit means extending to operatively connect to said crib spaces below the level of said fixed rails and below said central and lateral covers,

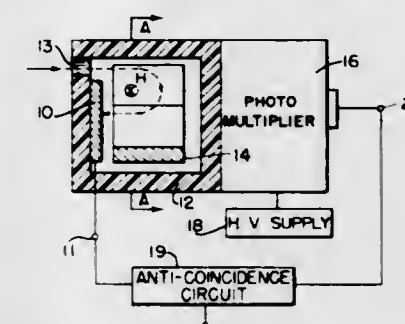
said central shield comprising a central cover portion and lateral cover portions, said central cover portion being flexible and attached to the ties central of the zone of movement thereover of said tongue rails and above a portion of the crib spaces and, on each side of said central portion, lateral panels protruding laterally from said central portion and below and spaced away from the bottom of the fixed rails, said lateral panels being connected to said central portion along a line central of but adjacent to the central edge of the zone over which said rails of said tongue move, said central portion extending from the heel of the tongue to its points and past the points of said tongue, said central cover portion extending at least as far toward the heel of the tongue as the length of the tongue which contacts the fixed rails, said lateral shield means each attached to the ties laterally of the fixed rails, said lateral shield means each extending along the length of said outer rails for the same length as said central cover and being fixed to the ties and covering over the crib spaces between said ties lateral to said fixed rails and extending downwards and outward of the top of each of said fixed rails.

3,312,821

PARTICLE MONITOR HAVING FIRST AND SECOND DETECTION MEANS CONNECTED BY AN ANTI-COINCIDENCE CIRCUIT

Gordon V. Oehser, Richmond, Calif., assignor to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware

Filed Oct. 11, 1963, Ser. No. 315,503
4 Claims. (Cl. 250—41.9)



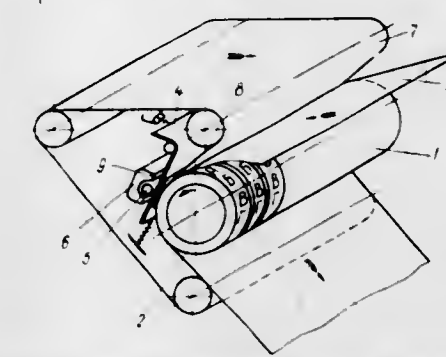
1. A particle monitor comprising: field generating means for constraining charged particles having pre-selected characteristics to traverse a predetermined arcuate path; first particle detection means to intercept incident charged particles including particles traversing said path, and to produce first signals in response to the intercepted particles; and second particle detection means comprising a medium surrounding said first particle detection means and having a hollow passage for particles traversing said predetermined path; said second particle detection means producing second signals in response to incident charged particles traversing paths other than said predetermined path for time comparison with said first signals and being traversed by charged particles incident thereon including particles to become incident upon said first particle detection means.

3,312,822

THERMOGRAPHIC REPRODUCTION APPARATUS WHEREIN THE ORIGINAL DATA IS STORED ON A ROTATING CYLINDER

Vladimir Alexandrovich Kalmanson, Moscow, U.S.S.R., assignor to Vsesouzny Institute Nauchnoi i Tekhnicheskoi Informatsii

Filed Feb. 24, 1964, Ser. No. 346,924
3 Claims. (Cl. 250—65)



1. Apparatus for registering data on a thermo-sensitive web comprising a source of infrared radiations, arranged to emit rays at a predetermined exposure area, a first means including an arcuate surface and constituting data storage means having characters to be printed arranged in horizontal and vertically aligned rows, a web of sensitive thermosetting paper for positioning between said exposure area and said first means, an endless belt including a portion passing between said surface and said source, said belt being penetrable by such radiation and movable to press said web against said surface to effect printing, a second means interposed between said belt and said source and movable to selectively block or permit passage of radiation rays, and one of said first and second means including individual components independent of the other.

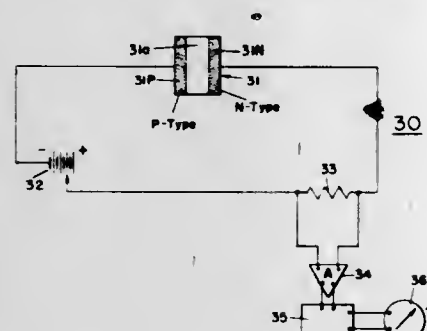
ently adjustably movable, and corresponding in number and position to the number and position of the rows of characters that extend vertically.

3,312,823

SEMICONDUCTOR RADIATION DETECTOR FOR USE IN NUCLEAR WELL LOGGING

Tom W. Bonner, Houston, and William R. Mills, Jr., Dallas, Tex., assignors to Mobil Oil Corporation, a corporation of New York

Filed July 7, 1961, Ser. No. 122,485
1 Claim. (Cl. 250-83.3)



A well logging system for logging gamma rays in a borehole, comprising:

an instrument housing and means for moving said housing through said borehole,

a logging instrument disposed within said housing, said instrument including a source of neutrons for irradiating the adjacent formations, and a detector having a high sensitivity to gamma rays and a low sensitivity to thermal neutrons for producing an output of electrical pulses having heights related to the energy of the gamma rays detected, including:

a diode constructed of semiconductor material including at least one element having an atomic number of at least 50 and including elements each having a thermal neutron-capture cross-section less than 15 barns, said diode having a sensitive depletion region disposed between the P-type and N-type regions, the volume of said depletion region being more than twice the volumes of said P-type and said N-type regions so that annihilation quanta are fully converted in the depletion region to electrons,

a source of voltage, and connections to said P-type and said N-type regions from said source of voltage for back-biasing the diode,

said system further comprising:

a pulse height analyzer for passing pulses having heights falling within a selected energy range, the output of said detector being connected to said pulse height analyzer, and

a recorder for recording the output of said pulse height analyzer as a function of depth of said instrument housing in said borehole.

3,312,824

SELF-COMPENSATING SPECTROMETER INCORPORATING A DIFFRACTION GRATING

Alan Hugh Cook, Teddington, Middlesex, England, assignor to National Research Development Corporation, London, England, a corporation of Great Britain

Filed Oct. 18, 1963, Ser. No. 317,354
Claims priority, application Great Britain, Oct. 22, 1962, 39,960/62

9 Claims. (Cl. 250-203)

1. A spectrometer incorporating a diffraction grating as the dispersing element, an entrance slit wide enough to accommodate excursions of small amplitude of an

apparent point source of light, means for applying collimated light from said source to said entrance slit, a photo-electric position sensitive means for receiving an undiffracted image, means for deriving therefrom a signal varying with lateral movements of the apparent source of light, receiving means for receiving a diffracted image, measuring means for measuring the intensity



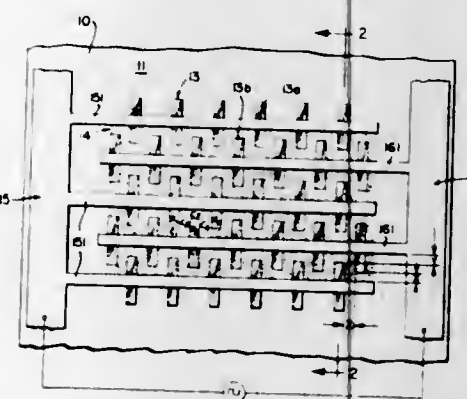
of the diffracted image at the receiving means, and compensating means actuated by said signal for substantially completely compensating for the effects of the said excursions of the apparent light source on the said receiving means at the point where the measuring means measures the intensity of the diffracted image, within the limits imposed by said entrance slit.

3,312,825

PANEL USING INTRINSIC OR CARRIER-INJECTION ELECTROLUMINESCENCE USABLE IN AN IMAGE CONVERTER

Thomas L. Robinson, Buffalo, N.Y., assignor to Cornell Aeronautical Laboratory, Inc., Buffalo, N.Y., a corporation of New York

Filed Dec. 26, 1962, Ser. No. 246,981
15 Claims. (Cl. 250-213)



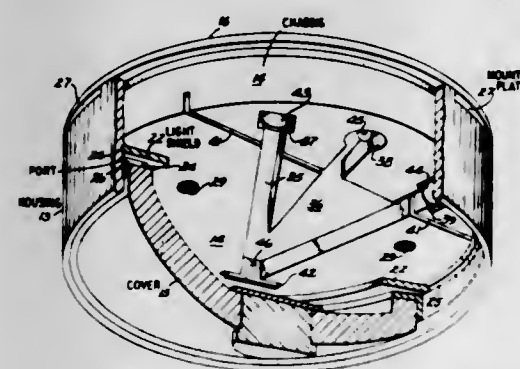
8. An electroluminescent panel operating on the principle of intrinsic electroluminescence, comprising a light transmissive insulating substrate having a surface, alternately arranged rows of coplanar and spaced first and second photosensitive semiconductor elements supported on said surface, a layer of electroluminescent phosphor supported on said surface and occupying the space between, contacting and of substantially the same thickness as said first and second elements, and interdigital electrode terminals severally electrically connected to said first and second elements and arranged only on one and the same side thereof, whereby an infrared image impinging said elements is converted to a visible light image viewable through said substrate.

15. An electroluminescent panel operating on the principle of carrier-injection electroluminescence, comprising a light transmissive insulating substrate having a surface, alternately arranged rows of coplanar photosensitive p- and n-type semiconductor elements supported on said surface and having opposing and abutting narrowing end portions to provide p-n junctions, and interdigital electrode terminals severally electrically connected to said p- and n-type elements, whereby an infrared image and impinging said elements is converted to a visible light image viewable through said substrate.

3,312,826

PHOTOELECTRIC SMOKE DETECTOR WITH VENTILATION INDUCED BY LIGHT SOURCE

Sam M. Flakle, Long Beach, Calif. 92640
(10351 Lampson Ave., Garden Grove, Calif. 92640)
Original application Nov. 19, 1962, Ser. No. 238,545, now Patent No. 3,226,703, dated Dec. 28, 1965. Divided and this application Dec. 28, 1965, Ser. No. 518,754
1 Claim. (Cl. 250-218)

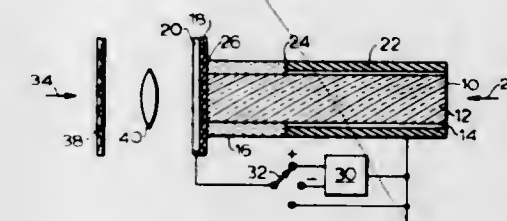


In combination with a stationary wall-or-ceiling-mounted fire detecting device that includes a Wheatstone bridge embodying first and second light-sensitive resistors as first and second legs thereof, an electrically energized source of light, an electric circuit for supplying electrical energy to said bridge and source of light, an electrically operated alarm forming a part of said circuit, a mirror, an assembly for continuously supply air that may contain smoke to said device, which assembly includes:

- (a) an opaque chassis having two elongate smoke chambers therein that are in angular relationship, with said chassis supporting said mirror at the junction of said chambers and said first resistor at a first end of said first chamber, which chassis also supports said second resistor at a first end said source of light so that a beam of light therefrom falls on said mirror and is reflected onto said first resistor, with said electrically operated alarm being energized when said bridge is unbalanced by presence of smoke in said chambers to increase or decrease the intensity of said beam of light reflected to said first resistor;
- (b) a mounting for supporting said chassis from a ceiling or an elevated position on a wall;
- (c) a housing supported by said mounting plate and extending around said chassis, which housing and mounting plate cooperatively define vent openings therebetween, with the end of said housing most remote from said mounting plate being open;
- (d) a light shield mounted in the open end of said housing;
- (e) a cover attached to said light shield, which shield and cover cooperatively form a port for admitting air that may contain smoke into said chambers, with said source of light heating the interior of said chassis to the extent that cool air from the ambient atmosphere that may contain smoke is continuously drawn through said port to circulate through said chambers and discharge through said vent openings.

3,312,827 FERROELECTRIC OPTICAL SHUTTER RADIATION CONVERTER MEANS

Joseph T. McNaney, 8548 Boulder Drive, La Mesa, Calif. 92041
Filed Apr. 30, 1963, Ser. No. 276,870
4 Claims. (Cl. 250-229)



1. In a light radiation responsive ferroelectric polarizing means:

- (a) photoconductor material presenting first and second terminals;
- (b) ferroelectric material presenting first and second surfaces and said second surface electrically coupled to said second terminal;
- (c) light radiation conductor means for supporting said photoconductor and ferroelectric materials and controlling the reflection of light radiation to said photoconductor material;
- (d) a first source of voltage for providing a first voltage polarity;
- (e) means for connecting said voltage polarity of said source between said first terminal and said first surface and, upon a reflection of light through said conductor means to which said photoconductor material is responsive, extending said voltage polarity of said source between said first and second surfaces to establish polarized effects in said ferroelectric material;
- (f) a second source of voltage for providing a second voltage polarity; and
- (g) means for disconnecting said first voltage polarity of said first source, connecting said second voltage polarity of said second source between said first terminal and said first surface and, upon the exposure of said photoconductor material to light radiation to which it is responsive, extending said second voltage polarity of said second source between said first and second surfaces to disestablish said polarized effects in said ferroelectric material.

3,312,828

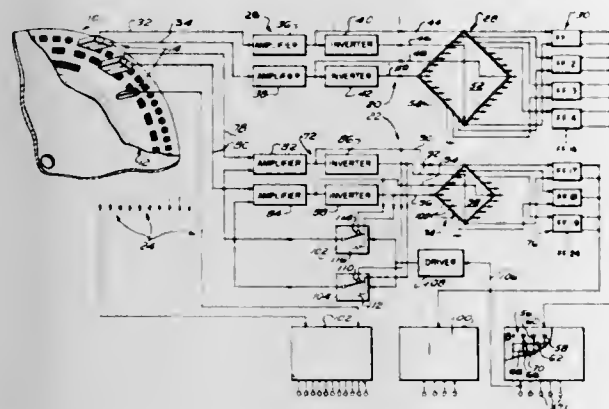
ANALOG TO DIGITAL ENCODING APPARATUS FOR DIRECTLY READING OUT INFORMATION

Sidney A. Wingate, Concord, Mass., assignor to Wayne-George Corporation, Newton, Mass., a corporation of Massachusetts

Filed May 9, 1963, Ser. No. 279,071
20 Claims. (Cl. 250-231)

1. An encoding system comprising code means presenting a plurality of track means, an array of groups of photocell means, said code means and said array being constrained for relative movement with said plurality of track means and said plurality of photocell means in registration, said photocell means of each group being related to each other predeterminedly, illumination means for directing radiation to said plurality of track means, each of said plurality of track means having first regions and second regions for differently associating said radiation with photocell means registered therewith, said groups of photocell means generating groups of predeterminedly different signals representing relative positions of said code means and said array, each of said prede-

terminedly different signals being characterized by phase differences, first analyzing means for distinguishing among the predeterminedly different signals within a selected group to produce resolved signals representing components of said different signals within said selected group, each of said resolved signals being characterized by phase differences, said phase differences of said resolved signals being greater in number than said phase



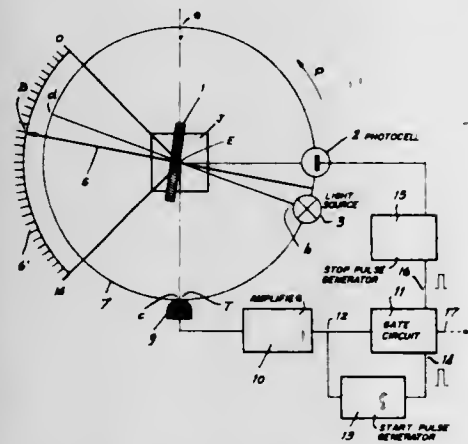
differences of said predeterminedly different signals, digitizing means responsive to said resolved signals for converting said resolved signals to digital signals, other means for distinguishing among others of said predeterminedly different signals of said plurality of groups to produce other signals, and interrelating means for combining said digital signals and said other signals for presentation.

3,312,829

PHOTOELECTRIC ANALOG-TO-DIGITAL CONVERTER ARRANGEMENT

Leo M. Sprengers, Lier, and Henri Castelljns, Wilrijk, near Antwerp, Belgium, assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Sept. 12, 1963, Ser. No. 308,581
Claims priority, application Belgium, Feb. 27, 1963,
42,377, Patent 628,936
5 Claims. (Cl. 250-231)



1. A device for measuring angular displacement of a part thereof which is angularly movable about an axis; said device comprising:

- a disc mounted on a shaft and having regularly spaced magnetic dipoles disposed along a portion of its circumference; means for rotating said disc about said axis at a substantially constant speed of rotation;
- a pick-up head disposed adjacent to and in opposition with a portion of the circumference of said disc, said dipoles for each revolution of said disc inducing in

said pick-up head a train of pulses recurring at a predetermined phase of said rotation; an electronic circuit connected to said pick-up head for receiving said train of pulses;

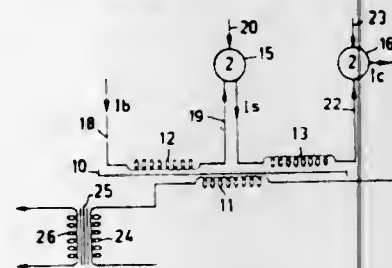
- a plane mirror secured to said angularly movable part, so that the plane of the reflecting surface of said mirror is moved angularly about said axis;
- a radiation source and a radiation detector with narrow opening angles, one of the last two mentioned elements being fixed with respect to said axis and the other being mounted on said disc and the center lines of said opening angles of said elements always intersecting said axis;
- said radiation detector producing, responsive to impingement on said detector of radiation from said source as reflected by said mirror, an electric stop signal for each revolution of said disc, said electronic circuit being connected to said radiation detector for receiving said stop signal whereby the number of pulses of said train generated until the time of occurrence of said stop signal represents a measure of the angular displacement of said part.

3,312,830

PULSE COUNTING MAGNETIC APPARATUS

Gerhard Werner Gore, Purley, Surrey, and Colin Green, Horsham, Surrey, England, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Oct. 14, 1963, Ser. No. 315,893
7 Claims. (Cl. 307-88)



1. An electrical circuit arrangement for producing an output signal at a predetermined time interval following the initiation of an input control signal, comprising a saturable reactance element having a core of magnetic material with a rectangular hysteresis loop characteristic and first and second windings on said core, means for magnetizing the core to a predetermined flux value, means for applying a control signal to said first winding having an amplitude and polarity magnetizing the core to a second predetermined flux value, gate means for applying to said second winding signal pulses of given amplitude and duration to vary the magnetic flux of said core in a given number of incremental steps from the second predetermined value to the saturation value thereof, means for applying said control signal to said gate means to initiate the flow of said pulse signal through said second winding and initiate the said incremental changes of the flux of said core, and means responsive to the saturation of said core for deriving an output signal as determined by the pulse signal upon saturation of the said core.

3,312,831

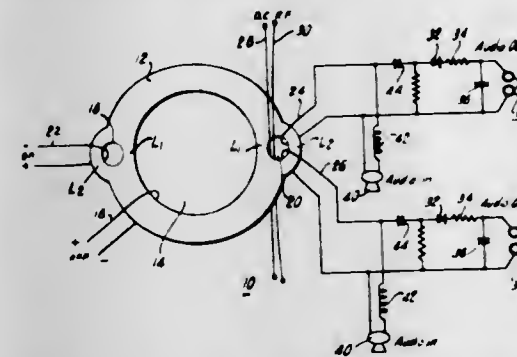
SWITCH CIRCUIT

Hewitt D. Crane, Portola Valley, and William K. English and James A. Baer, Menlo Park, Calif., assignors to AMP Incorporated, Harrisburg, Pa.
Continuation of application Ser. No. 144,790, Oct. 12, 1961. This application Oct. 9, 1964, Ser. No. 405,011

11 Claims. (Cl. 307-88)

1. A self-holding switch circuit comprising a multi-aperture magnetic core having a minor aperture, means to set the flux in said core in either on or off condition, a

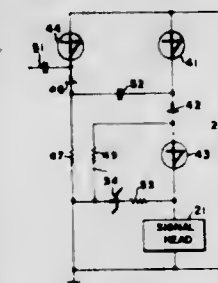
plurality of energizing means to apply to said minor aperture a rapidly fluctuating M.M.F., a relative steady bias-



ing M.M.F. and a signal M.M.F., and output detection means coupled to said minor aperture.

3,312,832 HIGH SPEED NPNP AND MPNP MULTI-VIBRATORS

Lee E. Scaggs, San Jose, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Oct. 25, 1961, Ser. No. 147,692
12 Claims. (Cl. 307-88.5)



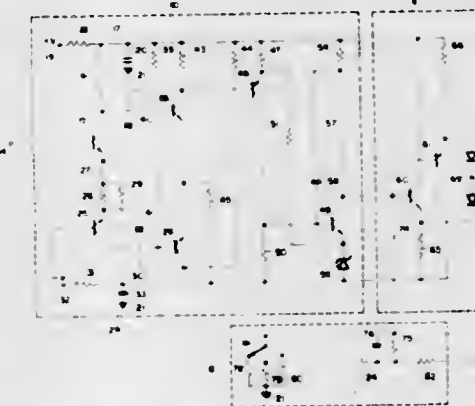
1. A circuit including a first power supply, at least first and second solid-state switching means and a load all connected in series, each of said switching means having a high positive resistance in the off state for applied voltages less than the switching voltage of said switching means, each of said switching means passing rapidly through a region of negative resistance into a region of low positive resistance which is the on state when the applied voltage exceeds the switching voltage, said power supply producing a voltage less than the sum of the switching voltages of said first and second switching means, but greater than the minimum voltage required to maintain said switching means in the on state when said switching means have been switched on; and a first resistor connected in parallel with said resistance load and one of said switching means, said resistor having a value less than said high positive resistance of the parallel-connected switching means and providing a shunt path for direct current whereby leakage current is diverted from said load when said switching means are in the off state.

3,312,833 AMPLIFIER PARALLEL CONNECTED CATHODE FOLLOWER OUTPUT STAGE

Richard L. Durrett, Los Angeles, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed June 26, 1963, Ser. No. 290,789
5 Claims. (Cl. 307-88.5)

1. A current limiting output stage for use with an amplifier comprising first and second transistors of opposite conductivity types, each of said transistors including a base, an emitter and collector electrodes, first and second diodes, input and output terminals, first and second voltage terminals adapted to be connected to sources of voltage,

means connecting said input terminal with the bases of said first and second transistors for applying input signals thereto, means connecting the collector electrode of said first transistor and the emitter electrode of said second transistor with said first voltage terminal for supplying voltage to said respective collector and emitter electrodes thereof, means connecting said emitter electrode of said first transistor and said collector electrode of said second transistor with said second voltage terminal for supplying voltage to the respective emitter and collector electrodes thereof,

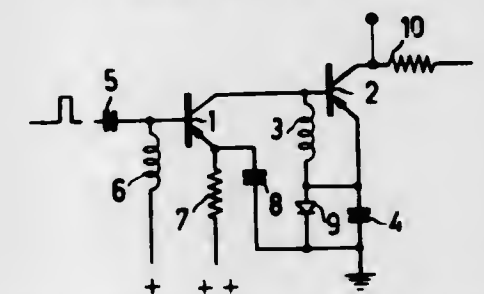


a common terminal, said first and second diodes being connected in series and poled in a like direction between the emitter electrode of said second transistor and the emitter electrode of said first transistor, with said common terminal being connected between said diodes, and said output terminal being connected to said common terminal.

3,312,834 SHORT DURATION PULSE GENERATOR UTILIZING AVALANCHE BREAKDOWN

Marie Marcel Antoine Arnold Ghislain Verstraelen, Hilversum, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Oct. 18, 1963, Ser. No. 317,240
Claims priority, application Netherlands, Nov. 13, 1962,
285,459
8 Claims. (Cl. 307-88.5)



1. A pulse generator comprising a discharge device having an avalanche breakdown characteristic and comprising input and output electrodes, a capacitor connected in series circuit relationship with said output electrodes, means for energizing said series circuit thereby to produce a given charge condition in said capacitor upon avalanche breakdown in said device, and means alternately to initiate avalanche breakdown in said device and to produce an opposite charge condition in said capacitor, said latter means comprising a second discharge device having input and output electrodes, an inductance connected in series circuit arrangement with said last mentioned output electrodes and said capacitor and means for energizing said series circuit arrangement, means for coupling said inductance to an input electrode of said first device, means for maintaining said second device

normally conducting thereby to produce said opposite charge condition in said capacitor, and means for interrupting said conduction of said second device thereby to induce a potential in said inductance actuating said first device and producing avalanche breakdown thereof.

3,312,835

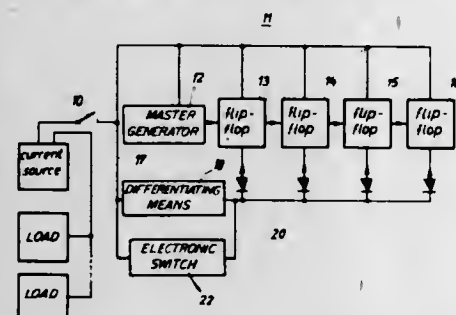
FREQUENCY DIVISION TIMING CIRCUIT EMPLOYING SHUNTING CIRCUIT FOR INHIBITING FALSE RESET SIGNALS TO FLIP-FLOP STAGES

Dieter Grasmück, Darmstadt, Germany, assignor to Bolkow Gesellschaft mit beschränkter Haftung, Munich, Germany

Filed Dec. 3, 1963, Ser. No. 327,643

Claims priority, application Germany, Dec. 5, 1962, B 69,869

6 Claims. (Cl. 307-88.5)



1. In a frequency division timing circuit including a master generator, plural flip-flop stages connected in series to said master generator to divide the frequency of the latter to provide predetermined timed periods, differentiating means, a re-set line commonly connecting said differentiating means to said flip-flop stages for re-setting of the latter to an initial position, and switch means operable, when closed, to connect said master generator and said differentiating means to a current source which is also connected to supply other loads, said differentiating means differentiating the initial voltage surge, appearing responsive to closure of said switch means, to apply a re-set pulse to said re-set line; electronic means operable to prevent re-setting of said stages by a spurious pulse from said differentiating means resulting from sharp changes in the load on said common source drawn by said other loads, said electronic means comprising, in combination, circuit components connected to said re-set line between said flip-flop stages and said switch means and shunting said differentiating means, said circuit components being operative to shunt said spurious or false re-set pulses to inhibit false re-setting of said flip-flop stages; and a time delay means included in said circuit components, said time delay means being operative, in response to closure of said switch means, to effectively delay operation of said components for a predetermined time period equal to a re-set pulse, whereby re-setting of said flip-flop stages may take place during a normal re-set operation.

3,312,836

CIRCUITRY FOR POSITIONING GATING WAVEFORMS FOR GATING WITH MINIMIZED SWITCHING TRANSIENTS

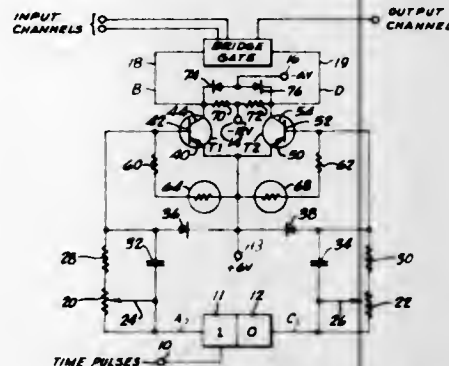
Barrett E. Gulsinger, Redwood City, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed Jan. 16, 1964, Ser. No. 338,034

8 Claims. (Cl. 307-88.5)

1. A gating system having a source of time pulses; a bi-stable multivibrator coupled to said source of time pulses, said bi-stable multivibrator having two output terminals; two variable resistors connected one to each said multivibrator output terminal; two diodes connected one between each said variable resistance and a first power

supply; and two transistors each having an emitter, a base, and a collector, the emitters of said transistors being joined and directly coupled to said first power supply and the bases of said transistors being directly coupled



one to the junctions between each of said variable resistors and said diodes, and a second power supply of polarity opposite that of said first supply coupled to said collectors of said transistors.

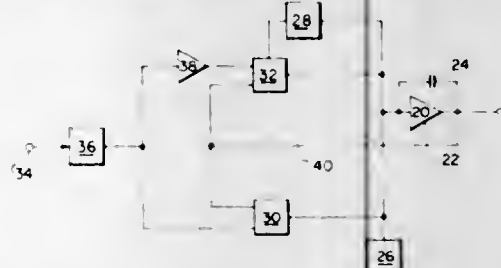
3,312,837

TRAPEZOIDAL WAVEFORM GENERATOR

George J. Flynn, Boston, and Howard H. Hill, Northborough, Mass., assignors, by mesne assignments, to Honeywell Inc., a corporation of Delaware

Filed Apr. 8, 1964, Ser. No. 358,249

10 Claims. (Cl. 307-88.5)



1. An electrical waveform generating device comprising in combination: an electrical integrating means; first, second, third and fourth current sources all connected to the input of said integrating means; said first current source providing a substantially fixed magnitude, steady-state current to the input of said integrating means; said second current source providing a current of substantially fixed magnitude to said input; means for gating said third current source so as to provide therefrom a step output of current of a first polarity to said input for only a predetermined period and for substantially simultaneous gating said second current source so as to inhibit the latter from providing said fixed magnitude current to said input; and means for gating said fourth current source so as to and for substantially simultaneously gating said second current source so as to restore current flow from the latter to said input.

3,312,838

SEMICONDUCTOR RECTIFYING DEVICE WITH A PLURALITY OF JUNCTIONS

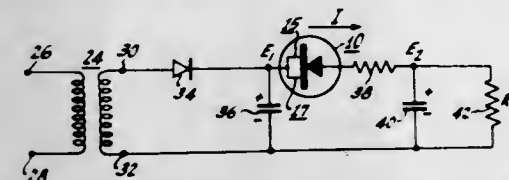
John T. Wallmark, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Apr. 27, 1964, Ser. No. 362,846

4 Claims. (Cl. 307-88.5)

1. A semiconductor device comprising: a common semiconductor region exhibiting a low resistivity; a first semiconductor region of an opposite conductivity type than said common semiconductor region, said

first semiconductor region having a resistivity at least one hundred times as great as that of said common region and forming a first rectifying junction with said common region, said first junction exhibiting a high avalanche breakdown voltage greater than one hundred volts; and



a second semiconductor region of an opposite conductivity type than said common region, said second region having a resistivity at least ten times that of said common region and forming a second rectifying junction with said common region, said second rectifying junction exhibiting an avalanche breakdown voltage less than one hundred volts.

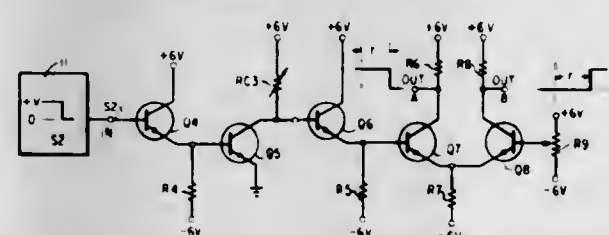
3,312,839

DELAY ARRANGEMENT USING TRANSISTOR WITH MINORITY CARRIER STORAGE

Bruce E. Briley, La Grange Park, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed May 7, 1964, Ser. No. 365,766

2 Claims. (Cl. 307-88.5)



1. In a delay arrangement including a transistor utilizing minority carrier storage, said transistor having a base, emitter, and collector electrode, an output connected to said collector electrode, a driving means connected to said base electrode, and providing a first voltage for saturating said transistor, whereby a large number of minority carriers are injected into the junction between said base and emitter electrodes, and a second voltage for cutting off said transistor, a source of bias voltage connected to said collector electrode, and resistive means connected between said output and said bias voltage source to prevent the immediate discharge of said injected carriers during the cutting off of said transistor so that the voltage at said output approaches the voltage of said bias source; the improvement comprising:

a discriminator including an input coupled to the output of said transistor and including an output providing a first and second voltage state; and a switching level adjuster connected to said discriminator for controlling the time interval during which said output provides said second voltage state, said adjuster having a first and second setting so that when said adjuster is positioned to said first setting, the output of said discriminator switches from said first state to said second state already upon the saturation of said transistor, remaining in said second state until the output of said transistor nears the voltage of said bias source, while when said adjuster is positioned to said second setting, the output of said discriminator initially remains in said first state upon the saturation of said transistor, and switches from said first state to said second state only after said transistor has been cut off, the last-mentioned output then remaining in said second state until the output voltage of said transistor nears the voltage of said bias source.

3,312,840

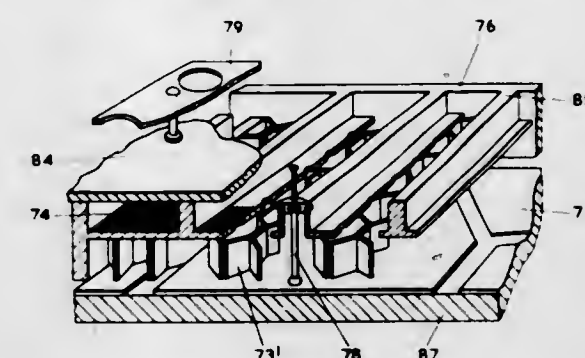
THERMIONIC GENERATORS EMBODYING MAIN AND AUXILIARY DISCHARGE CHAMBERS, CLOSELY SPACED EMITTER AND COLLECTOR STRUCTURES, AND MEANS FOR NEUTRALIZING SELF-MAGNETIC FIELDS

Dennis Gabor, London, England, assignor to National Research Development Corporation, London, England, a corporation of Great Britain

Filed Dec. 2, 1964, Ser. No. 415,238

Claims priority, application Great Britain, Dec. 23, 1959, 43,662/59; Mar. 24, 1960, 10,540/60

16 Claims. (Cl. 310-4)



1. In a thermionic generator of electricity, a main discharge chamber, an auxiliary discharge chamber, a collector electrode which separates said main discharge chamber from said auxiliary discharge chamber and which is at least partly foraminated, an electron emitter electrode opposed to one side of said collector electrode in said main discharge chamber, an auxiliary electrode opposed to the other side of said collector electrode in said auxiliary discharge chamber, a gas atmosphere having a pressure of a single-figure number of millimeters of mercury in both said chambers which communicate solely via said at least partly foraminated collector electrode, heating means for said emitter electrode, cooling means for said auxiliary and collector electrodes, and electrical connection terminals for each of said electrodes.

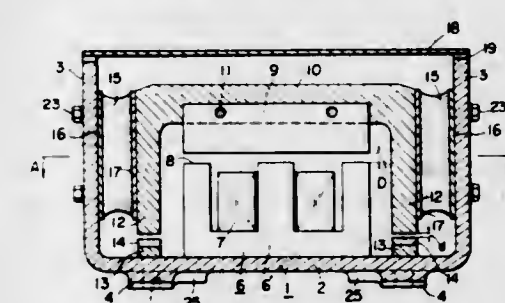
3,312,841

ELECTROMAGNETIC VIBRATOR

Shinobu Makino, Tokyo, Japan, assignor to Shinko Electric Co., Ltd., Tokyo, Japan

Filed Oct. 22, 1963, Ser. No. 318,046

7 Claims. (Cl. 310-15)



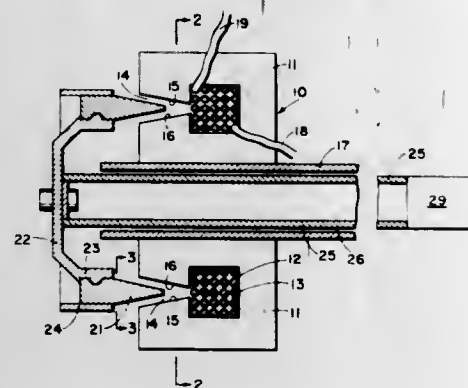
6. In an electrical vibrator: a base; a first cylinder extending substantially perpendicularly from said base; an electromagnet having a core extending in a direction substantially parallel to said first cylinder; and armature, said armature being spaced from said electromagnet core by a predetermined distance; and a holding frame to support said armature and including a second cylinder arranged substantially parallel to said first cylinder and being of a diameter different from that of the first cylinder, said cylinders fitting, with clearance, one within the other, and a ring-shaped resilient body located in the clearance between said cylinders and being adhesively secured thereto, said holding frame being supported in a freely hanging position.

position by said resilient body, with the latter stressed exclusively by the weight of said holding frame and said armature supported thereby.

3,312,842

RECIPROCATING ACTUATOR

Theodore P. Heuchling, Concord, and Richard E. Kronauer, Harvard, Mass., assignors to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Apr. 30, 1964, Ser. No. 363,789
8 Claims. (Cl. 310-17)



1. An actuator adapted to effect directly a reciprocating linear motion, comprising in combination

- (a) a stationary member having a central opening and defining a recess of substantially trapezoidal cross-section, said stationary member being formed of a plurality of laminas parallel to the direction of reciprocation and being adapted to receive periodic electrical current;
- (b) a moving member adapted to reciprocate linearly within said recess of said stationary member and in reciprocating to define a gap between said stationary and said moving members, that portion of said moving member which reciprocates in said recess having a substantially trapezoidal cross-section and formed of laminas of which a minor portion are of a non-magnetic material to impede flux flow in a direction normal to that of the preferred flux flow, said gap being shaped such that the gradient of reluctance operating in conjunction with said periodic electric current imparts a predetermined movement to a load associated with said moving member, said stationary and moving members being of such construction that the development of eddy currents resulting from said flux and reciprocation is impeded;
- (c) rotating means adapted to rotate said moving member simultaneously with said reciprocating and affixed to said moving member through an elastic member; and
- (d) axial supporting means affixed at one end to said moving member, extending through said central opening of said stationary member and adapted to be coupled to said load at the other end.

3,312,843

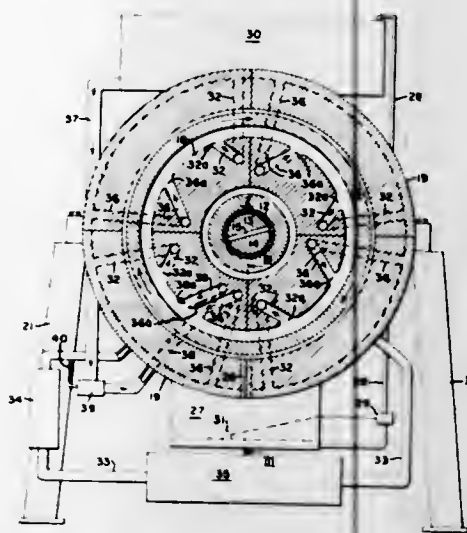
ELECTRICAL COLLECTOR APPARATUS

Gerd Edward Krulls, Glenville, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 30, 1964, Ser. No. 422,261
8 Claims. (Cl. 310-54)

1. An improved electrical collector apparatus for electrically connecting a rotating and a stationary member comprising:

- (a) an electrically conductive annular cup connected to the rotating member and defining an annular opening directed radially inwardly toward a horizontal axis of rotation,

- (b) a quantity of electrically conductive fluid held in said cup by centrifugal force and substantially rotating therewith,
- (c) an electrically conductive blade attached to the stationary member and having a portion extending radially outwardly into the liquid through said annular opening,

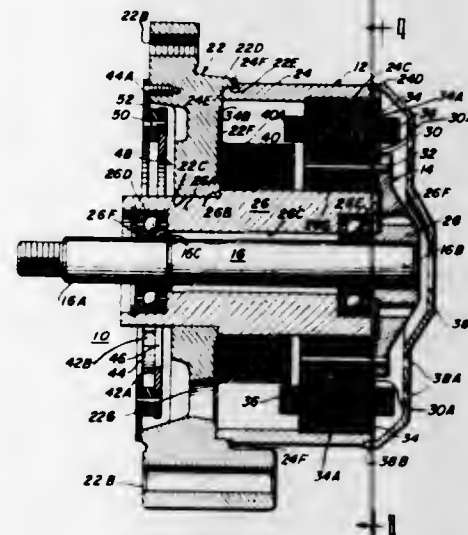


- (d) said blade portion defining fluid inlet and fluid outlet openings within said annular opening inclined from a radial direction so as to receive and discharge the electrically conductive fluid due to relative motion of said fluid in said cup past said openings when said cup is rotating, and
- (e) circulating conduit means connected to conduct recirculated fluid between said inlet and said outlet opening in said blade portion through an external system for treating said fluid.

3,312,844

INDUCTOR ALTERNATOR

Charles J. Juhnke, Deerfield, and Hans Jakobs, Des Plaines, Ill., assignors to C. E. Niehoff & Co., Chicago, Ill., a corporation of Illinois
Filed Feb. 16, 1965, Ser. No. 433,100
5 Claims. (Cl. 310-168)

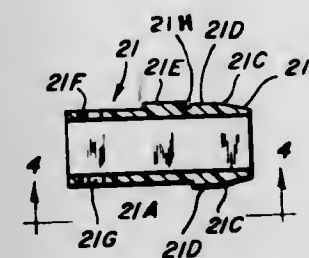


2. An inductor alternator, including in combination, a stator including a centrally apertured end plate, an elongated tubular support having an end mounted in the aperture in said end plate, a stationary field winding mounted on said support immediately adjacent said plate, a rotor shaft extending through said support, bearings at the opposite ends of said support rotatably supporting said shaft, and a rotor supported at the end of said shaft opposite the end plate.

3,312,845

BRUSH HOLDER

Bruno Satkunas, Lexington, Ohio, assignor to Dominion Electric Corporation, a corporation of Ohio
Filed Feb. 8, 1965, Ser. No. 430,919
10 Claims. (Cl. 310-247)



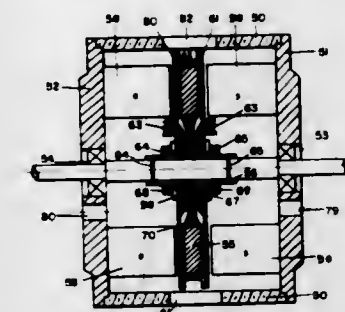
1. In an electric motor having a frame, said frame having brush-accommodating openings of rectangular cross-section extending therethrough, a commutator rotatably carried by the frame and positioned inwardly from said brush-accommodating openings, electrical conductors having spade-type terminals of a shape having a forward end of smaller width than the rearward end, the terminals being adapted to be electrically interconnected with said commutator, and brushes adapted to engage and electrically connect with said commutator, the improvement of brush holders for carrying the respective brushes in engagement with said commutator, each said holder comprising an open-ended tubular structure of rectangular cross-section complementarily interfitting in a said brush-accommodating opening and having a first portion extending from an inner side of the frame toward the commutator and having a second portion extending from an outer side of the frame away from the commutator, said holder on opposite sides of said first portion thereof having projections extending outwardly from the planes of said opposite sides a greater distance than the corresponding sides of said opening to engage on said inner side of the frame and prevent withdrawal of the holder outwardly from the frame away from the said commutator, said projections each having an inclined camming surface extending from the plane of the respective side of the structure adjacent the inner end of said first portion to the maximum extent of said each projection to cammingly lead the said projection into a said opening upon pressing the said first portion of structure into the opening toward said commutator, said structure being composed of a resiliently yieldable material of the order of nylon and lexan to permit the structure to resiliently yield in pressing the said first portion carrying said projection into said opening, said material being of high electrical insulating property to insulate the brush from the frame, said structure having a boss extending from a side thereof, the boss having a shoulder spaced from said inner side of the frame and abutting said frame on the outer side thereof to prevent further movement of said structure through the opening toward the commutator, said structure having extending through opposite sides thereof adjacent the outer end of said second portion aligned open spaces for receiving a said spade terminal extending through the open spaces transversely of the structure, one of said open spaces being shorter than the other and snugly engaging the smaller forward end of the spade terminal and the other of said open spaces snugly engaging the larger rearward end of the spade terminal, the material of the structure resiliently yielding to permit insertion of the spade terminal into said aligned open spaces and to restrain the spade terminal against withdrawal from the aligned open spaces, said holder having a bore for accommodating an axially aligned electric brush therein in sliding engagement with the inner walls of the holder and for permitting the brush to extend axially of the holder from the holder toward and against the commutator, said bore also accommodating a metal coil spring therein between, and in

engagement with, said brush and said spade terminal in said aligned open spaces, the coil spring resiliently biasing the brush toward the armature and providing electrical connection between the brush and spade terminal.

3,312,846

ELECTRIC ROTATING MACHINES

Jacques Henry-Baudot, Antony, France, assignor to Printed Motors, Inc., New York, N.Y.
Filed Aug. 6, 1963, Ser. No. 300,288
Claims priority, application France, Sept. 11, 1962, 909,193, Patent 1,341,582
3 Claims. (Cl. 310-266)



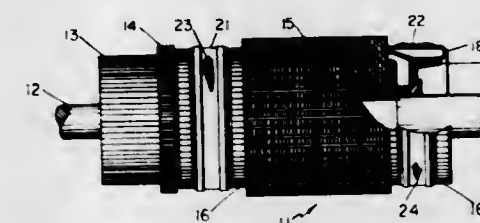
1. A rotary electric machine comprising in combination:

- (1) a pair of magnetic members each comprising an annularly-arranged series of alternate magnetic poles, said members being spaced axially from each other to define therebetween an annular axial air gap;
- (2) a hollow substantially disk-shaped armature positioned within said air gap and having windings comprising thin conductive members intimately bonded to its opposite radial faces within said air gap;
- (3) a magnetic annulus within and spaced from said armature for completing the flux path between said pair of magnetic members and through said armature,
- (4) and a shaft and means rigidly connecting said armature to said shaft, said annulus being mounted for free rotation with respect to said armature and said shaft.

3,312,847

BANDING AND BALANCING OF DYNAMO-ELECTRIC MACHINES

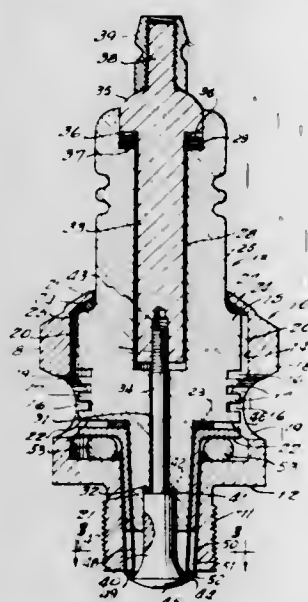
Henri Waclaw, Yonkers, N.Y., assignor to Otis Elevator Company, New York, N.Y., a corporation of New Jersey
Filed June 24, 1964, Ser. No. 377,719
16 Claims. (Cl. 310-271)



8. Banding apparatus for the end turns of the rotor of a dynamoelectric machine, comprising a layer of insulating material tightly encircling said end turns, a cylindrical metallic band, having a width not greater than that of said layer, tightly encircling said layer, and first and second additional layers of insulating material, each substantially narrower than said metal band, tightly encircling said band adjacent to oppo-

site edges thereof leaving exposed a portion of said band between said additional layers, said layers of insulating material being in the form of hard, solid masses.

3,312,848
SPARK PLUG HAVING CONCENTRIC RADIALLY SPACED ELECTRODES
Herman Baum, 3705 Autumn Drive,
Fort Worth, Tex. 76109
Filed May 13, 1964, Ser. No. 367,122
3 Claims. (Cl. 313—11.5)

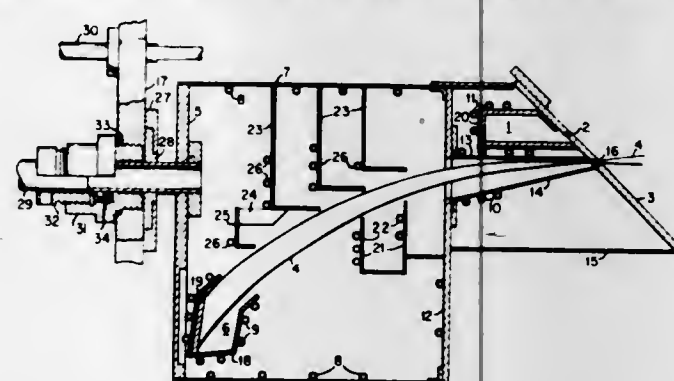


1. In a spark plug for internal combustion engines, having a base formed with a hollow body portion and a depending shank portion, the said base having a series of ports formed about said body portion, and a ceramic insulator arranged concentrically of said base and having a series of spaced circumferential ribs exposed to the ports in the body portion of said base, and having a portion depending into said shank portion, the improvements comprising: a central electrode, having upper and lower threaded joined sections, arranged concentrically of said insulator, the lower section extending beyond the lowermost end of said insulator and through said shank portion defining an annular chamber therearound within said shank portion, a first conical electrode in said shank portion providing a liner therefor and a conical ceramic sleeve seated in said conical electrode, the said ceramic sleeve having an annular flange about its upper end providing a seat for said ceramic insulator, a second conical electrode seated in said sleeve and embracing the lower end of said insulator defining an annular space therearound internally of said first conical electrode below the lower end of said insulator, and a circular sparking element formed on the lowermost end of the lower section of said central electrode and concentrically spaced from the lower ends of said first and second conical electrodes providing a circular spark gap therearound.

3,312,849
ISOTOPE RECEIVER FOR A CALUTRON HAVING AN OIL RESERVOIR IN ITS COLLECTION POCKET
William A. Bell, Jr., and Allen M. Veach, both of Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed May 9, 1966, Ser. No. 548,805
5 Claims. (Cl. 313—63)

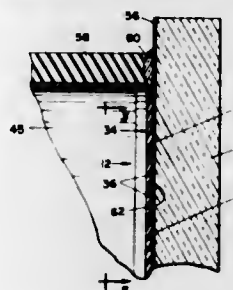
1. In a calutron system including an ion source; an ion receiver provided with a defining face plate with ion entrance slots therein, first ion collection pockets mounted

back of said slots and a housing enclosing said pockets; an evacuated tank enclosing said ion source and receiver; means for providing a magnetic field for said calutron; and a calcium-vapor generator disposed within said tank for directing a calcium vapor into the path of the ion beam from said ion source; the improvement comprising an enlarged second housing positioned back of said first housing, said housings having a common wall therebetween with said common wall being provided with an opening for passage of an isotope ion beam therethrough; a second ion collection pocket provided with an ion collection surface and mounted in a recessed position close to the back wall of said second housing and a substantial distance behind said first ion collection pocket; an additional ion entrance slot being provided in said face plate in alignment with said opening in said common wall such that the isotope beam of which added purity is



desired passes through said additional ion entrance slot, through said opening in said common wall and then into said recessed pocket; a pair of water-cooled diverging plate members mounted within said first housing to define a channel through which said isotope ion beam can pass; a first plurality of baffles mounted within said second housing above the path of said isotope ion beam and in close proximity thereto for trapping high-energy neutral particles; a second plurality of baffles mounted within said second housing below the path of said isotope ion beam and in close proximity thereto for trapping ions with extraneous energy; and means for respectively water cooling said second housing, all of said baffles and said recessed collection pocket, whereby the provision of said cooled recessed pocket, said cooled baffles and housing, and said cooled diverging beam channeling members effects collection of a desired isotope with substantially improved purity.

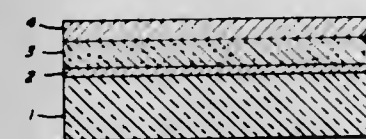
3,312,850
RELATIVELY THICK PHOSPHOR STORAGE TARGET HAVING SPACED HOLES FOR ELECTRON PASSAGE
Richard B. McMillan, Jr., Tigard, and Ronald C. Robinson, Beaverton, Oreg., assignors to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon
Filed Jan. 13, 1964, Ser. No. 337,202
4 Claims. (Cl. 313—48)



3. A bistable storage apparatus, comprising: a support member having an electrically conductive surface; storage dielectric means including an integral layer of phosphor material supported on said conductive sur-

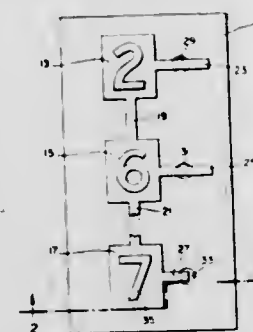
face of said support member, said phosphor layer having a plurality of spaced holes extending completely through said layer to provide a plurality of separate continuous unobstructed passageways for secondary electrons to be transmitted from the bombarded side of said layer and collected by said conductive surface on the opposite side of said layer; said phosphor layer being of too great a thickness to provide a sufficiently porous structure to enable said secondary electrons to be transmitted through the pores between the phosphor particles to said conductive surface; writing means for forming a charge image on said phosphor layer; and holding means for bombarding said phosphor layer with low velocity electrons to cause secondary electrons to be emitted from said phosphor layer and to enable bistable storage of said charge image.

3,312,851
ELECTROLUMINESCENT LAMP STRUCTURE HAVING THE PHOSPHOR PARTICLES DISPERSED IN A MODIFIED CYANOETHYLATED POLYVINYL ALCOHOL RESIN
Leonard C. Flowers, Franklin Township, Westmoreland County, and David Marschik, Wilkensburg, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 26, 1963, Ser. No. 276,012
5 Claims. (Cl. 313—108)



1. In an electroluminescent lamp structure comprising a phosphor-bearing layer disposed between two electrically conductive layers, the improvement which comprises having said phosphor embedded and dispersed in a layer of a dielectric material comprising a cyanoethylated polyvinyl alcohol modified with from about 0.6 to 40.0%, based on the weight of the cyanoethylated polyvinyl alcohol, of an organic material selected from the group consisting of polyisocyanates and polyisothiocyanates.

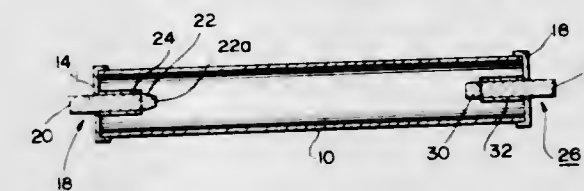
3,312,852
BASE ELEMENT FOR ELECTROLUMINESCENT LAMP
James F. Motson, 798 Welsh Road, Huntingdon Valley, Pa. 19006
Filed Mar. 12, 1964, Ser. No. 351,288
6 Claims. (Cl. 313—108)



1. An electroluminescent lamp comprising: an electrically conducting base member having an integrally formed lead-in member; an electrically non-conducting base member having an aperture therein; said conducting base member secured to said non-conducting base member with said integrally formed lead-in member being formed to pass through said aperture to the side of said non-conducting base lying opposite said conducting base

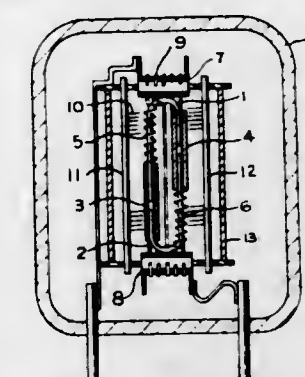
member; a layer of electroluminescent material bonded to said conducting base member; a transparent electrode bonded to said layer of electroluminescent material on the side lying opposite said conducting base member; and means connected to said conducting base member and said transparent electrode to be connected to a source of alternating current power.

3,312,853
FLASH TUBE CONSTRUCTION
Richard L. Mela, Arlington, Mass., assignor to Dynatech Corporation, Cambridge, Mass.
Filed Dec. 1, 1964, Ser. No. 415,143
4 Claims. (Cl. 313—218)



2. A flash device comprising
(A) enclosure means providing a chamber containing a gas to be ionized,
(B) first and second electrode assemblies, each of said electrode assemblies including
(1) an electrode having a tip thereon,
(2) electrical conducting means extending into said chamber from the exterior of said enclosure means and connecting with an end of said electrode remote from said tip,
(C) said first and second electrodes being located and oriented with respect to each other to provide for passage of an electric current between said tips thereof by way of said gas,
(D) at least one of said electrodes being of monocrystalline pyrolytic graphite with the axis of maximum thermal conductivity of said graphite extending substantially in the direction from the tip of said electrode to the electrical conducting means connecting therewith.

3,312,854
CATHODE HAVING A U-SHAPED SUPPORT MEMBER
John Edward Finn, Plainview, N.Y., assignor to North American Phillips Company, Inc., New York, N.Y., a corporation of Delaware
Filed July 31, 1964, Ser. No. 386,670
2 Claims. (Cl. 313—278)



1. A directly-heated cathode for an electric discharge tube comprising a support, a pair of U-shaped metal members mounted in opposed spaced relation, tubular insulating members slideable over the arms of said U-shaped members for insulating said U-shaped members from each other, resilient means supported by each of said U-shaped members engaging said tubular insulating members resiliently urging said U-shaped members apart, a pair of metal caps each of which is secured to one of

said U-shaped members, and a plurality of longitudinally-extending parallel-connected thin wires axially wound about said caps.

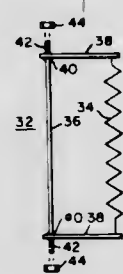
3,312,855

ELECTRON DISCHARGE DEVICE HAVING AN EXCHANGEABLE ELECTRODE

Richard J. Melling, Veteran, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 4, 1963, Ser. No. 249,497

4 Claims. (Cl. 313-237)



1. An electron discharge device comprising first and second support members for receiving an electrode sub-assembly, said electrode sub-assembly including third and fourth support members adapted to be engaged respectively to said first and second support members, a replaceable filament disposed between and connected to said third and fourth support members, an intermediate member disposed between said third and fourth support members for tensioning said filament prior to insertion within said electron discharge device, said intermediate member having a frangible portion which may be removed so that said filament is placed under tension by said first and second support members.

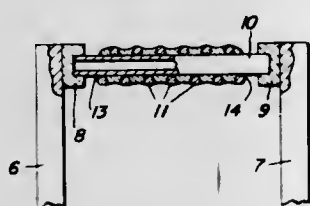
3,312,856

RHENIUM SUPPORTED METALLIC BORIDE CATHODE EMITTERS

James M. Lafferty, Schenectady, and William R. Grams, Ballston Spa, N.Y., assignors to General Electric Company, a corporation of New York

Filed Mar. 26, 1963, Ser. No. 268,107

7 Claims. (Cl. 313-346)



1. A thermionic cathode comprising: a support, said support including a surface region consisting of rhenium; and a thermionic emissive material consisting of a metal boride, which does not diffuse into rhenium at elevated temperatures, in contact with said surface region and carried by said support.

3,312,857

MICROWAVE AMPLIFIER UTILIZING MULTIPAC-TION TO PRODUCE PERIODICALLY BUNCHED ELECTRONS

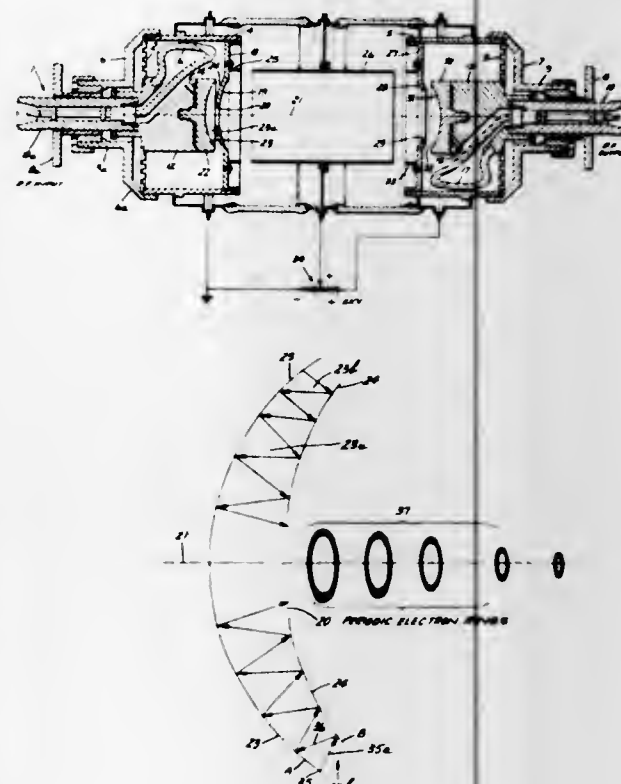
Philo T. Farnsworth, Fort Wayne, Ind., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed Apr. 19, 1963, Ser. No. 274,128

31 Claims. (Cl. 315-5)

1. An electron discharge device comprising cathode means for emitting spaced bunches of electrons in a given

direction, means for accelerating said bunches in beam-like form in said direction along a predetermined pencil-like path, and catcher means for absorbing energy from all of said bunches after one traversal of said path, and



for generating an electrical signal in response thereto, said path being free of structure and extending from said cathode means to said catcher means, said bunches thereby traversing said path without encountering any structure therein.

3,312,858

DEFLECTING SYSTEM FOR CHARGE CARRIER BEAMS

Walter Dietrich, Hanau am Main, Germany, assignor to W. C. Heraeus G.m.b.H., Hanau am Main, Germany, a corporation of Germany

Filed Aug. 21, 1962, Ser. No. 218,282

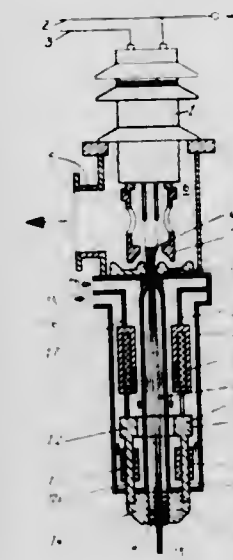
Claims priority, application Germany, Aug. 31, 1961, H 39,145

6 Claims. (Cl. 315-27)

1. In an electron gun wherein a focused electron beam is generated and emerges therefrom, a deflection system for controlling the angular deflection of said emergent electron beam with respect to its original axis, which comprises

- (a) A ferromagnetic core supported by the electron gun and having a central apertured portion disposed to accommodate the free passage therethrough of the focused electron beam travelling along a path defined by its original axis, said core having a pair of projecting end members extending from said apertured portion in the direction of electron beam travel and in substantially parallel spaced relation thereto,
- (b) A pair of ferromagnetic pole pieces each mounted to the free end of a projecting end member of said ferromagnetic core and disposed in opposite spaced apart relation to each other to define a gap accommodating the passage of the focused electron beam therethrough,
- (c) A solenoid mounted on one of the projecting end members of said ferromagnetic core and disposed for connection to a source of electricity for controllable

energization thereby to establish a magnetic flux circuit extending through the central apertured portion of the core, both projecting end members thereof, both pole pieces and across the gap defined by the

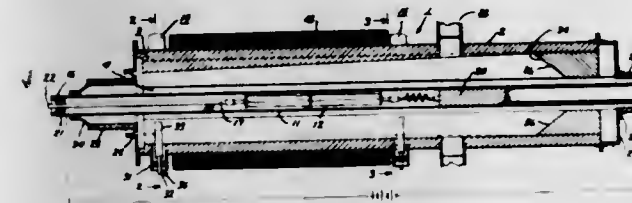


3,312,859 CROSSED FIELD TRANSVERSE WAVE AMPLIFIER COMPRISING TRANSMISSION LINE

Donald A. Wilbur, Scotia, and Se Puan Yu, Schenectady, N.Y., and Philip N. Hess, Los Altos, Calif., assignors to General Electric Company, a corporation of New York

Filed Sept. 10, 1962, Ser. No. 222,484

22 Claims. (Cl. 315-39)



1. A transverse wave amplifier comprising, spaced cathode and anode means defining a transmission line having an interaction space therein, said transmission line adapted for supporting and propagating a fast electromagnetic wave having a slow wave electric field component extending transverse the direction of propagation of the fast wave, means including an axially directed magnetic field component for establishing an electron flow transverse the direction of propagation of said fast wave and parallel to the direction of said transverse electric field component thereof, input means for introducing an electromagnetic wave signal having a transverse electric field component at one section of said transmission line and output means for extracting amplified electromagnetic wave energy from another section of said transmission line longitudinally spaced a plurality of free-space wavelengths from said one section along the path of propagation of said fast wave, and means providing a progressively decreasing interaction impedance along said transmission line between said input and output means.

3,312,860

CONDENSER DISCHARGE USING SILICON CONTROLLED RECTIFIER CONTROL MEANS

Theodor F. Sturm, Altadena, Calif., assignor, by mesne assignments, to Straza Industries, El Cajon, Calif., a corporation of California

Filed Sept. 27, 1963, Ser. No. 312,124

2 Claims. (Cl. 315-223)



1. An ignition system for internal combustion engines, which comprises

power-supply means adapted when connected to a battery to deliver a positive output voltage much greater than battery voltage, a step-up transformer,

a spark capacitor having one terminal thereof connected to the positive output of said power-supply means and the other terminal thereof connected to one terminal of the primary of said transformer,

a diode having the anode thereof connected to the other terminal of said transformer primary and the cathode thereof connected to said one terminal of said capacitor, an SCR connected in shunt with said diode,

the anode of said SCR being connected to said power-supply output and the cathode thereof being connected to said other terminal of said transformer primary,

means to connect the secondary of said transformer to the spark plug means of said engine,

triggering means connected to the gate of said SCR to trigger said SCR at predetermined times when it is necessary that a spark be generated in said spark plug means,

said triggering means being connected directly to said battery whereby the voltage at said gate may not exceed battery voltage,

said SCR operating when triggered to discharge said capacitor through said transformer primary and thereby effect generation of a spark in said spark plug means, and

means additional to said triggering means to prevent triggering of said SCR at times other than said predetermined times,

said last-named means comprising means to maintain said SCR in reverse-biased condition at all times except when said capacitor is sufficiently charged to effect extinguishment of said SCR during the reverse or restorative flow of current from said capacitor through said diode after the initial discharge of said capacitor through said SCR,

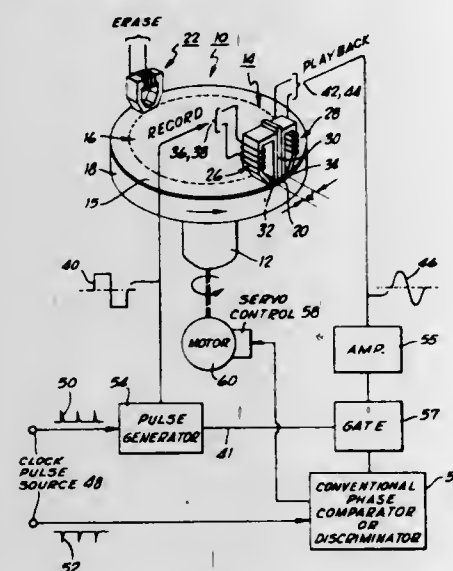
said means for maintaining said SCR in reverse-biased condition comprising circuit means including a resistor to connect to ground said cathode of said SCR, and circuit means including an additional diode to connect said SCR cathode to the positive terminal of said battery, said additional diode being so oriented that current may only flow therethrough in a direction toward said positive battery terminal,

whereby the charging current from said power-supply means to said capacitor will flow also through said additional diode and thereby maintain said cathode at a potential higher than that of said gate until charging of said capacitor is substantially complete.

3,312,861

MAGNETIC WRITE-READ TACHOMETER
Paul A. Mauch, Mountain View, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed Jan. 7, 1964, Ser. No. 336,269
4 Claims. (Cl. 317-5)



1. A system for developing an output signal based upon the motion of a rotating object comprising a magnetic recording element mounted to rotate with said rotating object, a magnetic recording head and a magnetic playback head mounted adjacent said recording element to operate thereon during rotation thereof with said rotating object, said playback head closely displaced from said recording head in the direction of rotation of said recording element, an erase head mounted adjacent said recording element at a position displaced from said playback head in the direction of rotation of said recording element, an input signal source coupled to said recording head to apply single cycles of an input waveform thereto with constant time intervals therebetween, each of said single cycles having a period less than the time required for a given point of said recording element to rotate between said recording and playback head, and output circuitry coupled to said playback head to process waveforms reproduced therefrom into an output signal based upon the motion of said rotating object, said output circuitry including a gate coupled to said input signal source, said gate timed to close upon initiation of each cycle of said input waveform and open at a time between the termination of said cycle and the time a point of said recording element adjacent said recording head at the initiation of said cycle has rotated adjacent said playback head to thereby block crosstalk signals between the recording head and playback head.

3,312,862

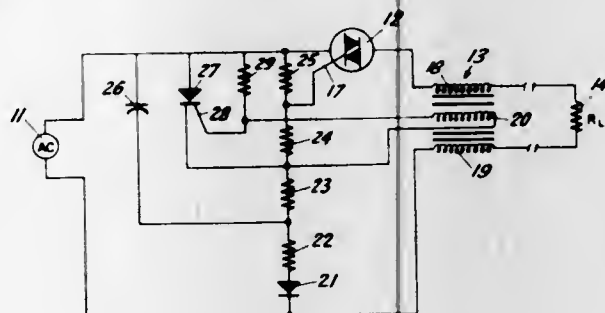
SEMICONDUCTOR LEAKAGE DETECTOR AND CONTROL CIRCUIT
Cedric G. Currin, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

Filed Oct. 12, 1964, Ser. No. 403,411
2 Claims. (Cl. 317-10)

1. A control circuit for interconnection between an alternating current source and a load, said circuit being

responsive to current leakage in the vicinity of the load, comprising:

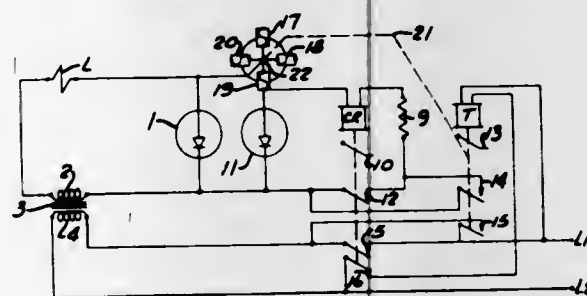
- a differential transformer for detecting current differential between the leads supplying said load, two windings of said transformer being connected in series with said load at opposite sides of the load, and having an output winding arranged to detect differences in current flowing between said two windings,
- a D.C. bias voltage controlled, gated, semiconductor alternating current switch having an input terminal connected to said source and an output terminal connected to one winding of said differential transformer, said switch having a characteristic whereby unless bias voltage is applied to its gate terminal the device is non-conductive,



- a D.C. bias voltage supply connected to the gate of said switch,
- a controlled rectifier connected between the gate terminal and the input terminal of said switch, said controlled rectifier having its control terminal connected to the output winding of said differential transformer, whereby a signal produced by said differential transformer causes conduction by said controlled rectifier.

3,312,863

TRANSIENT ELECTRIC ENERGY SENSOR WITH ZENER AND PARALLEL PROTECTIVE RELAY
Robert P. Muldoon, Indiana, Pa., assignor to Link-Belt Company, a corporation of Illinois
Filed July 25, 1963, Ser. No. 297,601
2 Claims. (Cl. 317-22)

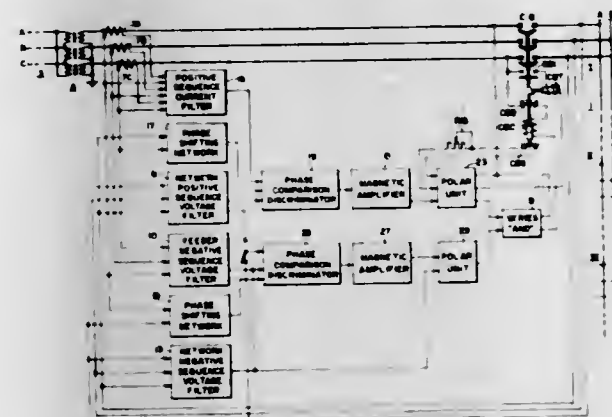


1. A protection circuit for semiconductors against overloads which consists of a transformer having a primary line circuit and a secondary load circuit, power semiconductor means in the load circuit to supply unidirectional current thereto, avalanche diode means in parallel with said power semiconductor means, a relay having an operating coil means, two front contacts, a series circuit of said operating relay coil means and one front contact connected in parallel with said avalanche diode means, said second front contact of said relay connected in series with said primary winding and the source of power, and reset means for said relay including a back contact on said relay and a timer having an operating coil and two front contacts connected in parallel with said relay front

contacts, the operating coil of said timer connected to the source of power through said relay back contact to energize the same.

3,312,864

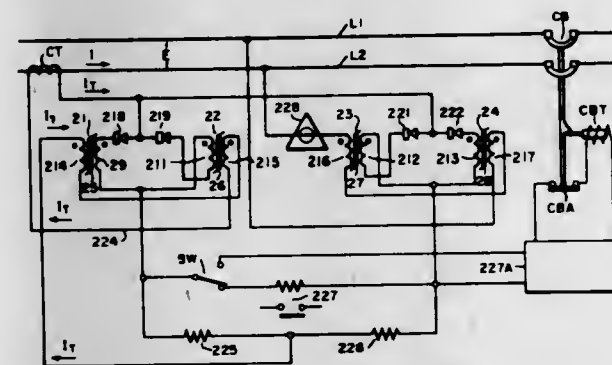
PROTECTIVE RELAYING DEVICES
Paul J. Schwannengel, Belleville, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 23, 1963, Ser. No. 304,099
7 Claims. (Cl. 317-23)



1. In a network protector for controlling the connection and disconnection of a polyphase alternating current supply circuit and a polyphase alternating current load circuit, a circuit breaker having supply terminals for connection to the supply circuit and load terminals for connection to the load circuit, circuit-breaker-closing-control means effective when the circuit breaker is open in response to electrical conditions at said terminals for closing the circuit breaker provided that the electrical conditions at said terminals are such that the supply terminals can supply electric energy through the circuit breaker to the load terminals, and restraining means responsive to the presence of a negative symmetrical component at the supply terminals for restraining closure of the circuit breaker.

3,312,865

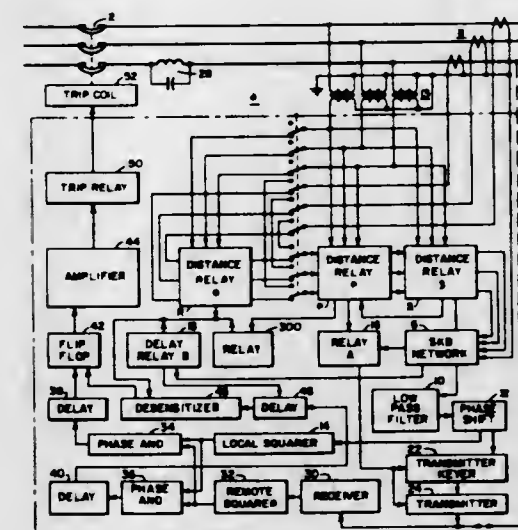
STATIC REACTANCE RELAY
John C. Gambale, Livingston, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 21, 1963, Ser. No. 317,506
7 Claims. (Cl. 317-27)



1. In combination with an alternating current line, a protective device comprising first energizing means powered in proportion to the square of current in said line, a second energizing means powered in proportion to the reactive power of said line, and means responsive to the difference between the power of said first energizing means and that of said second energizing means to control current flow in said line.

3,312,866

DISTANCE RELAY ACTUATED PHASE COMPARISON RELAYING DEVICE
George D. Rockefeller, Jr., Morris Plains, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 26, 1964, Ser. No. 392,126
12 Claims. (Cl. 317-28)



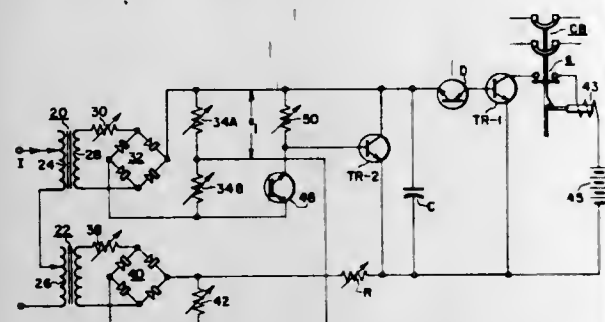
1. In a relay device for use in protecting a transmission line section, a transmitter adapted to supply first and second output signals as a consequence of the application thereto of first and second input signals respectively, a switch actuatable from a first to a second operating condition as a consequence of the application of a control signal thereto, desensitizing means connected to said switch and normally maintaining said switch ineffective to be actuated by said control signal, current actuated means including a current network operably connected to said transmitter, said current actuated means being operable as a consequence of current flow through said current network in first and second directions to supply said first and said second input signals to said transmitter, a control network having first and second input connections and an output connection, means connecting said output connection to said switch to render said switch actuatable by said control network, said control network being effective to actuate said switch from its said first to its said second condition solely when first and second input quantities are applied to said first and second input connections, circuit means connecting said current network to said first input connection whereby said control network, said current network being effective to supply said first input quantity to said input connection as a consequence of current flow through said current network, a signal receiver operatively connected to said second input connection, said receiver being effective to supply said second input quantity solely when actuated in a predetermined manner with respect to the direction of current flow supplied to said current network, first and second distance relays, each said relay including a control device actuated as a function of the combined magnitude of voltage and current quantities supplied thereto, circuit means interconnecting said control devices of said first and said second distance relays to said transmitter, whereby said transmitter is actuated to supply one of its said output signals as determined by the direction of current flow through said current network, and circuit means connecting solely one of said first and said second distance relays to said desensitizing means, said one distance relay being effective in response to a predetermined relationship of the said voltage and current quantities supplied thereto to render said switch effective to be actuated by said control network.

3,312,867

STATIC TIME-OVERCURRENT RELAYS

William K. Sonnemann, Roselle Park, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 26, 1963, Ser. No. 275,940
8 Claims. (Cl. 317-36)



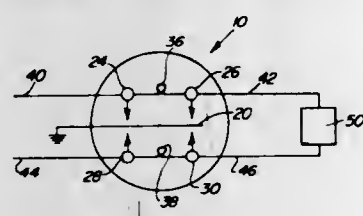
1. A time-overcurrent relay comprising a pair of transformers each having primary and secondary windings thereon, one of said transformers being designed to saturate at high voltage and current conditions and the other transformer being designed to saturate at low voltage and current conditions, means for passing current to be monitored through both of said primary windings, circuit means for combining electrical quantities proportional to voltages appearing across said secondary windings in opposing relationship to produce a single voltage proportional to the difference between said first-mentioned voltages, a capacitor, means for applying said single voltage across said capacitor, a utilization device, and means for discharging said capacitor through the utilization device when the voltage across said capacitor reaches a predetermined magnitude.

3,312,868

ELECTRICAL SURGE ARRESTER

Vladimir W. Vodicka, Santa Barbara, Calif., assignor to Joslyn Mfg. and Supply Co., Chicago, Ill., a corporation of Illinois

Filed July 23, 1964, Ser. No. 384,743
9 Claims. (Cl. 317-61)



1. A protective device for use in a balanced signal transmission line, said device comprising a sealed housing, four anode electrodes and cooperating cathode electrode means defining four spark gaps within said housing, an inert gaseous atmosphere in said housing, a first delay line connecting one pair of said anode electrodes and a second delay line connecting the other pair of said anode electrodes, said delay lines having different impedances.

2. A protective device for discharging transient high voltage impulses of high frequency induced in a balanced signal transmission system, said device including two pairs of anode electrodes for connection one pair in series in each side of said balanced line transmission system, a ground electrode for connection to electrical ground operatively arranged with said pairs of electrodes to define an arc gap between each electrode of said pairs and said ground electrode,

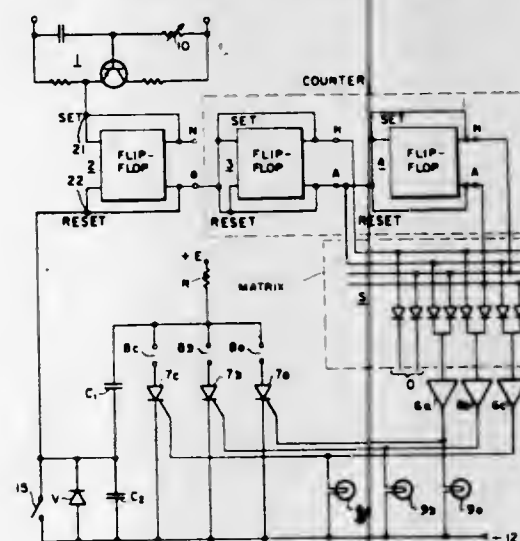
and a pair of delay lines connected one between each pair of said anode electrodes of said pair, said delay lines having impedance characteristics such that signals normally transmitted through said system are substantially unaffected by said delay lines but such that the rise time of high voltage transients appearing in said system is increased to facilitate the creation of an arc discharge across said gaps by said high voltage impulses, said delay lines having dissimilar impedances.

3,312,869

DETONATOR APPARATUS FOR SERIES FIRING OF EXPLOSIVES

Peder Werner, John Sverdrupsvet 13, Oslo, Norway

Filed May 14, 1964, Ser. No. 367,496
5 Claims. (Cl. 317-80)



1. Firing apparatus adapted for communication to a source of electrical power, for serial firing of explosive charges comprising a pulse source, an electronic counter having a plurality of counting stages connected to said pulse source and advancing a count each time a pulse is received; firing control means for the explosive charges connected to discrete stages of the counter, said firing control means causing selectively application of power to said charges and thus causing explosion thereof; means enabling the counter to count, one stage at a time upon application of pulses thereto, and means sensing operation of the firing control means and connected to said enabling means to inhibit said enabling means if an explosion has not been sensed.

3,312,870

ELECTRICAL TRANSMISSION SYSTEM

William T. Rhoades, Garden Grove, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Mar. 13, 1964, Ser. No. 351,715
15 Claims. (Cl. 317-99)



1. An electrical transmission system comprising: (a) three conductive plates having an insulating film on the outer surfaces thereof, said plates being disposed with the board surfaces thereof substantially coextensive, parallel and adjacent to form a laminated structure, said plates being electrically insulated from each other by said insulating film;

(b) an adhesive substance disposed between said plates and uniting said plates together; and

(c) means electrically interconnecting the outer two of said plates at regular intervals along the length thereof, the inner one of said plates forming a current path for the transmission of direct current and the outer two of said plates forming a double return path for said direct current.

3,312,871

INTERCONNECTION ARRANGEMENT FOR INTEGRATED CIRCUITS

Hajime Seki, Yorktown Heights, and Donald P. Seraphim, Bedford Hills, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Dec. 23, 1964, Ser. No. 420,580
9 Claims. (Cl. 317-101)



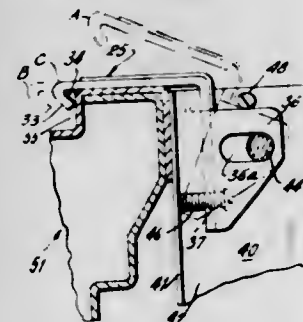
1. An interconnection arrangement for interconnecting active circuit elements formed on a wafer comprising a first plurality of spaced-parallel conductors in a first plane and a second plurality of spaced-parallel conductors in a second plane and supported in insulated fashion on said wafer for interconnecting said active elements, said first and said second conductors being arranged in substantially transverse fashion and located between said active elements, selected ones of said first conductors being connected to said active elements, and insulating means positioned between said first and said second conductors and providing access to corresponding portions of said first conductors, adjacent ones of said second conductors each having at least one substantially orthogonal extension oppositely-directed with respect to said orthogonal extension of the other for effecting electrical contact to selected ones of said first conductors through said insulating means.

3,312,872

BUS DUCT PLUG MOUNTING DEVICE WITH IMPROVED INTERLOCKING MEANS

Russell S. Davis, Detroit, Mich., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Aug. 30, 1965, Ser. No. 483,639
9 Claims. (Cl. 317-119)



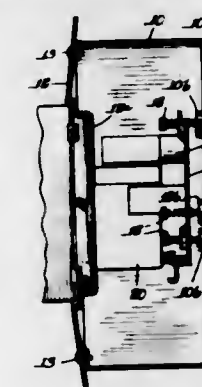
1. A bus duct plug comprising a plurality of bus bar engaging fingers; a housing to which said fingers are secured; said housing having a front wall with an aperture through which said fingers extend forwardly of said front wall; said housing also having first and second end walls extending rearwardly from opposite first and second edges, respectively, of said front wall; mounting means for securing said plug to a bus duct casing; said mounting means including upper and lower portions having individual open hook portions facing one another and projecting forward of said front wall; said lower por-

3,312,873

ADJUSTABLE MOUNTING MEANS

Harris I. Stanback, Lexington, Ky., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed Oct. 11, 1965, Ser. No. 494,849
5 Claims. (Cl. 317-119)



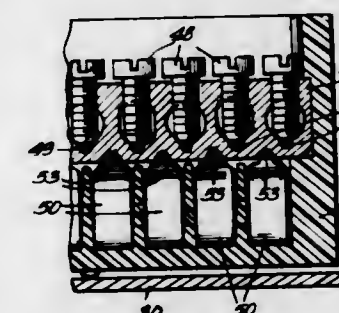
1. An assembly comprising a first member, a second member, and means for adjustably mounting said first member in spaced relationship to said second member, said mounting means comprising means on said second member defining a plurality of spaced internally threaded apertures of relatively small diameter, means on said first member defining a plurality of correspondingly spaced internally threaded apertures of relatively large diameter, and a plurality of screws each having a portion of relatively small diameter threaded into one of said apertures of said second member and a portion of relatively large diameter threaded into a corresponding one of said apertures of said first member.

3,312,874

ELECTRICAL PANELBOARD HAVING PARTICULAR NEUTRAL WIRE CONNECTING MEANS

Harris I. Stanback, Lexington, Ky., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed Oct. 11, 1965, Ser. No. 494,854
5 Claims. (Cl. 317-119)



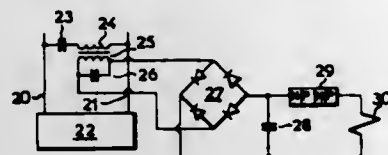
1. An electrical panelboard comprising an insulating base, an elongated neutral bar secured with respect to said base, said neutral bar having a plurality of wire-receiving holes extending transversely thereof and spaced longitudinally therealong and a plurality of clamping-screw-receiving holes spaced longitudinally therealong and respectively extending partially therethrough into intersecting relationship with said wire-receiving holes, and resilient means for securing said neutral bar to said base.

ient clip means in said base cooperating with said neutral bar and thereby forming a connector of the push-in type therewith.

3,312,875 RELAY CONTROL FOR SYSTEMS DISTRIBUTING ELECTRIC ENERGY

Ferdy Mayer, 22 Rue Ampere, Grenoble, France
Filed Feb. 26, 1963, Ser. No. 260,975
Claims priority, application France, Feb. 28, 1962, 889,474

3 Claims. (Cl. 317-147)

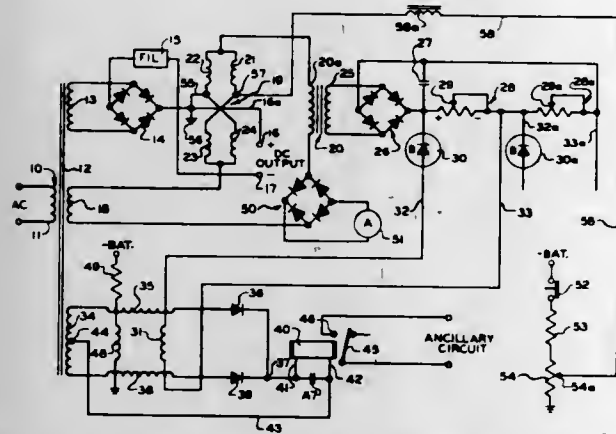


1. Equipment for the reception of alarm information carried by A.C. mains from a central station which distributes through said mains an alarm signal having a frequency different from that of said mains, comprising at least one individual alarm receiver, said receiver comprising a primary circuit connected across the mains, a secondary circuit inductively coupled to the said primary circuit, at least one of said primary and secondary circuits comprising first A.C. energy-storing means tuned to the frequency of said alarm signal, rectifying means, second D.C. energy-storing means loading said rectifying means, an electronic cut-off threshold switch, and electromagnetic relay alarm means, the said electronic switch connecting said second energy-storing means with the electromagnetic relay alarm means to discharge the said second energy-storing means through the said electromagnetic relay alarm means.

3,312,876 CURRENT RESPONSIVE SIGNALING SYSTEM

George H. Pohn, Lorain, and Jefferson T. Mitchell, Bay Village, Ohio, assignors to Lorain Products Corporation, a corporation of Ohio

Filed May 2, 1963, Ser. No. 277,660
4 Claims. (Cl. 317-148)

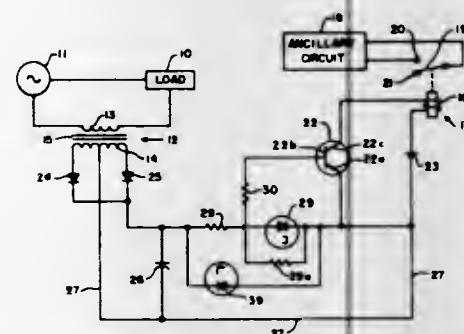


4. In a circuit adapted to energize an ancillary circuit, the combination of a power circuit section, a load current responsive circuit section including variable impedance means the impedance of which is responsive to the output current of said power circuit section, variable current load simulating means, means for connecting said variable current means to said variable impedance means to vary the impedance thereof and the magnitude of the current through said load current responsive circuit section independently of current flow in said power circuit section, current responsive means arranged to respond to current flow in said load current responsive section, a sensing circuit, an ancillary circuit, a source of power for said ancillary circuit, voltage sensitive conducting means

for connecting said sensing circuit between said current responsive means and said source of power to energize said ancillary circuit when a predetermined current in said current responsive circuit section is attained.

3,312,877 CURRENT RESPONSIVE SIGNALING CIRCUITRY

Jefferson T. Mitchell, Bay Village, Ohio, assignor to Lorain Products Corporation, a corporation of Ohio
Filed May 8, 1964, Ser. No. 366,032
1 Claim. (Cl. 317-148.5)



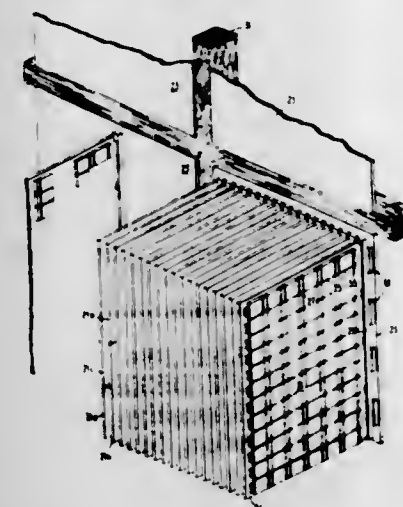
In a signaling circuit responsive to the current supplied to a load from an A.C. source, in combination, a transformer having a primary winding connected serially in the load current path and a secondary winding connected to capacitive means through rectifying means, first resistive means and tunnel diode means serially connected across said capacitive means whereby current proportional to load current is directed through said first resistive means and said tunnel diode means, a zener diode connected across said capacitive means to shunt current greater than a prescribed value around said first resistive means and said tunnel diode means, a transistor having emitter, collector and base electrodes, a D.C. source, a relay having a winding, means for connecting said D.C. source and said winding of said relay serially between said collector and emitter electrodes of said transistor, second resistive means connected between said base electrode of said transistor and one end of said tunnel diode means, means for connecting the emitter electrode of said transistor to the other end of said tunnel diode means and third resistor means connected in parallel relationship with tunnel diode means.

3,312,878 HIGH SPEED PACKAGING OF MINIATURIZED CIRCUIT MODULES

Leonard J. Poch, Montrose, Pa., and Reijo A. Rinne, William K. Springfield, and Bert E. Stevens, Vestal, and William G. Sweeney, Endicott, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed June 1, 1965, Ser. No. 460,016
12 Claims. (Cl. 317-101)

1. A high speed printed circuit package for miniaturized circuit modules comprising a plurality of multilayer printed circuit cards each having a plurality of conductive planes, a plurality of high speed, high density circuit modules and associated components mounted on said cards, the circuits formed by said circuit modules and associated components typically having a characteristic output impedance, a connector socket secured to each of said cards and including first contacts attached on one side of the card and second contacts attached to the edge of the cards, the contacts connected to the conductive planes of said card,

a multilayer printed wiring interconnection board having a plurality of conductive planes, rows of pins extending through said board and selectively connected to the said conductive planes of said interconnection board,



said cards plugged onto said interconnection boards approximately at right angles thereto with the first and second contacts in engagement with the rows of pins, at least some of the planes on said cards and board having transmission line system printed wiring the effective characteristic impedance of which substantially matches the characteristic output impedance of said circuits.

3,312,879 SEMICONDUCTOR STRUCTURE INCLUDING OPPOSITE CONDUCTIVITY SEGMENTS

Gordon C. Godejohn, Jr., Santa Ana, Calif., assignor to North American Aviation, Inc.
Filed July 29, 1964, Ser. No. 385,890
8 Claims. (Cl. 317-234)



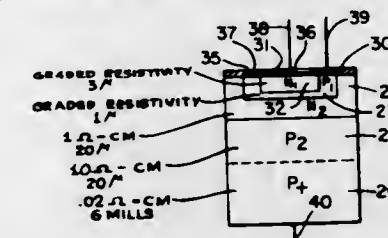
1. Single-crystal semiconductor segments of opposite conductivity types joined together in a monolithic-like crystalline structure by thermally compatible, electrically isolating, polycrystalline material on a common substrate, said segments being further isolated from said substrate and each other by a film of thermally compatible isolating material between said segments and said isolating material and wherein each of said segments has homogeneous resistivity.

3,312,880 FOUR-LAYER SEMICONDUCTOR SWITCHING DEVICE HAVING TURN-ON AND TURN-OFF GAIN

Thomas A. Longo, Winchester, and Marvin Miller, Newton, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 12, 1962, Ser. No. 244,075
5 Claims. (Cl. 317-235)

1. A semiconductor device comprising a body of semiconductor material including four zones of alternating conductivity type arranged in succession on a degenerate substrate of semiconductor material of very low resistivity of one conductivity type, the first of said zones contiguous said substrate being of high resistivity semiconductor material of the one conductivity type, the second of said zones forming a PN junction with said first zone and being of moderate resistivity semiconductor material of the opposite conductivity type,

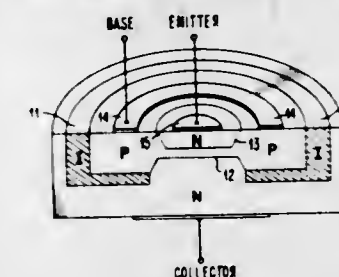
the moderate resistivity of the second of said zones being lower than the high resistivity of the first of said zones and being higher than the very low resistivity of said substrate, the third of said zones forming a graded PN junction with said second zone and being semiconductor material of the one conductivity type, the resistivity of the third of said zones decreasing with distance from the junction with the second zone,



the fourth of said zones forming a graded PN junction with said third zone and being semiconductor material of the opposite conductivity type, the resistivity of the fourth of said zones decreasing with distance from the junction with the third zone, the thickness of the degenerate substrate being greater than the total thickness of the four zones, and ohmic connections to the substrate, the fourth zone, and the third zone, the second zone being free of any connection.

3,312,881 TRANSISTOR WITH LIMITED AREA BASE-COLLECTOR JUNCTION

Hwa N. Yu, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Nov. 8, 1963, Ser. No. 322,383
3 Claims. (Cl. 317-235)



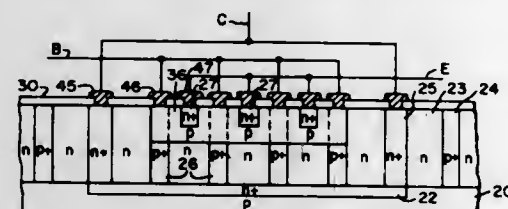
1. A semiconductor device comprising a crystalline body having a plurality of regions differing in conductivity type and comprising a collector region of a first conductivity type constituting the bulk of said body, a base region of a second conductivity type extending from the surface of said body and defining therewithin a junction of limited extent, an intrinsic region extending from the extremity of said junction to said surface disposed between said base and collector regions and an emitter region formed at said surface in spaced alignment with said junction of limited extent.

3,312,882 TRANSISTOR STRUCTURE, AND METHOD OF MAKING, SUITABLE FOR INTEGRATION AND EXHIBITING GOOD POWER HANDLING CAPABILITY AND FREQUENCY RESPONSE

Larry J. Pollock, Odenton, Md., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 25, 1964, Ser. No. 377,978
6 Claims. (Cl. 317-235)

1. A transistor structure suitable for incorporation within an integrated circuit comprising: emitter, base and collector regions of which said base region is of opposite

semiconductivity type to said emitter and collector regions forming junctions therewith that terminate at a planar surface; said base region comprising first and second portions of which said first portion has a resistivity at least an order of magnitude less than that of said second portion, said first portion having a plurality of integrally joined segments enclosing said second portion in directions parallel with said surface to define a plurality of segments within said second portion at least partially



separated by said first portion, said first portion also extending a greater distance from said surface than said second portion; said emitter region being disposed in said second portion of said base region and also having a plurality of segments at least partially separated by said first portion of said base region; ohmic contacts to each of said emitter, base and collector regions, said base contact being disposed only on said first portion of said base region.

3,312,883

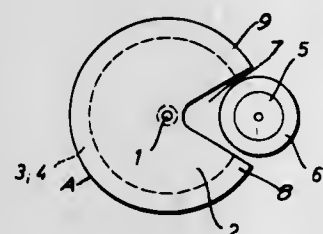
DRIVING MECHANISM OF A TORSIONAL OSCILLATOR

Robert Walter Reich, Merzhauserstr. 143, Freiburg im Breisgau, Germany

Filed Apr. 2, 1964, Ser. No. 356,888

Claims priority, application Germany, Apr. 4, 1963, R 34,864

6 Claims. (Cl. 318-132)



2. An electromechanical oscillator comprising; a balance wheel having an axle and an upper and lower disc fixed in axially spaced parallel relation thereon, said wheel having an angular oscillation arc, said upper and lower discs having coaxial sector portions removed therefrom and having inner sides facing each other, an arcuately shaped permanent magnet mounted on the inner side of said upper disc coaxially with said axle and having the ends thereof at the opposite sides of the said sector portion, an arcuately shaped permanent magnet mounted on the inner side of said lower disc coaxially with said axle and having the ends thereof at the opposite sides of the said sector portion, said magnets being axially magnetized and having poles of opposite polarity facing each other and at least equal in circumferential length to the length of the oscillation arc of said balance wheel, said magnets establishing an axial field therebetween which is continuous circumferentially from one side of said sector portions around the wheel to the other side of the portions, magnetic shunt means near said axle extending between said upper and lower discs to reinforce the magnetic effect of said upper and

lower magnets, coaxial exciter and driving coils mounted in the space between the planes formed by said discs and said magnets and within the radial range of said field, and electric circuit means interconnecting said exciter and driving coils and adapted to send a driving current impulse through said driving coil to develop a driving magnetic impulse on said balance wheel in response to a voltage induced in said exciter coil by the sudden change in said field when said sector portions pass within the range of said exciter coil, said circuit means comprising a transistor and a voltage source, the change of flux of the magnetic field of said magnets being strong enough to induce a current in said exciter coil sufficient to open said transistor, said transistor having a very small amplification factor.

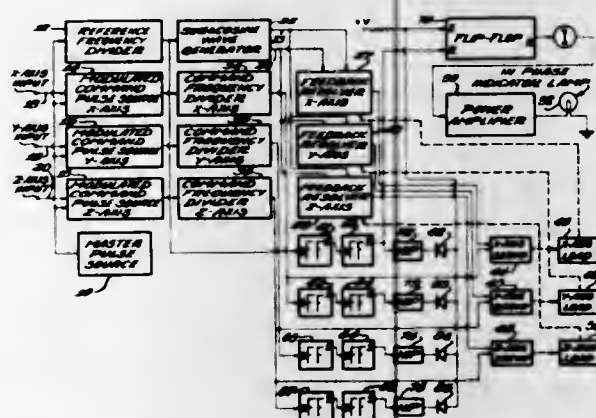
3,312,884

IN PHASE DETECTOR

Robert James Gabor, Willoughby, Ohio, assignor to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Filed Nov. 27, 1964, Ser. No. 414,254

6 Claims. (Cl. 318-162)



1. A detector system comprising means for generating a reference waveform and a series of phase modulated command waveforms representing command information relative to said reference waveform with respect to a plurality of axes of movement, respective servo means responsive to the respective phase modulated command waveforms to move respective output elements along the respective axes of movement toward respective commanded positions, and means responsive to said reference waveform and to each of said command waveforms to signal when all of the command waveforms are simultaneously exhibiting a substantially zero phase error relative to said reference waveform.

3,312,885

MOTOR DRIVE APPARATUS

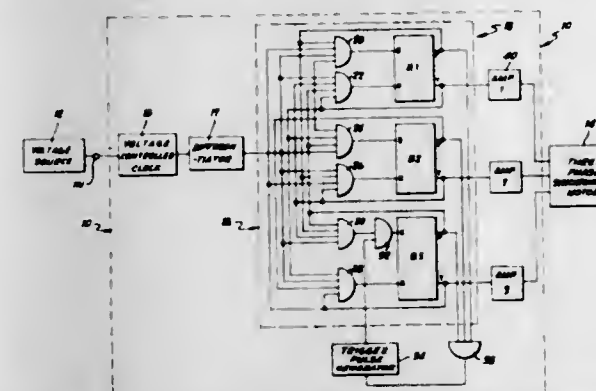
Melvin L. Falk, Sunnyvale, and Donald B. MacLeod, Redwood City, Calif., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed Jan. 16, 1964, Ser. No. 338,249

7 Claims. (Cl. 318-171)

1. Apparatus for controlling the speed of a three phase synchronous motor having three windings, in accordance with a physically varying quantity as represented by the level of an analog voltage signal, said apparatus comprising:
 - clock means for providing an oscillating signal having a frequency related to said analog voltage signal level;
 - means for applying said analog voltage signal to said clock means;

differentiator means coupled to the output of said clock means to form positive going pulses in response to selected portions of said oscillating signal; first, second, and third bistable devices each having an output terminal;



gating means connected to the differentiator means and responsive to each of said positive going pulses for switching in sequence a different one of said bistable devices to cause said bistable devices to provide essentially pure symmetric square wave output signals having harmonics only above the fifth harmonic; and means connected to said bistable devices for directly coupling in single ended relation the square wave output signals provided by each of said bistable devices to a different one of said windings.

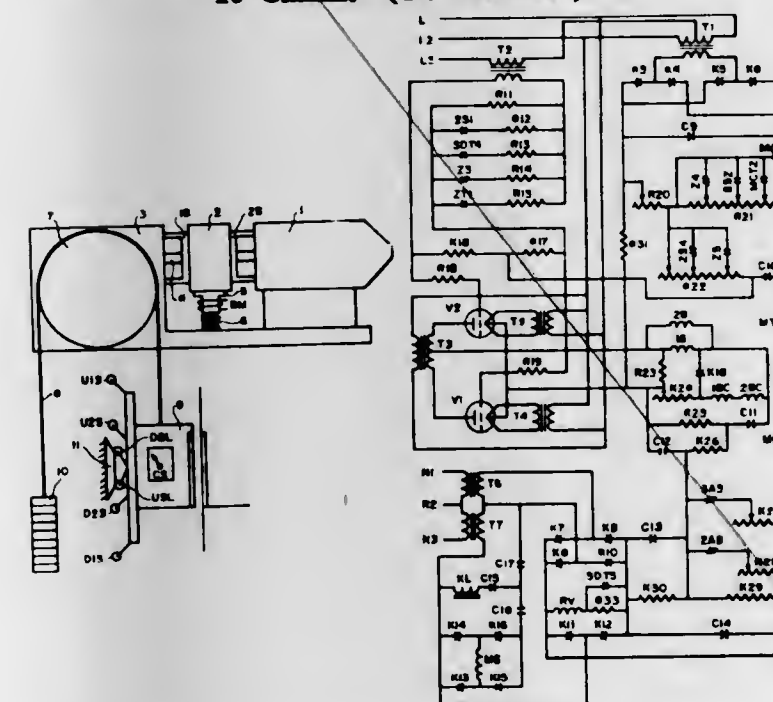
3,312,886

INDUCTION BRAKE SPEED CONTROL FOR ELEVATORS

Omery Edward Mitchell, Toronto, Ontario, Canada, assignor to Turnbull Elevator Limited, Toronto, Ontario, Canada, a corporation of Canada

Filed June 11, 1963, Ser. No. 287,081

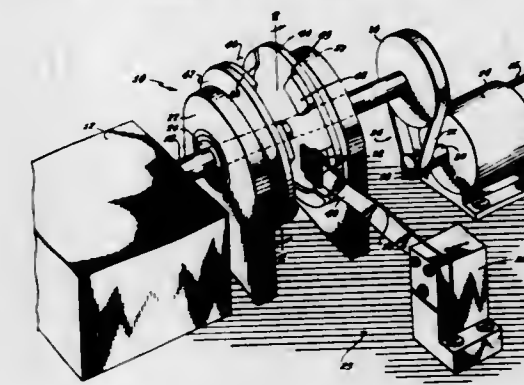
10 Claims. (Cl. 318-204)



1. An elevator comprising a car serving a plurality of floors; an alternating-current motor for driving the car and having rotor windings connected to slip-rings; a friction brake and a direct-current operated induction brake mechanically coupled to the drive motor, the induction brake having a brake magnet coil; an amplifier for supplying direct current to the brake magnet coil; a control system for the amplifier capable of increasing and reducing the direct current supplied by the amplifier to the brake magnet coil; current-sensing means in circuit with the brake magnet coil for sensing the current in said coil; external resistance across the slip-rings of the motor; and

means for changing the external resistance and operated by the current-sensing means to decrease the external resistance as the control system decreases the brake magnet coil current, thus increasing the motor torque as the induction brake torque decreases.

3,312,887

SPEED CONTROL FOR ELECTRIC MOTOR
Glenn A. Reese, San Pedro, and William E. Roberts, Culver City, Calif., assignors to The Magnavox Company, Torrance, Calif., a corporation of Delaware
Filed Feb. 26, 1963, Ser. No. 261,069
4 Claims. (Cl. 318-302)

1. A speed-limiting governor for limiting the speed of rotation of a drive motor and the load that is to be driven thereby to a predetermined constant speed, said governor comprising the combination of:

- a drive motor for being operatively interconnected with said load for rotatably driving said load at a speed that is a direct function of the speed at which said motor is running,
- a shaft connected to said motor to be driven thereby at a speed that is a direct function of the speed of said motor,
- a pair of discs mounted on said shaft to rotate therewith, said discs being separated by a substantially uniform space,
- a resonant member for having mechanical vibrations induced therein, said member requiring a minimum amount of power to sustain said vibrations at frequencies differing from the resonant frequency of said member and requiring a maximum amount of power to sustain said vibrations at frequencies that are equal to said resonant frequencies,

means for supporting said member with a free end disposed in said space between said discs, and magnetic means disposed on said discs so as to react with said free end of said member as said discs rotate, said magnetic means being effective to periodically attract said resonant member to induce vibrations in said resonant member, the frequency of said vibrations being a function of the speed of rotation of said motor and said load, said resonant member having a natural resonant frequency equal to the frequency of the vibrations induced in said member when said motor and said load are rotating at said speed.

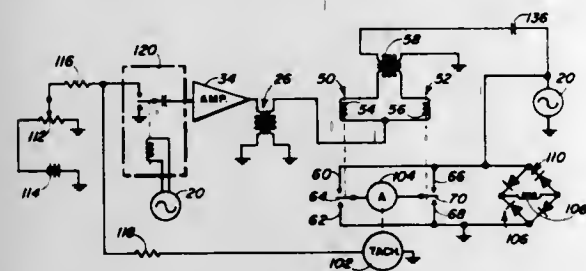
3,312,888

CYCLICALLY OPERABLE MEANS FOR MOTOR SPEED CONTROL

William L. Mohan, Jr., Prospect Heights, Ill., assignor to Spartans, Ltd., Sparta, Wis., a corporation of Wisconsin
Filed Aug. 13, 1962, Ser. No. 216,627
15 Claims. (Cl. 318-330)

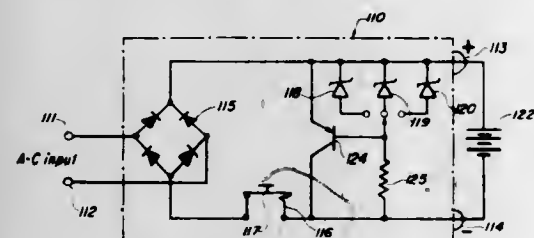
10. Improved apparatus for controlling the speed of electric motors of the type operable from D.C. energy comprising
 - a source of fixed amplitude A.C. energy,

a plurality of double throw contact pair means, the contacts of each pair being connected in parallel with said source, armature means associated with each of said contact pairs and cyclically operable therebetween, motor means connected between said armature means, cyclically operable means connected to said source and coupled to said armature means for cyclically actuating said armature means in phased relationship to cyclic variations in said source,



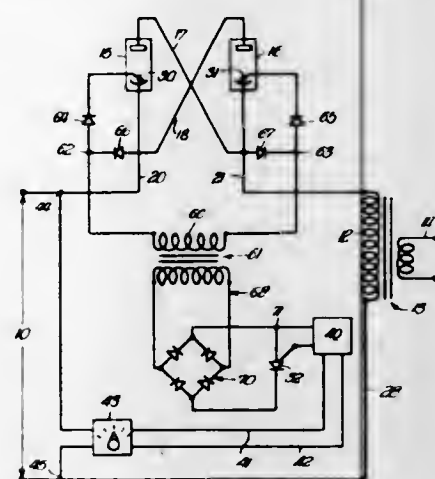
selectively operable control means for generating a command signal proportional to a selected speed of said motor means, means for generating feedback signals representative of the speed of said motor, and servo control means responsive to said command signals and said feedback signals for varying the phase relationship of said cyclically operable means relative to said source to thereby correct for any variations from the selected motor speed.

3,312,889
VOLTAGE CONTROL SYSTEM FOR BATTERY CHARGERS AND THE LIKE
Charles M. Gold, Franklin Square, N.Y., assignor to Yardney International Corporation, New York, N.Y., a corporation of New York
Filed Aug. 6, 1963, Ser. No. 300,326
9 Claims. (Cl. 320-36)



4. In a voltage-responsive control system, in combination, a source of unidirectional electrical potential connectable across a load adapted to develop a variable voltage thereacross; normally closed thermally responsive switch means provided with a thermal element energizable by passage of electric current of a predetermined magnitude and connected in series with said source and said load for supplying an electric current to said load insufficient to actuate said switch means; a transistor connected in circuit with said source and said element but normally biased nonconductive; and a normally nonconductive Zener diode connected across said load and in circuit with said transistor, said Zener diode being triggerable upon development of a voltage across said load in excess of a predetermined value for rendering said transistor conductive, thereby passing an electric current through said element sufficient to actuate said switch means and disconnect said source from said load.

3,312,890
CONTROL MEANS FOR AN ELECTRIC ENERGY SUPPLY CIRCUIT
Yves Charles Snel, Thiais, Seine, France, assignor to Welding Research, Inc., Chicago, Ill., a corporation of Illinois
Filed July 9, 1963, Ser. No. 293,779
1 Claim. (Cl. 323-24)

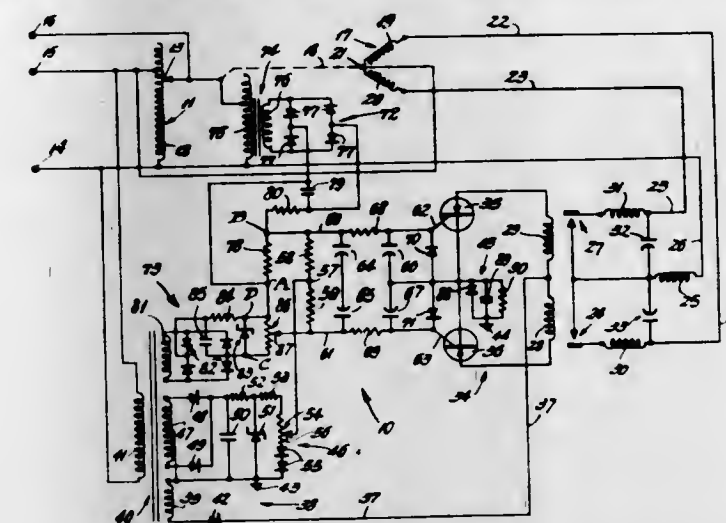


In a system for supplying power from a source of alternating current to a load, the combination of an electric circuit including a pair of electric discharge valves connected in back-to-back relation between the source and the load, said valves each having an anode, a cathode and a control electrode, said electric circuit including the primary winding of a transformer, conductors joining the terminals of the primary winding with the control electrodes of the valves, respectively, a rectifier in each of the conductor circuits for passing current pulses in one direction only to the electrodes, a single silicon controlled rectifier for supplying current pulses in one direction to the electrodes, a single silicon controlled rectifier electrically connected between the silicon controlled rectifier and the terminals of the secondary winding of said transformer, whereby the current pulses from the silicon controlled rectifier are supplied to the control electrodes for rendering the discharge valves conductive, and a pulse generator for supplying current pulses to the silicon controlled rectifier at a frequency double the frequency of the alternating current source.

3,312,891
AUTOMATIC VOLTAGE REGULATOR
Owen J. McCabe and Raymond G. Edgerly, Jr., Bristol, Conn., assignors to The Superior Electric Company, Bristol, Conn., a corporation of Connecticut
Filed Mar. 12, 1963, Ser. No. 264,552
4 Claims. (Cl. 323-43.5)

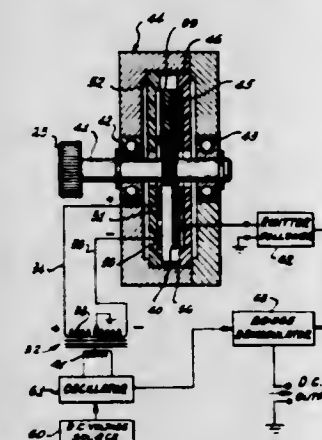
1. An automatic voltage regulator for providing and maintaining an adjustable A.C. voltage comprising input means connectible to a source of alternating current, output means whereat the output voltage appears, regulating means connected between the input and output means for regulating the value of output voltage and including a first channel means which upon energization increases the value of output voltage and a second channel means which upon actuation decreases the value of the output voltage, means connectible to the output means for providing a unidirectional current having a voltage value related to the value of the output voltage, means connectible to a source of electrical energy for providing another unidirectional current having a substantially constant voltage value and including a breakdown diode having a value of avalanche voltage at least equal to the maximum value of the unidirectional voltage for the maximum value of output voltage, adjustable means for selecting a set value of the another unidirectional current, means for algebraically adding the unidirectional current and the

set value of the another unidirectional current to produce an algebraic sum signal, and means for receiving the signal and causing energization of the first channel when



the signal is of one sense and for causing energization of the second channel when the signal is of the opposite sense.

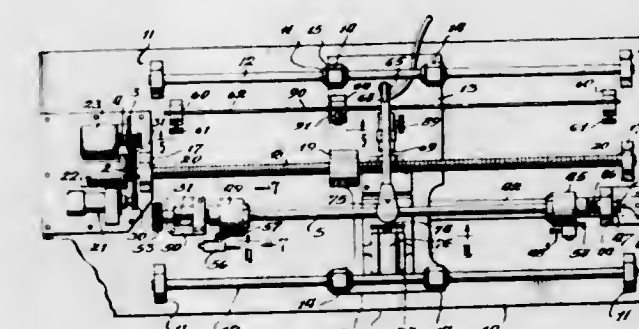
3,312,892
CONTACTLESS ELECTRICAL TRANSDUCER HAVING MOVING PARTS
Arthur Parnes, Newbury Park, Calif., assignor to Technology Instrument Corporation of California, Newbury Park, Calif., a corporation of California
Filed May 4, 1964, Ser. No. 364,741
14 Claims. (Cl. 323-93)



1. In combination: a pair of juxtaposed stationary plates having confronting edges, said edges being separated by a gap defined by the contours of said edges, said plates having input leads through which to charge said plates so as to have charge potentials of opposite polarity; a movable plate parallel to said pair of plates and adapted for movement parallel thereto so as to span said gap and have portions confronting both plates of said pair, said movable plate when spanning said gap being charged an amount corresponding to the difference between the portions thereof confronting both plates of said pair, said movable plate also being movable to confront either one of the plates of said pair and charged an amount corresponding to the charge on such one plate; a further stationary plate to be charged from said movable plate but which is not capacitively coupled thereto, said movable plate having a plate section in fixed spaced relation and electrically connected therewith which is movable parallel to and capacitively coupled to said further plate, said further plate being adapted to be charged from said plate section, the capacitance between said plate section and said

further plate being constant throughout movement of said movable plate, said further plate having an output lead; and means for effecting movement of said movable plate and plate section in unison.

3,312,893
AUTOMATIC APPARATUS FOR MEASURING RESISTIVITY OF SEMICONDUCTORS
Cedric G. Currin and John S. Hood, Jr., Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
Filed Dec. 12, 1963, Ser. No. 330,075
4 Claims. (Cl. 324-64)

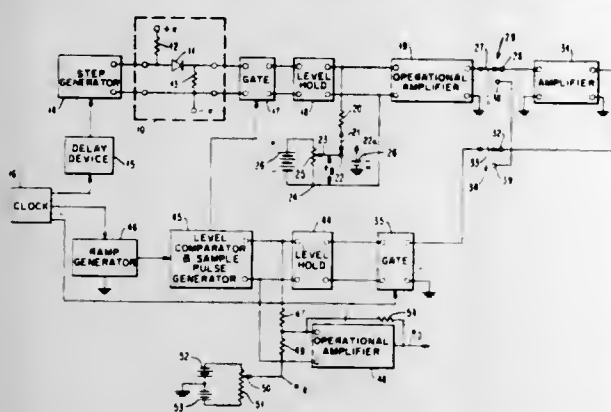


1. Apparatus for measuring resistivity data of a semiconductor specimen, said apparatus comprising: a base, specimen holding means supported by said base, a carriage mounted for relative movement with respect to said specimen holding means, drive means for effecting said relative movement between said specimen holding means and said carriage, location measuring means located on said base plate for measuring the location of said carriage with respect to said specimen, at least one pair of probes located on said carriage adapted for contact with said specimen, means for passing a constant electrical current through at least a portion of said specimen, means for measuring the voltage drop between said probes when said probes are in contact with said specimen, a first contact element located on said carriage contacting said specimen at a desired point, a second contact element spaced from said first contact element connected to said carriage for selectively contacting said specimen at a different desired point, actuating means for moving said second contact element into contact with said specimen, and potentiometer means electrically connected to said first and second contact elements for producing an output signal representative of the size of said specimen.

3,312,894
SYSTEM FOR MEASURING A CHARACTERISTIC OF AN ELECTRICAL PULSE
James A. Blake, St. Paul, and James C. Boyd, Minneapolis, Minn., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Jan. 23, 1964, Ser. No. 339,661
11 Claims. (Cl. 324-68)

1. An electrical pulse measuring system comprising: timing means; an operational amplifier having input and output circuits coupled by a servo loop including first electrical energy storage means and energy amplitude reference means both coupled to said input circuit, second electrical energy storage means, first translating means for translating electrical energy to and from said first energy storage means, and second translating means controlled by said timing means and coupling said output circuit to

said second energy storage means for translating amplifier output-circuit energy to and from said second energy storage means; means coupled to and controlled by said timing means for supplying to said first translating means electrical pulse energy to be measured; means controlled by said timing means for supplying a time reference signal; and means included in said servo loop and controlled



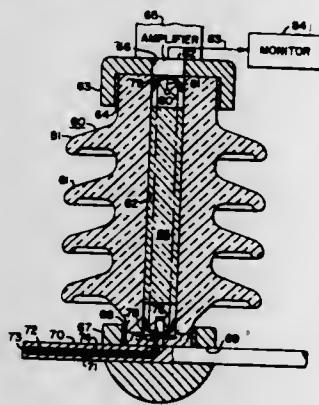
jointly by said time reference signal and by the energy storage in said second energy storage means for controlling said first translating means to effect, by time selectable translation of energy from said supply means to said first energy storage means and in relation to the energy amplitude of said reference means, measurement of a characteristic of said supplied electrical pulse energy.

3,312,895

TRANSMISSION LINE MONITOR APPARATUS UTILIZING ELECTROMAGNETIC RADIATION BETWEEN THE LINE AND A REMOTE POINT

Max Garbuny, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 23, 1962, Ser. No. 232,501
8 Claims. (Cl. 324-96)



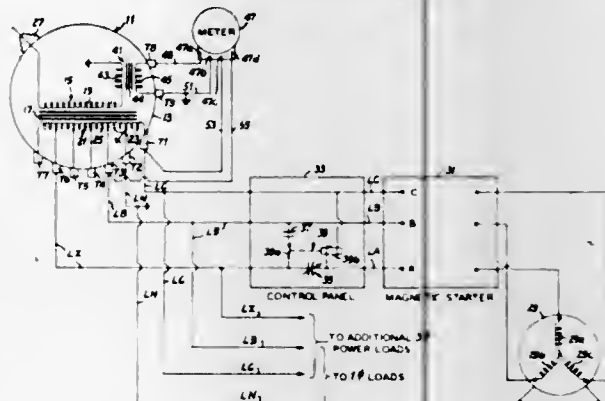
1. Monitoring apparatus for use with a high potential line comprising, in combination, first voltage obtaining means coupled to the line for obtaining a first voltage which varies in accordance with variations in the current in the line, resistor means and a normally non-conductive device connected in series across the first voltage obtaining means, a normally de-energized source of radiation in the visible portion of the spectrum connected across the resistor means, the normally non-conductive device becoming conductive when the voltage thereacross reaches at least a predetermined value causing a voltage drop across the resistor means, said voltage drop energizing the source of visible radiation, an infrared radiation source, second voltage obtaining means for obtaining a second voltage, circuit means for applying the second voltage to the infrared radiation source to vary the intensity of radiations therefrom in accordance with variations in the current in the line, and other circuit means connecting the infrared radiation source to the first voltage obtaining

means for normally applying a temperature biasing potential to the infrared radiation source while the source of visible radiation is not energized.

3,312,896

TRANSFORMER PHASE CONVERTER ADAPTED TO HAVE WATTMETER CURRENT TERMINALS CONNECTED IN SERIES WITH PRIMARY TO MEASURE TOTAL POWER SUPPLIED

Leroy B. Ronk, Nokomis, Ill., assignor to System Analyzer Corp., Nokomis, Ill., a corporation of Illinois
Filed Apr. 10, 1963, Ser. No. 272,025
9 Claims. (Cl. 324-107)



8. In power transfer apparatus for converting single-phase high voltage power to multiphase low voltage power, said apparatus including an electrical meter having a pair of metering-current terminals and a pair of metering-potential terminals; a distribution transformer comprising a tank, a primary winding within said tank, means interconnecting said primary winding with a primary line conductor of a power distribution system, a center-tapped secondary winding within said tank inductively coupled with said primary winding, an auxiliary winding within said tank inductively coupled with said primary winding and connected in series with said secondary winding, first, second, third and fourth secondary conductors interconnected with said secondary winding and said auxiliary winding, said first and second conductors being connected to respective ends of said secondary winding, said third conductor being connected to the center tap of said secondary winding, and said fourth conductor being connected to a point on said auxiliary winding remote from said secondary winding, a current transformer within said tank having first and second windings, means connecting said first winding in series with said primary winding, means for connecting said second winding across the metering-current terminals of said meter, and means for connecting said first and second secondary conductors to the metering-potential terminals of said meter whereby said first, second and third conductors supply single-phase low voltage power, said first, second and fourth secondary conductors are adapted to provide three-phase low voltage power, and said electrical meter is adapted to provide a measurement of the amount of power supplied through said distribution transformer.

3,312,897

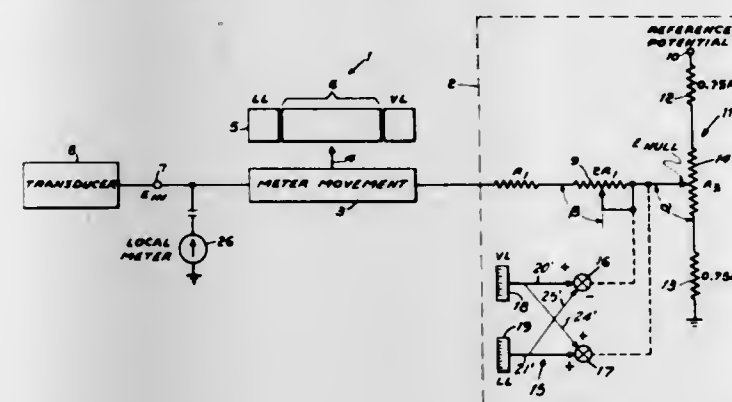
MONITORING CIRCUIT HAVING METER WITH INDEPENDENTLY VARIABLE SCALE LIMITS AND PROVIDING SIMULTANEOUS VARIABLE NULL AND SENSITIVITY ADJUSTMENTS

Joseph A. Fingerett, Van Nuys, Calif., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed Oct. 4, 1963, Ser. No. 313,991
8 Claims. (Cl. 324-115)

1. A circuit arrangement for providing variable null and sensitivity conditions at a monitoring device comprising a monitoring device having a scale of fixed length and

an indicator, means for applying an electrical signal to said monitoring device, differential means for simultaneously adjusting the null voltage and sensitivity of said monitoring device, said differential means having



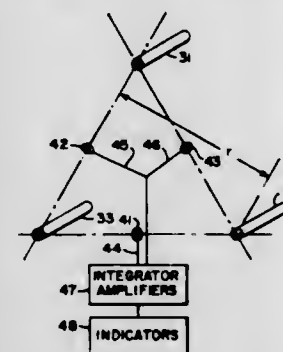
separate adjusting means for controlling the upper and lower limit value of said scale such that the sensitivity of the monitoring device is inversely proportional to the value of the null voltage.

3,312,898

POLYPHASE CURRENT MEASURING DEVICE USING SEVERAL SIGNAL DETECTORS EACH POSITIONED TO RESPOND TO ONLY ONE PHASE CURRENT MAGNETIC FIELD

Thomas E. Browne, Jr., Forest Hills, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 28, 1963, Ser. No. 261,789
16 Claims. (Cl. 324-117)



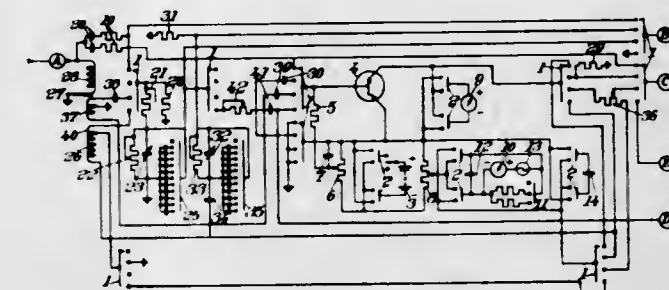
1. Current measuring apparatus for a high voltage three phase transmission line having first, second and third substantially parallel conductors disposed in a triangular pattern comprising, in combination, a first pickup coil mounted between the first and second conductors and having the axis of the coil disposed in the plane of the first and second conductors and substantially perpendicular to said first and second conductors, a second pickup coil mounted between the second and third conductors and having the axis thereof disposed in the plane of the second and third conductors and substantially perpendicular to said second and third conductors, a third pickup coil disposed between the first and third conductors, the third pickup coil having the axis thereof lying in the plane of the first and third conductors and substantially perpendicular to the first and third conductors, and first, second and third current measuring utilization means electrically connected to the first, second and third pickup coils and having the signals induced in the first, second and third pickup coils applied thereto respectively, the signals in the first, second and third pickup coils varying in amplitude with variations in the currents in the third, first and second conductors respectively.

3,312,899

DEVICE FOR MEASURING THE TRANSCONDUCTANCE AND OUTPUT CONDUCTANCE OF A TRANSISTOR

Robert Blanc, Marseille, France, assignor to Centre National de la Recherche Scientifique, Paris, France
Filed May 23, 1963, Ser. No. 282,654
Claims priority, application France, May 25, 1962, 898,801

2 Claims. (Cl. 324-158)

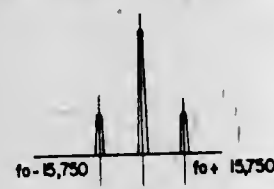


1. A device for measuring the transconductance of a transistor which comprises, in combination, a battery adapted to feed supply and polarizing voltages to the transistor the transconductance of which is to be measured, a first bridge first branch including a condenser and a resistance in series with said condenser, a first bridge second branch similar to the first branch including a condenser and a resistance in series with said last mentioned condenser, said second branch having a junction point with said first branch, called first bridge first junction point, a first bridge third branch consisting of the input circuit of said transistor, leading to the base electrode thereof, said third branch having a junction point with said first branch, called first bridge second junction point, a first bridge fourth branch forming a simulator of said third branch comprising a first rheostat and, in series therewith, a second rheostat and a variable condenser in shunt with each other, said fourth branch having a junction point with said second branch, called first bridge third junction point, and a junction point with said third branch, called first bridge fourth junction point, said fourth junction point being grounded, a transformer having a primary and a secondary, said primary having one end thereof connected with said first bridge first junction point and the other end thereof grounded, a second bridge first branch between the base electrode of said transistor and one end of said transformer secondary, a second bridge second branch starting from the other end of said transformer secondary, said second bridge second branch including said first rheostat, a centre point of said transformer secondary being grounded, a second bridge third branch connected at one end to one of the two other electrodes of said transistor and the other end of which is grounded, said second bridge third branch including in series a third rheostat having a movable contact, a second bridge fourth branch having, at one end thereof, a junction point with said second bridge second branch called second bridge junction point, said second bridge fourth branch being grounded at the other end thereof, a zero indicating instrument, switching selector means adapted, in one position thereof, to connect said first bridge four branches together to form a first bridge and to insert said zero indicating instrument in said first bridge diagonal between the second and the third junction points of

said first bridge, whereby said two first mentioned rheostats and said variable condenser can be adjusted to cause said zero indicating instrument to indicate zero, said switching selector means being adapted, in another position thereof, to connect said second bridge four branches together to form a second bridge and to insert said zero indicating instrument between said third rheostat movable contact and said second bridge junction point, whereby, while leaving said two first mentioned rheostats and said variable condenser adjusted as above mentioned, said third rheostat can be adjusted to cause said zero indicating instrument to indicate zero, thus permitting direct reading on said third rheostat of the transistor transconductance.

3,312,900

TELEVISION AUDIENCE SURVEY SYSTEM
David Lawrence Jaffe, Great Neck, N.Y., assignor to Polarad Electronics Corporation, Long Island City, N.Y., a corporation of New York
Filed Mar. 31, 1964, Ser. No. 356,202
10 Claims. (Cl. 325-31)



1. A system for surveying the station to which an individual television receiver is tuned in which a said receiver radiates a radio frequency signal from its local oscillator of a frequency corresponding to the station being received which radiated local oscillator signal cathode ray tube deflection produced by said receiver, said survey system comprising:

means for receiving said modulated radiated local oscillator radio frequency signal corresponding to and thereby identifying the station to which the receiver being monitored is tuned, means connected to said receiving means for demodulating the deflection scanning signal information from said received local oscillator radio frequency signal, and indicating means connected to said demodulating means and responsive to said demodulated deflection scanning signal information for identifying the reception of a radiated local oscillator radio frequency signal as originating from a television receiver.

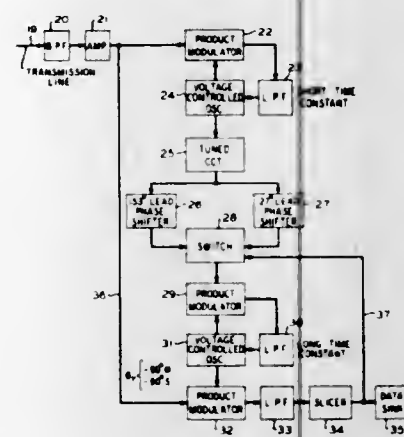
3,312,901

BIPOLAR VESTIGIAL SIDEBAND DATA SIGNAL DETECTOR

Floyd K. Becker, Colts Neck, and Burton R. Saltzberg, Middletown, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 4, 1963, Ser. No. 321,156
7 Claims. (Cl. 325-50)

1. A receiver for binary data signals appearing as phase reversals of a suppressed carrier wave in which a quadrature carrier-wave component is reinserted at a reduced level and one sideband is suppressed to form a vestigial sideband line signal so that the binary data signals are encoded as phase angles leading and lagging the phase of the reinserted carrier wave component by a predetermined angle less than 90 degrees comprising:
a first phase-locked oscillator loop controlled by said line signal producing an output in quadrature with the instantaneous line signal phase angles,
a pair of phase-shifting networks driven in parallel by the output of said first oscillator, one or the other of

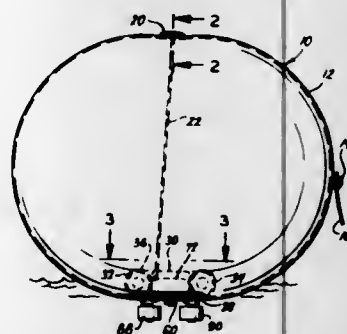
said networks being capable of rotating the phase of the output of said first oscillator corresponding to a particular binary signal to a common phase-opposed relation to said reinserted carrier-wave component, a second phase-locked oscillator loop selectively driven by one or the other of said phase-shifting networks according to which binary signal is detected and having an output in quadrature with the phase of said reinserted carrier-wave component,



modulator means jointly responsive to the output of said second oscillator and to said line signal producing output signals of opposite polarity corresponding to each type of binary signal, and a switching circuit controlled by the output of said modulator connecting the proper one of said phase-shifting networks to said second oscillator to maintain the output of said second oscillator in quadrature with said reinserted carrier-wave component.

3,312,902

SELF-ERECTING FLOATING STRUCTURE
Joseph W. Dean, Florissant, and Kenneth E. Smith, Hazelwood, Mo., assignors to McDonnell Aircraft Corporation, St. Louis, Mo., a corporation of Maryland
Filed June 29, 1964, Ser. No. 378,500
13 Claims. (Cl. 325-116)

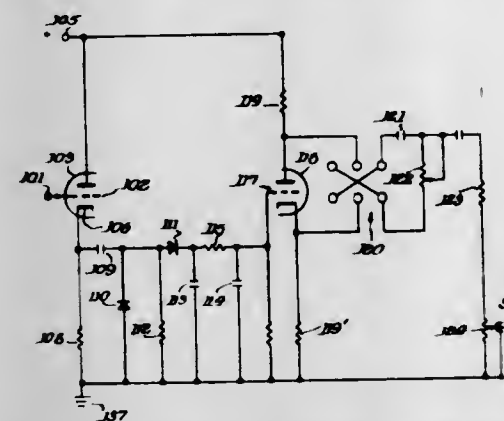


1. An emergency warning device comprising a collapsible balloon-like member, a unit including a gas pressure container including means energizable to release the pressure therein into the balloon to inflate the balloon and a signal transmitter, said unit being positioned on the interior surface of the balloon, a flexible conductive member forming an antenna having one end connected to the transmitter and an opposite end connected to the balloon on the opposite side thereof from the transmitter, said antenna having a length approximately equal to the diameter of the balloon to extend across the inside of the balloon when the balloon is inflated by the gas pressure container and means responsive to exposure of a liquid in which the device is positioned for energizing said pressure release means to release the gas pressure in the gas pressure container into the balloon.

3,312,903

JITTER COMPENSATING CIRCUIT FOR ANGLE ENCODING APPARATUS

Richard C. Webb, Broomfield, Colo., assignor, by mesne assignments, to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Original application Mar. 4, 1959, Ser. No. 797,264, now Patent No. 3,152,324, dated Oct. 6, 1964. Divided and this application Jan. 8, 1963, Ser. No. 250,185
1 Claim. (Cl. 328-127)

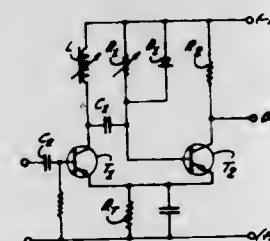


In an encoding system having a transducer means for generating recurring electrical signals for indicating a relative angular position, said signals being subject to phase and amplitude modulation caused by minor mechanical imperfections in said transducer, jitter circuit means for compensating for said modulation, said jitter circuit means comprising amplitude detecting means for detecting the amplitude variations of the envelope of said modulated signals, cathode follower amplifier means for coupling said modulated signals to said detecting means, means for integrating said detected envelope, and control means responsive to said integrated signal reaching a predetermined level for differentiating said integrated signal to provide a compensating signal which compensates for said phase and amplitude modulation; said control means comprising a cathode follower differentiating amplifier, double-pole, double-throw switching means for detecting the output from said differentiating amplifier, either from said cathode or from the plate of said amplifier, gain control means in series with the output of said differentiating amplifier for controlling the amplitude of said compensating signal, and resistor means in said differentiating circuit for controlling the phase of said compensating signal.

3,312,904

TEMPORAL CHARACTERISTICS OF MULTIVIBRATORS

Wilhelm Sterff and Erich Huber, Munich, Germany, assignors to Schaltbau-Gesellschaft m.b.H., Munich, Germany, a corporation of Germany
Filed Oct. 7, 1964, Ser. No. 402,307
8 Claims. (Cl. 328-207)



1. In a multivibrator circuit having first and second electronic control elements, each having first and second main electrodes and a control electrode and wherein said first main electrodes of said control elements are interconnected for connection to a first source of voltage potential, and wherein the second main electrode of said first control element is connected to the control electrode

of said second control element by means of a capacitor, the improvement comprising:

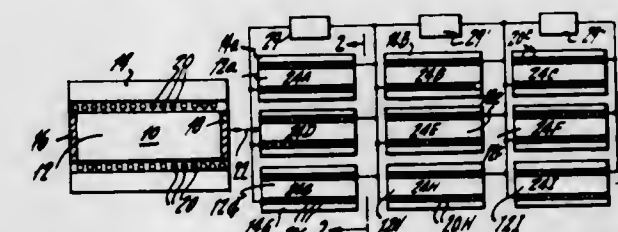
inductive means connected in series to said second main electrode of said first control element and for connection to a second source of voltage potential, so that the load current of said first control element when conductive is passed through said inductive means;

a discharge resistor connected to said capacitor at the side thereof connected to said control electrode; and a diode connected across said discharge resistor at such a polarity opposite to the direction of the discharge current through said discharge resistor as existent during the time of current conduction through said first control element.

3,312,905

HIGH POWER LASER INCORPORATING PLURAL TUNABLE AMPLIFIER STAGES

Henry R. Lewis, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed June 24, 1963, Ser. No. 290,125
7 Claims. (Cl. 330-4.3)

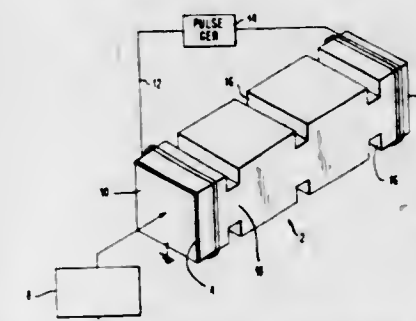


1. A high power laser device comprising a laser oscillator for producing a laser beam, a plurality of laser amplifier stages positioned in the path of said laser beam, means for pumping said laser amplifier stages, means for tuning each of said laser amplifier stages to a frequency that is different from the frequency to which any other amplifier stage is tuned to provide energy storage, and means for tuning all of said laser amplifier stages to substantially the same frequency.

3,312,906

MULTIVALLEY SEMICONDUCTOR AMPLIFIER FOR HYPERSONIC WAVES

Melvin Pomerantz, Ossining, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Feb. 1, 1965, Ser. No. 429,291
4 Claims. (Cl. 330-5)



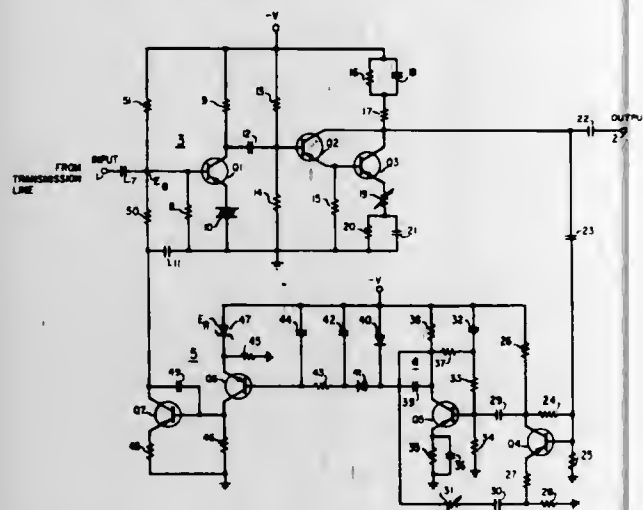
1. A hypersonic amplifier comprising a multi-valley semiconductor crystal having opposed, highly polished, parallel faces, means for directing an acoustical wave along a predetermined axis of said crystal, said acoustical wave having a polarization such that for said axis the acoustical wave lifts the degeneracy of the conduction bands of said multi-valley semiconductor, means external of said crystal for moving free electrons at a velocity greater than the velocity of said acoustical wave in said crystal during the passage of and in the direction of said acoustical wave through said crystal to obtain amplification of said wave within the crystal.

3,312,907

REGULATING ARRANGEMENT EMPLOYING A SYMMETRICAL VARISTOR

Neale A. Zellmer, Belmont, and George S. Wu, Santa Clara, Calif., assignors, by mesne assignments, to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Mar. 16, 1964, Ser. No. 351,998
2 Claims. (Cl. 330-29)



1. A circuit for regulating the gain in a transmission path to compensate for variations in input signal level, comprising:

- a voltage supply, a source of first reference potential and a source of second reference potential,
- variometer means including a first transistor having a base electrode for receiving an input signal, a collector electrode and an emitter electrode, a load impedance connecting said collector electrode to said voltage supply, and variable impedance means connecting said emitter electrode to said source of first reference potential, the impedance of said variable impedance means being automatically controlled by the conduction of said first transistor,
- an output circuit connected to said collector electrode for providing an output signal from said variometer means,
- sampling means connected to said output circuit for deriving a D.C. signal representative of said output signal,
- error means connected to said sampling means and to said source of second reference potential for deriving an error signal, and
- means connected to said voltage supply and to said base electrode for establishing a quiescent bias at said base electrode in the absence of an input signal, said last-mentioned means further connected to said error means and operative to subtract said error signal from said quiescent bias to control the conduction of said first transistor and vary the impedance ratio of said load impedance to said variable impedance means whereby said output signal is maintained at a substantially constant level.

3,312,908

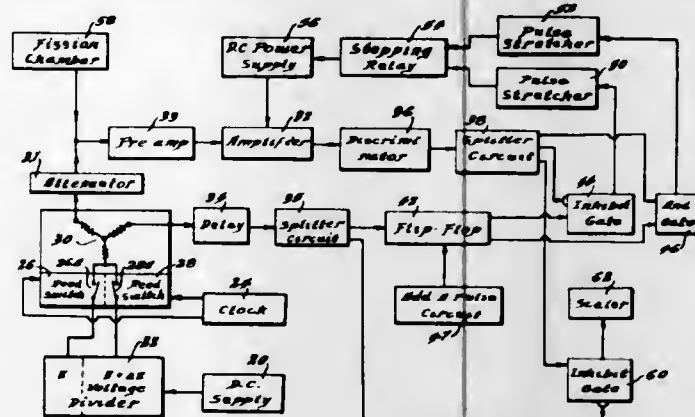
DEVICE FOR SUPERREGULATION OF AN AMPLIFIER-DISCRIMINATOR CIRCUIT

Karl G. Porges and John A. Bjorkland, both of Evanston, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed May 15, 1964, Ser. No. 367,905
5 Claims. (Cl. 330-52)

1. A device for superregulation of an amplifier-discriminator circuit comprising a voltage divider including an input and first and second voltage outputs, a D.C. voltage supply having the output thereof connected to the

input of said divider, said divider being adjusted such that the voltage amplitude of the first and second outputs thereof are respectively above and below the threshold level of said discriminator, a periodic signal generator, and means responsive to said periodic signal generator for alternately connecting the first and second outputs of said voltage divider to the input of said amplifier-discriminator



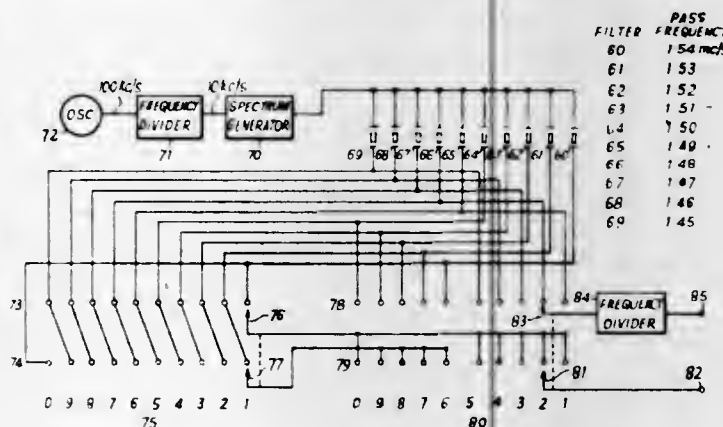
circuit to apply thereto pulses alternately having amplitude values above and below the threshold level of said discriminator circuit, means for detecting which of said applied pulses are transmitted through said amplifier-discriminator circuit, said detected pulses indicating drift of said amplifier-discriminator circuit, and means responsive to said detecting means for adjusting the gain of said amplifier-discriminator circuit in accordance therewith.

3,312,909

VARIABLE FREQUENCY OSCILLATION GENERATORS

Allan Victor Bryant, Stubbington, near Fareham, England, assignor to Communications Patents Limited, London, England

Filed Mar. 8, 1965, Ser. No. 437,732
Claims priority, application Great Britain, Mar. 26, 1964, 12,848/64
4 Claims. (Cl. 331-60)



1. Apparatus for providing at least two frequency stabilized oscillations comprising a single stable frequency source of oscillation, harmonics of said stable frequency, ten electric wave filters each of which are fed from the said single source and each of which are adapted to pass a different harmonic oscillation, said oscillations being related by a common frequency difference, switching means connected to said filters for selecting at least two of the said harmonic oscillations passed by the electric wave filters, said switching means comprising a first switch having a first ten-position bank and a second ten-position bank and a second switch having a first ten-position bank and a second ten-position bank, a first output terminal connected to said second switch and a second output terminal connected to said first switch, a decade frequency divider connected between the second

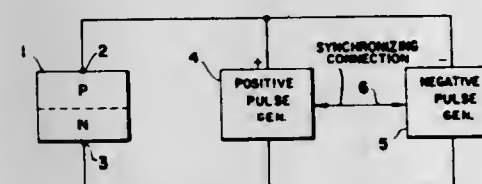
switch and the first output terminal, the first switch including means for selecting one harmonic from its first bank and one harmonic from its second bank and supplying said harmonics to the second bank of the second switch, the said two selected harmonic oscillations being related to each other by said common frequency difference, the second bank of the second switch selectively supplying to the first output terminal one or the other of said two selected harmonic oscillations and the first bank of the second switch supplying to the second output terminal a selected one of the harmonic oscillations by way of the said decade frequency divider.

3,312,910

FREQUENCY MODULATION OF RADIATION EMITTING P-N JUNCTIONS

Franklin F. Offner, 1890 Telegraph Road, Deerfield, Ill. 60015

Filed May 6, 1963, Ser. No. 278,094
3 Claims. (Cl. 331-94.5)



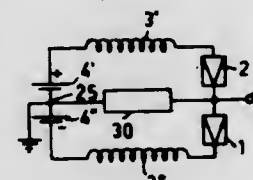
1. A radiation emitting crystal of the semiconductor type, including a P-N junction, said junction being characterized by having excited energy levels of finite lifetime which are excited by a forward exciting current, means for passing a forward exciting current pulse which is short in comparison with the average lifetime of the excited energy levels and which has an amplitude sufficient to produce a high current density at said junction through said junction, and means for applying reverse bias voltage to said junction immediately following application of said current pulse and within said lifetime following said current pulse, thereby shifting the wavelengths of the radiation emitted by said semiconductor.

3,312,911

TUNNEL DIODE RELAXATION OSCILLATOR

Eeltje de Boer, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Jan. 7, 1964, Ser. No. 336,304
Claims priority, application Netherlands, Jan. 15, 1963, 287,808
18 Claims. (Cl. 331-107)



1. A relaxation oscillator circuit comprising first and second negative resistance diodes, inductance means, means connecting said first and second diodes and said inductance means in series circuit relationship, means for applying a voltage to both of said diodes at a level to bias each of said diodes into the negative resistance region of its current-voltage characteristic, means for supplying a control current to said series circuit at a junction such that said diodes are effectively connected in parallel for said current, and output means coupled to said oscil-

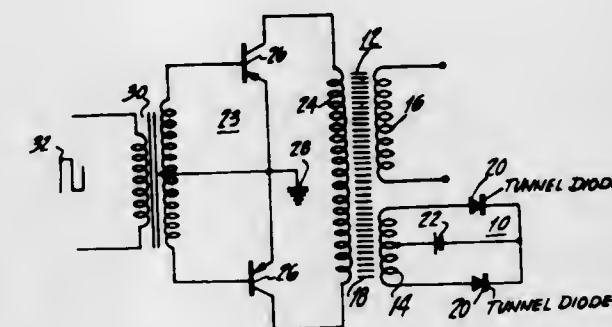
lator circuit so as to supply to a load a relaxation oscillation signal of a polarity determined by said control current.

3,312,912

FREQUENCY STABILIZING OF TUNNEL DIODE INVERTERS BY MOMENTARILY OVERLOADING THE INVERTER

Rubin Feryszka, Somerville, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed June 28, 1965, Ser. No. 467,534
5 Claims. (Cl. 331-107)



1. The combination of a tunnel diode inverter including a saturable core inductor in which the frequency of the output thereof varies with the load applied thereto and a frequency control apparatus, said frequency control apparatus comprising

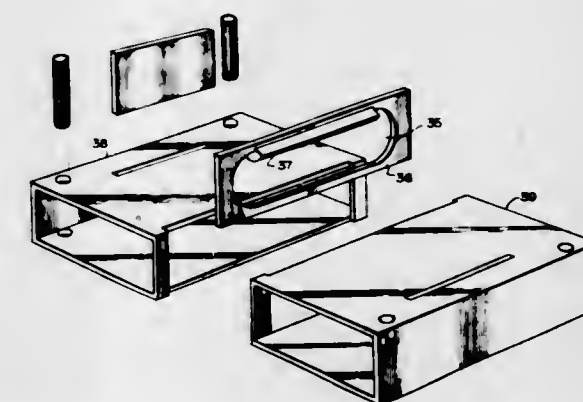
driven means to momentarily and periodically withdraw an overloading amount of energy from said inverter at a rate higher than the highest frequency exhibited by said inverter due to changes in the load applied thereto, the flow of current in the output of said inverter reversing each time the inverter is overloaded, said driven means including connections for a source of control waves oscillating at said higher rate.

3,312,913

MODE SUPPRESSION WAVEGUIDE HYBRID JUNCTION

Edward Salzberg, Wayland, Mass., assignor to Microwave Development Laboratories, Inc., Wellesley, Mass., a corporation of Massachusetts

Filed July 31, 1964, Ser. No. 386,491
4 Claims. (Cl. 333-10)



1. A short slot hybrid junction comprising: a pair of hollow rectangular waveguides joined together to have a common narrow wall, the common narrow wall having an aperture extending longitudinally therein for about one free space wavelength to permit energy to couple from one waveguide to the other;

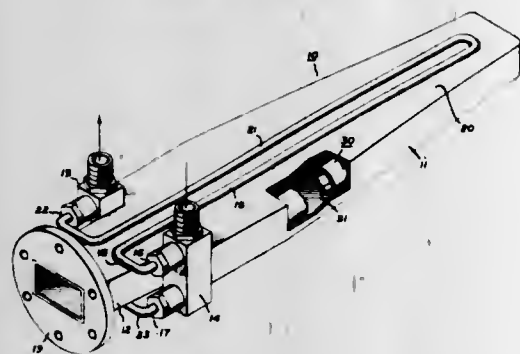
each waveguide having therein a conductive plate offset from and parallel to its outer narrow wall, the conductive plates causing a constriction in the width of the apertured region;

a capacitive spline extending longitudinally along the apertured region, the spline having a slot therein accommodating a depending portion of the common narrow wall, the spline having sloping faces providing tapered gaps between the faces and the adjacent waveguide broad wall; and

inductive posts in the waveguides adjacent to the ends of the conductive plates.

3,312,914

HIGH POWER MICROWAVE LOAD
Morris F. Bolster, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 29, 1965, Ser. No. 451,786
8 Claims. (Cl. 333-22)

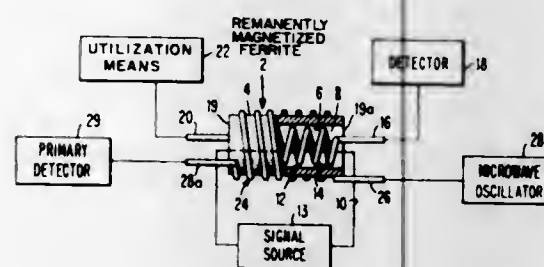


8. A high power microwave load comprising in combination,
- (a) an axially extending metal waveguide of a rectangular cross section having an input end and a terminating end,
 - (b) said waveguide having top and bottom walls defining a width dimension and end walls defining a thickness dimension,
 - (c) the said width dimension being sufficient to reduce transverse currents to a predetermined low level,
 - (d) the said waveguide tapering from a larger width dimension at its input end to a minimum width dimension at its terminating end at a predetermined rate,
 - (e) oppositely disposed R.-F. power absorbing means commencing at predetermined locations at said waveguide inlet and extending axially along and adjacent said sidewalls,
 - (f) the lateral distance between said absorbing means being substantially greater than said thickness dimension and sufficiently large so that said absorbing means are subjected only to said low level transverse current,
 - (g) the commencing ends of said absorbing means being spaced apart in the axial direction a distance about a quarter guide wavelength,
 - (h) means to pass R.-F. power into said waveguide, and
 - (i) channel means in said waveguide adjacent said absorber for circulation of a coolant therethrough so that said R.-F. power passing through said absorber is converted to heat energy in said coolant,
 - (j) said absorbing means having constant dimensions over the length thereof extending from said input end to said terminating end of said waveguide,
 - (k) said coolant circulating along one side of said waveguide from said inlet end to said terminating end, and along an opposite side of said waveguide from said terminating end to said inlet end.

3,312,915

COUPLED HELICAL WAVE STRUCTURE EMPLOYING A REMANENTLY MAGNETIZED FERRITE

Ivars G. Akmenkalns, Endicott, and Philip A. Lord, Vestal, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 30, 1965, Ser. No. 517,629
10 Claims. (Cl. 333-24.1)



1. A coupled helical wave structure comprising, a ferrite element having a bore positioned therethrough, said element having an integral gyro-magnetic resonant absorption frequency, said element being selectively magnetized to a first stable state of remanent magnetization and to a second stable state remanent magnetization, said magnetized ferrite generating a first circularly polarized magnetic field having electrons with a first sense of rotation corresponding to a said first stable state of remanent magnetization and for generating a second circularly polarized magnetic field having electrons with a second sense of rotation corresponding to said second stable state of remanent magnetization,
- a source of microwave signals operating at substantially said resonant absorption frequency,
- second means positioned around said element and connected to said source for circularly polarizing said microwave signal in said first sense of rotation,
- third means positioned within said bore for magnetically coupling with said microwave signal on said second means, and
- said ferrite in said first state of remanent magnetization substantially absorbing said microwave signals in said ferrite and said ferrite in said second state of remanent magnetization substantially passing said microwave signals undiminished to said third means.

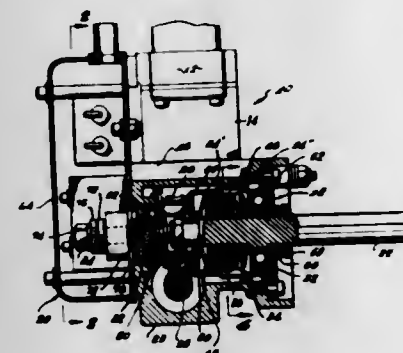
3,312,916

ACTUATOR WITH LIMITING MECHANISM AND TORQUE LIMITING CLUTCH

Vaino A. Hoover, 1433 San Vicente Blvd., Santa Monica, Calif. 90402
Original application Sept. 5, 1957, Ser. No. 682,121, now Patent No. 3,087,105. Divided and this application June 13, 1962, Ser. No. 202,169
5 Claims. (Cl. 335-74)

4. In an actuator having a reversible motor for moving a driven device between opposite mechanical limits, apparatus comprising:
 - an output shaft;
 - a rotatable drive member coupled to said motor;
 - slip clutch means coupling said drive member to said output shaft;
 - switch means for stopping operation of said motor;
 - a cam shaft, mechanical means connecting said cam shaft to said drive member, whereby said cam shaft is operated by said drive member;
 - and a pair of cams adjustably mounted on said cam shaft, each of said cams actuating said switch means when said drive member has turned through the num-

ber of revolutions in a given direction necessary to move the driven device from one to the other of its mechanical limits, said slip clutch means permitting continued rotation of said drive member and said

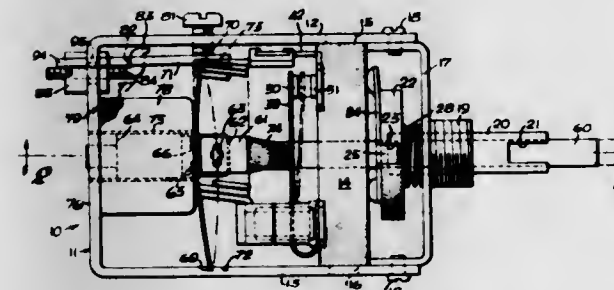


cam shaft when said driven device is in its mechanical limits and said output shaft is blocked, whereby said cams may be adjusted on said cam shaft to produce actuation of said switch means coincidental with said driven device reaching its mechanical limits.

3,312,917

ELECTRICAL CONTROL SWITCH FOR AUTOMOBILE AIR CONDITIONERS
Uville Alexander Garcia, 3125 NW. 86th St., Miami, Fla. 33147

Filed Dec. 1, 1965, Ser. No. 510,762
7 Claims. (Cl. 335-122)

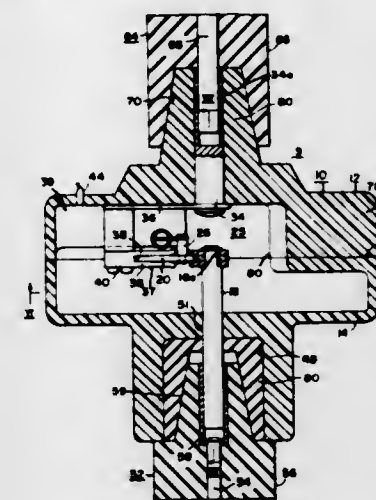


1. In an electrical control switch for automobile air conditioners, the combination comprising, a supporting framework having spaced parallel front and back walls, an electrically-insulating support block secured transversely between said front and back walls within said framework, a solenoid coil secured to said framework and having a central cylindrical opening extending in front-to-back relation in said supporting framework, a ferromagnetic plunger slidably disposed in said solenoid opening and axially movable between inner and outer positions with respect thereto, a control shaft linked at one end to one end of said plunger for movement in unison therewith and having its other end extending through and beyond an opening in the front wall of said framework, yieldable toggle mechanism for holding said plunger, selectively, at one or the other of said inner and outer positions, said solenoid coil, when energized, being operative to move said plunger from said outer to said inner position, a pair of normally-open single-pole, single-throw switches mounted on one side of said support block at each side of the center thereof, a central opening in said support block through which said control shaft extends, and electrically non-conductive abutment means secured to said control shaft and straddling said pair of throw switches for moving them from open-circuit to closed-circuit positions when said control shaft is moved, together with said plunger, from said inner to said outer position upon manually pulling outwardly upon said other end of said control shaft.

3,312,918

REMOTELY OPERATED SEALED CIRCUIT INTERRUPTER

John J. Astleford, Jr., Sharon, Pa., and Edward R. Ronan, Jr., Masury, Ohio, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 26, 1965, Ser. No. 482,812
6 Claims. (Cl. 335-205)

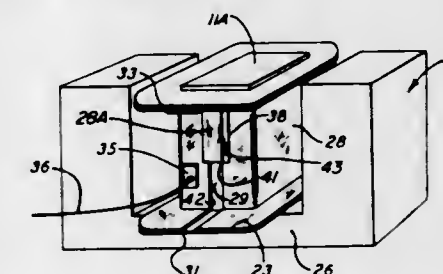


1. A circuit interrupter comprising a sealed casing, means defining a stationary contact mounted interiorly of said sealed casing, first conductor means electrically connected to said stationary contact and extending exteriorly of said sealed casing, second fixed conductor means extending interiorly of said sealed casing and providing a fixed pivot shaft portion, said fixed pivot shaft portion freely rotatably supporting a movable contact arm carrying a movable contact adjacent the free end thereof, said movable contact being cooperable with said stationary contact to open and close the connected circuit, overcenter spring actuating means including a rotatable actuating arm also freely rotatably supported on said fixed pivot shaft portion, said overcenter spring actuating means further including an overcenter tension spring with its ends secured to both said movable contact arm and said rotatable actuating arm, said actuating arm and said movable contact arm having opposite rotative opening and closing movement whereby said overcenter spring moves over said pivot shaft portion, and magnetic means including an externally movable magnetic member and a following internal member secured to said actuating arm for effecting snap opening and closing movement of said movable contact member.

3,312,919

SHIELDED TRANSFORMERS

James A. Ross, Sierra Madre, Calif., assignor to Berkeleyonics, Inc., Monrovia, Calif., a corporation of California
Filed Dec. 30, 1963, Ser. No. 334,219
2 Claims. (Cl. 336-84)

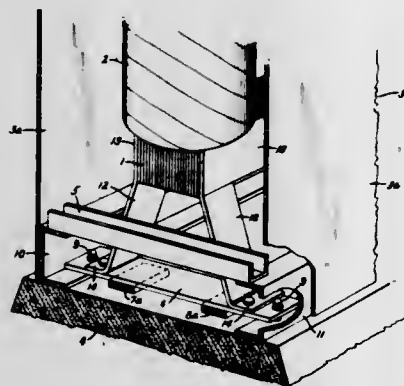


1. An electrostatically shielded transformer comprising an insulated transformer core, a first winding of conductive wire about the insulated core, a first insulating

layer about the first winding, a first electrostatic shielding coating about the insulated first winding, a coating gap defined by separated coating edges, said coating being of a dried liquid conductive material continuous between its separated edges, a first insulating strip more than spanning the gap between the edges of the shielding coating, an added coating of a dried liquid conductive material on the insulating strip such that the added coating electrically joins one edge of the first coating and overlies but does not electrically join the second edge of the first shielding coating, a conductive lead extending externally from the shielding coating, a second insulating layer covering the electrostatic shielding coatings, a second winding of conductive wire about the second insulating layer, a third insulating layer about the second conductive windings, a second electrostatic shielding coating of dried conductive liquid having separated edges defining a coating gap and applied to the outer surface of the third insulating layer so that the coating is continuous between its separated edges, a second insulating strip overlying the interval between separated edges of the second shielding coating and extending over the coating on each side of the separated edges, an added conductive coating on the second insulating strip electrically joining one edge but electrically separate from and overlying the other edge, an electrical lead fixed to the second shielding coating, a fourth insulating layer covering the conductive coatings such that the electrical lead extends externally, and means for external connections to the first and the second conductive windings.

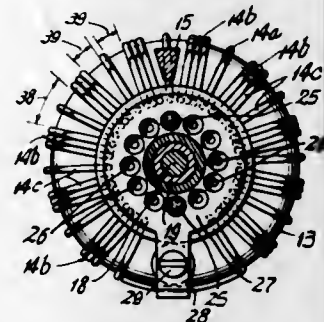
3,312,920

SOUND SUPPRESSING MOUNTING FOR ELECTRIC INDUCTION APPARATUS
Thomas J. Twomey, Rome, Ga., assignor to General Electric Company, a corporation of New York
Filed Mar. 19, 1965, Ser. No. 441,030
7 Claims. (Cl. 336-100)



1. In an electrical induction apparatus adapted to be mounted upon a massive rigid foundation having a substantially flat bearing surface, a housing having sidewalls of sheet material and an open base portion adapted to rest directly upon said foundation, a magnetizable core in said housing subject to severe vibration in operation, a pair of supporting legs extending downwardly toward said open base portion of said casing and terminating at their lower ends in spaced-apart mounting feet, a cross bar connected between said mounting feet in substantially parallel spaced relation with said bearing surface, said mounting feet and legs transmitting appreciable vibration from said core to said cross bar, a bearing plate interposed directly between said cross bar and said bearing surface thereby to support said core on said massive foundation free of any bearing contact with said housing, said bearing plate being offset from said mounting feet, and positioning means loosely connecting said cross bar to said sidewalls.

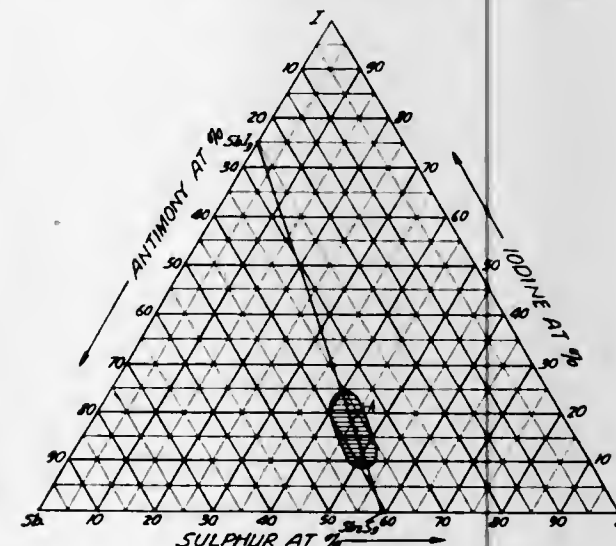
3,312,921
ADJUSTABLE VOLTAGE AUTOTRANSFORMER
Raymond G. Ederly, Jr., and Norman K. Zurell, Bristol, Conn., assignors to The Superior Electric Company, Bristol, Conn., a corporation of Connecticut
Filed May 10, 1965, Ser. No. 454,260
7 Claims. (Cl. 336-149)



1. An adjustable voltage autotransformer for providing an output voltage that is adjustable in substantially constant increments comprising a paramagnetic core, a winding wound on said core, input means connected to said winding and adapted to be connected to a source of alternating current, said winding alternately having a group of closely spaced turns and an individual turn, a commutating surface formed on the turns of the winding, said surface of the individual turn being spaced substantially from the surfaces of the groups of turns adjacent thereto, a brush mounted for movement on the commutating surface in electrical engagement therewith and output means connected to the brush and input means.

3,312,922

SOLID STATE SWITCHING DEVICE
William R. Eubank, Troy Township, St. Croix County, Wis., and George Alexander Walker, White Bear Lake, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed June 22, 1965, Ser. No. 466,047
15 Claims. (Cl. 338-20)



1. A solid state switching device which, when semi-conductive, is capable of one or two of three distinct switching cycles responsive to preselected electric fields applied thereto, one switching cycle being characteristically non-polar and symmetrical wherein switching occurs under applied voltage and current conditions, the other cycles being characteristically sequentially polar wherein switching occurs under both finite voltage and current conditions and also under nearly zero voltage and zero amperage conditions, said device comprising:

(a) a wafer of a glass composition as defined by area A of FIGURE 1 and as further modified by partial re-

placement of antimony with a material selected from the group consisting of from greater than 0 to about 24 atomic percent copper, from greater than 0 to about 24 atomic percent silver, and from greater than 0 to about 5 atomic percent gold but containing not less than about 15 atomic percent of antimony;

(b) two electrodes, each one functionally associated with a different surface region of said wafer;

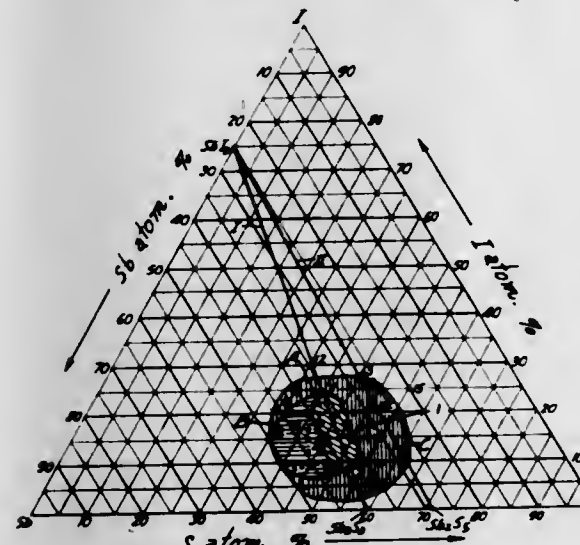
(c) the relationship between said wafer and said pair of electrodes being such that

(1) said wafer has a characteristic initial resistance state measured through said electrodes greater than said characteristic high resistance state; and

(2) when a sufficient minimum electric field is applied to said wafer through said electrodes, said wafer becomes semiconductive as indicated by a change from said characteristic initial resistance state to said characteristic low resistance state.

3,312,923

SOLID STATE SWITCHING DEVICE
William R. Eubank, Troy Township, St. Croix County, Wis., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Sept. 27, 1965, Ser. No. 490,515
15 Claims. (Cl. 338-20)



1. A ternary glass composition comprising antimony, sulfur and iodine in an amount falling within the shaded areas A, B and C of FIGURE 1 in the drawing.

10. A solid state switching device which, when semi-conductive, is capable of switching from a characteristic high resistance state to a characteristic low resistance state in response to a downswitch electric field pulse and further capable of switching from said low resistance state to said high resistance state in response to an upswitch electric field pulse, said downswitch pulse being larger than said upswitch electric field pulse, said high resistance state being at least about one order in magnitude greater than said low resistance state, said device comprising:

(a) a wafer of a glass composition as defined in claim 1;

(b) two electrodes each one functionally associated with a different surface region of said wafer;

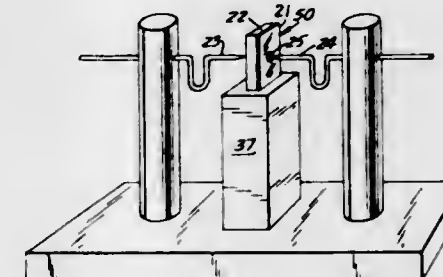
(c) the relationship between said wafer and each of said electrodes, respectively, being such that:

(1) said wafer has a characteristic initial resistance state measured through said electrodes greater than said characteristic high resistance state; and

(2) when a sufficient minimum electric field is applied to said wafer through said electrodes, said wafer becomes semiconductive as indicated by a change from said characteristic initial resistance state to said characteristic low resistance state.

3,312,924

SOLID STATE SWITCHING DEVICE
William R. Eubank, Troy Township, St. Croix County, Wis., and David L. Cross, St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Sept. 27, 1965, Ser. No. 490,519
6 Claims. (Cl. 338-20)



1. A solid state switching device which, when semi-conductive, is capable of altering its resistance from a high value to a low value and vice versa responsive to electric fields of predetermined polarity, said device comprising

(a) a substrate of aluminum metal, said substrate having a surface characterized by

(1) having a roughness not greater than about 25 microinches (about 0.625 micron) r.m.s.; and

(2) being substantially free of aluminum oxide;

(b) a coating on at least a portion of said surface, said composition being an ordered vapor deposited layer not more than about 1 mil (about 0.025 mm.) in thickness of a glass composition, the minimum width of said layer being at least twice the thickness thereof;

(c) said glass composition being one selected from a group of glass systems defined by the following table:

Glass System	Compositional Range, Atomic Percent				
	Phosphorus (P)	Arsenic (As)	Antimony (Sb)	Sulfur (S)	Iodine (I)
As-S-I.....	-----	11-44	-----	40-92	2-28
As-Sb-S-I.....	-----	5-35	5-35	40-56	5-25
P-Sb-S-I.....	1-8	-----	29-40	42-52	5-20
P-As-S-I.....	1-12	20-40	-----	40-60	2-20
P-As-Sb-S-I.....	1-10	5-35	>0-35	41-54	2-22

and

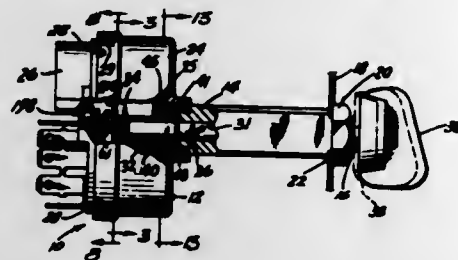
(d) a pair of electrode means, one contacting said coating, the other contacting said substrate.

3,312,925

ELECTRIC SWITCH APPARATUS
Nicholas Frantz, Skokie, Ill., assignor to Carter Precision Electric Co., Skokie, Ill., a corporation of Illinois
Filed Oct. 30, 1963, Ser. No. 320,012
13 Claims. (Cl. 338-200)

1. In switching apparatus which includes a housing, fixed contacts in said housing, and movable contacts in said housing, said movable contacts being mounted on a pair of contact carrying members rotatably mounted in said housing, engageable projection means on said members providing for movement of one of said members between a pair of positions in which the contacts thereon

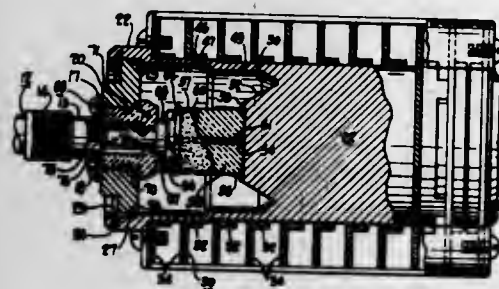
are engaged with certain of said fixed contacts in response to back and forth rotation of the other one of said mem-



bers, said housing and said one contact carrying member having coating detent means which define said pair of positions.

3,312,926

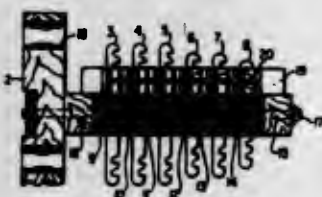
AIR-COOLED COAXIAL LINE TERMINATION
Harold E. Stevens, Lyndhurst, Ohio, assignor to Bird Electronics Corporation, Solo, Ohio, a corporation of Ohio
Filed June 17, 1965, Ser. No. 464,621
11 Claims. (Cl. 338-216)



3. A coaxial line termination for terminating the inner and outer conductors of a coaxial line in a reflectionless, heat dissipating termination including:
 - a load resistor housing formed of metal having a heat conductivity of at least 0.4 cal./sec./° C./cm.³;
 - a recess in said housing, said recess including at least one cylindrical section and a re-entrant, frusto-conical section terminating in a circular surface facing said coaxial line and encircled by a ridge extending toward said coaxial line;
 - a resistor assembly including a cylindrical resistor formed on a substantially solid substrate having thermal conductivity of at least 0.4 cal./sec./° C./cm.³ and an aspect ratio less than 2; and electrically conducting means supporting and mechanically biasing said resistor against said circular surface and said ridge, said spring means connecting said resistor to said inner conductor, said frusto-conical section tapering outwardly from said resistor assembly and outwardly from coaxial line.

3,312,927

INTERCEPT STRAPPING BRIDGE
Jim C. Garrett, Huntington Park, Calif., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Nov. 12, 1964, Ser. No. 410,589
1 Claim. (Cl. 339-17)

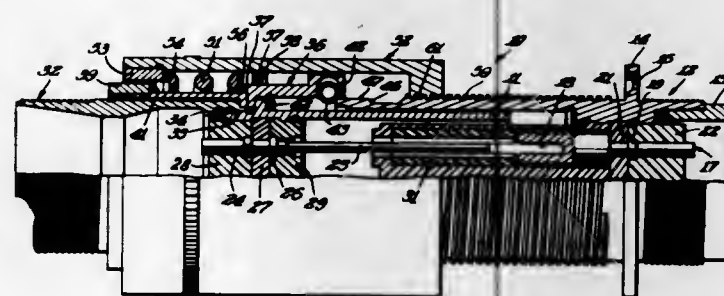


A terminal connector for use in conjunction with a terminal block having a plurality of rows of generally parallel terminals projecting therefrom, said connector com-

prising an elongated insulating mounting plate, a plurality of longitudinally spaced spring contacts mounted on said plate, and printed circuit means on said plate on the side opposite said contacts interconnecting certain of said spring contacts for electrically interconnecting certain of said terminals when said spring contacts are engaged therewith, said mounting plate and said spring contacts having a height less than the height of the terminals whereby the spring contacts may be engaged with the terminals below the upper ends thereof thereby enabling the upper ends of the terminals to be accessible and also enabling adjacent terminals to be accessible, each of said spring contacts including a generally U-shaped spring member in the form of a flat spring, one leg of said spring being longer than the other and disposed against the surface of the mounting plate, a rivet extending through a hole in the free end of the longer leg of the U-shaped spring and through the board for electrically connecting the printed circuit with the spring contact, the shorter leg of said spring being formed with two independently flexible sections generally converging towards the longer leg and forming two distinct points of contact for engaging one side of the terminal, said longer leg having a pair of bosses disposed generally opposite one of said flexible sections and at least one other boss disposed generally opposite the other of said flexible sections for electrically contacting the other side of said terminal, said rivet-receiving hole in the longer end of said spring being disposed generally opposite said other flexible section, the longer leg of said spring having a punched out lug adjacent said rivet-receiving hole, said lug being inserted in a hole in said mounting plate to prevent twisting action of the spring.

3,312,928

EXPLOSION-PROOF CONNECTOR
Joseph A. Nava, Villa Park, Walter Ronald Heyneman, La Grange, and Donald Kenneth Jewell, Chicago, Ill., assignors to The Pyle-National Company, Chicago, Ill., a corporation of New Jersey
Filed July 21, 1964, Ser. No. 384,123
9 Claims. (Cl. 339-46)

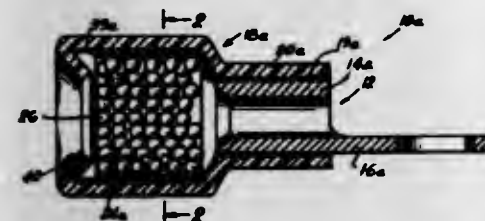


1. A connector for minimizing arcing time in a high voltage, high current line comprising a male shell carrying a plurality of male contact elements, a female shell carrying a plurality of female contact elements for engagement with said male contact elements, detent means movable with one of the aforementioned shells, abutment means on the other of said shells arranged to temporarily restrain said detent means until a predetermined force is applied to said detent means, a coupling sleeve in threaded engagement with said other shell, and spring means confined between said coupling sleeve and said detent means to urge said detent means against said abutment means with increasing pressures as said coupling sleeve is progressively threaded onto said shell until the force behind said detent means is sufficient to unseat said detent means from said abutment means, whereupon said male contact elements are rapidly engaged with said female contact elements.

3,312,929

SEALING OF CRIMPED ELECTRICAL CONNECTORS

Suel G. Shannon, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Aug. 24, 1964, Ser. No. 391,482
19 Claims. (Cl. 339-115)

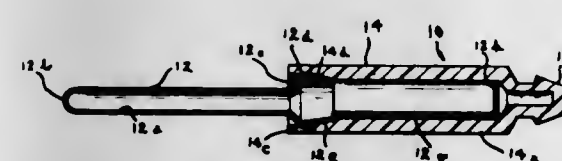


10. A crimp-type electrical connector adapted to store a multi-component contact-treating liquid system which is activated by mixing, which connector comprises a metal ferrule adapted to be cold forged into electrical contacts with a wire, pressure-rupturable capsules each filled with at least one liquid component of said contact-treating system and separately stored in distribution generally adjacent to said other components in a manner so that upon crimping the capsules are ruptured and the components are effectively mixed and flowed into said ferrule where said contacts are formed, and carrier means for storing said capsules therein at an area removed from said ferrule, said carrier means extending beyond one end of said ferrule in a generally cylindrical form, having flow access from said capsules to the interior of said ferrule, being adapted to be crimped onto a wire inserted within said connector and storing said capsules at an area subject to said crimping.

3,312,930

TERMINAL PIN ASSEMBLY

John Gross Hatfield, Camp Hill, and Winfield Warren Loose, Reading, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Feb. 10, 1965, Ser. No. 431,555
4 Claims. (Cl. 339-147)

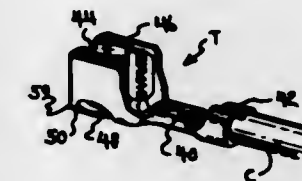


1. A terminal pin assembly of the type adapted to house a component and to provide a connection to input and output leads thereof including a first contact portion of a tubular configuration joined by a portion of enlarged diameter having spring characteristics in a radial sense and carrying a plurality of barbs, an arm member joining said further portion and extending axially relative to said first contact portion for a length substantial as compared to said first contact portion, said arm ending in a bifurcated flange disposed at right angles to the longitudinal axis of said assembly, a further contact member extending axially out from said first mentioned contact portion and of approximately the same diameter of said first contact portion in its forward part, the said further contact member including a central beam extending within said first contact portion and terminated in a receptacle adapted to accommodate one end of a component lead, the other end fitting in said flange, an insulating spacer surrounding said beam along its length and extending between said beam and said first mentioned contact portion to support and insulate said beam relative thereto, an insulating shroud having a bore of a length adapted to fit over said component and said arm to elastically engage the outer surface of said further portion and to engage said flange.

3,312,931

ELECTRICAL CONNECTOR AND HOUSING

Joseph R. Keller, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Original application Sept. 10, 1962, Ser. No. 222,604, now Patent No. 3,202,959, dated Aug. 24, 1965. Divided and this application Sept. 23, 1964, Ser. No. 403,686
2 Claims. (Cl. 339-258)

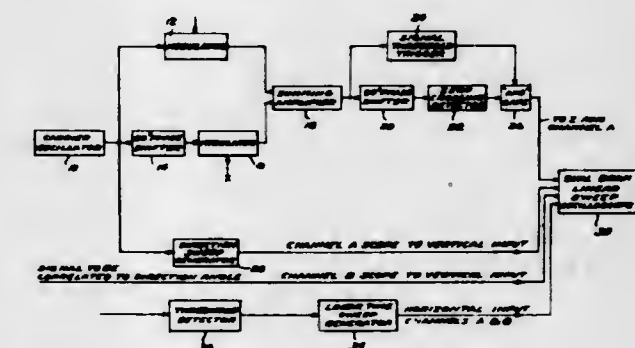


1. An electrical connector adapted to receive a pin-type conductor, comprising: a pair of U-shaped members, disposed parallel to each other, each of said members having an inside leg and an outside leg connected by a bight, the inside legs of said members extending in the same direction and arranged to receive a pin in resilient frictional engagement, a ring-shaped member resiliently secured to said U-shaped members adjacent the bights thereof by root portions, the opening of the ring being in alignment with the pin-receiving axis of said inside legs, a probe means on one side of said ring-shaped member, and means for securing said U-shaped members to an electrical conductor.

3,312,932

ELECTRICAL CONVERSION OF TRANSIENT VECTOR SIGNALS FOR RECORDER APPLICATION
Beno Barber, Brooklyn, and Kenneth W. Gross, Forest Hills, N.Y., assignors to Sperry Rand Corporation, Ford Instrument Company Division, a corporation of Delaware

Filed Oct. 28, 1963, Ser. No. 319,598
2 Claims. (Cl. 340-6)



1. Means for recording direction angle signals of a transient nature comprising a carrier oscillator, a display device synchronized with said oscillator, a phase shifter connected to said oscillator, a modulator connected to the output of said phase shifter, a second modulator connected to said oscillator, a summing amplifier connected to the output of both modulators, means connected to said amplifier for detecting a pre-selected relative output value thereof and generating a pulse each time said value is detected, said display device being actuated by said generated pulse, said detecting and generating means comprising a 90° phase shifter and a zero crossing detector connected to the output of said 90° phase shifter, an "AND" gate connected to the output of said zero crossing detector and a signal threshold trigger is connected between said summing amplifier and said "AND" gate.

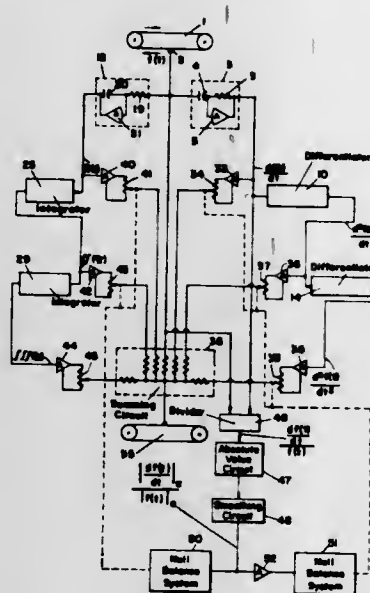
3,312,933

TIME VARIANT INVERSE FILTER

Philip L. Lawrence, Riverside, Conn., and Jack T. Nipper, Dallas, Tex., assignors to Mobil Oil Corporation, a corporation of New York

Filed Apr. 23, 1964, Ser. No. 362,135

4 Claims. (Cl. 340—15.5)



1. The method of converting a seismogram having a frequency content which varies in accordance with the variation of the frequency attenuation of the earth and instruments into a seismogram having a time invariant frequency content comprising:

generating a first electrical signal representative of said seismogram,

applying said first electrical signal to a differentiator to produce a second electrical signal representative of the magnitude of the higher frequency components of said seismogram,

applying said first electrical signal to an integrator to produce a third electrical signal representative of the magnitude of the lower frequency components of said seismogram,

generating from the ratio of said first and second electrical signals a control signal proportional to the absolute value of said ratio, said control signal varying in accordance with the variation in frequency content of said seismogram with time,

applying said first, second and third electrical signals to amplitude controllers,

applying said control signal to said amplitude controllers to change the magnitudes of said electrical signals in accordance with the magnitude of said control signal,

applying the outputs of said amplitude controllers to a mixer to produce a resultant signal having an invariant frequency content, and

converting said resultant signal to a seismogram having an invariant frequency content.

3,312,934

MEASURING ACOUSTIC VELOCITY OVER TWO TRAVEL PATHS

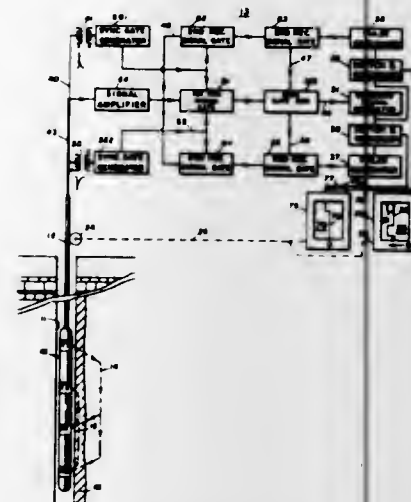
Allen A. Stripling and Joseph Zemanek, Jr., Dallas, Tex., and Warren G. Hicks, deceased, late of Grand Prairie, Tex., by Sibyl A. Hicks, legal representative, Grand Prairie, Tex., assignors to Mobil Oil Corporation, a corporation of New York

Filed July 12, 1963, Ser. No. 295,598

15 Claims. (Cl. 340—18)

9. A method of acoustical well logging comprising: generating acoustical impulses at a point within a borehole; receiving said acoustical impulses over at least two

separate equal length intervals, said equal length intervals being located at different ranges from said point and registering on a scale related to the depth of said point in the borehole a quantity whose magnitude is related to the difference in travel time of the acoustical impulse over said two separate equal length intervals.



10. A method of acoustical well logging comprising: generating acoustical impulses at points within a borehole; generating signals indicating the duration of time periods required for said acoustical impulses to travel two equal intervals located at different fixed ranges from said points in the borehole; transmitting the generated signals to the surface and registering quantities whose magnitudes are related to the difference between the two time periods indicated by said signals.

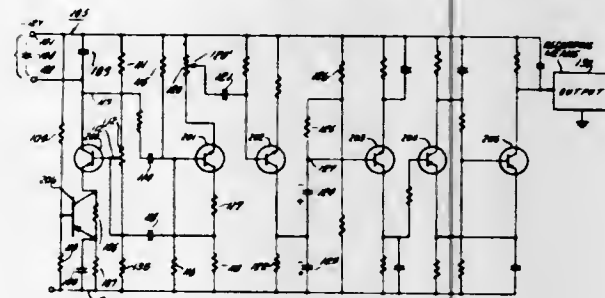
3,312,935

TRAFFIC LOOP DETECTOR

Abraham Brothman, Dumont, Richard D. Reiser, Waldwick, Michael Gomery, Saddle River, and Bruce A. Cuddeback, Waldwick, N.J., assignors, by mesne assignments, to Sangamo Electric Company, Springfield, Ill., a corporation of Delaware

Filed Apr. 21, 1964, Ser. No. 361,339

5 Claims. (Cl. 340—38)



1. Means for detecting the movement of vehicles and the like comprising first means arranged for inductive association with moving vehicle; second means for forming a resonant electrical circuit with said first means; third transistor means for supplying energy to said first and second means; feedback means coupled to said third means for sustaining the operation of said first, second, and third means at the resonant frequency; fourth means for demodulating the output of the resonant circuit to produce the wave envelope of said frequency signal; the rate of dissipation of energy by said resonant circuit being increased due to the passage of a vehicle; variable impedance means connected in series with said third transistor means to reduce the output of said third means when its energy dissipation rate increases; said variable impedance means comprising fifth transistor means having base, emitter and collector electrodes;

sixth means for maintaining said base electrode at a reference voltage level; resistance means coupled in parallel across said emitter and collector electrodes; one terminal of said resistance means being connected to said third transistor amplifier means, and the other terminal of said resistance means being coupled to ground potential.

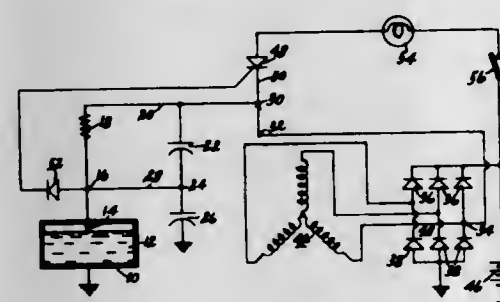
3,312,936

ELECTRICAL FLUID LEVEL INDICATING SYSTEM

Gerald O. Huntzinger, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Apr. 10, 1964, Ser. No. 358,908

5 Claims. (Cl. 340—59)



1. A liquid level indicating system comprising, a circuit having a pair of input terminals, first and second capacitors having a common junction connected across said input terminals, a container, a probe means adapted to contact a quantity of liquid when said liquid is at a predetermined level in said container, a resistor, said resistor and said liquid being connected across the input terminals of said circuit and forming a part of said circuit, means connecting the junction of said resistor and said probe with the common junction of said capacitors, means for applying a pulsating voltage to the input terminals of said circuit, and a means connected with the common junction of said capacitors for indicating a condition where the liquid is out of contact with the probe.

3,312,937

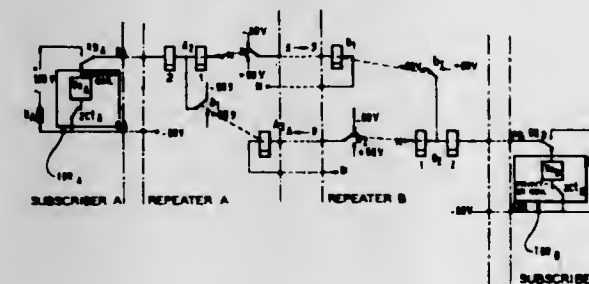
LINE TELEGRAPH SYSTEM WITH ERROR CORRECTION

Hendrik Cornelis Anthony van Duuren, Wassenaar, Netherlands, assignor to De Staat der Nederlanden, ten deze vertegenwoordigd door de directeur-generaal der Posterijen, Telegrafie en Telefonie, The Hague, Netherlands

Filed Dec. 13, 1962, Ser. No. 244,354

Claims priority, application Netherlands, Dec. 15, 1961, 272,613

9 Claims. (Cl. 340—146.1)



1. An error correction system for the telecommunication of multi-element binary code signals, which binary code elements comprise "stop" and "start" signals of different potentials, said system being for a line telegraph system having relays A₁, A₂, B₁, B₂ which transmit said

"start" and "stop" signal element in one direction at a time between two stations, said system comprising:

(A) a transmitter and a receiver at each station A and B,

(B) means 2 for storing a predetermined number of signals at each transmitter after said number of signals have been transmitted,

(C) relay means (A₂, B₂) in each receiver for maintaining that receiver in its "stop" signal potential condition during reception of both "start" and "stop" signal elements by said relay means,

(D) means 4' for testing the correctness of each signal as it is received by each receiver,

(E) the improvement comprising: means responsive to said testing means for testing an incorrectly received signal for switch means 8', RQ operating said relay means for changing the "stop" signal potential condition to a "start" signal potential condition for a duration of time between that of a signal element and a multi-element signal, regardless of whether "stop" or "start" signal elements are being received,

(F) means 7 for detecting said change in potential condition of said receiver at said transmitter, and

(G) means 8 to repeat said predetermined number of stored signals from said transmitter in response to said detecting means detecting said change in condition in said receiver.

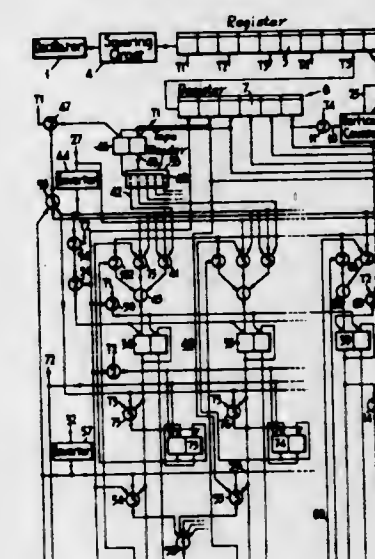
3,312,938

DATA SIGNALLING SYSTEMS WITH PROVISION FOR SYNCHRONIZING THE TERMINAL EQUIPMENT BY TRANSMITTING SYNCHRONIZING SIGNALS WHEN LOSS OF SYNCHRONISM HAS BEEN DETECTED

John Richard Cousins, Coventry, and Frederick Claude Robertson, Kenilworth, England, assignors to The General Electric Company Limited, London, England

Filed June 3, 1963, Ser. No. 285,151

5 Claims. (Cl. 340—146.1)



1. Equipment for the transmitting station of a data signalling system, said equipment comprising:

(A) a cyclic counter,

(B) means to supply to said counter a train of regularly recurring impulses to cause the counter to be triggered to a plurality of different states in turn,

(C) a digital data store,

(D) means to supply signals carrying digital data to said data store which temporarily stores that data,

(E) an output path,

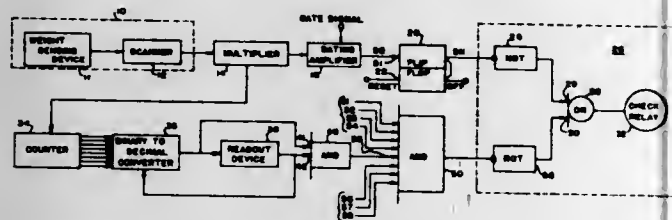
(F) means to supply to said output path a digital output signal of said equipment by reading from said store a succession of sub-groups of digits under the control of said counter,

- (G) each of said states of the counter resulting in one said sub-groups being read out in this manner,
 (H) repeat means to cause the last mentioned means to re-operate in respect of a group consisting of a plurality of such sub-groups of digits that have already been read out from said store,
 (I) signal generating means to supply a digital synchronizing signal having a predetermined characteristic pattern of digits,
 (J) counter modifying means to increase said plurality of cyclic states of said counter by the addition of further states to which the counter is triggered by said impulses, and
 (K) means to cause the counter modifying means to be operated prior to the operation of said repeat means so as to temporarily to increase the number of cyclic states of the counter and while the counter is in said further states to cause the digital synchronizing signal to be supplied to said output path.

3,312,939

CHECK CIRCUITRY AND APPARATUS

Robert E. Bell and Richard C. Loshbough, Toledo, Ohio, assignors to Toledo Scale Corporation, Toledo, Ohio, a corporation of Ohio
 Continuation of application Ser. No. 15,499, Mar. 16, 1960. This application June 1, 1965, Ser. No. 466,140
 7 Claims. (Cl. 340-147)



1. In combination, a condition responsive system adapted to generate an encoded electrical signal which is a function of a condition being measured, translating means for decoding the signal and including a plurality of movable members and latch means for latching the members in read out positions, and circuit means responsive to electrical operation of the system and to the position of the movable members being in coincidence with said signal for generating an output signal, the translating means further including means responsive to the output signal for mechanically sensing the latch means and initiating a succeeding cycle provided all the members are correctly latched in their read out positions.

3,312,940

CENTRAL TO REMOTE SIGNALLING SYSTEM HAVING SYNCHRONIZED COUNTERS

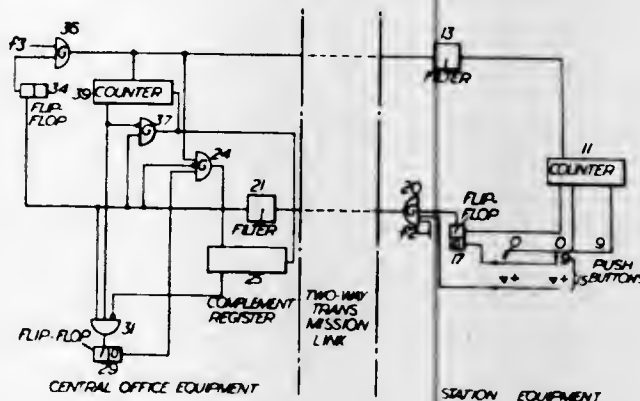
Oskar Evert Ekbergh, Hagersten, Per Gustaf Jonsson, Sorlid Ronninge, and Walter Franz Fetz, Sodertalje, Sweden, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 30, 1963, Ser. No. 305,800
 Claims priority, application Sweden, Sept. 10, 1962, 9,731/62

5 Claims. (Cl. 340-163)

1. A signaling system for transmitting digital information over a transmission link interconnecting central office equipment with remotely located station equipment comprising digit indicating means in the station equipment for indicating the value of any desired digit to be transmitted, means responsive to the operation of said digit indicating means for transmitting a first frequency over said link, means in the said central office equipment responsive to the receipt of said first frequency for generating a second frequency, counting means in the said central office

equipment and said station equipment for counting the number of each cycle of said second frequency means in the station equipment responsive to the number of cycles of said second frequency counted by said counting means therein corresponding to the said indicated digit

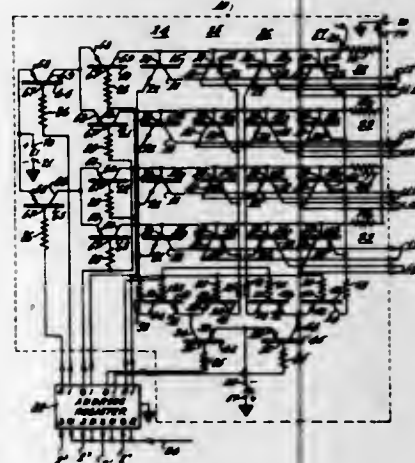


value for terminating the transmission of said first frequency, and recording means in the said central office equipment operable responsive to said termination of transmission of said first frequency for rendering the value of the digit indicated in said station equipment.

3,312,941

SWITCHING NETWORK

Grant W. Booth, Framingham, Mass., and Charles S. Warren, Riverside, N.J., assignors to Radio Corporation of America, a corporation of Delaware
 Continuation of application Ser. No. 544,280, Nov. 1, 1955. This application June 24, 1963, Ser. No. 293,922
 6 Claims. (Cl. 340-166)



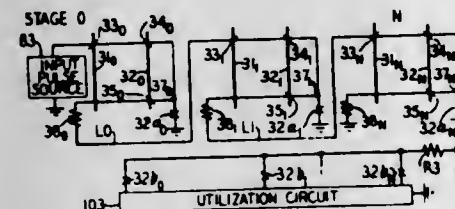
1. In combination:

- a coordinate array of transistors, of given conductivity type, arranged in columns and rows;
- means providing a plurality of input signals;
- source means providing two operating voltages of different value;
- a row selection array of transistors of one conductivity type connected to receive the operating voltage of one of said values for applying a voltage to the base electrodes of one row of the transistors in the coordinate array in response to a particular combination of said input signals applied to the transistors of the row selection array; and
- a column selection array of transistors of opposite conductivity type of the transistors of the row selection array connected to receive the operating voltage of said other value for applying a voltage to the emitter electrodes of one column of the transistors in the coordinate array in response to a particular combination of said input signals applied to the transistors of the column selection array, which voltage

is in the forward direction relative the voltage applied to the base electrode of the transistor in the coordinate array which is common to the row and column thereof selected by the row and column arrays, for placing said transistor in condition to conduct.

3,312,942
MAGNETICALLY CONTROLLED SWITCHING CIRCUITS

Philip G. Ridinger, Colts Neck, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
 Filed Dec. 27, 1962, Ser. No. 247,757
 32 Claims. (Cl. 340-168)



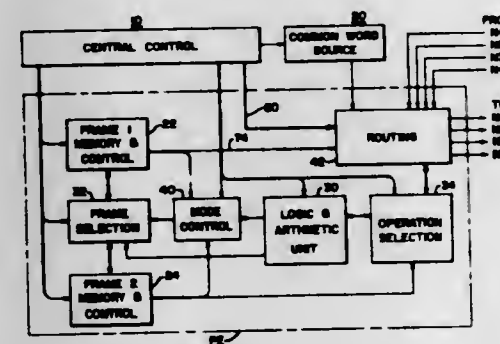
16. A sequential circuit comprising a plurality of stages of magnetically controlled switching devices, each of said devices including remanent magnetic means, winding means for changing the remanent state of said remanent magnetic means, and contact means operative in response to changes in said remanent state; a source of input pulses; means for steering said input pulses to a selected one of said stages, said steering means including said contact means in each of said stages magnetically coupled to the device of the stage immediately preceding said selected stage and operative after said pulses have been steered to said selected stage; and output means comprising an additional one of said contact means in each of said stages for providing an external indication of the state of said stages.

3,312,943

COMPUTER ORGANIZATION

Gerald T. McKindles, Catonsville, and Walter C. Borck, Jr., Baltimore, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 28, 1963, Ser. No. 261,783
 6 Claims. (Cl. 340-172.5)



6. A computer comprising:

- (1) a central control means;
- (2) an array of processing elements under simultaneous control of said central control means;
- (3) common word means for storing an information word for use as data by two or more processing elements for carrying out, simultaneously, desired operations including said information word;
- (4) each said processing element including:
 - (a) memory means for storing data,

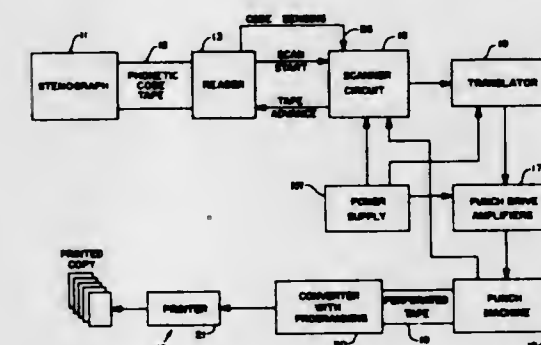
(b) logic and arithmetic means for carrying out desired operations designated by said central control means, and

(c) routing means including a plurality of gates for receiving said data from said memory means and operable in response to routing signals from said central control means, to route said data to said logic and arithmetic means or to other pre-selected processing elements, depending upon said routing signals, said routing means additionally operable to receive the information word from said common word means to gate said word to said logic and arithmetic means in the absence of said routing signals.

3,312,944

CODE TRANSLATING SYSTEM

Robert C. Kull, 2317 Lynn Oaks Drive, and Robert W. Dell, 3457 Williams Road, both of San Jose, Calif. 95117, and George E. Boyle, Jr., 2533 Johnson Place, Santa Clara, Calif. 95050, assignors of twenty-five percent to Robert F. Webb, Santa Clara, Calif.
 Filed Sept. 12, 1963, Ser. No. 308,452
 18 Claims. (Cl. 340-172.5)



3. Apparatus for transcribing copy of complete words from a tape having character code intelligence thereon comprising a photoelectric reader code sensing device for sensing characters on said tape to produce simultaneously a plurality of signals representative of characters on said tape, a scanning circuit connected to said sensing device to receive said simultaneously produced signals for producing in succession signals representative of the characters sensed by said device in the same order as the characters appear on said tape, a code translating circuit connected to said scanning circuit for translating said successive signals into signals compatible with a predetermined code, means responsive to said compatible code signals for recording in said predetermined code said compatible signals, and means responsive to the recorded predetermined code for printing copy transcribed from the character intelligence on said tape.

3,312,945

INFORMATION TRANSFER APPARATUS

Evelyn Berezin, New York, Jack Knoll, Plainview, and Eugene Leonard, Sands Point, N.Y., assignors to Digilronics Corporation, Albertson, N.Y., a corporation of Delaware

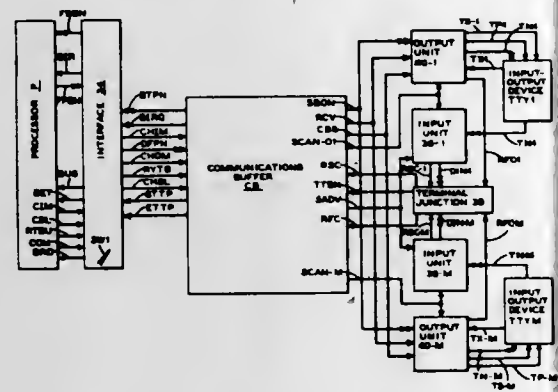
Filed Oct. 14, 1963, Ser. No. 315,743
 23 Claims. (Cl. 340-172.5)

1. In combination with

- (a) a data processor which transmits and receives words of information as groups of information characters, each comprising a plurality of bits, which transmits input and output control signals to indicate when it will transmit a word of information and when it will receive a word of information and which transmits storage register address signals, and

(b) a plurality of input-output devices each of which transmits and receives information characters, each comprising a plurality of bits, and is responsive to input and output control signals indicating when it can transmit or receive a character of information, a communications buffer comprising:

- (I) a memory having a plurality of multicharacter storage registers,
- (II) means for selecting one of said multicharacter storage registers,



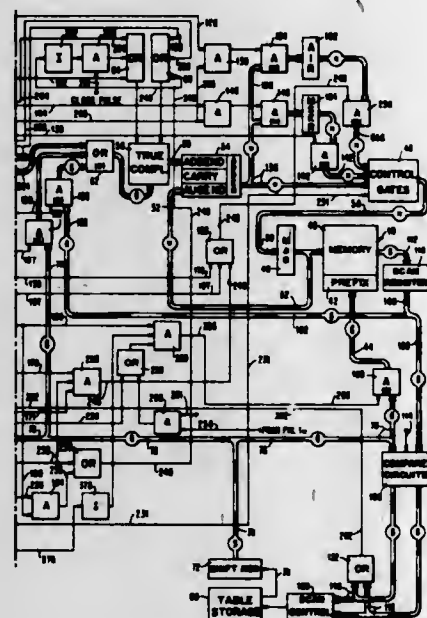
- (III) word transfer means for transferring a word of information as a group of information characters between a selected multicharacter storage register and said data processor,
- (IV) character transfer means for transferring a single information character between a selected multicharacter storage register and one of said input-output devices, and
- (V) control means for activating either said word transfer means or said character transfer means when a multicharacter storage register is selected.

3,312,946

PROCESSOR FOR CODED DATA

John L. Craft, Beacon, and Warren B. Strohm, Wappinger Falls, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 18, 1963, Ser. No. 331,553
24 Claims. (Cl. 340-172.5)



1. A device for manipulating coded units of data comprising:
addressable means for storing said coded data units;
means for requesting and utilizing selected ones of said data units;

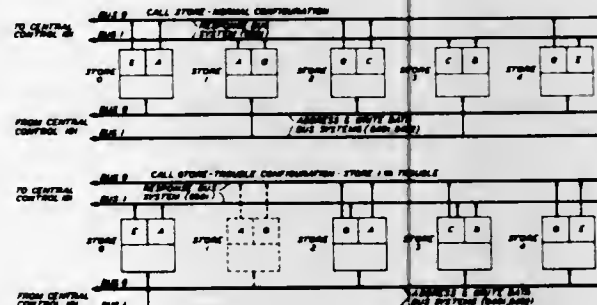
means for storing the address in said addressable means of the data being utilized by said utilizing means;
means operable in response to an instruction from said utilizing means for utilizing the address in said address storing means to calculate the address in said addressable means of the beginning of a selected data unit;
and means operable when said selected data unit is required for applying said calculated address to said address storing means.

3,312,947

PLURAL MEMORY SYSTEM WITH INTERNAL MEMORY TRANSFER AND DUPLICATED INFORMATION

Matthew Raspani, Lincroft, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 31, 1963, Ser. No. 334,725
14 Claims. (Cl. 340-172.5)



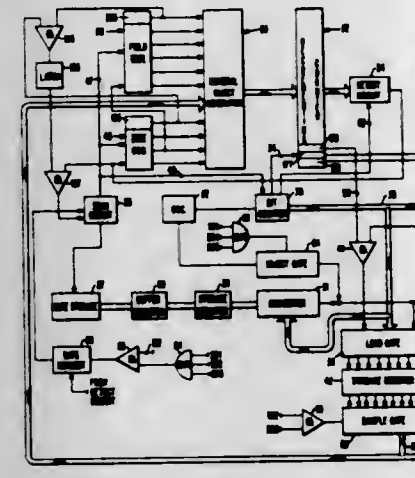
7. In combination,
a central data processor comprising
a central control,
a memory arrangement and transmission means interconnecting said central control and said memory arrangement,
said central control comprising
means for generating commands for controlling said memory arrangement, certain of said commands being memory commands and other of said commands being control commands,
said memory arrangement comprising a plurality of independent memory units,
each of said memory units comprising a memory proper and control means including a plurality of control locations,
said control means responsive to said memory commands to control said memory proper and responsive to said control commands for providing access to said control locations, said transmission means comprising a command transmission bus system for transmitting said commands from said central control to said memory arrangement and a response bus system for transmitting responses from said memory arrangement to said central control, said command transmission bus system comprises a "0" command bus and a "1" command bus, said response bus system comprises a "0" response bus and a "1" response bus, said memory proper comprises a left half a right half, said control means comprises a plurality of response control flip-flops, and said control means is responsive to said memory commands to selectively read information from said left half or said right half of said memory proper and responsive to the states of said response control flip-flops and a portion of said memory command to selectively transmit information read from said memory proper to said "0" response bus and to said "1" response bus.

3,312,948

RECORD FORMAT CONTROL CIRCUIT

Anthony J. Capozzi, Binghamton, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Mar. 25, 1964, Ser. No. 354,563
5 Claims. (Cl. 340-172.5)



1. A record format control circuit for entering a record format onto a magnetizable surface rotating at a constant rate, comprising
a core storage circuit for holding a plurality of records, each including a plurality of field areas of determinable lengths,
means for writing a plurality of zones onto said magnetizable surface,
a first ring counter having a plurality of stages, each producing an enabling signal,
a second ring counter responsive to said first counter and having a plurality of stages, each producing an enabling signal,
a decrementing counter having a plurality of stages, each producing a plurality of output signals,
injecting means responsive to said ring counters for setting numbers into said decrementing counter which indicate said length of said field areas and said zone areas,
means for producing signals which decrement said decrementing counter,
a detect circuit connected to said stages of said decrementing counter for generating an output signal indicating the production of a selected combination of said output signals,
said first ring counter being responsive to said detect circuit, and
means responsive to said enabling signals of said ring counters and connected to said core storage circuit and said injecting means for transferring fields and zones onto said magnetizable surface.

3,312,949

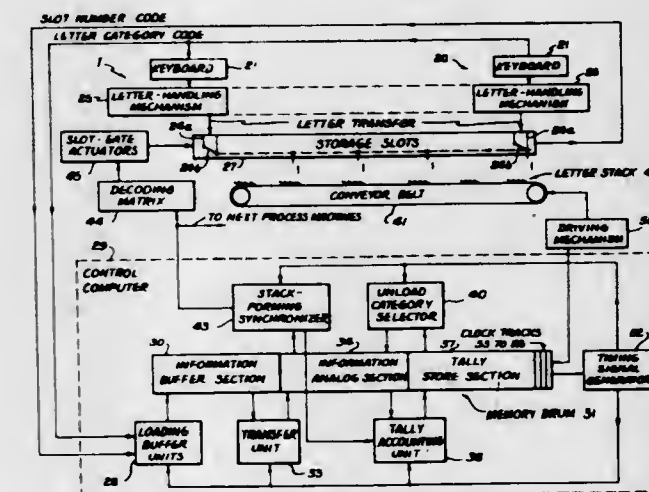
STACK-FORMING SYNCHRONIZER FOR A SORTING MACHINE

Seymour Henig, Kensington, Md., assignor to the United States of America as represented by the Secretary of Commerce

Filed Apr. 6, 1964, Ser. No. 357,846
12 Claims. (Cl. 340-172.5)

1. A stack-forming synchronizer for articles, each associated with one of a plurality of article category codes and each positioned in a respective one of a plurality of slots arranged in a sequence, comprising:
first storing means containing said article category codes, each in a code position related to a respective one of said slots,

second storing means having a plurality of code positions, each related to a respective one of said slots, means for recording at least one unload category code in one of the code positions in said second storing means,
first comparing means having a first and second comparing-position,
means for transferring said unload category code from said second storing means to the first comparing-position and then to the second comparing-position, the first comparing-position being associated with the slot related to the code position from which the unload category code was transferred and the second comparing-position being associated with the next slot occurring in said sequence of slots,
second comparing means,



- first control means for selectively applying either the output of one of the comparing-positions or for applying the output of the first and second comparing-position in sequence to said second comparing means, means for sequentially transferring to said second comparing means the article category codes in said first storing means related to the slots associated with the first and second comparing-positions, respectively, means for generating an output signal when an identity is found in the second comparing means,
means responsive to each output signal for releasing the article in the slot related to the article category code being applied to said second comparing means when the output signal is generated, and
second control means for re-recording the unload category code in said second storing means with a selected advance in code position.

3,312,950

BUFFER SYSTEM WITH EACH CHANNEL TRANSFERRING TO A SPECIFIED MEMORY LOCATION, SAID LOCATION STORING INDICATION OF NEXT CHANNEL TO BE SERVICED

Ernest L. Hillman, Cherry Hill, and Robert H. G. Chan, Haddonfield, N.J., assignors to Radio Corporation of America, a corporation of Delaware

Filed May 28, 1964, Ser. No. 370,830
11 Claims. (Cl. 340-172.5)

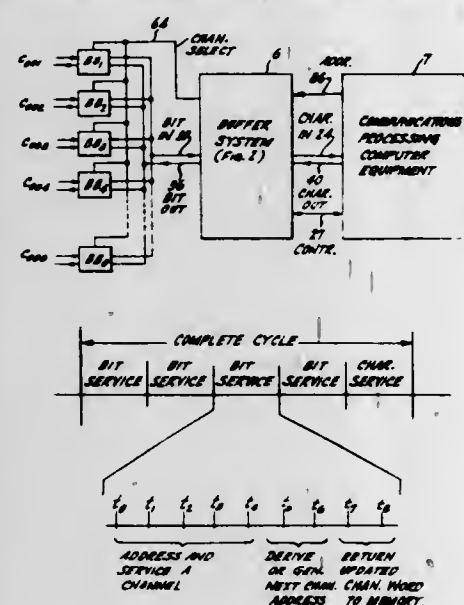
11. A system for cyclically addressing all of many word locations in a memory at least once during a complete cycle, said word locations including most frequently accessed locations and least frequently accessed locations, said locations being divided for purposes of description into subscan groups each including all of the most frequently accessed locations and some of the less frequently accessed locations, each least frequently accessed location being included in only one of said subscan groups, each of said word locations including space for the storage of scan control information giving the address of the next word location in the same subscan, comprising

means including an address register, an end of subscan flip-flop and a last subscan flip-flop for sequentially addressing the word locations,

means operative during the access of a word for accepting the scan control portion thereof and storing it in said address register for use in addressing the next word in the same subscan,

decoder means operative during the access of the penultimate word included in all subscans for recognizing the scan control portion thereof, and setting said end of subscan flip-flop for use during the next access in directly addressing the last word included in all subscans,

means responsive to the set condition of said end of subscan flip-flop and operative during the directly-addressed access of the last word included in all subscans for incrementing the scan control portion there-



of in said address register for use during the next access in addressing the first word of the next subscan,

decoder means operative during the access of said one word appearing solely in the last subscan for recognizing the unique scan control portion thereof, setting said last subscan flip-flop, and incrementing the contents of said address register to provide the address therein of the next word to be accessed,

means responsive to the set states of both of said end of subscan flip-flop and said last subscan flip-flop, and operative during the access of the last word of the last subscan to generate and store in said address register the address of the first word of the first subscan, and

means operative during the access of the last word appearing in all subscans for resetting said end of subscan flip-flop and said last subscan flip-flop.

3,312,951 MULTIPLE COMPUTER SYSTEM WITH PROGRAM INTERRUPT

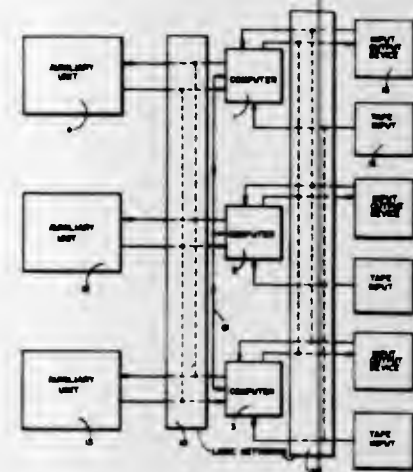
Theodore M. Hertz, Whittier, Calif., assignor to North American Aviation, Inc.
Filed May 29, 1964, Ser. No. 371,205
11 Claims. (Cl. 340-172.5)

1. In a multiple computer system, a plurality of program controlled computers, each having a stored program including instructions and at least one subroutine,

an interrupt control signal representing an interrupt control instruction having an address portion,

means for detecting and executing instructions of said stored program including a subroutine that may be detected and executed only in response to said interrupt control signal,

means responsive to a stored instruction of said stored program commanding an interruption for producing said interrupt control signal for the immediate interruption of selected ones of said computers, if any are specified by said instructions, and a delayed interrupt control signal for self-interruption after a predetermined number of delay periods, if a delayed interruption is specified by said instruction,



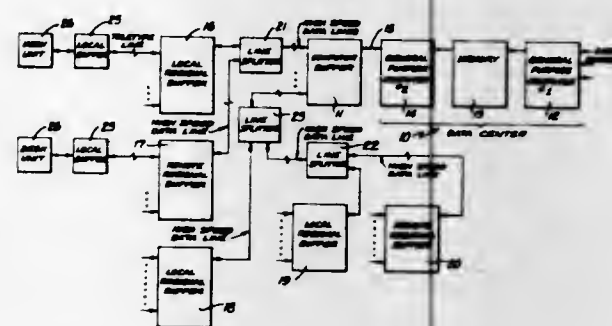
means responsive to said address portion of said interrupt control instruction for transmitting said interrupt control signal to selected ones of said computers,

means responsive to said interrupt control signal for interrupting the main program of each computer selected and causing said subroutine to be executed,

and means responsive to said delayed interrupt control signal for interrupting the stored program of said computer after said predetermined delay time.

3,312,952 HIGH SPEED LINE SPLITTER FOR MARKET QUOTATION APPARATUS

John R. Scantlin, Los Angeles, Evan J. Drummond, Woodland Hills, Michael T. Gray, Los Angeles, and Reaman Paul Niquette, Palos Verdes Estates, Calif., assignors to Scantlin Electronics, Inc., Los Angeles, Calif., a corporation of Delaware
Filed June 15, 1964, Ser. No. 374,889
7 Claims. (Cl. 340-172.5)



1. In a market quotation apparatus having a memory unit including means for storing market information therein,

a computer including means for looking up stored information in the memory unit and composing a message in response to an inquiry, the inquiry including an identification section and a function section,

a plurality of customer units, each including means for generating an inquiry and means for displaying a message,

first and second regional buffers, each having a plurality of customer inputs and outputs and a high speed line input and output,

means for connecting customer units to the corresponding input and output of predetermined regional buffers for transmitting inquiries to a regional buffer and messages to a customer unit, and

a computer buffer having a high speed line input and output and a computer input and output for connection to the computer, with the inquiries and messages being transmitted between regional and computer buffers in the form of digital words grouped into transmission frames with each frame having even and odd time slots and a synchronizing frame indicator time slot,

the improvement comprising means for connecting the first and second regional buffers to an input and output of the computer buffer for transmitting inquiries to the computer buffer and messages to the first and second regional buffers, and with the first regional buffer transmitting inquiries only in the even time slots and with the second regional buffer transmitting inquiries only in the odd time slots, and including in combination:

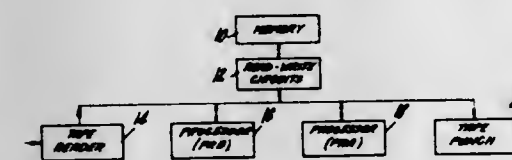
a word storage unit,

a gate unit connected between one of said regional buffers and said word storage unit and including means for passing words from said one regional buffer to said word storage unit during one of said even and odd time slots and rejecting words during the other of said time slots, and

a switching unit having an output connected to said computer buffer and having the output of said word storage unit connected as one input and said other regional buffer connected as another input and including means for alternately selecting words from said word storage unit and from said other regional buffer for transfer of the inquiry words from both regional buffers to the switching unit output.

3,312,953 DATA PROCESSING SYSTEM

An Wang and Ge-Yao Chu, Lincoln, Mass., assignors to Wang Laboratories Inc., Tewksbury, Mass., a corporation of Massachusetts
Filed Oct. 29, 1964, Ser. No. 407,492
44 Claims. (Cl. 340-172.5)



1. A data processing system comprising serial data storage means for storing signals representative of data items,

a plurality of data processing units arranged in succession,

each successive processing unit being arranged to extract from said data storage means and processing data items entered in said data storage means by the preceding processing unit, and then to reenter the additionally processed data items in said data storage means,

and control means for preventing each said succeeding processing unit from extracting from said storage means a data item that has not been processed by the preceding data processing unit.

31. Apparatus for inserting justification information in a serial train of text items comprising storage means for storing signals representative of said text items, means for specifying the length of a line of text as a function of said text item signals,

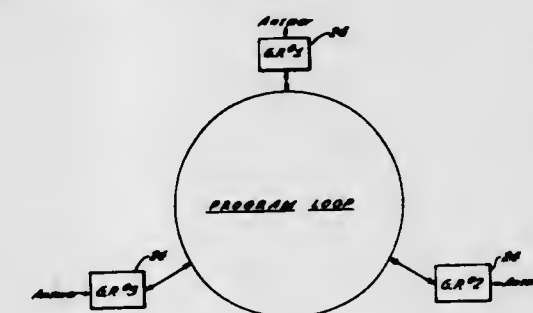
means for sensing said text item signals to accumulate signals representative of said text items as a function of said specified line length and generate a maximum line length signal in coordination with said text item signals,

means for automatically selecting an acceptable end of line location and generating a signal representative as a function of the accumulated text item signals,

and means for enabling an operator to insert a hyphenation symbol in said serial train of text items when said automatic selecting means does not generate said signal representative of an end of line location.

3,312,954 MODULAR COMPUTER BUILDING BLOCK

Robert E. Bible, Rancho Santa Fe, and Robert L. McIntyre, Glendale, Calif., Arville T. Trost, Butler, N.J., and Robert R. Williamson, Carlsbad, Calif., assignors to General Precision, Inc., a corporation of Delaware
Continuation of application Ser. No. 189,010, Apr. 19, 1962. This application Dec. 8, 1965, Ser. No. 512,466
6 Claims. (Cl. 340-172.5)



1. A digital computer including: a memory unit; a plurality of separate digital computer units; means coupling said computer units to said memory unit to derive common information including a repeated sequence of instructions therefrom and to supply such common information to respective ones of said digital computer units so as to enable each of said digital computer units to perform the same computations on such information; a common service unit coupled to said memory unit and to said digital computer units for controlling the timing of said digital computer units; and control means coupled to said digital computer units for controlling the introduction of the sequence of instructions in said memory unit to respective ones of said digital computer units so that said sequence is applied periodically to said digital computer units but at different times to each of said digital computer units.

3,312,955 SYSTEM FOR RECORDING AND RETRIEVING DIGITAL INFORMATION

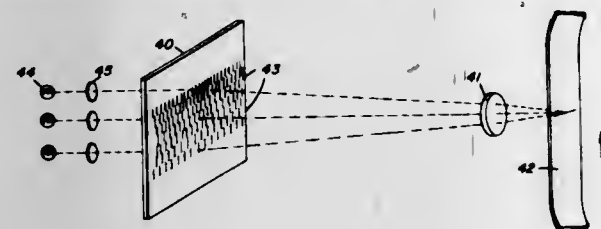
Robert L. Lamberts and George C. Higgins, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Sept. 3, 1963, Ser. No. 306,057
5 Claims. (Cl. 340-173)

4. An information record for digital data in the form of a digital numeral having a plurality of discrete numerical bits, each of said bits representing a distinct numerical value, said record comprising

a member having formed thereon, in a discrete area thereof, a composite diffraction grating corresponding to said digital numeral,

said composite grating comprising a plurality of component gratings superimposed upon one another,

and each of said component gratings extending substantially throughout said discrete area and having a



spatial frequency uniquely indicative of the numerical value represented by the corresponding one of said bits.

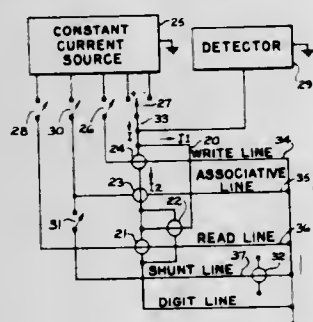
3,312,956

ASSOCIATIVE MEMORY

John Wood Bremer, Sunnyvale, Dwight W. Doss, Santa Clara, and Bruce T. McKeever, Sunnyvale, Calif., assignors to General Electric Company, a corporation of New York

Filed Jan. 2, 1963, Ser. No. 249,033

17 Claims. (Cl. 340-173.1)



1. In an associative memory system having a plurality of word storage positions and containing blocks of data words, each block of data words being stored in sequentially occurring word storage positions and only the first word and the last word of each block containing block identification data, the combination of: means for interrogating said memory with selected block identification data; means responsive to said interrogation for detecting said first and last words of each block of data words containing said selected block identification data; and means responsive to the detection of said first and last words for enabling for selection all of the word storage positions of each block of data words which contains said selected block identification data in its first and last word storage positions.

3,312,957

SIMPLIFIED ACCESS OPTICAL MEMORY

Harold Fleisher, Thomas J. Harris, and Eugene Shapiro, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Oct. 25, 1963, Ser. No. 318,859

2 Claims. (Cl. 340-173)

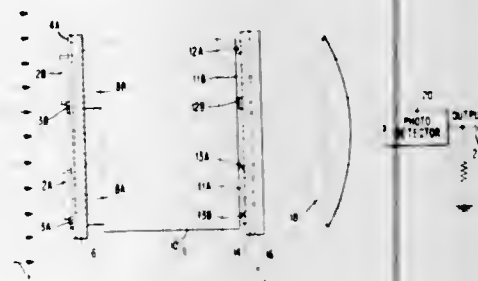
1. An optical memory which is activated by a beam of polarized radiation, comprising:

a plurality of electro-optical memory elements located in the path of said radiation, each said memory element displaying electro-optical remanence;

read-in means for reading information into said memory elements, said read-in means including a plurality of mutually perpendicular conductive means each of which electrically bridges a single memory element;

first analyzer means spaced from said memory elements in a direction away from the source of said radiation, and oriented to exclude radiation of a preselected polarity;

a plurality of second electro-optical substances having no electro-optical remanence, said plurality being spaced from said first analyzer means in a direction away from the source of said radiation, each said substance being optically coupled with a different one of said memory elements; and oriented to change radiation to said preselected polarity when activated; means to activate each of said second electro-optical substances individually;



fiber optic means for coupling in parallel the information contained in said memory elements to said corresponding second electro-optical substances when said memory elements are illuminated by said radiation; and for reducing interference between memory elements;

second analyzer means oriented to exclude radiation which is not in the status of polarization induced by said second electro-optical substances when activated; and

photosensitive means to observe radiation emerging from said second analyzer means.

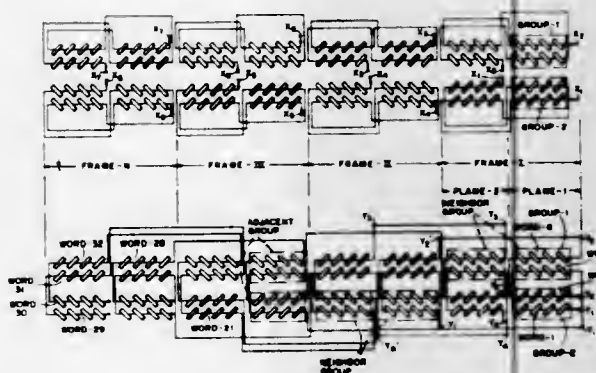
3,312,958

MAGNETIC CORE MATRIX ASSEMBLY

William F. Elseman, North Linthicum, and John C. Donohue, Hanover, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 4, 1963, Ser. No. 249,413

13 Claims. (Cl. 340-174)



1. A memory frame comprising two parallel planes each divided into two groups of magnetic cores; the cores of each group forming a plurality of words; a first winding extending through each word of one group and its neighbor group of the other plane in the frame; a plurality of second windings each extending through a respective word in said one group and a respective word in the other group of its respective plane in the frame; and means for orientating the cores of said one group with the cores of said other groups to provide currents through each core which are additive in polarity.

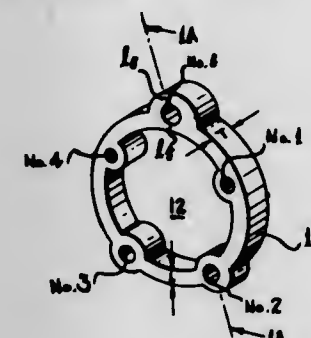
3,312,959

MULTI-APERTURE CORE

David R. Bennion, Menlo Park, Calif., assignor to AMP Incorporated, Harrisburg, Pa.

Filed July 16, 1963, Ser. No. 295,497

18 Claims. (Cl. 340-174)



2. An improved multi-aperture magnetic core having a centrally disposed major aperture and a plurality of minor apertures spaced about the periphery of the core with the cross-sectional area of magnetic material adjacent one minor aperture less than any other cross-sectional area of the core, another of said minor apertures having a cross-sectional area of adjacent magnetic material substantially greater than any other cross-sectional area of magnetic material of the core and a further minor aperture having a cross-sectional area of adjacent magnetic material substantially equal to the cross-sectional area of magnetic material through portions of the core between minor apertures.

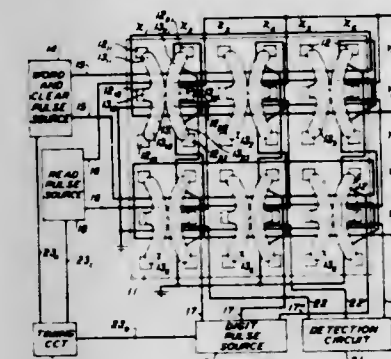
3,312,960

MAGNETIC WAFFLE IRON MEMORY CIRCUITS

Andrew H. Bobeck, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed July 25, 1963, Ser. No. 297,528

19 Claims. (Cl. 340-174)



6. A magnetic memory circuit comprising a first magnetic plate having six posts protruding therefrom, a second magnetic plate having substantially rectangular hysteresis characteristics overlying said posts, said second magnetic plate being patterned to provide six intersecting legs between said six posts, means for driving to unblocked and blocked states the flux in four of said six legs, and means for applying a switching pulse to the other two legs.

3,312,961

COINCIDENT CURRENT MAGNETIC PLATE MEMORY

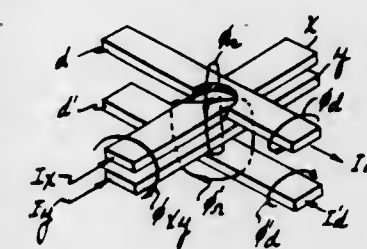
Jan A. Rajchman, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Aug. 22, 1963, Ser. No. 303,766

8 Claims. (Cl. 340-174)

8. A memory element comprising a magnetic member, first and second parallel-extending conductors embedded in said member, and

third and fourth parallel-extending conductors embedded in said member in crossed relation to said first and second conductors,



said third and fourth conductors being located on opposite sides of said first and second conductors.

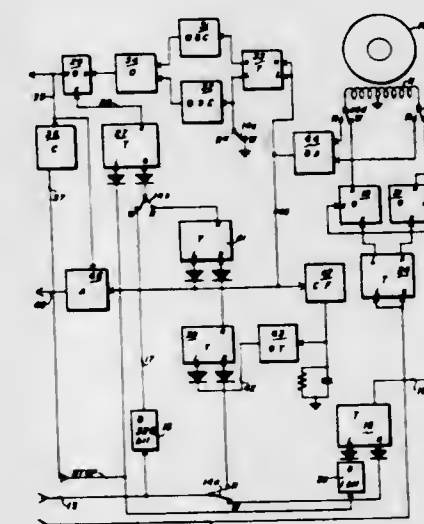
3,312,962

APPARATUS FOR MAGNETICALLY RECORDING DATA AT A RANDOM LOCATION

Hal K. St. Clair, Los Gatos, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Continuation of application Ser. No. 648,358, Mar. 25, 1957. This application Nov. 26, 1962, Ser. No. 243,697

4 Claims. (Cl. 340-174.1)



1. In a device for storing data in a plurality of digit positions recorded thereat to provide coded character representations the combination of:

a rotatable storage medium having at least one data storage track for storing a plurality of digits in each track and

wherein a gap is provided between the recorded positions of the first and last digits,

erasing and recording means for cooperating with said tracks, means responsive to the initiation of a recording operation for energizing said erasing and recording means for erasing a predetermined length of a selected track to remove previously recorded data thereat,

said erasing operation occurring at random on the track independently of any data previously recorded thereon, and

means for delivering the digits of data to the erase and recording means a fixed predetermined time and multigit interval after said erasing operation started for storage on the track, said last digit recorded being recorded in a previously erased portion of the track.

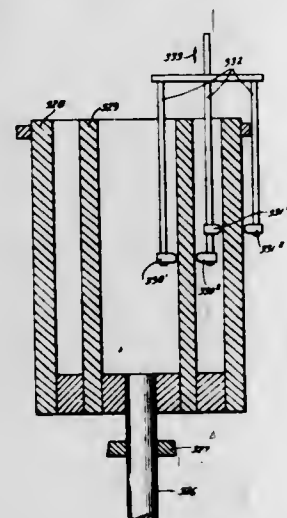
3,312,963

STORAGE DEVICES FOR SIGNALS

Gerhard Dirks, 12120 Edgecliff Place,
Los Altos Hills, Calif. 94022

Application Feb. 19, 1962, Ser. No. 173,908, which is a division of application Ser. No. 617,742, Oct. 23, 1956, now Patent No. 3,049,694 dated Aug. 14, 1962. Divided and this application Oct. 7, 1964, Ser. No. 402,134 Claims priority, application Great Britain, Oct. 25, 1955, 30,413/55; Oct. 28, 1955, 30,860/55; Nov. 23, 1955, 33,509/55

6 Claims. (Cl. 340—174.1)



1. In data signal storage apparatus, in combination, supporting means; a plurality of signal storing drums mounted coaxially in said supporting means and comprising hollow cylinders of different diameters mounted within one another with the outer surface of each in spaced relation from the inner surface of the next adjacent one, at least said inner surfaces of said cylinders being signal storage surfaces; driving means coupled to said drums to rotate them in synchronism; and transducing means mounted to cooperate with said inner storage surface of each of said cylinders.

3,312,964

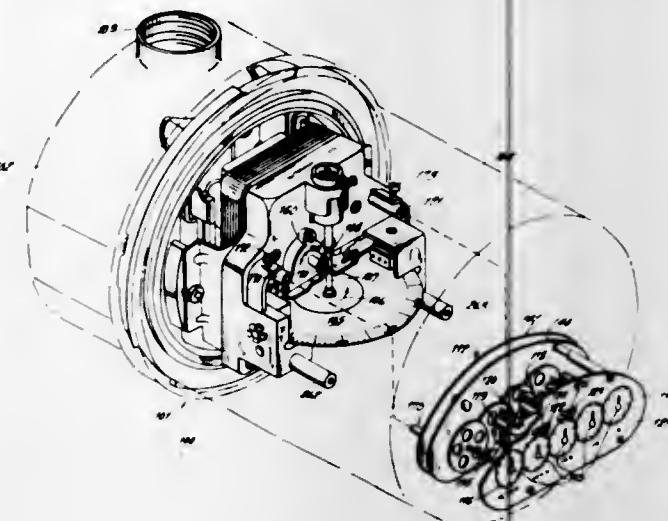
METER ENCODER-TRANSMITTER

Nathaniel L. Kahn, Glen Rock, Richard D. Reiser, Midland Park, and George A. Harris, Jr., Passaic, N.J., and Melvin Schrier, Bronx, N.Y., assignors, by mesne assignments, to Sangamo Electric Company, Springfield, Ill., a corporation of Delaware

Filed Dec. 3, 1962, Ser. No. 241,730
23 Claims. (Cl. 340—204)

1. Transmitter means for encoding and transmitting to a remote location data representative of a quantity being measured by means of a meter and responsive to a transmit request signal comprising encoding means for generating a binary coded representation of the quantity measurement even during the operation of said meter; normally de-energized transmitter means for generating frequency signals and transmitting said signals to a remote location in response to a transmit request signal; programming means for keying said transmitter means in accordance with said binary coded representations; said encoding means comprising a plurality of shaft angle encoders adapted to generate a predetermined binary code representative of discrete shaft angle positions; a plurality of groups of sensing members each being positioned to make wiping contact with an associated shaft angle encoder; at least one of said sensing member groups being disengaged from its associated shaft angle encoder when said transmitter is in its de-energized state; the remaining sensing member groups being continuously engaged by their associated shaft angle encoders during

both the energized and de-energized states of said transmitter; said programming means comprising actuating means for moving said disengaged sensing member group



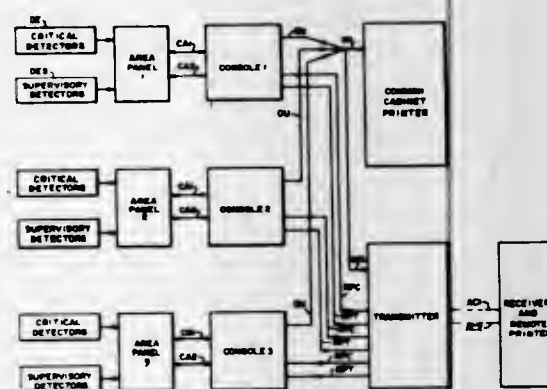
into engagement with its associated shaft angle encoder during a portion of the transmission cycle to permit all of said shaft angle encoders to key said transmitter means.

3,312,965

SUPERVISORY APPARATUS

Emmett J. Ward, Maplewood, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 7, 1964, Ser. No. 365,761
4 Claims. (Cl. 340—213)



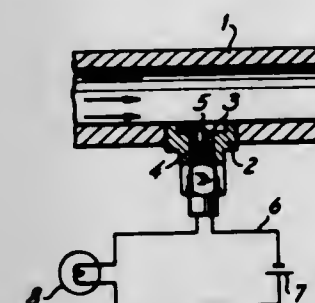
1. Apparatus for conveying intelligence of abnormal conditions and/or restorations to normal conditions in any of a plurality of areas, comprising condition-detector means in each of said areas, intelligence processing means, first transmitting means responsive to said detector means for transmitting intelligence of abnormal conditions and/or restorations in any of said areas to said intelligence processing means, said processing means including means, connected to said first transmitting means, responsive to the completion of the processing of said intelligence by said processing means for actuating said first transmitting means to perform a predetermined operation appropriate to said completion, receiving means, remote-printer means for printing the data of said intelligence, second transmitting means connected to said processing means for transmitting the intelligence processed by said processing means to said receiving means, said second transmitting means including memory means connected to said processing means for preventing actuation of said completion-responsive actuable means until after the completion of the transmission of said intelligence by said second transmitting means, and means connected to said receiving means and to said remote-printer means for printing the intelligence processed by said processing means.

3,312,966

APPARATUS FOR MONITORING THE FLOW OF A FLUID MEDIUM

Werner Schaller, Heustrasse 14, Mannheim, Germany
Filed Oct. 6, 1964, Ser. No. 401,805

Claims priority, application Germany, Oct. 9, 1963,
Sch 33,971
2 Claims. (Cl. 340—239)



1. Apparatus for monitoring flow of a fluid medium along a confined path comprising, in combination, a cold semi-conductor resistance positioned in heat transfer relation with the flowing fluid medium; said cold semi-conductor resistance having, in a low temperature range, a temperature coefficient which is substantially equal to zero, so that said resistance has substantially no significant change in its ohmic value in said low temperature range, and having, in an immediately succeeding higher temperature range, a high positive temperature coefficient, so that said resistance has an extremely high positive change in its ohmic value in said higher temperature range; means applying a substantially constant potential across said cold semi-conductor resistance to effect a heating current flow therethrough; the heat content of said cold semi-conductor resistance being dissipated by the flowing fluid medium in accordance with the rate of flow thereof, whereby the ohmic resistance value of said cold semi-conductor resistance is responsive to the rate of flow of the fluid medium; said low temperature range corresponding to a rate of flow of the fluid medium above a predetermined value and said succeeding higher temperature range corresponding to a rate of flow of the fluid medium below said predetermined value; and current flow responsive indicator means in electric circuit connection with said constant potential cold semi-conductor resistance to provide an effective amplitude indication when the rate of flow of the fluid medium is below said predetermined value.

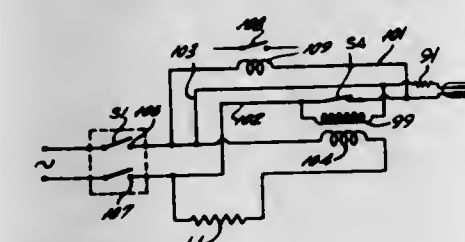
3,312,967

ALTERNATING CURRENT ELECTRICAL LOAD MONITORING DEVICE

George Levine, 150—26 76th Road,

Flushing, Queens, N.Y. 11367

Filed May 12, 1964, Ser. No. 369,348
8 Claims. (Cl. 340—253)



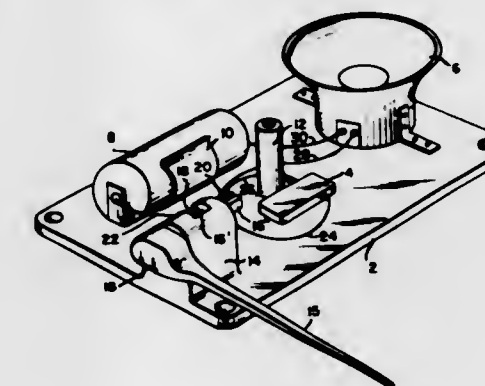
3. An electric network comprising a current consuming loads, a source of alternating current, a normally open magnetically responsive switch, a biasing coil magnetically coupled to said switch and connected to said source of alternating current to produce a magnetic field sufficient to bias said switch to a closed position, and a control coil magnetically coupled to said switch and connected in opposite phase to said alternating current source through

said load and normally producing a magnetic field sufficient to buck said biasing coil magnet field and effect the opening of said switch.

3,312,968

UNITIZED COMBINATION BURGLAR-FIRE ALARM DEVICE

Russell A. Kiefer, Jr., Huntington Beach, Calif.
(24261 Las Naranjas, South Laguna, Calif. 92677)
Filed Nov. 5, 1964, Ser. No. 401,063
3 Claims. (Cl. 340—274)



1. A burglar-fire device comprising in combination:
(1) a base plate support member;
(2) an electrically-operable audible signal generating device mounted on said base plate member;
(3) an electrical power supply for said audible signal generating device mounted on said base plate;
(4) a normally open thermal switch device connected in series with said power supply and said audible signal generating device;
(5) a mechanically operable, normally open switch member connected in parallel with said thermal switch device and including:
(a) a stationary contact member mounted on said base plate member and having a flat surface connected to said audible signal generating device;
(b) an electrically conductive rotatable shaft member mounted on said base plate member and having a first portion electrically connected to said power supply and a flat surface portion disposed adjacent said stationary contact member with said flat surfaces being parallel to and spaced from each other;
(c) and a movable lever arm affixed to an end of said shaft member whereby movement of said lever arm rotates said shaft member to bring an edge of said second portion thereof into electrical contact with said flat surface of said stationary contact member to thereby connect said power supply to said audible signal generating device.

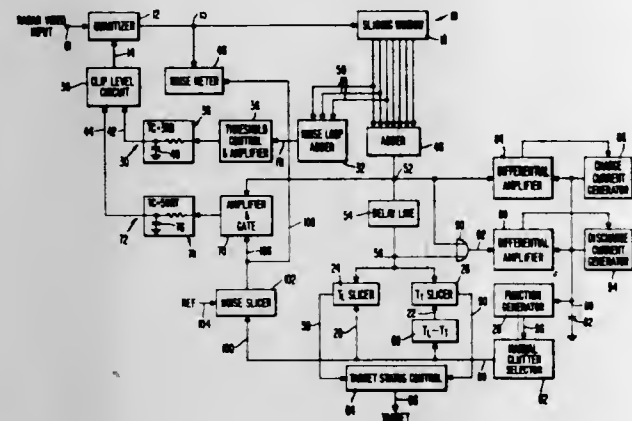
3,312,969

RADAR VIDEO PROCESSOR AND CLUTTER ELIMINATOR

Charles P. Halsted, Oreland, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed July 9, 1965, Ser. No. 470,740
18 Claims. (Cl. 343—5)

13. Apparatus for processing the output of a radar receiver which includes receiver-generated noise signals and radar video signals comprising a circuit for establishing a variable clip level, means for quantizing into digital pulses those receiver output signals which are effective in magnitude to exceed the clip level magnitude, means responsive to variations in the duty cycle of the output of the quantizing means caused by variations

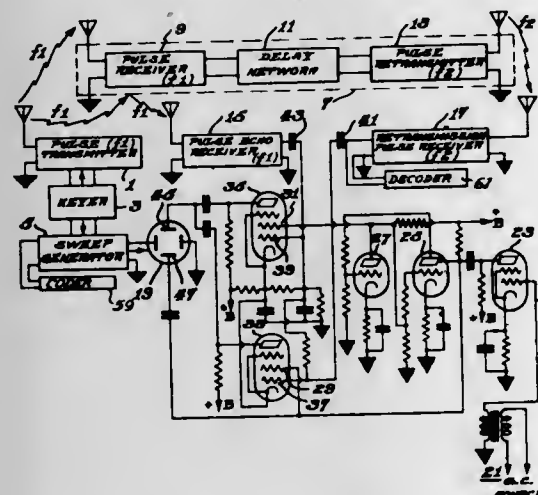
in the frequency of effective noise signals for adjusting the clip level to maintain said duty cycle substantially constant, and means responsive to variations in said duty



cycle caused by effective clutter signals in the receiver output for adjusting the clip level to limit the number of effective clutter signals to be quantized.

3,312,970

PULSE ECHO RECOGNITION SYSTEMS
Donald S. Bond, Philadelphia, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed June 27, 1941, Ser. No. 400,079
9 Claims. (Cl. 343-6)



1. A pulse echo recognition system for air or surface craft including a station consisting of a pulse transmitter, and a pulse echo receiver, an indicator connected to said receiver for indicating the distances of pulse reflecting craft, means located on said craft for radiating from said craft pulse recognition signals in response to challenging signals from said station, means located near said station for receiving said pulse recognition signals, and means for applying said recognition signals to said indicator so that each of said distance indicating signals may be compared to each of said indicated recognition signals.

3,312,971
RADAR SYSTEM

John B. Gehman, La Jolla, Calif., assignor to General Dynamics Corporation, Pomona, Calif., a corporation of Delaware

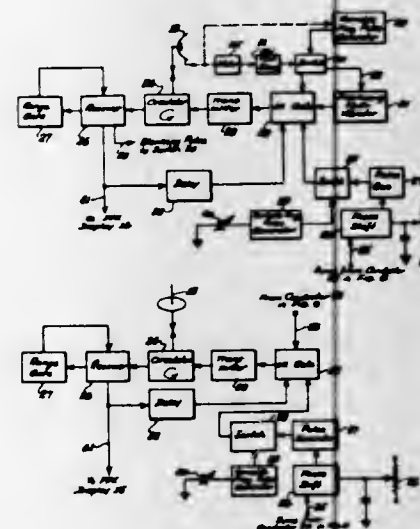
Filed Sept. 30, 1964, Ser. No. 400,316
27 Claims. (Cl. 343-6.5)

21. A radar system for controlling the position of a plurality of craft, said system comprising:

(a) a transponder including a receiver and a transmitter in each craft for respectively receiving reply signals and retransmitting said received reply signals,

(b) one of said craft being a master craft and having a signal source for transmitting range interrogations and a variable frequency signal generator for transmitting azimuth signals which have a cyclical variation in frequency corresponding to cyclical scans in azimuth, means for coupling said source and said generator to the transmitter of the master craft transponder for transmission to the other of said plurality of craft,

(c) gate means between said receiver and transmitter in the transponders on said other of said plurality of craft for controlling the transmission of reply signals to said master craft,



(d) display means on said other of said plurality of craft comprising

- (1) a synchronizing circuit responsive to said received azimuth signals for providing an output representing different positions in azimuth about said master craft,
- (2) means for applying said output to said gate means for operating said transponders to provide replies in selected ones of said azimuth positions,
- (3) means responsive to said output and said replies for indicating said range and azimuth positions of said other of said plurality of craft with respect to said master craft.

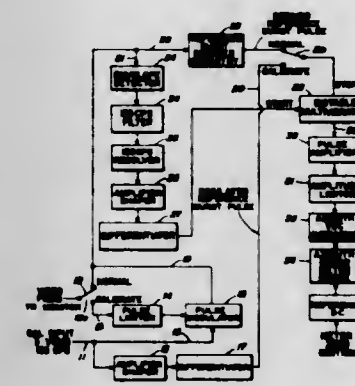
3,312,972

TACAN AZIMUTH CALIBRATION TECHNIQUE
Orville J. Alitz, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Oct. 20, 1965, Ser. No. 498,324
9 Claims. (Cl. 343-106)

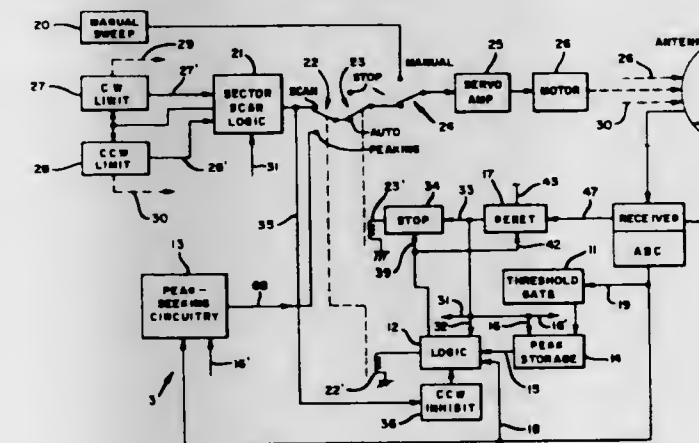
1. In a monitoring system for a composite video signal of the type comprising an amplitude modulated pulse train including periodic reference bursts of pulses wherein information is conveyed in the form of the variable phase of the amplitude modulation envelope compared to the time occurrence of said reference burst of pulses, said monitoring system comprising first signal processing means for generating a first signal corresponding to the time occurrence of said reference burst of pulses, second signal processing means developing a second signal proportional to a particular zero cross-over of the modulation envelope of said train of pulses, signal comparison means receiving said first and second signals and developing an output signal the amplitude of which is proportional to the time correspondence between said first and second signal; means for calibrating said monitoring system comprising an external source of reference signal

at a frequency corresponding to the amplitude modulation component of said composite signal, third signal processing means receiving said composite signal and removing the amplitude modulation therefrom to provide a train of constant amplitude pulses, modulating means receiving said constant amplitude pulses and said reference signal and amplitude modulating said pulses at



3,312,973

AUTOMATIC ANTENNA POSITIONING SYSTEM
Roy L. Rogers, Sunnyvale, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Aug. 20, 1965, Ser. No. 481,267
10 Claims. (Cl. 343-117)

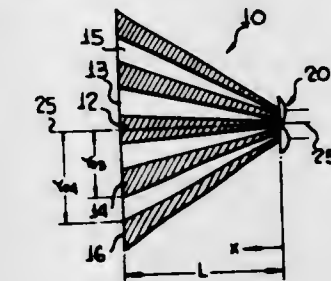


10. A system for automatically aligning a rotatable directional antenna with the direction of a peak received signal having a prescribed characteristic, said system comprising

- a rotatable directional antenna,
- a drive system for rotating said antenna,
- utilization apparatus responsive to signals received by said antenna for generating outputs proportional to received signals having the prescribed characteristic, and
- a peak-seeking circuit responsive to the output of said utilization apparatus for storing the peak value thereof, said circuit generating outputs biasing said drive system to rotate said antenna to scan a small sector including the direction of the stored peak signal.

3,312,974
FRESNEL ZONE CORRECTING ANTENNA HAVING A PLURALITY OF CONCENTRIC SPACED CONICAL DIELECTRIC SECTIONS
Bernard L. Lewis, Satellite Beach, Fla., assignor to Radiation Incorporated, Melbourne, Fla., a corporation of Florida

Filed July 17, 1964, Ser. No. 383,344
10 Claims. (Cl. 343-755)

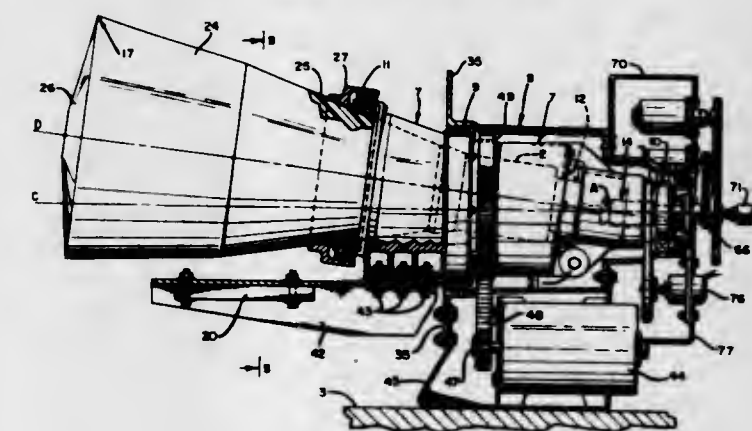


1. An antenna for correcting the phase of components of a radio wave incident thereon such that said wave components arrive at the antenna feed in an in-phase condition, said antenna comprising a plurality of spaced dielectric elements radiating geometrically from said feed, said elements arranged and adapted to intercept alternate Fresnel zones occurring in a plane a distance X from the phase center of said feed, said elements having a preselected dielectric constant for introducing a phase delay of half wavelength of said radio wave traveling therethrough with respect to those portions of said radio wave passing through an equivalent length of the space between said elements.

3,312,975

ANTENNA NUTATION MECHANISM WITH POLARIZATION CONTROL
Richard F. Huelskamp, Los Altos, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware

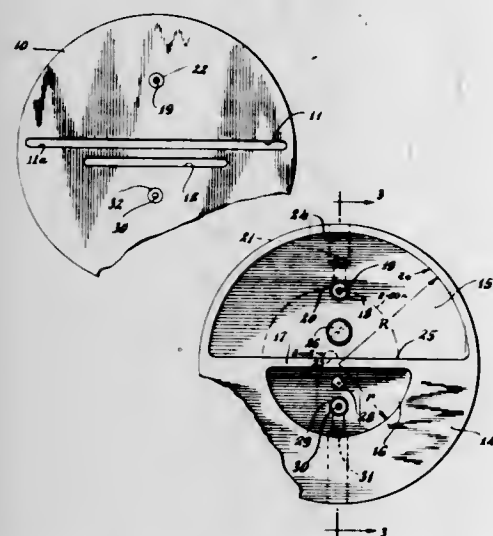
Filed Aug. 20, 1963, Ser. No. 303,322
4 Claims. (Cl. 343-760)



1. Mechanism for nutating a waveguide feed horn adapted to propagate electromagnetic waves comprising an outer housing, an inner housing disposed within and having a forward portion projecting outwardly from one end of the outer housing, antifriction bearings between said housings for supporting the inner housing for rotation about a first axis relative to the outer housing, a motor operatively connected to the inner housing for rotating the latter about said first axis, said feed horn being disposed within and having a forward portion extending outwardly from the forward portion of the inner housing,

antifriction bearings between said feed horn and inner housing for supporting the horn for rotation about a second axis relative to the inner housing, said axes being angularly related and intersecting at a point adjacent to the end of the horn opposite from the forward portion thereof, counterweight means connected to said inner housing on the side of said first axis diametrically opposite from the second axis, tubular means connected to the rear end of the feed horn and extending rearwardly therefrom comprising a flexible sleeve and a rigid sleeve interconnected to the flexible sleeve, a flexible coaxial line connected to said feed horn and extending through said tubular means, and a polarization control motor operatively connected to said rigid sleeve and adapted to rotate same through a selected angle whereby to correspondingly rotate said feed horn relative to the outer housing.

3,312,976
DUAL FREQUENCY CAVITY BACKED SLOT ANTENNA
Benjamin F. Gregory, Tampa, Fla., assignor to Trak Microwave Corporation, Tampa, Fla.
Filed July 19, 1965, Ser. No. 472,932
9 Claims. (Cl. 343-767)

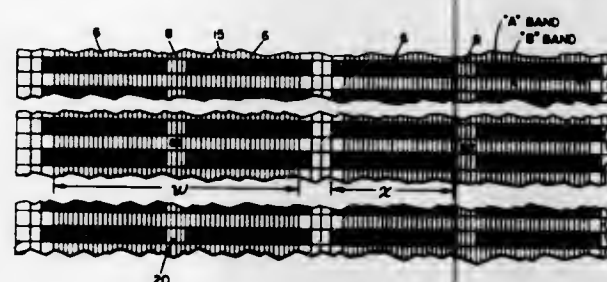


1. A unidirectional microwave antenna radiator comprising in combination,
 - (A) a semi-cylindrical cavity substantially enclosed by electrically conductive material,
 - (B) a slot opening in to said cavity along the diameter of said cavity and adjacent a high impedance portion of said cavity, and
 - (C) means for introducing radio frequency energy into said cavity at a selected lower impedance point within said cavity, whereby said radio frequency energy resonates in said cavity and is emitted through said half wave slot in a directional beam.

3,312,977
MULTICHANNEL DIRECT WRITING OSCILLOGRAPH AND RECORD MEMBER THEREFOR
Maurice S. Hartley, Cleveland, Allan R. Thompson, Westlake, and Frank P. Zaffarano, Rocky River, Ohio, assignors to Clevite Corporation, a corporation of Ohio
Filed Apr. 21, 1965, Ser. No. 449,729
5 Claims. (Cl. 346-49)

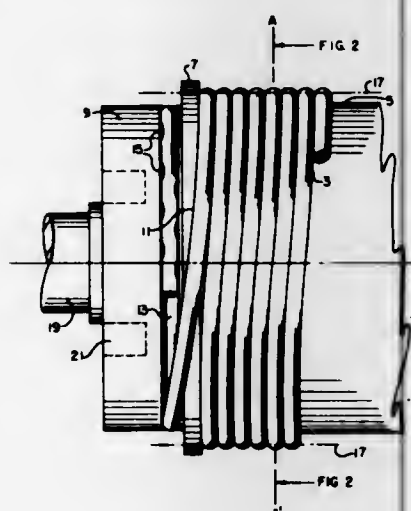
1. In a multichannel direct writing oscillograph, the combination of a first direct writing instrument having a centerline and capable of lateral movement of its writing tip throughout a given distance w , a plurality of second direct writing instruments each having a centerline and

each capable of lateral movement throughout a given distance x which is less than the distance w , means mounting said plurality of second direct writing instruments side by side with a space between their centerlines which is greater than x whereby the tips of the writing instruments



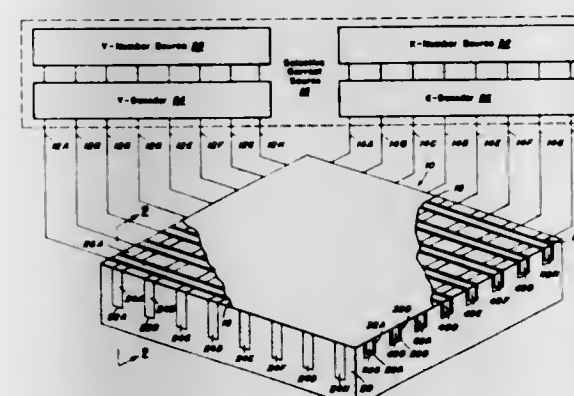
do not touch each other in writing at said maximum amplitude x , a record chart having printed thereon two grid patterns superimposed on each other, one for said first instrument and the other(s) for said plurality of second instruments, and means for moving said record chart past said writing instruments.

3,312,978
MAGNETIC STORAGE DRUM
John P. Woods, Henry R. Barta, Clifford D. Dransfield, and Emmet D. Riggs, Dallas, Tex., assignors to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Aug. 29, 1962, Ser. No. 220,193
16 Claims. (Cl. 346-74)



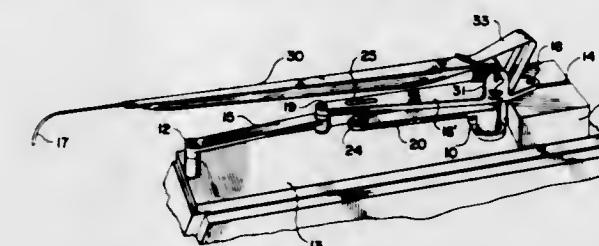
1. An improved magnetic recording drum comprising
 - (a) a cylindrical member,
 - (b) a first channel bounded by first and second shoulders, said first channel positioned around the outside of an inner portion of said cylindrical member and having a bottom diameter smaller than the diameter of said shoulders,
 - (c) a spiralling slot in each of said shoulders, said slots extending from said first channel and spiralling toward the end of said cylindrical member,
 - (d) a continuous length of magnetic wire of uniform volumetric resistance in a helical contiguous relationship around said bottom of said first channel with each end of said wire placed in the slot in one of said shoulders, and
 - (e) the outer surfaces of said windings of wire forming a smooth cylindrical recording surface parallel to said bottom of said first channel.

3,312,979
THERMAL RECORDING MATRIX
Edward Della Torre, Somerville, Stefan Orsen, Jersey City, and Charles Engelberg, Bound Brook, N.J., assignors to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 23, 1965, Ser. No. 434,318
9 Claims. (Cl. 346-76)



1. Apparatus for recording a spot on a thermosensitive record medium comprising a first electrical conductor, an electrical resistance means surrounding at least a portion of said first electrical conductor and in intimate electrical contact therewith, said electrical resistance means being adapted to be positioned against said thermosensitive record medium, a second electrical conductor intersecting said first electrical conductor and spaced from said first electrical conductor, said second conductor being in intimate electrical contact with said electrical resistance means, and means for applying a source of electric current to said first and second conductors so that electric current flows from said first conductor via said electrical resistance means to said second conductor whereby the portion of said electrical resistance means in the electric current flow path is heated by said current flow.

3,312,980
RECTILINEAR RECORDER
Arthur R. Erbach, Des Plaines, Ill., assignor to Beckman Instruments, Inc., a corporation of California
Filed Aug. 16, 1965, Ser. No. 479,864
10 Claims. (Cl. 346-139)



1. A linkage mechanism for converting limited angular motion of a drive shaft to straight line motion comprising a block having a guide slot for receiving a guide pin and constraining it to motion in a straight line within said slot, an arm having one end free to move along a substantially straight line path in response to angular motion of said drive shaft, and having the other end thereof connected to said guide pin, a control link having one end pivotally connected to said arm and the other end mounted to pivot about a stationary control pin positioned on the center line of said guide slot and between said guide block and said straight line path, a drive crank connected to said guide shaft, said drive shaft being mounted to rotate about a fixed point on the center line of said guide slot, said fixed point being positioned between said guide block and said control pin, and a connection between the outer end of said drive crank and said arm for driving said arm, thereby converting limited angular motion of said drive shaft to substantially straight line motion of the free end of said arm.

DESIGNS

APRIL 4, 1967

207,298

FRAME FOR A DISPLAY SIGN

Lindell N. Edwards, St. Louis, Mo., assignor to Commander Board International, Inc., St. Louis, Mo., a corporation of Missouri

Filed Aug. 24, 1966, Ser. No. 3,573
Term of patent 14 years
(Cl. D1-12)



207,299

COMBINED HAT AND MASK

Nathan R. Strongin, 53-44 199th St., Flushing, N.Y. 11365

Filed Aug. 4, 1966, Ser. No. 3,341
Term of patent 14 years
(Cl. D2-258)



207,300

DENTIFRICE DISPENSER

Jay Doblin, Chicago, Ill., assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine

Filed Feb. 7, 1966, Ser. No. 958
Term of patent 14 years
(Cl. D4-3)

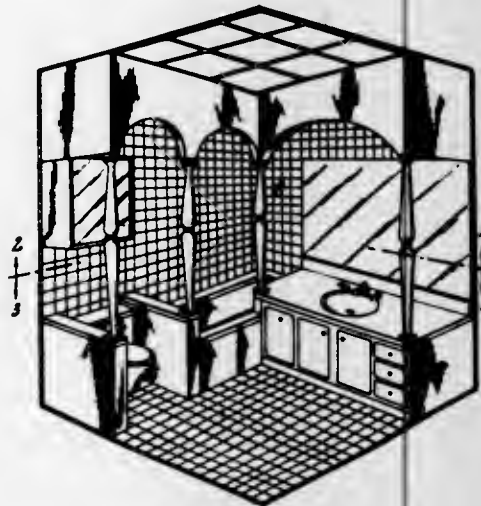


207,301

BATHROOM UNIT

Henry Blevio, 632 Warburton Ave., Apt. 7K, Yonkers, N.Y. 10701

Filed Feb. 9, 1966, Ser. No. 977
Term of patent 14 years
(Cl. D4-4)

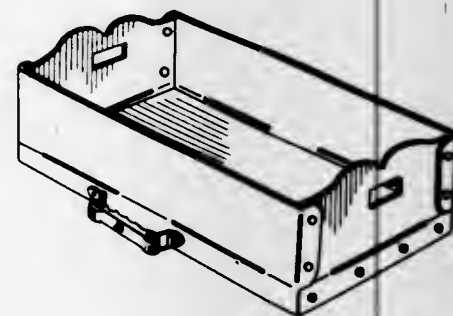


207,302

PORTABLE COLLAPSIBLE CRIB

Robert Lerner, 1000 Northfield Road, Woodmere, N.Y. 11598

Filed Jan. 13, 1966, Ser. No. 592
Term of patent 14 years
(Cl. D5-5)



207,303

TOOTHBRUSH

James W. Moll, 1035 S. Clayton Way, Denver, Colo. 80209

Filed May 12, 1966, Ser. No. 2,274
Term of patent 14 years
(Cl. D9-2)



APRIL 4, 1967

U. S. PATENT OFFICE

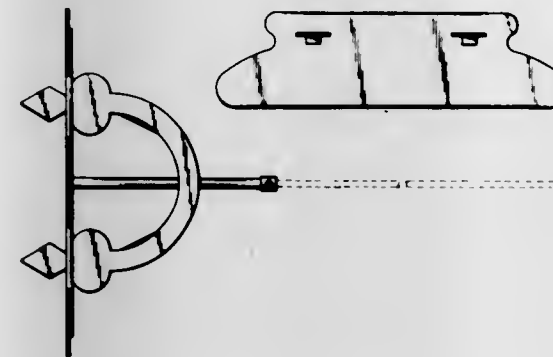
325

207,304

SNOW SCRAPER FOR ROOFS

Matthew J. Radosevich, 817 1st Ave. NW., Chisholm, Minn. 55719

Filed Jan. 17, 1966, Ser. No. 621
Term of patent 3 1/2 years
(Cl. D9-6)

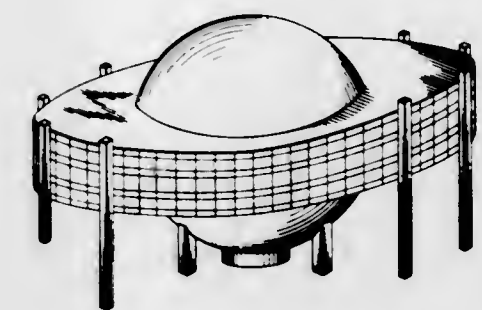


207,307

BUILDING

Joseph A. Etelman, 287 Weed Ave., Stamford, Conn. 06902

Filed June 22, 1965, Ser. No. 85,842
Term of patent 14 years
(Cl. D13-1)



207,308

HOUSEHOLD CLEANING CADDY CART OR THE LIKE

Irene S. Bell, 4674 Brewster Drive, Tarzana, Calif. 91356

Filed Dec. 10, 1965, Ser. No. 143
Term of patent 14 years
(Cl. D14-3)

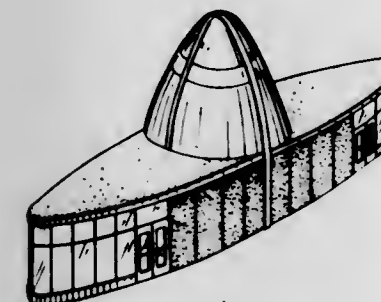


207,305

RESTAURANT

James H. Sorenson, 1009 W. 80th St., Minneapolis, Minn. 55420

Filed Mar. 7, 1966, Ser. No. 1,312
Term of patent 14 years
(Cl. D13-1)



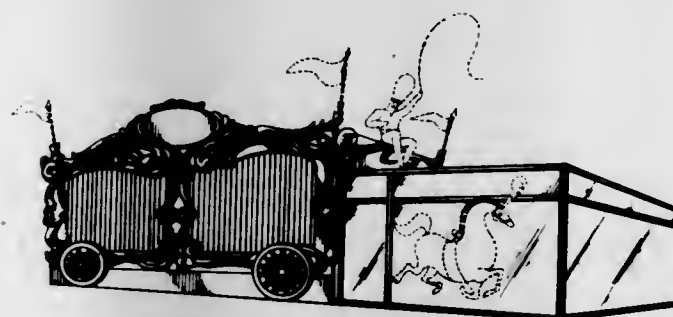
207,306

RESTAURANT BUILDING

Edwin H. Eichler, 910 Lake Shore Drive, Chicago, Ill. 60611

Original design applications Sept. 22, 1964, Ser. No. 81,826, now Patent No. 205,061, dated June 21, 1966, and Dec. 13, 1965, Ser. No. 517, now Patent No. 205,931, dated Oct. 11, 1966. Divided and this application June 16, 1966, Ser. No. 3,271

Term of patent 14 years
(Cl. D13-1)

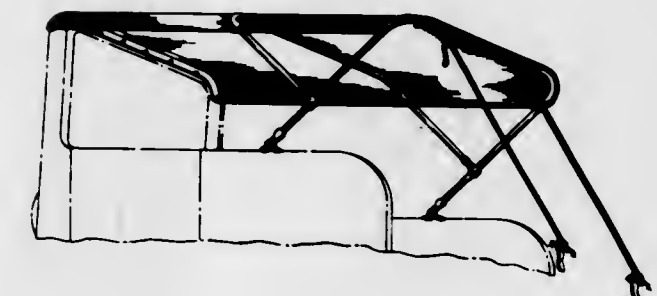


207,309

CONVERTIBLE TOP FOR FIRE ENGINES

Donald V. Walther, Sr., 16366 E. Bridger, Covina, Calif. 91722

Filed Mar. 28, 1966, Ser. No. 1,665
Term of patent 14 years
(Cl. D14-27)

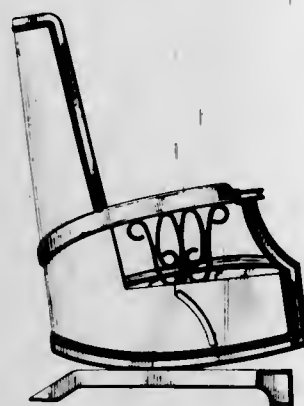


207,310

ROCKING LOUNGE CHAIR

Daniel F. Caldemeyer, Vanderburgh County, Ind. (4300 Jennings Lane, Evansville, Ind. 47712), and Lloyd O. Caldemeyer, 3815 E. Mulberry St., Evansville, Ind. 47715

Filed Dec. 30, 1965, Ser. No. 377
Term of patent 14 years
(Cl. D15-6)

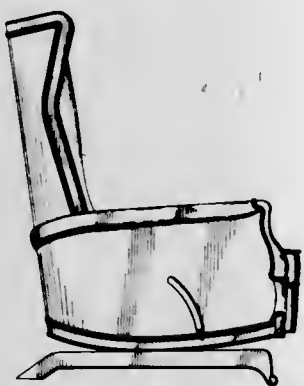


207,311

ROCKING LOUNGE CHAIR

Daniel F. Caldemeyer, Vanderburgh County, Ind. (4300 Jennings Lane, Evansville, Ind. 47712), and Lloyd O. Caldemeyer, 3815 E. Mulberry St., Evansville, Ind. 47715

Filed Dec. 30, 1965, Ser. No. 381
Term of patent 14 years
(Cl. D15-6)

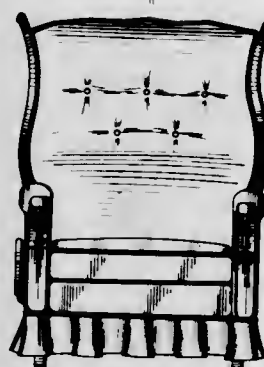


207,312

ROCKING LOUNGE CHAIR

Daniel F. Caldemeyer, Vanderburgh County, Ind. (4300 Jennings Lane, Evansville, Ind. 47712), and Lloyd O. Caldemeyer, 3815 E. Mulberry St., Evansville, Ind. 47715

Filed Dec. 30, 1965, Ser. No. 386
Term of patent 14 years
(Cl. D15-6)



207,313

ROCKING LOUNGE CHAIR

Daniel F. Caldemeyer, Vanderburgh County, Ind. (4300 Jennings Lane, Evansville, Ind. 47712), and Lloyd O. Caldemeyer, 3815 E. Mulberry St., Evansville, Ind. 47715

Filed Dec. 30, 1965, Ser. No. 388
Term of patent 14 years
(Cl. D15-6)

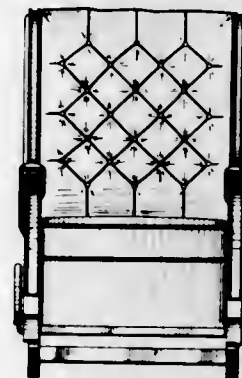


207,314

ROCKING LOUNGE CHAIR

Daniel F. Caldemeyer, Vanderburgh County, Ind. (4300 Jennings Lane, Evansville, Ind. 47712), and Lloyd O. Caldemeyer, 3815 E. Mulberry St., Evansville, Ind. 47715

Filed Dec. 30, 1965, Ser. No. 399
Term of patent 14 years
(Cl. D15-6)



207,315

BACK REST

Warren S. Radford, 12306 Miles Ave., Cleveland, Ohio 44105

Filed Aug. 26, 1965, Ser. No. 86,731
Term of patent 14 years
(Cl. D15-8)

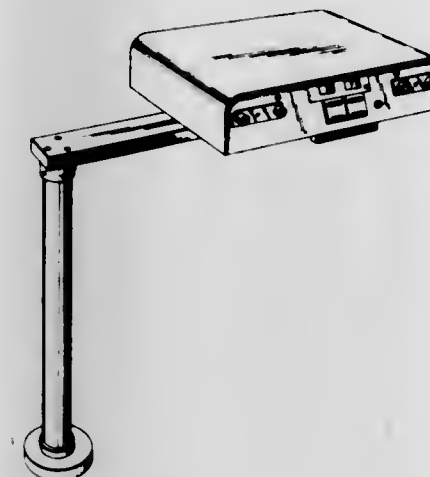


207,316

DENTAL UNIT

George R. Kern, Jr., 5525 23rd St. N., Arlington, Va. 22205

Filed June 7, 1966, Ser. No. 2,594
Term of patent 14 years
(Cl. D24-1)

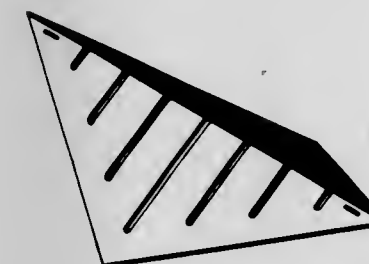


207,317

CABLE VIBRATION DAMPER OR SIMILAR ARTICLE

Curtis M. Wright, 5 Bigelow Ave., Dundee, N.Y. 14837

Filed May 13, 1966, Ser. No. 2,292
Term of patent 14 years
(Cl. D26-1)

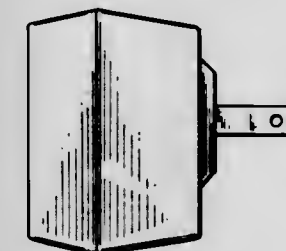


207,318

BATTERY ELIMINATOR OR THE LIKE

Yoshiyuki Watanabe, 30 Futabacho, Itabashi-ku, Tokyo, Japan

Filed July 30, 1965, Ser. No. 86,367
Claims priority, application Japan Feb. 8, 1965
Term of patent 14 years
(Cl. D26-15)

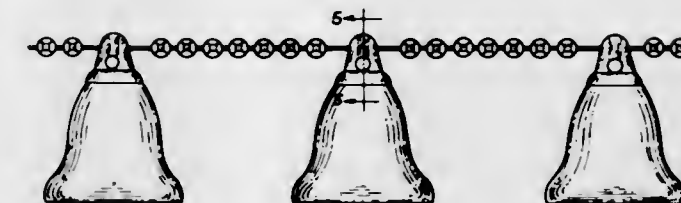


207,319

DECORATIVE CHAIN FOR A CHRISTMAS TREE

Jack Burnbaum, Newton, Mass (451 D St., Boston, Mass. 02127)

Filed Apr. 7, 1966, Ser. No. 1,801
Term of patent 14 years
(Cl. D29-1)



207,320

BOW DRAWING AND RELEASING DEVICE

Glen C. Klaurens, 10412 Princess Jeanne NW., Albuquerque, N. Mex. 87112

Filed Oct. 1, 1965, Ser. No. 87,257
Term of patent 3½ years
(Cl. D30-1)

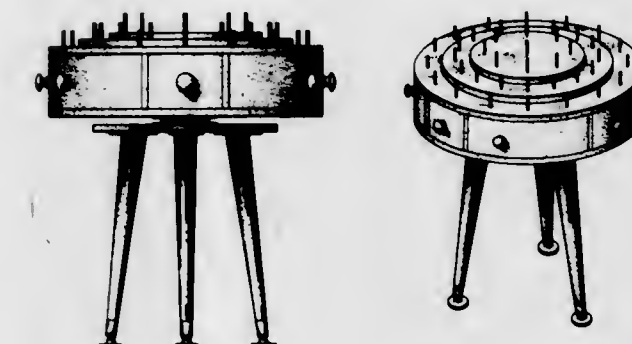


207,321

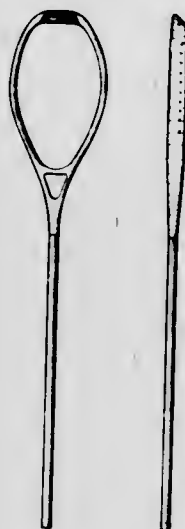
SEWING TABLE

Howard J. Walker, Jr., Box 125, West Newton, Ind. 46183

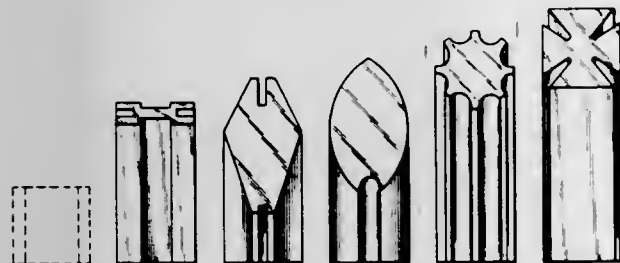
Filed Sept. 16, 1965, Ser. No. 87,038
Term of patent 3½ years
(Cl. D33-14)



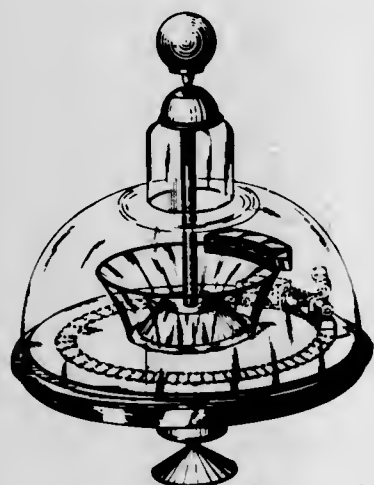
207,322
LACROSSE STICK
Elbert R. Nuttle, Jr., 308 Stanmore Road,
Baltimore, Md. 21212
Filed Mar. 18, 1966, Ser. No. 1,537
Term of patent 14 years
(Cl. D34—5)



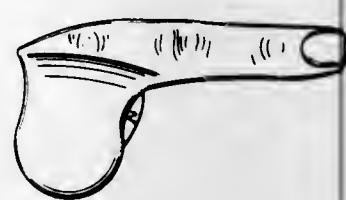
207,323
SET OF CHESS PIECES
Michael J. Hanna and Francis A. Maljan, Chicago, Ill.,
assignors to Malmik Enterprises, Chicago, Ill., a co-
partnership
Filed June 28, 1965, Ser. No. 85,929
Term of patent 3½ years
(Cl. D34—5)



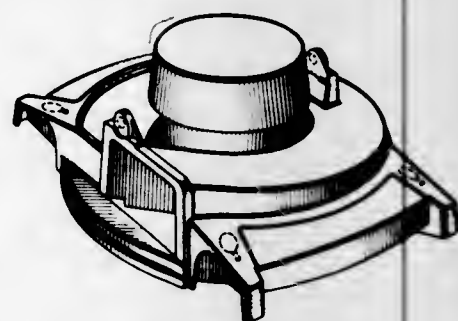
207,324
TOY SPINNING TOP
Peter Ballels, 55 Hermann-Lons-Strasse, Zirndorf,
near Nurnberg, Germany
Filed Apr. 2, 1965, Ser. No. 84,568
Claims priority, application Germany Oct. 13, 1964
Term of patent 3½ years
(Cl. D34—15)



207,325
TOY PISTOL
Vincent A. Ciulla, Staten Island, N.Y., assignor to De
Luxe Reading Corp., a corporation of New Jersey
Filed Oct. 13, 1965, Ser. No. 87,456
Term of patent 3½ years
(Cl. D34—15)



207,326
**COMBINED MOTOR SHROUD AND BLADE
HOUSING FOR A LAWN MOWER**
James B. Stewart, Glen Ellyn, Ill., assignor to Sunbeam
Corporation, Chicago, Ill., a corporation of Illinois
Filed July 5, 1966, Ser. No. 2,947
Term of patent 14 years
(Cl. D40—1)



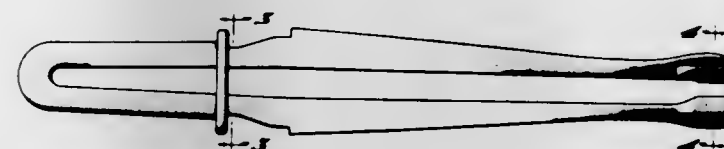
207,327
HOOK
Charles B. Patton, 1507 Kingsley, Dallas, Tex. 75216
Filed Apr. 2, 1965, Ser. No. 84,586
Term of patent 3½ years
(Cl. D41—1)



207,328
COMBINED CLOCK AND WALL PLAQUE
Benjamin Levy, Hewlett, N.Y., assignor to United Metal
Goods Mfg. Co., Inc., a corporation of New York
Filed Oct. 24, 1965, Ser. No. 87,892
Term of patent 7 years
(Cl. D42—7)



207,329
PAIR OF TONGS
Robert D. Parry, 7240 Algonquin Drive,
Cincinnati, Ohio 45243
Filed Mar. 31, 1966, Ser. No. 1,705
Term of patent 14 years
(Cl. D44—4)



207,330
CAKE STAND
Peter John Culpitt, St. Albans, England (Culford Works,
Southgate Grove, London N.1, England)
Filed Jan. 28, 1966, Ser. No. 813
Claims priority, application Great Britain Dec. 22, 1965
Term of patent 14 years
(Cl. D44—19)



207,331
COFFEE PERCOLATOR
Dominic J. De Fano, Palatine, and Robert I. Kallman,
Elburn, Ill., assignors to Sunbeam Corporation, Chi-
cago, Ill., a corporation of Illinois
Filed July 13, 1966, Ser. No. 3,064
Term of patent 14 years
(Cl. D44—26)



207,332
COFFEE PERCOLATOR
Alfred W. Madl, Mequon, Wis., assignor to John Oster
Manufacturing Co., Milwaukee, Wis., a corporation of
Wisconsin
Filed July 28, 1966, Ser. No. 3,236
Term of patent 14 years
(Cl. D44—26)



207,333
COFFEE PERCOLATOR
Robert O. Ernest, Oak Park, Dominic J. De Fano, Pala-
tine, and Robert I. Kallman, Elburn, Ill., assignors to
Sunbeam Corporation, Chicago, Ill., a corporation of
Illinois
Filed Sept. 8, 1966, Ser. No. 3,767
Term of patent 14 years
(Cl. D44—26)



207,334
COFFEE PERCOLATOR
Dominic J. De Fano, Palatine, and Robert I. Kallman,
Elburn, Ill., assignors to Sunbeam Corporation, Chicago,
Ill., a corporation of Illinois
Filed Sept. 8, 1966, Ser. No. 3,779
Term of patent 14 years
(Cl. D44—26)



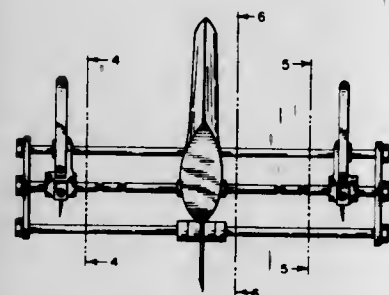
207,335
COFFEE PERCOLATOR

Stephen H. Kaminski, Warren, Mich., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois

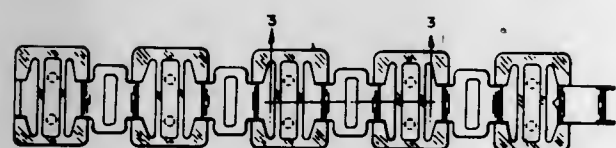
Filed Sept. 8, 1966, Ser. No. 3,768
Term of patent 14 years
(Cl. D44-26)



207,336
PIZZA CUTTER
Fred A. Giovannini, Fort Lauderdale, Fla.
(601 Waterway, Venice, Fla. 33595)
Filed July 14, 1966, Ser. No. 3,079
Term of patent 14 years
(Cl. D44-29)



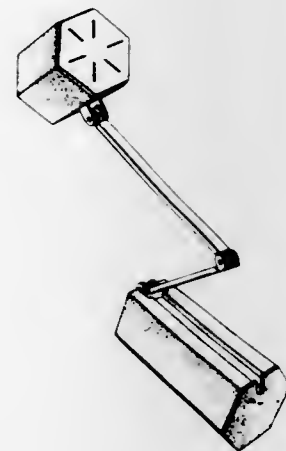
207,337
BRACELET
Russell A. Funk, Torrance, Calif.
(315 E. Washington Ave., Santa Ana, Calif. 92701)
Filed Nov. 8, 1965, Ser. No. 88,046
Term of patent 14 years
(Cl. D45-4)



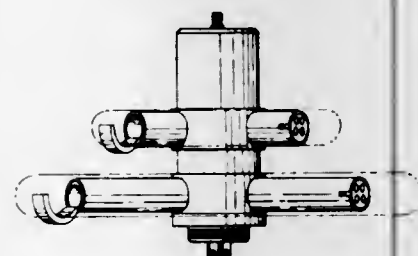
207,338
LAMP

Kazuma Nakao, Inuyama, Japan, assignor to Whitehall Overseas Corporation, New York, N.Y.

Filed May 27, 1966, Ser. No. 2,455
Claims priority, application Japan Jan. 12, 1966
Term of patent 14 years
(Cl. D48-20)



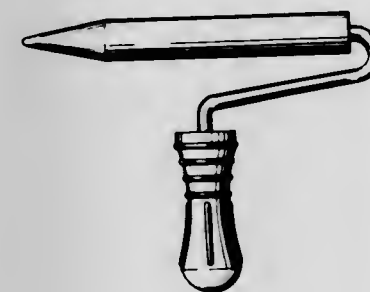
207,339
FLUORESCENT LIGHTING FIXTURE
Leslie M. Sheridan, 1300 Chicago St.,
Butte, Mont. 59701
Filed Mar. 14, 1966, Ser. No. 1,450
Term of patent 14 years
(Cl. D48-23)



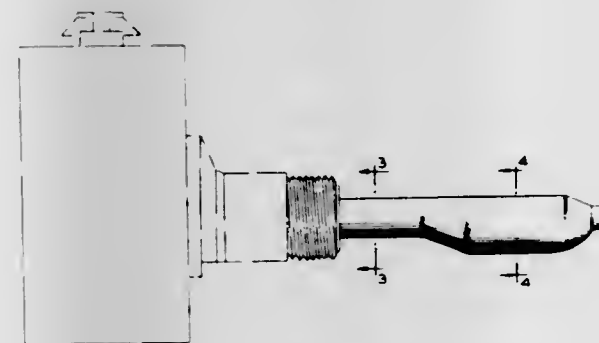
207,340
GAS TANK FOR GAS LIGHTERS
Marcel Quercia, Paris, France, assignor to Flaminare
Marcel Quercia, Paris, France
Filed Apr. 2, 1965, Ser. No. 84,570
Claims priority, application France Oct. 6, 1964
Term of patent 3½ years
(Cl. D48-27)



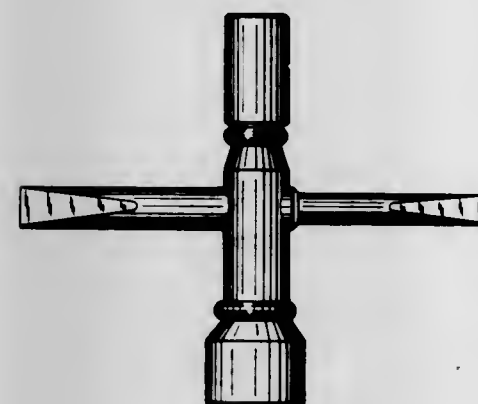
207,341
**IRONER FOR SMOOTHING CLOTHING,
LINENS OR THE LIKE**
George Schwartz, New York, N.Y. (1031 Orion Court,
East Meadow, N.Y. 11554)
Filed Apr. 5, 1966, Ser. No. 1,788
Term of patent 14 years
(Cl. D49-6)



207,342
THERMOSTAT TUBE
Theodore J. Dykzeul, Rolling Hills, Calif., assignor to
Robertshaw Controls Company, Richmond, Va., a cor-
poration of Delaware
Filed May 6, 1966, Ser. No. 2,199
Term of patent 14 years
(Cl. D52-7)



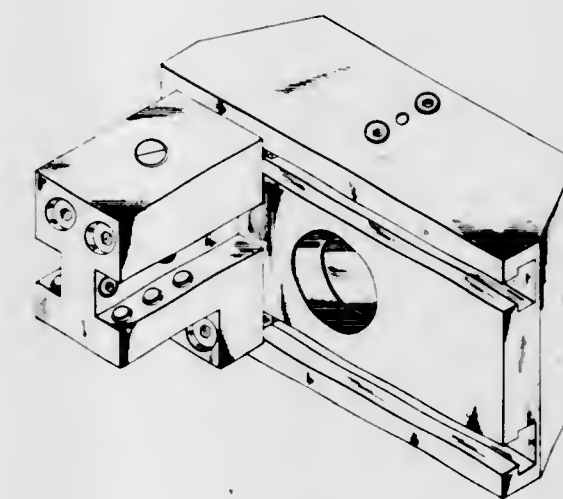
207,343
DRUM KEY
Charles S. Alden, 23 Nadine Road,
Framingham, Mass. 01701
Filed Sept. 9, 1965, Ser. No. 86,917
Term of patent 7 years
(Cl. D54-13)



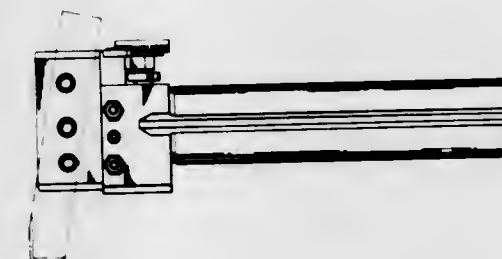
207,344
METAL CLIP OR SIMILAR ARTICLE
William Hucal, 3814 N. Wilton Ave.,
Chicago, Ill. 60613
Filed Apr. 7, 1966, Ser. No. 1,883
Term of patent 14 years
(Cl. D54-1)



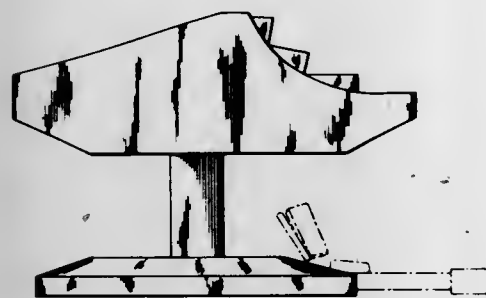
207,345
**COMBINED TOOL BASE AND CUTTER
BLOCK FOR A LATHE**
Gilbert F. Lutz, Chesterland, Ohio, assignor to The War-
ner & Swasey Company, Cleveland, Ohio, a corpora-
tion of Ohio
Filed Jan. 17, 1966, Ser. No. 638
Term of patent 14 years
(Cl. D54-6)



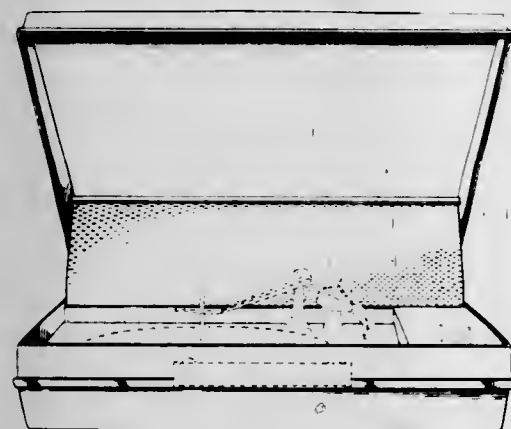
207,346
TOOL HOLDER
Gilbert F. Lutz, Chesterland, Ohio, assignor to The
Warner & Swasey Company, Cleveland, Ohio, a corpora-
tion of Ohio
Filed Jan. 17, 1966, Ser. No. 630
Term of patent 14 years
(Cl. D54-13)



207,347
ORGAN CABINET
 Le Roy J. Ryan, Jr., 5300 W. Hutchinson,
 Chicago, Ill. 60641
 Filed May 3, 1966, Ser. No. 2,136
 Term of patent 14 years
 (Cl. D56—2)



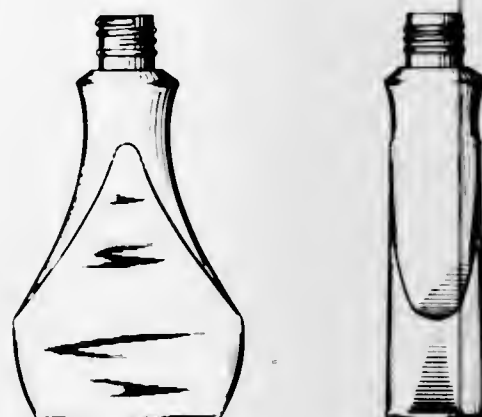
207,348
PORTABLE PHONOGRAPH OR SIMILAR ARTICLE
 Keith D. Kitts, Glenview, Ill., assignor to Admiral Cor-
 poration, Chicago, Ill., a corporation of Delaware
 Filed Oct. 15, 1965, Ser. No. 87,491
 Term of patent 7 years
 (Cl. D56—4)



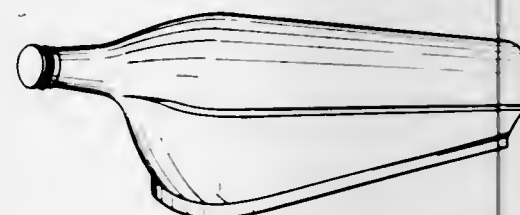
207,349
JUG
 Clark Swayze, Midland, Mich., assignor to Lever Brothers
 Company, New York, N.Y., a corporation of Maine
 Filed Dec. 22, 1965, Ser. No. 307
 Term of patent 14 years
 (Cl. D58—5)



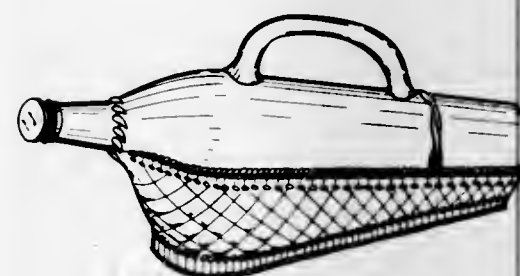
207,350
BOTTLE OR SIMILAR ARTICLE
 Victor Koenigsberg, Franklin Square, N.Y., assignor to
 Colgate-Palmolive Company, New York, N.Y., a cor-
 poration of Delaware
 Filed Apr. 4, 1966, Ser. No. 1,755
 Term of patent 14 years
 (Cl. D58—6)



207,351
BOTTLE
 Arthur N. Knowles, London, Ontario, Canada, assignor
 to London Winery Limited, London, Ontario, Canada
 Filed Feb. 24, 1966, Ser. No. 1,161
 Term of patent 14 years
 Claims priority, application Canada Nov. 18, 1965
 (Cl. D58—9)



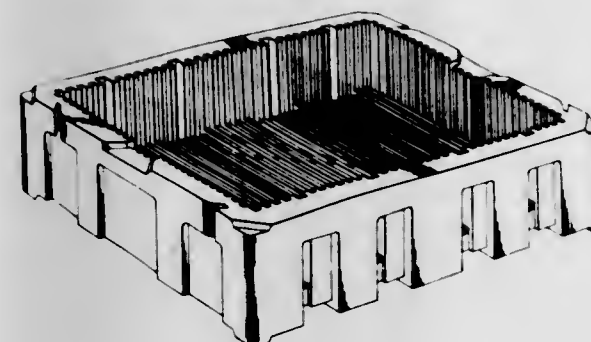
207,352
BOTTLE
 Arthur N. Knowles, London, Ontario, Canada, assignor
 to London Winery Limited, London, Ontario, Canada
 Filed Feb. 24, 1966, Ser. No. 1,173
 Term of patent 14 years
 Claims priority, application Canada Nov. 18, 1965
 (Cl. D58—9)



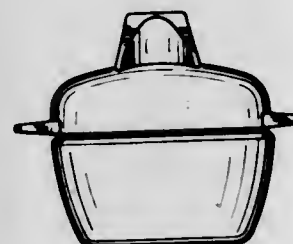
207,353
DISPLAY CONTAINER
 Samuel Braun, Rye, N.Y., assignor to B.C.N. Design Prod-
 ucts, Inc., Amityville, N.Y., a corporation of New York
 Filed Mar. 7, 1966, Ser. No. 1,322
 Term of patent 14 years
 (Cl. D58—12)



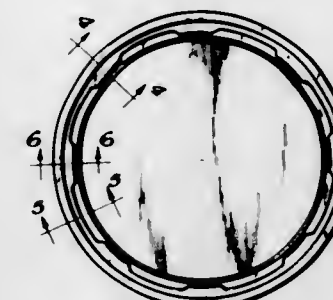
207,354
TRAY FOR FRUIT
 Champlyn Kenneth Sulger, 11650 Loyola Drive, and
 John F. Pandolfo, 23467 Esberg Road, both of Los
 Altos, Calif. 94022
 Filed June 21, 1965, Ser. No. 85,838
 Term of patent 14 years
 (Cl. D58—13)



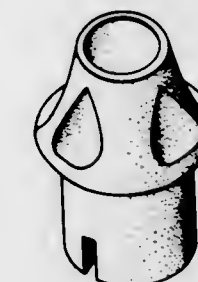
207,355
JAR OR THE LIKE
 Raymond J. Fesenmaier, Minneapolis, Minn., assignor to
 The Pillsbury Company, Minneapolis, Minn., a corpo-
 ration of Delaware
 Filed Mar. 18, 1966, Ser. No. 1,547
 Term of patent 14 years
 (Cl. D58—25)



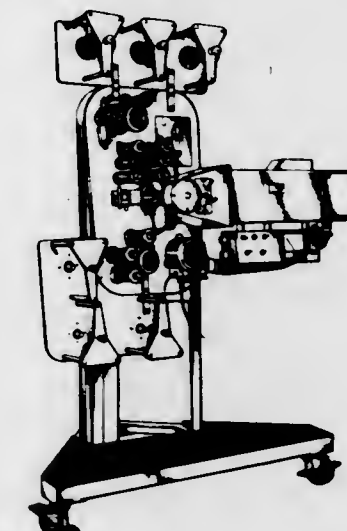
207,356
CONTAINER LID
 Robert J. McCormick, Findlay, Ohio, assignor to The
 Dow Chemical Company, Midland, Mich., a corpora-
 tion of Delaware
 Filed Aug. 18, 1965, Ser. No. 86,635
 Term of patent 14 years
 (Cl. D58—26)



207,357
ATOMIZER NOZZLE
 Robert D. Parry, 7240 Algonquin Drive,
 Cincinnati, Ohio 45243
 Filed May 4, 1966, Ser. No. 2,168
 Term of patent 14 years
 (Cl. D58—26)



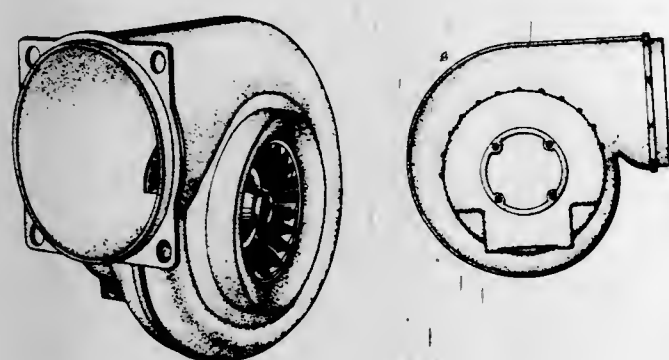
207,358
STRIP PRINTER
 Frank R. Potucek, Lake Zurich, Ill., assignor to Chicago
 Aerial Industries, Inc., a corporation of Delaware
 Filed Mar. 2, 1966, Ser. No. 1,250
 Term of patent 14 years
 (Cl. D61—1)



207,359

CENTRIFUGAL FAN

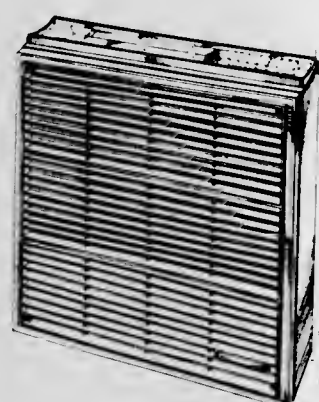
Richard G. Hajec, Woodstock, N.Y., assignor to Rotron Manufacturing Company, Inc., Woodstock, N.Y., a corporation of New York
 Filed Mar. 22, 1965, Ser. No. 84,378
 Term of patent 14 years
 (Cl. D62-4)



207,360

FAN HOUSING

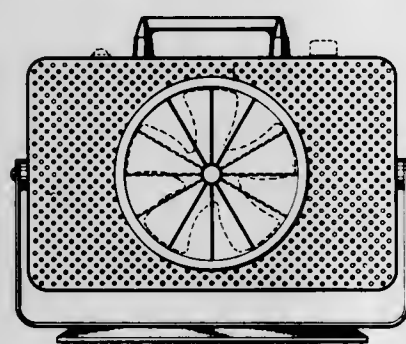
Paul O. Rawson, Jr., Trumbull, Conn., assignor, by mesne assignments, to J. C. Penney Company, Inc., a corporation of Delaware
 Filed Dec. 9, 1965, Ser. No. 392
 Term of patent 14 years
 (Cl. D62-4)



207,361

ELECTRIC AIR DIRECTOR

Herbert F. Bruns, 3520 Segovia St., Coral Gables, Fla. 33134
 Filed Apr. 11, 1966, Ser. No. 1,835
 Term of patent 7 years
 (Cl. D62-4)



207,362

PRINTING MACHINE

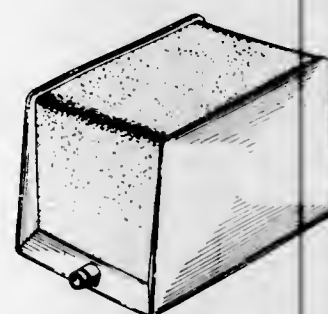
John R. Ewart, Akron, Ohio, assignor to Toledo Scale Corporation, Toledo, Ohio, a corporation of Ohio
 Filed Apr. 18, 1966, Ser. No. 1,929
 Term of patent 14 years
 (Cl. D64-11)



207,363

AQUARIUM PUMP

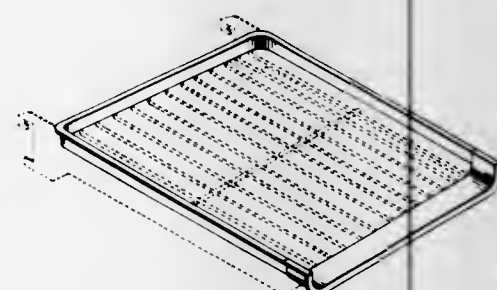
David D. Lovitz, Short Hills, N.J., assignor to Sternco Industries, Inc., Harrison, N.J., a corporation of New Jersey
 Filed July 29, 1966, Ser. No. 3,267
 Term of patent 14 years
 (Cl. D65-1)



207,364

SHELF FOR REFRIGERATOR OR FREEZER OR SIMILAR ARTICLE

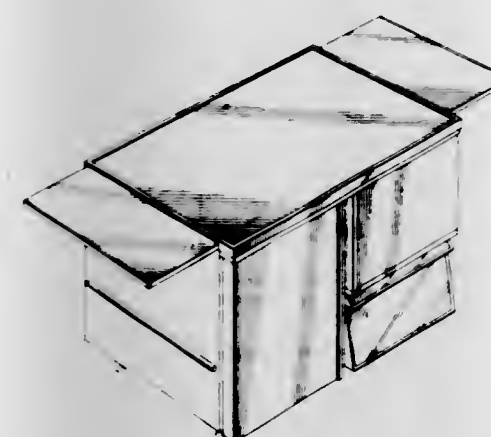
John K. Wagner, Marengo, and Louis R. Marz, Homestead, Iowa, assignors to Amana Refrigeration, Inc., Middle Amana, Iowa, a corporation of Delaware
 Filed Nov. 24, 1965, Ser. No. 88,211
 Term of patent 14 years
 (Cl. D67-3)



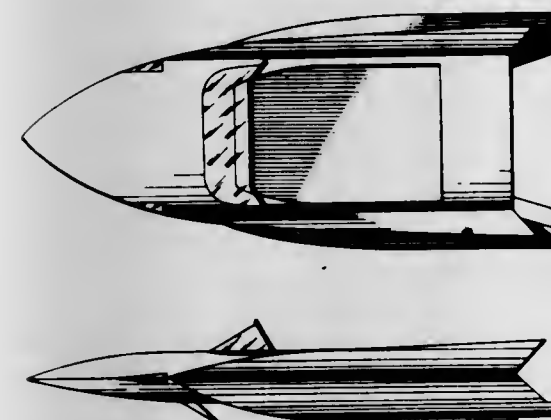
207,365

REFRIGERATOR CABINET

Chan Fook Leng, 56 Tras St., Singapore
 Filed Feb. 24, 1966, Ser. No. 1,167
 Term of patent 14 years
 (Cl. D67-3)

207,366
BOAT

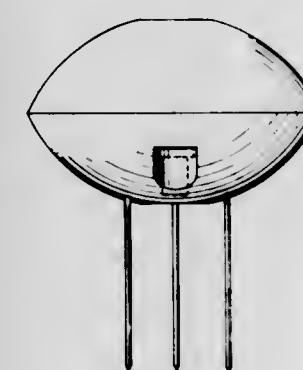
John G. Edwards, Jr., 1501 Hyde Park, Houston, Tex. 77006
 Filed Dec. 30, 1965, Ser. No. 387
 Term of patent 7 years
 (Cl. D71-1)



207,367

ILLUMINABLE STEAK MARKER

Clarence E. Johnson, 1804 S. Lincoln, and Gilbert P. Erickson, 1522 Linda Lane, both of Aberdeen, S. Dak. 57401
 Filed Sept. 10, 1965, Ser. No. 86,931
 Term of patent 3 1/2 years
 (Cl. D72-1)



207,368

SIGNAL LAMP AND ALARM BOX STANDARD

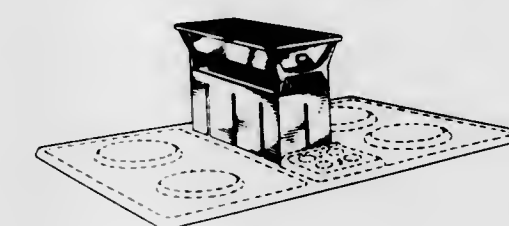
Wenzel W. Thom, Wichita, Kans., assignor of one-half to Cecil D. Jones, Wichita, Kans.
 Filed July 14, 1966, Ser. No. 3,075
 Term of patent 14 years
 (Cl. D72-1)



207,369

COOKING SURFACE AND VENTILATOR COMBINATION

Thomas R. Field, Indianapolis, Ind., assignor to Jenn-Air Corporation, Indianapolis, Ind., a corporation of Indiana
 Filed Apr. 21, 1966, Ser. No. 1,968
 Term of patent 14 years
 (Cl. D81-25)



207,370

MEDICAL TREATMENT CARRIER

Joel J. Nobel, Philadelphia, Pa., assignor to Graduate Pain Research Foundation, Philadelphia, Pa., a non-profit corporation of Pennsylvania
 Filed Dec. 10, 1965, Ser. No. 135
 Term of patent 14 years
 (Cl. D83-1)



207,371
OPHTHALMOSCOPE

Arthur J. Pulos, Fayetteville, N.Y., assignor to Welch Allyn, Inc., Skaneateles Falls, N.Y., a corporation of New York

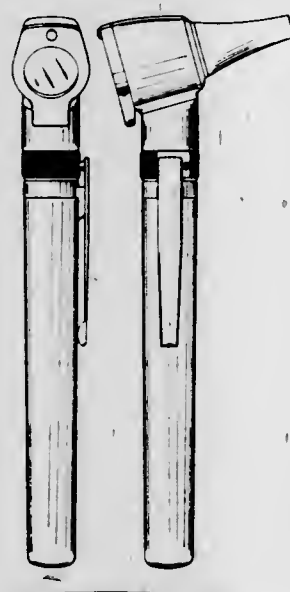
Filed Nov. 26, 1965, Ser. No. 88,219
Term of patent 14 years
(Cl. D83-12)



207,372
OTOSCOPE

Arthur J. Pulos, Fayetteville, N.Y., assignor to Welch Allyn, Inc., Skaneateles Falls, N.Y., a corporation of New York

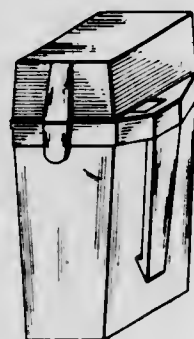
Filed Nov. 26, 1965, Ser. No. 88,224
Term of patent 14 years
(Cl. D83-12)



207,373
CIGARETTE CASE

David K. Rudnikoff and William M. Maki, both of Niles, Mich., assignors to The Morso Company, Niles, Mich.

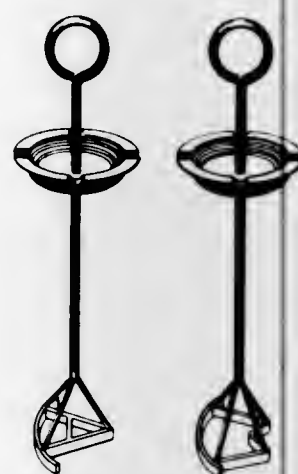
Filed Aug. 23, 1965, Ser. No. 86,685
Term of patent 3½ years
(Cl. D85-2)



207,374
ASH TRAY OR SIMILAR ARTICLE

Herman Gadow, Jr., R.R. 1, Maynard, Iowa 50655

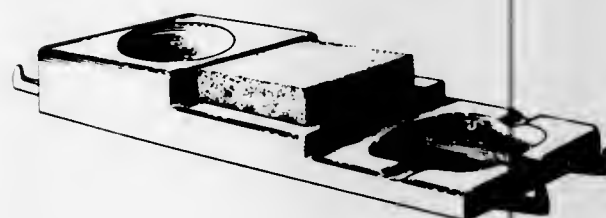
Filed Mar. 7, 1966, Ser. No. 1,327
Term of patent 14 years
(Cl. D85-2)



207,375
COMBINED CONTAINER HOLDER, PIN CUSHION AND ASH TRAY

Alfred J. Shreves, 2505 Milton Ave. SE., Warren, Ohio 44484

Filed May 31, 1966, Ser. No. 2,474
Term of patent 14 years
(Cl. D85-2)



207,376
SMOKING PIPE

Stephen P. Chernock, 1553 Boston Post Road, Milford, Conn. 06460

Filed Apr. 22, 1966, Ser. No. 1,985
Term of patent 14 years
(Cl. D85-8)



207,377
HEATER HOUSING FOR HAIR CURLERS

Arne Bybjerg Pedersen, 42-46 Skibbrogade, Kalundborg, Denmark

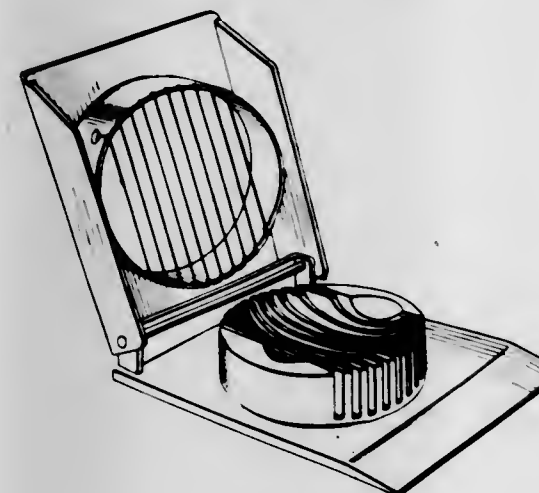
Filed Jan. 3, 1966, Ser. No. 406
Claims priority, application Canada Dec. 2, 1965
Term of patent 14 years
(Cl. D86-10)



207,378
EGG SLICER

Monte Levin, Roslyn Heights, N.Y., assignor to Rudl Baer, doing business as Progressus Company, New York, N.Y.

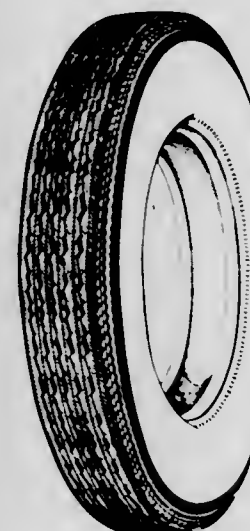
Filed Mar. 2, 1966, Ser. No. 1,245
Term of patent 14 years
(Cl. D89-1)



207,379
TIRE

Frank Bernard Jones, Sutton Coldfield, England, assignor to Dunlop Rubber Company Limited, Erdington, Birmingham, England, a British corporation

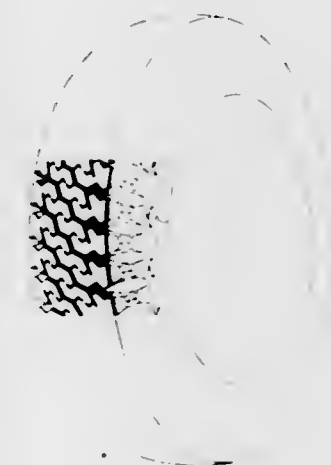
Filed July 7, 1966, Ser. No. 2,967
Claims priority, application Great Britain Jan. 27, 1966
Term of patent 14 years
(Cl. D90-20)



207,380
TIRE

Robert M. Allen, Grande Hotel Cá. d'Oro, Rua Avanhandava, Sao Paulo, Brazil, and Thomas A. McLaughlin, 1054 Kevin Drive, Akron, Ohio 44313

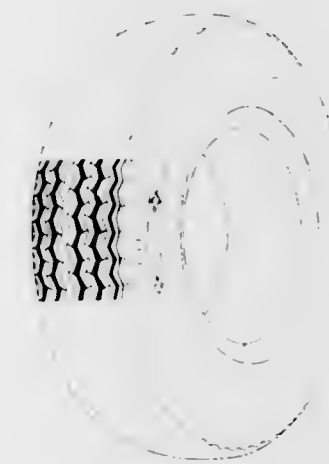
Filed Aug. 11, 1966, Ser. No. 3,422
Term of patent 14 years
(Cl. D90-20)



207,381
TIRE

Robert M. Allen, Grande Hotel Cá. d'Oro, Rua Avanhandava, Sao Paulo, Brazil

Filed Aug. 31, 1966, Ser. No. 3,661
Term of patent 14 years
(Cl. D90-20)



207,382
TIRE

Raymond S. Lull, Wadsworth, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

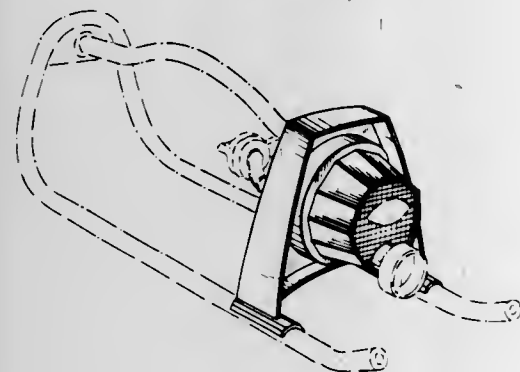
Filed Sept. 9, 1966, Ser. No. 3,790
Term of patent 14 years
(Cl. D90—20)



207,383
LAWN SPRINKLER

John D. Beinert, Babylon, N.Y., assignor to International Patent Research Corp., % Milton Friedman, Esq., New York, N.Y., a corporation of New York

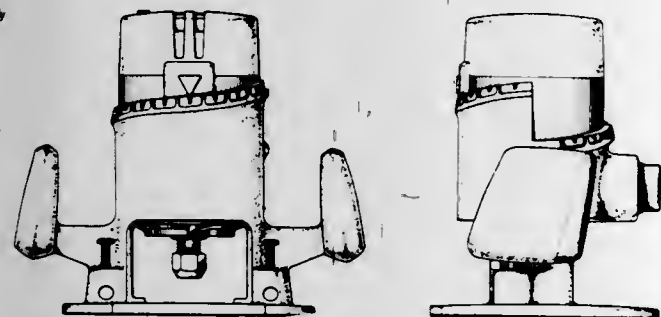
Filed Apr. 21, 1966, Ser. No. 1,959
Term of patent 7 years
(Cl. D91—1)



207,384
ROUTER

Milford D. Burrows, Avon, Peter H. Morganson, Winsted, and Phillipp J. Quedens, Newington, Conn., assignors to The Stanley Works, New Britain, Conn., a corporation of Connecticut

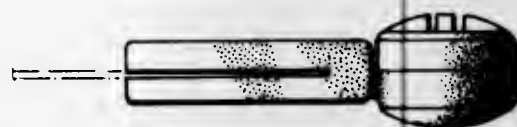
Filed June 3, 1966, Ser. No. 2,531
Term of patent 14 years
(Cl. D93—2)



207,385
HAND SAW

Peter R. Hollaender, Cincinnati, Ohio, assignor to The Hollaender Manufacturing Company, Cincinnati, Ohio, a corporation of Ohio

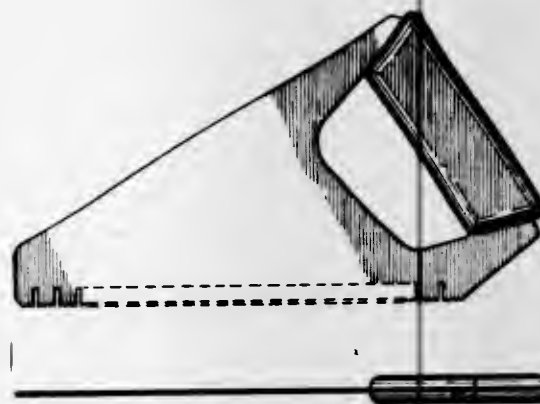
Filed Feb. 17, 1966, Ser. No. 1,095
Term of patent 14 years
(Cl. D93—4)



207,386
FROZEN FOOD CUTTER

Clayton A. Laughlin, Minneapolis, Minn., assignor to Arthur Salm, Inc., Chicago, Ill., a corporation of Illinois

Filed May 2, 1966, Ser. No. 2,110
Term of patent 14 years
(Cl. D95—3)



207,387
KNIFE OR SIMILAR ARTICLE

Jens H. Quistgaard, Meggen, Lucerne, Switzerland, assignor to Dansk Designs Ltd., Mount Kisco, N.Y., a corporation of New York

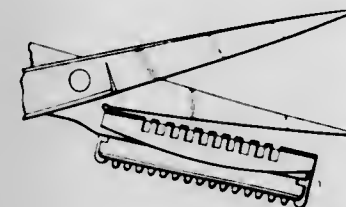
Filed May 3, 1966, Ser. No. 2,148
Term of patent 14 years
(Cl. D95—3)



207,388
COMBINED SCISSORS AND HAIR SHAPER

Donald G. Tayler, 5842 Newman St., Cypress, Calif. 93214

Filed Jan. 24, 1966, Ser. No. 744
Term of patent 14 years
(Cl. D95—5)

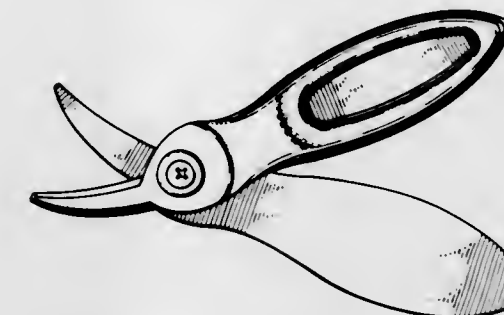


207,389

SHEET METAL SNIPS

Lee W. Barker, 443 Alhambra Road, South San Francisco, Calif. 94080

Filed July 13, 1966, Ser. No. 3,065
Term of patent 14 years
(Cl. D95—5)



LIST OF REISSUE PATENTEEES

TO WHOM

PATENTS WERE ISSUED ON THE 4TH DAY OF APRIL, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- American Can Co.: See—
 Henry, James W. Re. 26,185.
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 Biemiller, Philip E.: See—
 Van Horn, John A., Biemiller, and Reese. Re. 26,187.
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 Green, James C.: See—
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 Harvey, Douglass C., and H. Nerwin, to Eastman Kodak Co. Camera locking device. Re. 26,181, 4-4-67, Cl. 95—31.
 Henry, James W., to American Can Co. Carton having hinged cover. Re. 26,185, 4-4-67, Cl. 229—51.
 Linares, Robert C., Jr.: See—
 Ballman, Albert A., Linares, and Van Uitert. Re. 26,184.
 Lowrey, Wiley W.: See—
 McQuerry, John L. Re. 26,186.
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 Morrell, Donald E. Ventilated poultry house. Re. 26,183, 4-4-67, Cl. 119—15.
 Nerwin, Hubert: See—
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 Torr, David. Re. 26,182.
 Reese, James H.: See—
 Van Horn, John A., Biemiller, and Reese. Re. 26,187.
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 Frenzel, Carl J., and Green. Re. 26,180.
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 Van Horn, John A., P. E. Biemiller, and J. H. Reese, to Hamilton Watch Co. Electric watch. Re. 26,187, 4-4-67, Cl. 58—28.
 Van Uitert, Le Grand G.: See—
 Ballman, Albert A., Linares, and Van Uitert. Re. 26,184.

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- Great Western Rose Co., Inc.: See—
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 Mikkelsen, James C. Poinsettia plant. 2,731, 4-4-67, Cl. 86.
 Mikkelsen, James C. Poinsettia plant. 2,732, 4-4-67, Cl. 86.

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- Admiral Corp.: See—
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 Allen, Robert M. Tire. 207,381, 4-4-67, Cl. D90—20.
 Allen, Robert M., and T. A. McLaughlin. Tire. 207,380, 4-4-67, Cl. D90—20.
 Amana Refrigeration, Inc.: See—
 Wagner, John K., and Marx. 207,364.
 B. C. N. Design Products, Inc.: See—
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 Bell, Irene S. Household cleaning caddy cart or the like. 207,308, 4-4-67, Cl. D14—3.
 Blevio, Henry. Bathroom unit. 207,301, 4-4-67, Cl. D4—4.
 Braun, Samuel, to B. C. N. Design Products, Inc. Display container. 207,353, 4-4-67, Cl. D58—12.
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 Burrows, Milford D., P. H. Morganson, and P. J. Quedens, to The Stanley Works. Router. 207,384, 4-4-67, Cl. D93—2.
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 Caldemeyer, Daniel F. and Lloyd O. Rocking lounge chair. 207,311, 4-4-67, Cl. D15—6.
 Caldemeyer, Daniel F. and Lloyd O. Rocking lounge chair. 207,312, 4-4-67, Cl. D15—6.
 Caldemeyer, Daniel F. and Lloyd O. Rocking lounge chair. 207,313, 4-4-67, Cl. D15—6.
 Caldemeyer, Daniel F. and Lloyd O. Rocking lounge chair. 207,314, 4-4-67, Cl. D15—6.
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 Caldemeyer, Daniel F. and Lloyd O. 207,311.
 Caldemeyer, Daniel F. and Lloyd O. 207,312.
 Caldemeyer, Daniel F. and Lloyd O. 207,313.
 Caldemeyer, Daniel F. and Lloyd O. 207,314.
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 Nobel, Joel J. 207,370.
 Hajec, Richard G., to Rotron Mfg. Co., Inc. Centrifugal fan. 207,359, 4-4-67, Cl. D62—4.
 Hanna, Michael J., and F. A. Maljan, to Malmik Enterprises. Set of chess pieces. 207,323, 4-4-67, Cl. D34—5.
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- Hucal, William. Metal clip or similar article. 207,344. 4-4-67, Cl. D54-1.
- International Patent Research Corp.: See—
Beinert, John D. 207,383.
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- Jones, Cecil D.: See—
Thom, Wenzel W. 207,368.
- Jones, Frank B., to Dunlop Rubber Co. Ltd. Tire. 207,379. 4-4-67, Cl. D90-20.
- Kallman, Robert I.: See—
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De Fano, Dominic J., and Kallman. 207,334.
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- Kaminski, Stephen H., to Sunbeam Corp. Coffee percolator. 207,335, 4-4-67, Cl. D44-26.
- Kern, George R., Jr. Dental unit. 207,316, 4-4-67, Cl. D24-1.
- Kitts, Keith D., to Admiral Corp. Portable phonograph or similar article. 207,348, 4-4-67, Cl. D56-4.
- Klaurens, Glen C. Bow drawing and releasing device. 207,320, 4-4-67, Cl. D30-1.
- Knowles, Arthur N., to London Winery Ltd. Bottle. 207,351, 4-4-67, Cl. D58-9.
- Knowles, Arthur N., to London Winery Ltd. Bottle. 207,352, 4-4-67, Cl. D58-9.
- Koenigsberg, Victor, to Colgate-Palmolive Co. Bottle or similar article. 207,350, 4-4-67, Cl. D58-6.
- Laughlin, Clayton A., to Arthur Salm Inc. Frozen food cutter. 207,386, 4-4-67, Cl. D95-3.
- Leng, Chan F. Refrigerator cabinet. 207,365, 4-4-67, Cl. D87-3.
- Lerner, Robert. Portable collapsible crib. 207,302, 4-4-67, Cl. D5-5.
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- Madl, Alfred W., to John Oster Mfg. Co. Coffee percolator. 207,332, 4-4-67, Cl. D44-26.
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- Quedens, Phillip J.: See—
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- Sulger, Champlin K., and J. F. Pandolfo. Tray for fruit. 207,354, 4-4-67, Cl. D58-13.
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TO WHOM

PATENTS WERE ISSUED ON THE 4TH DAY OF APRIL, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- AMP Inc.: See—
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- Crane, Hewitt D., English, and Baer. 3,312,831.
- Hathfield, John G., and Loose. 3,312,930.
- Keller, Joseph R. 3,312,931.
- Shannon, Suel G. 3,312,929.
- Aaronson Bros. Ltd.: See—
Allan, Morris, and Berman. 3,312,582.
- Abe, Akira, to Kabushiki Kaisha Hitachi Selsakusho. Production of semiconductor elements by the diffusion process. 3,311,963, 4-4-67, Cl. 29-253.
- Abbott, Earl: See—
Lickliter, Robert P., Abbott, and Reeves. 3,312,488.
- Abbott, Paul D. Cultivator harness. 3,312,290, 4-4-67, Cl. 172-451.
- Acker, Ellsworth G.: See—
Vank, Milton C., Sanchez, and Acker. 3,312,630.
- Acme Fishing Tool Co.: See—
McKain, Walter P. 3,312,292.
- Adam, Richard L., and T. C. Winn. Drapery traversing apparatus. 3,312,273, 4-4-67, Cl. 160-345.
- Adams, Frederick J., to Hydrostat Ltd. Power operated steering gear. 3,312,148, 4-4-67, Cl. 91-462.
- Adams, Joe T., and H. F. Lykins, to Union Carbide Corp. Acid-base catalyzed modification of cellulose with hydroxyalkyl and alkoxyalkyl, epoxyalkyl sulfones. 3,312,522, 4-4-67, Cl. 8-120.
- Addmaster Corp.: See—
Mark, Richard S. 3,312,392.
- Aerojet-General Corp.: See—
Atanasoff, Theodore B., and Morgret. 3,312,358.
- Aerov, Mikhail E., T. A. Bystrova, N. I. Zelentsova, and V. A. Kulikova, to Nauchno-Issledovatel'skiy Institut Sintericheskikh Spil'tov i Organicheskikh Produktov. Refrigeration process. 3,312,078, 4-4-67, Cl. 62-112.
- Agfa Aktiengesellschaft: See—
Muller-Bardon, Wolfgang, and Behr. 3,312,552.
- Ahola, Elmer E. Berth-settee combination. 3,311,932, 4-4-67, Cl. 5-9.
- Ainslie, Thomas D., to Phillip-Van Heusen Corp. Impact wear tester. 3,312,100, 4-4-67, Cl. 73-7.
- Airspace, Inc.: See—
Axelsson, Folke A. 3,311,948.
- Akkerman, Antony M., G. C. Van Leeuwen, and J. F. Michels, to N.V. Nederlandsche Cofinatie Voor Chemische Industrie. Pyrazineacetonitriles and methods of preparing. 3,312,700, 4-4-67, Cl. 260-250.
- Akmenkains, Ivars G., and P. A. Lord, to International Business Machines Corp. Coupled helical wave structure employing a remanently magnetized ferrite. 3,312,915, 4-4-67, Cl. 333-241.
- Albrecht Jung Elektrotechnische Fabrik: See—
Remhof, Kurt. 3,312,492.
- Albright & Wilson (Mfg.) Ltd.: See—
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- Aldrich Chemical Co., Inc.: See—
Biel, John H., and Jaeger. 3,312,716.
- Alfa Romeo S.p.A.: See—
Garcea, Giampaolo. 3,312,208.
- Alitz, Orville J., to Collins Radio Co. Tacan azimuth calibration technique. 3,312,972, 4-4-67, Cl. 343-106.
- Allan, Morris, and M. Berman, to Aaronson Bros. Ltd. Methods of producing sheets of wood veneer and the sheets of wood veneer so produced. 3,312,582, 4-4-67, Cl. 161-37.
- Allen-Bradley Co.: See—
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- Allen & Hanbury Ltd.: See—
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- Allen & Hanbury (Surgical Instrument) Ltd.: See—
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- Allen, Walter R. Gyrotory crusher and method of crushing and grinding ore. 3,312,404, 4-4-67, Cl. 241-215.
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- Eisenbraun, Allan A. 3,312,714.
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- Altenau, Alan G.: See—
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- American Chain & Cable Co., Inc.: See—
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- American Cyanamid Co.: See—
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- American Machine & Foundry Co.: See—
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- American Radiator & Standard Sanitary Corp.: See—
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- Ametek, Inc.: See—
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- Amort, Donald J., to Arvey Corp. Envelope assembly. 3,312,385, 4-4-67, Cl. 229-73.
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- Amsted Industries Inc.: See—
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- Anderson, Gordon C.: See—
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- Anderson, J. Leavitt. Attitude controlled conveyor. 3,312,333, 4-4-67, Cl. 198-145.
- Anderson, James H. Heat transfer at equalized pressure. 3,312,063, 4-4-67, Cl. 60-59.
- Anderson, James H., and J. H. Anderson, Jr. Sea water power plant. 3,312,054, 4-4-67, Cl. 60-26.
- Anderson, James H., Jr.: See—
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- Anderson, John J., and W. C. Harris, to S. C. Johnson & Son, Inc. Actuator cap. 3,312,725, 4-4-67, Cl. 222-402.13.
- Anderson, William A., and R. Andrew, to Aluminum Co. of America. Aluminum reflectors. 3,312,535, 4-4-67, Cl. 29-183.5.
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- Anker-Werke Aktiengesellschaft: See—
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- Aqua-Chem, Inc.: See—
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- Aqua Ran Water Supplies, Inc.: See—
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- Archer, Giles A., and L. H. Sternbach, to Hoffmann-La Roche Inc. Process for preparing 2-aminobenzodiazepines. 3,312,688, 4-4-67, Cl. 260-239.
- Ardouin, Jean J. H., and A. Torossian. Methods of making electrical resistors. 3,311,968, 4-4-67, Cl. 29-155.69.
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- Ark Mfg. Co., Inc.: See—
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- Aspro-Nicholas Ltd.: See—
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Yarder, Irving R., to The Yarder Mfg. Co. Frame for show cards. 3,312,008, 4-4-67, Cl. 40-152.1.

Yarder Mfg. Co., The: See—

Yarder, Irving R. 3,312,008.

Yardner International Corp.: See—

Gold, Charles M. 3,312,889.

Yeadon, David A.: See—

Rayner, Eric T., Yeadon, Hopper, Dupuy, and Dollear. 3,312,565.

Yeager, Paul R.: See—

Melfi, Leonard T., Jr., Wood, and Yeager. 3,312,101.

Yetman, Edward D., to Shell Oil Co. Pumping well tools through flowlines of irregular diameter. 3,312,282, 4-4-67, Cl. 166-46.

Yetman, Edward D., to Shell Oil Co. System for installing and retrieving well tools in well strings. 3,312,283, 4-4-67, Cl. 166-46.

Yost, Paul E., to Raven Industries, Inc. Balloon structure with launching cells. 3,312,427, 4-4-67, Cl. 244-31.

Young, Austin H., to A. E. Staley Mfg. Co. Amylose material plasticized with a mixture of triethanolamine and an alpha, beta, omega trihydric alcohol. 3,312,559, 4-4-67, Cl. 106-213.

Young, Austin H., to A. E. Staley Mfg. Co. Polyvinyl alcohol plasticized amylose compositions. 3,312,641, 4-4-67, Cl. 260-17.4.

Young, Robert E., and C. L. Jullian, General Motors Corp. Excessive speed responsive engine governors. 3,312,233, 4-4-67, Cl. 137-57.

Yu, Hwa N., to International Business Machines Corp. Transistor with limited area base-collector junction. 3,312,881, 4-4-67, Cl. 317-235.

Yu, Se P.: See—

Wilbur, Donald A., Yu, and Heas. 3,312,859.

Zaffarano, Frank P.: See—

Hartley, Maurice S., Thompson, and Zaffarano. 3,312,977.

Zanoni, Stephen J.: See—

Ferris, Ernest A., and Zanoni. 3,312,419.

Zawistowski, Ferdinand, to Technion Research and Development Foundation Ltd. Compensated gauges for external dimensions. 3,311,986, 4-4-67, Cl. 33-147.

Zeelen, Filippus J., to Organon Inc. 3-desoxy-19-nor-androstene. 3,312,720, 4-4-67, Cl. 260-397.5.

Zelentsova, Nina I.: See—

Aerov, Mikhail E., Byatrova, Zelentsova, and Kulikova. 3,312,078.

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Zelony, Walter. Adjustable leg. 3,312,440, 4-4-67, Cl. 248-188.8.

Zemanek, Joseph, Jr.: See—

Stripling, Allen A., Zemanek, and Hicks. 3,312,934.

Ziegenbein, Willi: See—

Schneider, Wolfgang, and Ziegenbein. 3,312,742.

Zientek, Eugene A.: See—

Pines, Arthur N., and Zientek. 3,312,622.

Zienty, Ferdinand B.: See—

Holm, Myron J., and Zienty. 3,312,668.

Zifferer, Lothar R. Machine and process for reclaiming foundry sand. 3,312,403, 4-4-67, Cl. 241-24.

Zimmermann, Rudolf, OHG: See—

Erhardt, Max, Behringer, and Fuchs. 3,312,817.

Zinaco Electrical Products: See—

Locher, Ross E. 3,312,798.

Zinser-Textilmaschinen Gesellschaft mit beschränkter Haftung: See—

Güttler, Hermann, and Krauss. 3,312,381.

Zsulevich, John W.: See—

Best, Robert G., Hartzell, and Zsulevich. 3,312,298.

Zurell, Norman K.: See—

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CLASSIFICATION OF PATENTS

ISSUED APRIL 4, 1967

NOTE.—First number, class; second number, subclass; third number, patent number

2-3	3,311,921	34-5	3,311,991	62-155	3,312,080	96-29	3,312,549	128-516	3,312,224	172-451	3,312,290
8	3,311,922	57	3,311,992	158	3,312,081	63	3,312,550	129-16.1	3,312,225	173-28	3,312,291
74	3,311,923		3,311,993	353	3,312,082	75	3,312,551	131-17	3,312,226	89	3,312,292
87	3,311,924	168	3,311,994	390	3,312,083	94	3,312,552	187	3,312,227	119	3,312,293
111	3,311,925	35-12	3,311,995	65-59	3,312,540	107	3,312,553	205	3,312,228	164	3,312,294
128	3,311,926	31	3,311,996	66-163	3,312,084	114	3,312,554	229	3,312,229	174-35	3,312,295
221	3,311,927		3,311,997	67-31	3,312,085	98-1	3,312,159	134-72	3,312,230	48	3,312,296
243	3,311,928	35	3,311,998		3,312,086	40	3,312,160	111	3,312,231	52	3,312,297
4-69	3,311,929	36-2.5	3,311,999	68-12	3,312,087	99-108	Re.26.182	176	3,312,232	71	3,312,298
185	3,311,930	34	3,312,000	18	3,312,088	138	3,312,555	137-57	3,312,233	75	3,312,299
227	3,311,931	44	3,312,001	70-70	3,312,089	377	3,312,161	81.5	3,312,234	119	3,312,300
5-9	3,311,932	37-142	3,312,002	285	3,312,090	101-56	3,312,162	268	3,312,235	120	3,312,301
66	3,311,933		3,312,003	71-2.6	3,312,541	93	3,312,163	344	3,312,236	143	3,312,302
102	3,311,934		3,312,004	72-11	3,312,542		3,312,164	512.15	3,312,237	175-19	3,312,303
109	3,311,935	40-2	3,312,005	13	3,312,091	119	3,312,165	552.5	3,312,238	72	3,312,304
8-116.2	3,312,520	106.51	3,312,006	56	3,312,092	148	3,312,166	596.12	3,312,239	392	3,312,305
116.4	3,312,521	125	3,312,007	162	3,312,093	382	3,312,167	599	3,312,240	176-52	3,312,306
120	3,312,522	152.1	3,312,008	203	3,312,095	102-86.5	3,312,168	601	3,312,241	54	3,312,307
12-127	3,311,936	159	3,312,009	238	3,312,096	103-37	3,312,169	609	3,312,242	67	3,312,308
142	3,311,937	209	3,312,010	347	3,312,097	38	3,312,170	625.18	3,312,243	177-158	3,312,309
145	3,311,938	43-9	3,312,011	349	3,312,098	44	3,312,171	625.23	3,312,244	178-5.4	3,312,310
14-73	3,311,939	46-111	3,312,012	392	3,312,099	51	3,312,172	625.69	3,312,245		3,312,311
15-88	3,311,940	243	3,312,013	73-7	3,312,100	53	3,312,173	636.2	3,312,246		3,312,312
510	3,311,941	47-41.1	3,312,014	23	3,312,101	121	3,312,175		3,312,247	6.6	3,312,313
16-105	3,311,942	49-213	3,312,015	35	3,312,102	123	3,312,176	138-42	3,312,248	179-15	3,312,314
125	3,311,943	218	3,312,016	49.1	3,312,103	126	3,312,177	158	3,312,249	16	3,312,315
128	3,311,944	246	3,312,017	123	3,312,104	175	3,312,178	159	3,312,250	18	3,312,316
179	3,311,945	52-90	3,312,018	135	3,312,105	104-7	3,312,179	168	3,312,251	84	3,312,317
180	3,311,946	106	3,312,019	194	3,312,106	246	3,312,180	168	3,312,252	100.2	3,312,318
18-2	3,311,947	108	3,312,020	200	3,312,107	105-369	3,312,181	168	3,312,253	107	3,312,319
4	3,311,948	122	3,312,021	359	3,312,108		3,312,182	141-24	3,312,254	110	3,312,320
5	3,311,949	169	3,312,022	407	3,312,109	106-54	3,312,183	65	3,312,255	175.3	3,312,321
5.3	3,311,951	203	3,312,023	412	3,312,110	58	3,312,184	214	3,312,256	110	3,312,322
14	3,311,952	221	3,312,024	74-84	3,312,111	63	3,312,185	144-251	3,312,257	180-11	3,312,323
19-23	3,311,953	239	3,312,025	125	3,312,112	213	3,312,186	311	3,312,258	19	3,312,324
22-45	3,311,954	403	3,312,026	125	3,312,113	316	3,312,187	145-50	3,312,259	79.2	3,312,325
57.4	3,311,955	475	3,312,027	125.5	3,312,114	110-8	3,312,188	146-123	3,312,260		3,312,326
194	3,311,956	495	3,312,028	141.5	3,312,115	112-118	3,312,189	148-11.5	3,312,261	89	3,312,327
23-106	3,312,523	497	3,312,029	240	3,312,116	262	3,312,190	175	3,312,262	181-33	3,312,328
122	3,312,524	530	3,312,031	250	3,312,117	115-4	3,312,191	187	3,312,263	182-15	3,312,329
196	3,312,525	580	3,312,032	424.8	3,312,118	116-70	3,312,192	149-38	3,312,264	1	3,312,330
204	3,312,526	615	3,312,033	473	3,312,119	117-4	3,312,193	150-5	3,312,265	187-10	3,312,331
254	3,312,527	731	3,312,034	475	3,312,120	33.3	3,312,194	2	3,312,266	72	3,312,332
	3,312,528	737	3,312,035	480	3,312,121	36.1	3,312,195	151-19	3,312,267	73	3,312,333
255	3,312,529	53-182	3,312,036	483	3,312,122	72	3,312,196	152-330	3,312,268	79.5	3,312,334
259.1	3,312,530	188	3,312,037	494	3,312,123	93.1	3,312,197	156-106	3,312,269	106	3,312,335
357	3,312,531	190	3,312,038	558	3,312,124	105.4	3,312,198	151	3,312,270	88	3,312,336
358	3,312,532	54-24	3,312,039	572	3,312,125	119.2	3,312,199	305	3,312,271	106	3,312,337
24-21	3,311,957	44	3,312,040	675	3,312,126	126	3,312,200	550	3,312,272	152	3,312,338
155	3,311,958	55-30	3,312,041	75-5	3,312,543	126	3,312,201	158-28	3,312,273	163	3,312,339
274	3,311,959	67	3,312,042	60	3,312,544	212	3,312,202	99	3,312,274	196	3,312,340
28-72	3,311,960	158	3,312,043	146	3,312,545	218	3,312,203		3,312,275		3,312,341
	3,311,961	168	3,312,044	208	3,312,546	77-71	3,312,204		3,312,276		3,312,342
29-1.23	3,311,962	174	3,312,045	77-71	3,312,127	81-3	3,312,205		3,312,277		3,312,343
25.14	3,311,964	56-42	3,312,046	81-3	3,312,128	126	3,312,206		3,312,278		3,312,344
25.3	3,311,963	126	3,312,047	82-70.1	3,312,129	82-70.1	3,312,207		3,312,279		3,312,345
34	3,311,965	214	3,312,048	83-5	3,312,131	83-5	3,312,208		3,312,280		3,312,346
155.5	3,311,966	255	3,312,049	85-66	3,312,132	85-66	3,312,209		3,312,281		3,312,347
	3,311,967	57-34	3,312,050	88-14	3,312,133	88-14	3,312,210		3,312,282		3,312,348
155.69	3,311,968	34.5	3,312,051		3,312,134		3,312,211		3,312,283		3,312,349
	3,311,969	157	3,312,052		3,312,135		3,312,212		3,312,284		3,312,350
182.3	3,312,533	58-28	3,312,053		3,312,136		3,312,213		3,312,285		3,312,351
183	3,312,534	60-26	3,312,054		3,312,137		3,312,214		3,312,286		3,312,352
183.5	3,312,535	37	3,312,055		3,312,138		3,312,215		3,312,287		3,312,353
	3,312,536	39.18	3,312,056		3,312,139		3,312,216		3,312,288		3,312,354
	3,312,537	39.24	3,312,057		3,312,140		3,312,217		3,312,289		3,312,355
190	3,312,538	52	3,312,058		3,312,141		3,312,218		3,312,290		3,312,356
198	3,312,539	54	3,312,059		3,312,142		3,312,219		3,312,291		3,312,357
451	3,311,970	54.6	3,312,060		3,312,143		3,312,220		3,312,292		3,312,358
523	3,311,971	59	3,312,061		3,312,144		3,312,221		3,312,293		3,312,359
528	3,311,972	64	3,312,062		3,312,145		3,312,222		3,312,294		3,312,360
568	3,311,973	68	3,312,063		3,312,146		3,312,223		3,312,295		3,312,361
30-6.1	3,311,974	104	3,312,064		3,312,147		3,312,224		3,312,296		3,312,362
62	3,311,975	226	3,312,065		3,312,148		3,312,225		3,312,297		3,312,363
335	3,311,976	246	3,312,066		3,312,149		3,312,226		3,312,298		3,312,364
32-14	3,311,977	226	3,312,067		3,312,150		3,312,227		3,312,299		3,312,365
	3,311,978	246	3,312,067		3,312,151		3,312,228		3,312,300		3,312,366
33-9	3,311,979	258	3,312,068		3,312,152		3,312,229		3,312,301		3,312,367
17	3,311,980	61-1	3,312,069		3,312,153		3,312,230		3,312,302		3,312,368
27	3,311,981	36	3,312,070		3,312,154		3,312,231		3,312,303		3,312,369
76	3,311,982	45	3,312,071		3,312,155		3,312,232		3,312,304		3,312,370
126.5	3,311,983	62-6	3,312,072		3,312,156		3,312,233		3,312,305		3,312,371
126.7	3,311,984	9	3,312,073		3,312,157		3,312,234		3,312,306		3,312,372
141	3,311,985	13	3,312,074		3,312,158		3,312,235		3,312,307		3,312,373
147	3,311,986	20	3,312,075		3,312,159		3,312,236		3,312,308		3,312,374
204	3,311,987	55	3,312,076		3,312,160		3,312,237		3,312,309		3,312,375
207	3,311,988	112	3,312,077		3,312,161		3,312,238		3,312,310		3,312,376
34	3,311,989	130	3,312,078		3,312,162		3,312,239		3,312,311		3,312,377
211	3,311,990		3,312,079		3,312,163		3,312,240		3,312,312		3,312,378

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200-169	3.312.808	236-15	3.312.397	253-96	3.312.450	260-397.5	3.312.721	294-31.2	3.312.495	324-96	3.312.895
202-160	3.312.809	44	3.312.398	254-164	3.312.451	399	3.312.722	66	3.312.496	107	3.312.896
203-11	3.312.600	238-152	3.312.399	172	3.312.452	410.7	3.312.724	296-1	3.312.497	115	3.312.897
53	3.312.602	239-206	3.312.400	260-2	3.312.636	429.7	3.312.725	117	3.312.498	117	3.312.898
204-14	3.312.603	283	3.312.401		3.312.637	437	3.312.726	117	3.312.499	158	3.312.899
49	3.312.604	552	3.312.402	2.5	3.312.638	448.2	3.312.727	135	3.312.500	325-31	3.312.900
59	3.312.605	240-46.57	3.312.814		3.312.639	458	3.312.728	297-42	3.312.501	50	3.312.901
62	3.312.606	73	3.312.815	17.4	3.312.640	465.7	3.312.729	385	3.312.502	116	3.312.902
70	3.312.607	78	3.312.816		3.312.641	473	3.312.730	442	3.312.503	328-127	3.312.903
73	3.312.608	128	3.312.817		3.312.642	485	3.312.731	299-24	3.312.504	207	3.312.904
98	3.312.609	241-24	3.312.403	17.5	3.312.643	501	3.312.732	301-37	3.312.505	330-4.3	3.312.905
101	3.312.610	215	3.312.404	22	3.312.644		3.312.733	302-66	3.312.506	5	3.312.906
159.21	3.312.611	242-26.4	3.312.405		3.312.645	505	3.312.734		3.312.507	29	3.312.907
162	3.312.612	55.11	3.312.406		3.312.646	513	3.312.735	303-19	3.312.508	52	3.312.908
163	3.312.613	55.12	3.312.407	23	3.312.647	530	3.312.736	331-60	3.312.509	60	3.312.909
266	3.312.614	66	3.312.408	28.5	3.312.648	551	3.312.737	307-88	3.312.830	94.5	3.312.910
206-82	3.312.336	67.1	3.312.409		3.312.649	556	3.312.738		3.312.831	107	3.312.911
46	3.312.337	67.3	3.312.410	29.3	3.312.650		3.312.739	88.5	3.312.832		3.312.912
52	3.312.338	68.3	3.312.411	29.6	3.312.651	561	3.312.740		3.312.833	333-10	3.312.913
57	3.312.339	71.2	3.312.412		3.312.652	586	3.312.741		3.312.834	22	3.312.914
80	3.312.340	74.2	3.312.413	30.8	3.312.653	598	3.312.742		3.312.835	24.1	3.312.915
208-120	3.312.615	75.2	3.312.414	33.4	3.312.654	609	3.312.743		3.312.836	335-74	3.312.916
209-2	3.312.341	75.43	3.312.415	41	3.312.655	635	3.312.744		3.312.837	122	3.312.917
3	3.312.342	78.1	3.312.416	41.5	3.312.656	638	3.312.745		3.312.838	205	3.312.918
139	3.312.343	84.1	3.312.417	45.75	3.312.658	650	3.312.746		3.312.839	336-84	3.312.919
210-26	3.312.616	85	3.312.418	45.8	3.312.657	654	3.312.747	308-9	3.312.510	100	3.312.920
35	3.312.617	107.11	3.312.419	47	3.312.659	671	3.312.748	213	3.312.511	149	3.312.921
90	3.312.344		3.312.420		3.312.660	674	3.312.749	310-4	3.312.840	15	3.312.922
195	3.312.345	158.4	3.312.421		3.312.661	675.5	3.312.750		3.312.841	338-20	3.312.923
264	3.312.346	3.18	3.312.422		3.312.662	677	3.312.751		3.312.842		3.312.924
283	3.312.347	12	3.312.423		3.312.663	680	3.312.752		3.312.843	200	3.312.925
307	3.312.350		3.312.424	75	3.312.664	823	3.312.753	168	3.312.844	216	3.312.926
323	3.312.351		3.312.425		3.312.665	837	3.312.754	247	3.312.845	339-17	3.312.927
453	3.312.352	31	3.312.426		3.312.667	859	3.312.755	266	3.312.846	46	3.312.928
59	3.312.353	43	3.312.427	78.4	3.312.668	876	3.312.756	271	3.312.847	115	3.312.929
177	3.312.354	53	3.312.428	79.1	3.312.669	878	3.312.757	312-45	3.312.512	147	3.312.930
214-1	3.312.355	122	3.312.429	79.3	3.312.665	895	3.312.758	184	3.312.513	258	3.312.931
6	3.312.356	135	3.312.430		3.312.670	263-7	3.312.453		3.312.514	340-6	3.312.932
11	3.312.357	182	3.312.431		3.312.671	15	3.312.454	321	3.312.515	15.5	3.312.933
42	3.312.358	221	3.312.432	79.5	3.312.672	32	3.312.455	330	3.312.516	18	3.312.934
64	3.312.359	221	3.312.433	80.3	3.312.673	264-1	3.312.456	331	3.312.517	38	3.312.935
145	3.312.360	428	3.312.434		3.312.674	51	3.312.457	313-11.5	3.312.848	59	3.312.936
334	3.312.361	248-13	3.312.435		3.312.675	77	3.312.458		3.312.849	146.1	3.312.937
450	3.312.362	62	3.312.436		3.312.676	98	3.312.459		3.312.850		3.312.938
768	3.312.363	115	3.312.437	93.5	3.312.677	108	3.312.460		3.312.851	147	3.312.939
215-7	3.312.364	148	3.312.438		3.312.678	127	3.312.461		3.312.852	163	3.312.940
219-98	3.312.365	158	3.312.439		3.312.679	152	3.312.462		3.312.853	166	3.312.941
388	3.312.366	165	3.312.440	94.2	3.312.680	167	3.312.463		3.312.854	168	3.312.942
220-23	3.312.367	176	3.312.441		3.312.681	254	3.312.464		3.312.855	172.5	3.312.943
30.5	3.312.368	188.8	3.312.442		3.312.682	266-19	3.312.465		3.312.856		3.312.944
53	3.312.369	210	3.312.443		3.312.683	36	3.312.466	315-5	3.312.857		3.312.945
91	3.312.370	217	3.312.444		3.312.684	267-1	3.312.467		3.312.858		3.312.946
221-13	3.312.371	223	3.312.445		3.312.685	45	3.312.468		3.312.859		3.312.947
125	3.312.372	229	3.312.446		3.312.686	269-70	3.312.469		3.312.860		3.312.948
39	Re.26.180	239	3.312.447		3.312.687	101	3.312.470	317-5	3.312.861		3.312.949
131	3.312.373	250-41.9	3.312.448		3.312.688	271-4	3.312.471		3.312.862		3.312.950
135	3.312.374	65	3.312.449		3.312.689	10	3.312.472		3.312.863		3.312.951
146	3.312.375	83.3	3.312.450		3.312.690	26	3.312.473		3.312.864		3.312.952
320	3.312.376	203	3.312.451	239.3	3.312.691	272-8	3.312.474		3.312.865		3.312.953
359	3.312.377	213	3.312.452	239.5	3.312.692	82	3.312.475		3.312.866		3.312.954
389	3.312.378	218	3.312.453	247.1	3.312.693	273-26	3.312.476		3.312.867	173	3.312.955
402.13	3.312.723	229	3.312.454	247.2	3.312.694	33	3.312.477		3.312.868		3.312.956
223-96	3.312.379	231	3.312.455		3.312.695	51	3.312.478		3.312.869	173.1	3.312.957
107	3.312.380	247.7	3.312.456		3.312.696	95	3.312.479		3.312.870	174	3.312.958
226-118	3.312.381	248	3.312.457		3.312.697	105	3.312.480		3.312.871		3.312.959
227-73	3.312.382	249.6	3.312.458		3.312.698	106	3.312.481		3.312.872		3.312.960
229-1.5	3.312.383	249.8	3.312.459		3.312.699	149	3.312.482		3.312.873		3.312.961
51	Re.26.185	250	3.312.460		3.312.700	186	3.312.483		3.312.874	174.1	3.312.962
54	3.312.384	252	3.312.461		3.312.701	274-1	3.312.484		3.312.875		3.312.963
73	3.312.385	256.4	3.312.462		3.312.702	277-87	3.312.485		3.312.876	204	3.312.964
230-117	3.312.386	106	3.312.463		3.312.703	280-32.5	3.312.486		3.312.877	213	3.312.965
152	3.312.387	135	3.312.464		3.312.704	405	3.312.487		3.312.878	239	3.312.966
229	3.312.388	149	3.312.465		3.312.705	407	3.312.488		3.312.879	253	3.312.967
233	3.312.389	152	3.312.466		3.312.706	443	3.312.489		3.312.880	274	3.312.968
235-55	3.312.390	301.1	3.312.467		3.312.707	285-12	3.312.490		3.312.881	343-5	3.312.969
60	3.312.391		3.312.468		3.312.708	168	3.312.491		3.312.882	6	3.312.970
	3.312.392		3.312.469		3.312.709	340	3.312.492		3.312.883	6.5	3.312.971
	3.312.393		3.312.470		3.312.710		3.312.493		3.312.884	106	3.312.972
61	3.312.394		3.312.471		3.312.711	287-20.92	3.312.494		3.312.885	117	3.312.973
114	3.312.395		3.312.472		3.312.712	52.05	3.312.495		3.312.886	155	3.312.974
151.34	3.312.812		3.312.473		3.312.713	58	3.312.496		3.312.887	760	3.312.975
152	3.312.813		3.312.474		3.312.714	189.36	3.312.497		3.312.888	767	3.312.976
236-15	3.312.396		3.312.475		3.312.715	292-48	3.312.498		3.312.889	344-49	3.312.977
			3.312.476		3.312.716	153	3.312.499		3.312.890	74	3.312.978
			3.312.477		3.312.717	201	3.312.491		3.312.891	76	3.312.979
			3.312.478		3.312.718	218	3.312.492		3.312.892	139	3.312.980
			3.312.479		3.312.719	218	3.312.493		3.312.893	354-37	3.312.518
			3.312.480		3.312.720	281	3.312.494		3.312.894	161	3.312.519

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D 2-258 :	207,299	8 :	207,315	26 :	207,331		207,346		207,361	8 :	207,376
D 4- 3 :	207,300	D22- 99 :	207,320		207,332	D56- 2 :	207,347	D64- 11 :	207,362	D86- 10 :	207,377
4 :	207,301	D24- 1 :	207,316		207,333	4 :	207,348	D65- 1 :	207,363	D89- 1 :	207,378
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D 9- 2 :	207,303	15 :	207,318		207,335	6 :	207,350		207,365		207,380
6 :	207,304	D29- 1 :	207,319	29 :	207,336	9 :	207,351	D71- 1 :	207,366		207,381
D13- 1 :	207,305	D33- 14 :	207,321	D45- 4 :	207,337		207,352	D72- 1 :	207,367		207,382
	207,306	D34- 5 :	207,322	D48- 20 :	207,338	12 :	207,353		207,368	D91- 1 :	207,383
	207,307		207,323	23 :	207,339	13 :	207,354	D81- 25 :	207,369	D93- 2 :	207,384
D14- 3 :	207,308	15 :	207,324	27 :	207,340	25 :	207,355	D83- 1 :	207,370	4 :	207,385
27 :	207,309		207,325	D49- 6 :	207,341	26 :	207,356	D83- 12 :	207,371	D95- 3 :	207,386
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	207,311	D41- 1 :	207,327	D54- 1 :	207,344	D61- 1 :	207,358	D85- 2 :	207,373	5 :	207,388
	207,312	D42- 7 :	207,328	6 :	207,345	D62- 4 :	207,359		207,374		207,389
	207,313	D44- 4 :	207,329								

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3,312,231	3,312,236	3,312,833	3,312,763	3,312,261	3,311,982
3,312,584	3,312,245	3,312,836	3,312,801	3,312,271	3,312,042
3,312,744	3,312,259	3,312,860	3,312,891	3,312,272	3,312,062
2 : 3,312,238	3,312,282	3,312,861	3,312,921	3,312,289	3,312,147
4 : 3,312,016	3,312,283	3,312,868	3,312,933	3,312,320	3,312,169
3,312,243	3,312,285	3,312,870	3,312,214	3,312,336	3,312,233
3,312,273	3,312,295	3,312,879	3,312,342	3,312,338	3,312,246
5 : 3,312,046	3,312,297	3,312,885	3,312,676	3,312,341	3,312,270
3,312,328	3,312,302	3,312,887	3,312,764	3,312,346	3,312,313
3,312,330	3,312,306	3,312,892	3,312,106	3,312,354	3,312,316
6 : 3,311,922	3,312,307	3,312,897	3,312,237	3,312,355	3,312,417
3,311,929	3,312,344	3,312,907	3,312,011	3,312,364	3,312,442
3,311,943	3,312,352	3,312,916	3,312,019	3,312,370	3,312,625
3,311,956	3,312,382	3,312,919	3,312,025	3,312,385	3,312,812
3,311,966	3,312,392	3,312,927	3,312,159	3,312,399	3,312,857
3,311,983	3,312,402	3,312,944	3,312,220	3,312,406	3,312,936
3,311,985	3,312,423	3,312,951	3,312,255	3,312,412	3,312,172
3,311,988	3,312,426	3,312,952	3,312,280	3,312,419	3,312,386
3,311,989	3,312,431	3,312,954	3,312,293	3,312,420	3,312,471
3,312,001	3,312,446	3,312,956	3,312,348	3,312,445	3,312,274
3,312,002	3,312,453	3,312,959	3,312,425	3,312,463	3,312,972
3,312,003	3,312,466	3,312,962	3,312,917	3,312,486	3,312,044
3,312,004	3,312,467	3,312,963	3,312,974	3,312,493	3,312,257
3,312,013	3,312,477	3,312,968	3,312,976	3,312,497	3,312,343
3,312,017	3,312,479	3,312,971	3,311,955	3,312,498	3,312,357
3,312,028	3,312,480	3,312,973	3,312,083	3,312,508	3,312,362
3,312,031	3,312,482	3,312,975	3,312,117	3,312,538	3,312,373
3,312,032	3,312,490	3,311,921	3,312,300	3,312,559	3,312,435
3,312,033	3,312,503	3,311,945	3,312,361	3,312,560	3,312,459
3,312,040	3,312,518	3,312,039	3,312,920	3,312,605	3,312,756
3,312,047	3,312,540	3,312,265	3,312,045	3,312,641	3,311,928
3,312,068	3,312,566	3,312,404	3,311,933	3,312,648	3,312,080
3,312,093	3,312,593	3,312,615	Re.26,180	3,312,717	3,312,087
3,312,097	3,312,673	3,312,903	3,311,942	3,312,724	3,312,088
3,312,098	3,312,737	3,311,950	3,311,949	3,312,734	3,312,184
3,312,099	3,312,754	3,311,962	3,311,969	3,312,766	3,312,232
3,312,107	3,312,761	3,312,006	3,311,973	3,312,803	3,312,234
3,312,118	3,312,768	3,312,111	3,311,977	3,312,805	3,312,244
3,312,120	3,312,770	3,312,128	3,311,981	3,312,809	3,312,251
3,312,127	3,312,772	3,312,181	3,312,009	3,312,839	3,312,468
3,312,139	3,312,776	3,312,199	3,312,010	3,312,844	3,312,873
3,312,141	3,312,788	3,312,200	3,312,061	3,312,888	3,312,874
3,312,143	3,312,792	3,312,204	3,312,095	3,312,896	3,311,957
3,312,154	3,312,798	3,312,407	3,312,119	3,312,908	3,312,561
3,312,161	3,312,815	3,312,536	3,312,126	3,312,910	3,312,565
3,312,176	3,312,821	3,312,572	3,312,158	3,312,925	3,312,602
3,312,197	3,312,826	3,312,579	3,312,182	3,312,928	3,312,711
3,312,201	3,312,827	3,312,616	3,312,183	3,312,980	3,312,726
3,312,206	3,312,831	3,312,617	3,312,215	Re.26,185	3,312,049
					3,312,564

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	3,312,116		3,312,500		3,312,691		3,312,702		3,312,797	43 :	3,312,195
	3,312,258		3,312,502		3,312,692		3,312,708		3,312,845	44 :	3,312,171
	3,312,358		3,312,509		3,312,722		3,312,747		3,312,876		3,312,496
	3,312,422		3,312,520		3,312,738		3,312,759		3,312,877	45 :	3,312,775
	3,312,469		3,312,567		3,312,751		3,312,767		3,312,884		3,312,256
	3,312,485		3,312,574		3,312,762		3,312,778		3,312,926		3,312,405
	3,312,530		3,312,587		3,312,771		3,312,779		3,312,939		3,312,568
	3,312,611		3,312,588		3,312,780		3,312,783		3,312,977		3,312,643
	3,312,628		3,312,607		3,312,790		3,312,786	40 :	Re.26,186		3,312,757
	3,312,629		3,312,664		3,312,794		3,312,825		3,312,279	46 :	3,312,427
	3,312,630		3,312,706		3,312,838		3,312,843		3,312,281	47 :	3,311,997
	3,312,631		3,312,758		3,312,864		3,312,847		3,312,418		3,312,059
	3,312,632		3,312,862		3,312,865		3,312,854		3,312,649		3,312,534
	3,312,633		3,312,872		3,312,866		3,312,855		3,312,663		3,312,652
	3,312,693		3,312,893		3,312,867		3,312,856		3,312,680		3,312,665
	3,312,740	27 :	3,311,991		3,312,901		3,312,859		3,312,765		3,312,670
	3,312,882		3,312,109		3,312,905		3,312,871	41 :	3,312,162		3,312,675
	3,312,943		3,312,110		3,312,912		3,312,881		3,312,229		3,312,686
	3,312,949		3,312,156		3,312,935		3,312,889		3,312,266		3,312,741
	3,312,958		3,312,194		3,312,942		3,312,900		3,312,769		3,312,849
25 :	3,311,934		3,312,235		3,312,947		3,312,906		3,312,810	48 :	3,311,924
	3,311,936		3,312,250		3,312,950		3,312,914		3,312,850		3,312,069
	3,311,938		3,312,263		3,312,960		3,312,915	42 :	Re.26,187		3,312,113
	3,311,958		3,312,333		3,312,961		3,312,932		3,311,937		3,312,131
	3,311,967		3,312,365		3,312,964		3,312,945		3,311,946		3,312,268
	3,311,992		3,312,394		3,312,965		3,312,946		3,311,965		3,312,278
	3,311,999		3,312,400		3,312,979		3,312,948		3,312,007		3,312,294
	3,312,000		3,312,563	35 :	3,311,923		3,312,955		3,312,014		3,312,296
	3,312,005		3,312,799	36 :	Re.26,181		3,312,957		3,312,027		3,312,339
	3,312,193		3,312,894		Re.26,182		3,312,967		3,312,036		3,312,506
	3,312,209	28 :	3,312,380		3,311,925	37 :	3,311,935		3,312,041		3,312,671
	3,312,223	29 :	3,311,971		3,311,941		3,311,953		3,312,054		3,312,687
	3,312,239		3,312,178		3,311,959		3,311,980		3,312,063		3,312,718
	3,312,260		3,312,191		3,311,987		3,312,029		3,312,064		3,312,748
	3,312,277		3,312,398		3,311,995		3,312,198		3,312,077		3,312,820
	3,312,315		3,312,505		3,311,996		3,312,224		3,312,122		3,312,823
	3,312,372		3,312,523		3,312,012		3,312,332		3,312,157		3,312,848
	3,312,383		3,312,571		3,312,056		3,312,730		3,312,180		3,312,934
	3,312,414		3,312,613		3,312,065		3,312,760		3,312,190		3,312,978
	3,312,429		3,312,619		3,312,072		3,312,802		3,312,196	49 :	3,312,150
	3,312,448		3,312,623		3,312,081		3,312,803		3,312,203		3,312,526
	3,312,474		3,312,645		3,312,086		3,312,806		3,312,213	50 :	3,312,290
	3,312,512		3,312,668		3,312,102		3,311,960		3,312,241	51 :	3,312,089
	3,312,682		3,312,713		3,312,105		3,311,970		3,312,334		3,312,101
	3,312,732		3,312,814		3,312,121		3,311,978		3,312,337		3,312,226
	3,312,773		3,312,902		3,312,133		3,311,979		3,312,376		3,312,276
	3,312,781	30 :	3,312,288		3,312,137		3,312,008		3,312,387		3,312,368
	3,312,800		3,312,750		3,312,164		3,312,034		3,312,390		3,312,470
	3,312,811	31 :	3,311,998		3,312,165		3,312,134		3,312,396		3,312,576
	3,312,828		3,312,473		3,312,166		3,312,135		3,312,397		3,312,639
	3,312,837		3,312,488		3,312,170		3,312,136		3,312,403		3,312,714
	3,312,842		3,312,547		3,312,174		3,312,153		3,312,409		3,312,735
	3,312,853	33 :	3,312,510		3,312,216		3,312,155		3,312,438		3,312,777
	3,312,880	34 :	Re.26,184		3,312,219		3,312,160		3,312,457		3,312,784
	3,312,913		3,311,940		3,312,242		3,312,217		3,312,462		3,312,787
	3,312,941		3,311,947		3,312,291		3,312,225		3,312,472	53 :	3,311,932
	3,312,953		3,311,952		3,312,317		3,312,247		3,312,481		3,312,327
26 :	3,311,930		3,311,976		3,312,318		3,312,248		3,312,494		3,312,432
	3,311,948		3,312,037		3,312,322		3,312,267		3,312,527		3,312,487
	3,311,994		3,312,074		3,312,325		3,312,284		3,312,528	54 :	3,311,972
	3,312,058		3,312,076		3,312,366		3,312,298		3,312,535		3,312,292
	3,312,060		3,312,100		3,312,375		3,312,310		3,312,546		3,312,522
	3,312,090		3,312,130		3,312,379		3,312,331		3,312,557		3,312,589
	3,312,123		3,312,145		3,312,384		3,312,347		3,312,558		3,312,674
	3,312,187		3,312,167		3,312,408		3,312,363		3,312,575		3,312,729
	3,312,189		3,312,186		3,312,413		3,312,367		3,312,583		3,312,753
	3,312,210		3,312,228		3,312,428		3,312,369		3,312,624	55 :	3,311,990
	3,312,211		3,312,262		3,312,434		3,312,401		3,312,677		3,312,149
	3,312,269		3,312,274		3,312,439		3,312,424		3,312,721		3,312,175
	3,312,305		3,312,326		3,312,444		3,312,441		3,312,727		3,312,188
	3,312,308		3,312,335		3,312,451		3,312,449		3,312,736		3,312,218
	3,312,309		3,312,371		3,312,460		3,312,483		3,312,749		3,312,286
	3,312,311		3,312,562		3,312,465		3,312,484		3,312,793		3,312,299
	3,312,314		3,312,580		3,312,495		3,312,539		3,312,795		3,312,301
	3,312,321		3,312,594		3,312,519		3,312,541		3,312,807		3,312,324
	3,312,340		3,312,612		3,312,532		3,312,544		3,312,818		3,312,433
	3,312,345		3,312,621		3,312,549		3,312,548		3,312,819		3,312,542
	3,312,349		3,312,634		3,312,550		3,312,569		3,312,851		3,312,600
	3,312,350		3,312,636		3,312,553		3,312,570		3,312,852		3,312,601
	3,312,351		3,312,640		3,312,555		3,312,618		3,312,863		3,312,716
	3,312,353		3,312,642		3,312,573		3,312,626		3,312,878		3,312,723
	3,312,374		3,312,646		3,312,585		3,312,627		3,312,895		3,312,806
	3,312,377		3,312,656		3,312,593		3,312,637		3,312,898		3,312,808
	3,312,440		3,312,657		3,312,598		3,312,653		3,312,918		3,312,922
	3,312,454		3,312,669		3,312,599		3,312,654		3,312,929		3,312,923
	3,312,461		3,312,681		3,312,610		3,312,678		3,312,930		3,312,924
	3,312,489		3,312,683		3,312,622		3,312,679		3,312,931	56 :	3,312,436
	3,312,491		3,312,685		3,312,650		3,312,709		3,312,969		

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U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
April 4, 1967 Volume 837 Number 1

TRADEMARKS NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 82,124 (WALTHAM), Waltham Watch Company, Watches, watchcases, watch-movements, and parts thereof; Reg. No. 86,188 (AMERICAN WALTHAM AND DESIGN), same, Watches and parts of watches; Reg. No. 114,912 (WALTHAM AND DESIGN), same, Watches, watchcases, all parts of watches and watch-movements; Reg. No. 130,487, same, Watch materials—namely, all parts of a watch,

watches, and watchcases; Reg. No. 230,678, same, Watches and parts thereof; Reg. No. 311,103 (WALTHAM WATCHES AND DESIGN), same; Reg. No. 401,424 (WALTHAM PREMIER), same, Watches, clocks, chronometers, watch cases, clock cases, and parts of each of the foregoing; Reg. No. 431,380 (WALTHAM AND DESIGN), Watches; Reg. No. 700,921, (DESIGN SIMULATING W), same, filed Apr. 20, 1966, D.C., S.D.N.Y., Doc. 66/1118, *Waltham Watch Co. v. Edward A. Waldman et al.* Consent judgment in favor of plaintiff Feb. 1, 1967.

CONDITION OF TRADEMARK APPLICATIONS AS OF FEBRUARY 28, 1967

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]..... 17,447
Date of oldest new application..... Jan. 13, 1966
Date of oldest amended application (filing date)..... May 13, 1963

C. M. WENDT, Director, Trademark Examining Operation		Oldest Application	
TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION		New	Amended
(I) L. J. BETTENDORF, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44.....		1-21-66	7-30-64
(II) F. H. WETHERBEE, Classes 1, 3, 6, 7, 9, 10, 18, 22, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B.....		1-13-66	5-13-63
Renewals (All Classes).....		1-24-67
Sec. 12 (c) Publications (All Classes).....		1-31-67

Applications filed during the month of February 1967—2,064

Registration Issued 427—No. 826,612 to No. 827,038
Renewals Issued 80

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, \$12.00 per annum, foreign mailing \$4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105. A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 208,803. The H. R. Nicholson Company, Baltimore, Md. Filed Dec. 21, 1964. SN 226,480. Tiger Fabrics, Inc., New York, N.Y. Filed Aug. 25, 1965.

Bombay

Owner of Reg. No. 546,453.

Class 45—Soft Drinks and Carbonated Waters
For Lemonade Bases.

Class 46—Foods and Ingredients of Foods

For Fruit Juice Bases and Concentrates for Making Food Beverages.

First use Nov. 21, 1949.

SN 219,997. Kidder, Peabody & Co. Incorporated, New York, N.Y. Filed May 28, 1965.

Kidder, Peabody & Co. INCORPORATED

No registration rights are claimed for the notation "Kidder, Peabody & Co. Incorporated" apart from the mark as shown.

Class 100—Miscellaneous

For Advisory and Research Services in the Field of Investments.

Class 101—Advertising and Business

For Providing of Technical Assistance in Various Fields of Finance.

Class 102—Insurance and Financial

For Stock Brokerage Services.

First use Mar. 26, 1965.

SN 222,036. Roger W. Kent Company, Inc., d.b.a. Carpet Lease Maintenance, Quincy, Mass. Filed June 25, 1965.

C L M

Class 100—Miscellaneous

For Carpet Leasing Services.

Class 103—Construction and Repair

For Carpet Cleaning Services.

First use Apr. 26, 1965.

TM 2

TIGER THINGS



Class 2—Receptacles

For Accordion Files, Desk Baskets, Memo Boxes, Pencil Cups, Perfume Trays, Soap Dishes, Storage Boxes, Tissue Box Covers, Tonic Trays, Waste Paper Baskets, and Napkin Holders.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Beach Bags, Carry Alls, Coin Purses, Toilet Kits, Handbags, Luggage, and Purses.

Class 8—Smokers' Articles, Not Including Tobacco Products

For Ash Trays, Cigarette Holders, and Cigarette Lighters.

Class 32—Furniture and Upholstery

For Cushions, Picture Frames, and Photo Frames.

Class 39—Clothing

For Kerchiefs.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Bedspreads, Boxed Placemats, Shelf Liners, Shower Curtains, Tablecloths, Valances, Wall Coverings, and Window Drapes, and Fabrics for Making Into These Goods.

Class 50—Merchandise Not Otherwise Classified

For Pot Holders.

First use Sept. 15, 1964.

SN 229,268. National Appliance Company, Portland, Oreg. Filed Oct. 4, 1965.

National

Class 26—Measuring and Scientific Appliances

For Biological Incubators.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Controlled Environmental Laboratory Apparatus—Namely, Vacuum Ovens and Drying and Sterilizing Ovens.

First use July 22, 1965.

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SN 229,440. McKesson & Robbins, Incorporated, d.b.a. American Sun Mark Company, New York, N.Y. Filed Oct. 6, 1965.

SN 233,091. Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Bruning, Frankfurt am Main, Germany. Filed Nov. 22, 1965.



Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical and Electronic Products—Namely, Radios, Lamps, Electric Blankets, and Batteries.

Class 36—Musical Instruments and Supplies

For Tape Recorders.

First use at least as early as Sept. 14, 1964.

SN 230,330. Wall Trends, Inc., Brooklyn, N.Y. Filed Oct. 15, 1965.



Class 20—Linoleum and Oiled Cloth

For Wall Covering Comprising Fabric-Back Vinyl, Grass Cloth, Paper-Back Vinyl, Silks, and the Like.

Class 37—Paper and Stationery

For Wallpaper.

First use Dec. 1, 1964.

SN 232,970. Morrie Chaitlen, d.b.a. C. & E. Marshall Co., Chicago, Ill. Filed Nov. 19, 1965.

PEERLESS

Class 4—Abrasives and Polishing Materials

For Abrasive Cloth and Abrasive Cones.

Class 6—Chemicals and Chemical Compositions

For Alcohol Lamp Fluid.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Watchmakers' and Jewelers' Tools and Machines, Including Tweezers, Saw Blades, Lathes, Lathe Chucks, Polishing Machines, Dust Collecting Machines, Watch Cleaning Machines, and Ultrasonic Cleaning Machines.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Soldering Machines.

Class 52—Detergents and Soaps

For Watch Cleaning Solution, Watch Rinsing Solution, Watch Cleaning Solvent, and Hair Spring Cleaner.

First use on or about Feb. 1, 1936.

Schapira

Owner of German Reg. No. 749,938, dated Apr. 8, 1961.

Class 1—Raw or Partly Prepared Materials

For Synthetic Spinnable Fibers and Filaments.

Class 39—Clothing

For Hats, Caps and Hoods; Hosiery, Lingerie, Corsets and Girdles, Underpants, Undershirts; Neckties, Shirts, Socks, Gloves, Boots, Booties, Galoshes, Rubbers, Sandals, Slippers, Moccasins, and Sneakers.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Woven and Knitted Fabrics, Partly or in Whole of Synthetic Materials, and Table and Bed Linen.

Class 43—Thread and Yarn

For Yarns.

SN 234,699. General Wax & Candle Co., North Hollywood, Calif. Filed Dec. 14, 1965.



Applicant disclaims the words "Wax" and "Candle," and the representation of the candle at the top of the design and mark.

Class 15—Oils and Greases

For Candles, Candles Pre-Formed in Glass Containers, Decorative Wax Candles in Glass Containers, Perfumed Candles, and Religious Candles in Glass.

First use Oct. 15, 1965.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Candle Holders, Self-Contained Wax Garden Lights, Glass Holders for Wax Tapers, and Wax French Tapers.

First use Sept. 22, 1965.

SN 235,084. Robins Industries Corp., Flushing, N.Y. Filed Dec. 22, 1965.



The mark consists of the representation of a dancing girl. Owner of Reg. No. 640,988.

Class 12—Construction Materials

For Fiber Glass Acoustic Insulation Material.
First use May 1960.

Class 21—Electrical Apparatus, Machines, and Supplies

For Tape Recorder Head Demagnetizers and Indoor Antennas.
First use June 1958.

Class 36—Musical Instruments and Supplies

For Cutters and Splicers for Recording Tapes; and Non-Electrical Accessories, Repair and Replacement Parts for Use in the Servicing and Maintenance of Tapes, Tape Recorders, Phonograph Records, and Phonograph Record Players.
First use 1954.

SN 235,725. Spot Welding Products, Inc., Forest Park, Ill.
Filed Dec. 30, 1965.

**Class 14—Metals and Metal Castings and Forgings**

For Copper and Copper Alloy Bar Stock and Copper and Copper Alloy Castings.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Seam Welding Wheels, Portable Gun Jaw Extension, Electrode Holders, Resistance Welding Dies, Resistance Welding Die Inserts, and Spotwelding Tips.
First use Nov. 26, 1965.

SN 236,843. Rocky Cycle Co., Inc., Redwood City, Calif.
Filed Jan. 19, 1966.



Applicant disclaims the words "Motorcycle," "Parts," and "Accessories."

Class 21—Electrical Apparatus, Machines, and Supplies

For Batteries and Electric Lights.

Class 35—Beking, Hose, Machinery Packing, and Non-metallic Tires

For Motorcycles; Parts and Accessories—Namely, Tires and Tubes.
First use Sept. 15, 1962.

SN 237,403. Trans World Airlines, Inc., New York, N.Y.
Filed Jan. 26, 1966.

MARKETAIR

Owner of Reg. No. 747,974.

Class 100—Miscellaneous

For Advising Business Firms as to the Best Means To Expand Their Markets.

Class 105—Transportation and Storage

For Air Transportation of Persons, Property, and Mail.
First use Sept. 10, 1964.

SN 241,216. Monsanto Company, St. Louis, Mo. Filed Mar. 17, 1966.

ASTROTURF

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Surface Coverings of Fibers or Filaments for Indoor and Outdoor Use.

Class 50—Merchandise Not Otherwise Classified

For Man-Made Grasses of Fibers and Filaments.
First use at least as early as Mar. 12, 1966.

SN 242,780. Season-All Industries, Inc., Indiana, Pa. Filed Apr. 6, 1966.

SEASON-ALL

Owner of Reg. No. 556,390.

Class 12—Construction Materials

For Aluminum Construction Products for Home and Industry—Namely, Doors, Windows and Screens; Combination Storm and Screen Windows and Doors; Self-Storing Combination Storm and Screen Windows and Doors; Jalousie Windows and Doors; Casement Windows; Insulated Dual Pane Windows and Doors; Sliding Glass Doors; Ornamental Railing; Columns and Accessories; Siding; Awnings; Shutters; and Associated Hardware.
First use September 1947.

Class 14—Metals and Metal Castings and Forgings

For Electrostatic and Painted Finishes on Metal Parts of Aluminum and Aluminum Alloys in Cast and Extruded Forms.
First use April 1962.

SN 243,327. Management Assistance Inc., New York, N.Y.
Filed Apr. 13, 1966.



The representation of the globe is disclaimed apart from the mark as shown. Owner of Reg. No. 766,691.

Class 100—Miscellaneous

For Leasing Data Processing Equipment.

Class 103—Construction and Repair

For Servicing Data Processing Equipment.
First use Dec. 22, 1965.

SN 244,862. Heavenly Creations, Inc., Norfolk, Va. Filed May 4, 1966.

Heavenly Hair

The word "Hair" is disclaimed apart from the mark as shown.

Class 29—Brooms, Brushes, and Dusters

For Brushes for Wigs and Hair Pieces.

Class 40—Fancy Goods, Furnishings, and Notions

For Hair Tresses.
First use August 1964.

SN 245,540. Ameco, Inc., Phoenix, Ariz. Filed May 13, 1966.

**Class 100—Miscellaneous**

For Engineering and Designing Community Antenna Television Equipment.

Class 103—Construction and Repair

For Constructing, Maintaining, and Operating Community Antenna Television Equipment.
First use Jan. 18, 1964.

SN 246,381. Soft Sheen Products, Inc., Chicago, Ill. Filed May 23, 1966.

SOFT SHEEN

Class 51—Cosmetics and Toilet Preparations

For Hair and Scalp Conditioner, Pressing Creams and Oils, Preparation for Holding Curls, and Bubble Bath Oil.
First use during January 1962.

Class 52—Detergents and Soaps

For Hair Shampoo.
First use During May 1964.

SN 246,406. Union Tank Car Company, Chicago, Ill. Filed May 23, 1966.

LINDSAY

Owner of Reg. Nos. 752,957, 753,814, and 769,155.

Class 6—Chemicals and Chemical Compositions

For Salt for Recharging Water Softeners.
First use 1954.

Class 31—Filters and Refrigerators

For Water Treating Chemicals—Namely, Ion Exchange Resin, Greensand, Activated Carbon, Acid Neutralizer, Acid Iron Solvent, Red Flint Sand, and Torpedo Gravel.
First use 1946.

SN 248,491. Eli Lilly and Company, Indianapolis, Ind. Filed June 20, 1966.

EVER PREEN

Class 6—Chemicals and Chemical Compositions

For Combination Herbicide and Fertilizer.

Class 10—Fertilizers

For Fertilizer.
First use June 10, 1966.

SN 253,403. Jean Nate, Inc., New York, N.Y. Filed Aug. 30, 1966.

J. N.

Owner of Reg. Nos. 299,041, 786,930, and others.

Class 51—Cosmetics and Toilet Preparations

For After Bath Lotion, Bath Crystals, Hand Lotion, Bath Oil, Bath Powder, Talc, Bath Bubbles, After Shave Lotion, Personal Deodorant, and Cologne.

Class 52—Detergents and Soaps

For Bath Soap.
First use at least as early as 1935.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 249,924. S. C. Johnson & Son, Inc., Racine, Wis. Filed July 11, 1966.

SN 208,819. Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, assignee, by mesne assignment, of Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Bruning, Frankfurt am Main, Germany. Filed Dec. 24, 1964.

ARISTOFLEX

Owner of German Reg. No. 726,819, dated Aug. 2, 1956.
For Synthetic Resins Used in the Manufacture of Hair-Setting Lotions.

ACRYSCOPE

Owner of Reg. Nos. 753,520 and 760,868.
For Organic Addition Polymer of the Acrylic Type, and Synthetic Resins.
First use Oct. 11, 1965.

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SN 250,679. Pennsalt Chemicals Corporation, Philadelphia, Pa. Filed July 20, 1966.

KYNAR 500

Owner of Reg. No. 723,719.
For Vinylidene Fluoride Resin Base for Long Life Liquid Finishes.
First use December 1964.

SN 250,824. Cudahy Tanning Co., Inc., Cudahy, Wis. Filed July 22, 1966.

RUMPLESKIN

For Leather.
First use on or about Jan. 3, 1961.

SN 250,825. Cudahy Tanning Co., Inc., Cudahy, Wis. Filed July 22, 1966.

ADVENTURER

For Leather.
First use on or about Jan. 5, 1961.

SN 250,826. Cudahy Tanning Co., Inc., Cudahy, Wis. Filed July 22, 1966.

CUDDY

For Leather.
First use on or about Jan. 3, 1961.

SN 253,950. American Enka Corporation, Enka, N.C. Filed Sept. 7, 1966.

ENCRON

Owner of Reg. Nos. 409,392, 797,927, and others.
For Staple Fiber.
First use Aug. 24, 1966.

Class 2 — Receptacles

SN 226,649. Lamson Corporation, Syracuse, N.Y. Filed Aug. 27, 1965.

LAMSON
Selectray

For Boxes Moulded of Auto-Clavable Plastic Material Used for the Transportation and Storage of Items in Hospitals.
First use Feb. 10, 1965.

SN 233,887. David Douglas & Co., Inc., Manitowoc, Wis. Filed Dec. 3, 1965.

ACCA

For Plastic Tableware.
First use June 1, 1965.

SN 237,491. Sealright Co., Inc., Fulton, N.Y. Filed Jan. 27, 1966.

VARI-PAK

For Disposable Plastic Food Containers.
First use Feb. 9, 1965.

SN 240,421. Dowlite, Inc., Detroit Lakes, Minn. Filed Mar. 8, 1966.

DOWLITE

For Burial Containers.
First use Apr. 28, 1965.

SN 240,698. American Vault & Concrete Products Corp., Detroit, Mich. Filed Mar. 11, 1966.

CORONATION SUPREME

Owner of Reg. No. 690,036.
For Concrete Burial Vaults.
First use on or about Jan. 1, 1959.

SN 247,501. J. Gross & Son, Inc., Philadelphia, Pa. Filed June 7, 1966.

SPOOLTAINER

For Containers for Sewing Thread.
First use on or about Aug. 1, 1964.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 248,073. Weight Watchers International, Inc., Forest Hills, N.Y. Filed June 14, 1966.

HANDI-PAK

For Pocket Portfolios.
First use May 3, 1966.

SN 248,163. Regal Bag Corporation, Newburgh, N.Y. Filed June 15, 1966.

HIP-STERS

For Ladies' Handbags.
First use on or about Apr. 25, 1966.

SN 248,638. Fred Seltzer Corporation, d.b.a. Tiara, Chicago, Ill. Filed June 21, 1966.

SHEFFIELD

For Leather Wallets, Key Cases, Ladies' Purses, and Pocket Secretaries.
First use May 26, 1965, on leather wallets.

SN 248,742. Fred Seltzer Corporation, d.b.a. Tiara, Chicago, Ill. Filed June 22, 1966.

PRINCETON

For Leather Wallets, Key Cases, Ladies' Purses, and Pocket Secretaries.
First use May 26, 1965, on leather wallets.

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Class 6 — Chemicals and Chemical Compositions

SN 237,640. Prentiss Drug & Chemical Co., Inc., New York, N.Y. Filed Feb. 1, 1966.

PRENTOX

Owner of Reg. No. 333,181.
For Household, Garden and Agricultural Insecticides; Rodenticides; and Household and Industrial Deodorants.
First use June 1, 1935.

SN 237,751. Sifers Chemicals, Inc., Iola, Kans. Filed Feb. 1, 1966.

WAR

For Household Insect Spray.
First use Nov. 29, 1965.

SN 238,383. The Ansul Company, Marinette, Wis. Filed Feb. 9, 1966.

SILVISAR

For Agricultural Chemicals—Namely, Tree and Brush Killers.
First use Dec. 21, 1965.

SN 238,523. Sam Goldberg, d.b.a. San-Co Products, Houston, Tex. Filed Feb. 10, 1966.



For Preparation Used as a Bactericide-Deodorant for Industrial Use.
First use February 1948.

SN 244,836. The McBee Laboratory, Bozeman, Mont. Filed May 3, 1966.

ANAEROL

For Bacteriological Culture Medium.
First use Oct. 12, 1965.

SN 246,978. Wood Treating Chemicals Co., St. Louis, Mo. Filed May 31, 1966.



For Chemical Wood Preservatives, Water Repellents, Insecticides, Herbicide and Soil Poisons.
First use at least as early as July 1953.

SN 169,594. Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, assignee, by mesne assignments, of Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany. Filed May 20, 1963.

HOSTAPHAT

Owner of German Reg. No. 672,472, dated Jan. 8, 1955; and U.S. Reg. Nos. 661,236, 748,613, and others.
For Organic Phosphoric Acid Derivatives Useful as Base Materials, Emulsifiers, and Anti-Static Agents in Cosmetic Preparations.

SN 216,071. Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, assignee, by mesne assignments, of Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany. Filed Apr. 8, 1965.

NOVOFIL

Owner of German Reg. No. 621,887, dated Dec. 14, 1950.
For Coal Tar Dyestuffs.

SN 223,529. Central O-B Products Co., Inc., Buffalo, N.Y. Filed July 16, 1965.

KIL-O-MIST

For Insecticide.
First use August 1955.

SN 235,980. Holland-Suco Color Company, Holland, Mich. Filed Jan. 7, 1966.

MACATAWA

For Pigments.
First use as early as September 1949.

SN 235,981. Holland-Suco Color Company, Holland, Mich. Filed Jan. 7, 1966.

HOLLWAY

For Pigments.
First use as early as December 1943.

SN 236,604. Holland-Suco Color Company, Holland, Mich. Filed Jan. 17, 1966.

BIG MAC

For Pigments.
First use as early as May 1963.

SN 237,329. General Aniline & Film Corporation, New York, N.Y. Filed Jan. 26, 1966.

LINATRACE

Owner of Reg. No. 729,403.
For Photographic Chemicals for Processing Exposed Photographic Paper.
First use Jan. 12, 1965.

SN 250,607. Union Oil Company of California, Los Angeles, Calif. Filed July 19, 1966.

one-fill

For Compositions for Preventing Freezing and Overheating in Internal Combustion Engine Cooling Systems.
First use on or about Oct. 15, 1946.

SN 250,976. Kennecott Copper Corporation, New York, N.Y. Filed July 25, 1966.

KOCIDE

For Wettable Powder Agricultural Fungicides.
First use June 7, 1966.

SN 251,364. American-Lincoln Corporation, Toledo, Ohio. Filed Aug. 1, 1966.

AMERDIS-F

For Disinfectant-Deodorant for Use in Germicidal Filters.
First use Aug. 19, 1965.

SN 251,366. Armour Pharmaceutical Company, Chicago, Ill. Filed Aug. 1, 1966.

RESEPTASE

For Enzyme Preparations for Use in Liquefying and Digesting Solids in Septic Tanks, Cesspools, and Drainage Systems.
First use on or prior to July 19, 1966.

SN 253,744. FMC Corporation, New York, N.Y. Filed Sept. 2, 1966.

FURADAN

For Insecticides.
First use July 22, 1966.

SN 254,325. Southwestern Hamus, Inc., Midland, Tex. Filed Sept. 12, 1966.

AGMARK

For Agricultural Dye.
First use Aug. 30, 1966.

SN 254,453. Kaspar Winkler & Co., Zurich, Switzerland. Filed Sept. 14, 1966.

FRIOPLAST

For Chemical Products for Addition to Cement, Plaster, and Concrete, and for the Improvements of the Properties of Cement, Plaster, and Concrete, Particularly for Improving Their Resistance to Frost and/or Cold.
First use May 27, 1947; in commerce in or about 1964.

SN 254,454. Kaspar Winkler & Co., Zurich, Switzerland. Filed Sept. 14, 1966.

PLASTAIR

For Chemical Products for Addition to Cement, Plaster, and Concrete, and for the Improvement of the Properties of Cement, Plaster, and Concrete, Particularly for Improving Their Resistance to Frost and/or Cold.
First use Oct. 8, 1957; in commerce on or about Oct. 8, 1960.

SN 254,455. Kaspar Winkler & Co., Zurich, Switzerland. Filed Sept. 14, 1966.

RUGASOL

For Preparations To Be Applied to the Surface of Plaster, Concrete, Cast Stone or Forms Therefor, for Retarding the Setting and Facilitating the Roughening of the Concrete or Cast Stone Surfaces so Treated.
First use May 3, 1947; in commerce in or about 1956.

SN 259,638. O. D. Berry, d.b.a. Sunshine Cleaners, Deming, N. Mex. Filed Nov. 29, 1966.

SILATEX

For Chemical Additive Used in Dry Cleaning To Impart a Coating to the Fabric.
First use at least as early as Aug. 15, 1962.

Class 7 - Cordage

SN 245,209. Lion Ribbon Company, Inc., New York, N.Y. Filed May 9, 1966.

STAY-PUT

For Ribbons.
First use in or before January 1964.

SN 248,344. N.V. Lankhorst Toufabrieken, Sneek, Netherlands. Filed June 17, 1966.

BLACK TULIP

For Twine and Cordage.
First use 1954; in commerce 1954.

SN 248,345. N.V. Lankhorst Toufabrieken, Sneek, Netherlands. Filed June 17, 1966.

WOODEN SHOE

For Twine and Cordage.
First use 1962; in commerce 1962.

Class 8 - Smokers' Articles, Not Including Tobacco Products

SN 242,810. S. M. Frank & Co., Inc., New York, N.Y. Filed Apr. 6, 1966.

DUROBIT

For Smokers' Pipes.
First use Mar. 22, 1966.

Class 9 - Explosives, Firearms, Equipments, and Projectiles

SN 228,771. UMC Industries, Inc., St. Louis, Mo., by change of name from Universal Match Corporation, St. Louis, Mo. Filed Sept. 27, 1965.

UMC

For Book Matches.
First use February 1964.

Class 10 - Fertilizers

SN 238,475. Herman M. Zeldman, d.b.a. Fab-U-Gro Gardening Company, Reading, Pa. Filed Feb. 9, 1966.

FAB-U-GRO

For Liquid Fertilizer.
First use Jan. 19, 1966.
Subj. to Intf. with SN 240,488.

SN 240,488. Farm Bureau Association, Waltham, Mass. Filed Feb. 7, 1966.

FABU-GRO

For Liquid Fertilizer.
First use at least as early as Oct. 27, 1965.
Subj. to Intf. with SN 238,475.

SN 248,488. Eli Lilly and Company, Indianapolis, Ind. Filed June 20, 1966.

GREEN POWER

For Lawn Fertilizer.
First use June 10, 1966.

Class 12 - Construction Materials

SN 219,932. United States Gypsum Company, Chicago, Ill. Filed May 27, 1965.

COVER COAT

For Drywall Compound for Concrete Surfaces.
First use as early as November 1948.

SN 238,888. Pascoe Steel Corporation, Pomona, Calif. Filed Feb. 15, 1966.

PASCOE

For Fabricated Metal Products Consisting of Preengineered Metal Buildings and Component Parts.
First use Oct. 2, 1964.

SN 242,211. H L Birum Corporation, Lambertville, N.J. Filed Mar. 30, 1966.

H L BIRUM Corporation

The term "Corporation" is disclaimed as part of the mark.
For Interior and Exterior Curtain Wall Assemblies and Accessories Sold as a Unit Therefor.
First use March 1962.

SN 244,815. The Evans Brick and Pipe Company, Inc., Uhrichville, Ohio. Filed May 8, 1966.

TEBCO

Owner of Reg. No. 823,281.
For Brick Used in Construction of Buildings, Kilns, and the Like.
First use in or about February 1937.

SN 258,745. The Philip Carey Manufacturing Company, Cincinnati, Ohio. Filed Nov. 16, 1966.

AWP

For Flashing Cement for Use in Constructing and Repairing Flashings of Built-Up Roofs, Skylights, and the Like.
First use Aug. 15, 1966.

Class 13 - Hardware and Plumbing and Steam-Fitting Supplies

SN 233,303. American Radiator & Standard Sanitary Corporation, New York, N.Y. Filed Nov. 26, 1965.

DUO FLOW

For Thermostatically-Operated Valves for Controlling Hot and Cold Water Flows Through Room Heat Exchange Units.
First use Sept. 9, 1958.

SN 245,052. American Dispenser Company, Inc., New York, N.Y. Filed May 6, 1966.

PEDISHELF

For Soap Dispenser.
First use April 1966.

SN 260,068. North Point, Inc., Baltimore, Md. Filed Dec. 5, 1966.

NIP

For Plastic Pipes.
First use on or about Aug. 31, 1966.

Class 17 - Tobacco Products

SN 243,285. General Cigar Co., Inc., New York, N.Y. Filed Mar. 25, 1966.

DON SEBASTIAN

For Cigars.
First use May 1922.

Class 18—Medicines and Pharmaceutical Preparations

SN 209,386. B. F. Ascher & Company, Inc., Kansas City, Mo. Filed Jan. 6, 1965.

BUREN

For Urinary Analgesic.
First use Dec. 18, 1964.

SN 243,403. Bradley Products Company, Chicago, Ill. Filed Apr. 14, 1966.



For Animal Health and Veterinary Products—Namely, Hog Cholera Antibody Concentrate; Granules Containing Liver, Iron and Folic Acid; Anti-Anemia Preparation; Protective Wound Treatment; Hog Cholera Vaccine; Iron Pellets; Anti-Hog Cholera Serum; Erysipelas Bacteria and Vitamin-Mineral Tablets.
First use on or prior to Oct. 26, 1965.

SN 244,009. Nejo Pharmacal, Inc., Houston, Tex. Filed Apr. 21, 1966.

HISTALONES

For Antihistaminic Decongestants.
First use at least as early as Jan. 11, 1965.

SN 244,010. Nejo Pharmacal, Inc., Houston, Tex. Filed Apr. 21, 1966.

SEDALONES

For Sedatives.
First use at least as early as June 25, 1963.

SN 244,011. Nejo Pharmacal, Inc., Houston, Tex. Filed Apr. 21, 1966.

ALKALONES

For Tablets for Antacid and Digestive Aid.
First use at least as early as June 24, 1963.

SN 248,509. The National Laboratories Corporation, Kansas City, Mo. Filed June 20, 1966.

RUMATONE

For Veterinary Product for the Treatment of Atony of the Rumens.
First use June 1962.

SN 248,975. Columbian Hog and Cattle Powder Co., Kansas City, Mo. Filed June 27, 1966.

DUO-PLUS

For Antibiotic-Vitamin Mixture for Use as an Aid in Prevention and Treatment of Bacterial Diarrhea and the Like in Poultry, Cattle, and Swine.
First use May 5, 1966.

SN 249,659. Meyer Laboratories, Inc., Detroit, Mich. Filed July 6, 1966.

THEOBID

For Pharmaceutical Preparation for the Treatment of Bronchial Asthma and Related Disorders.
First use Apr. 1, 1966.

SN 250,093. Daggett and Ramsdell International Corporation, New York, N.Y. Filed July 12, 1966.

HA-KOL

Owner of Reg. No. 329,669.
For Headache Cologne for the Relief of Simple Headaches, Neuralgia.
First use June 16, 1966.

SN 250,554. Barnes-Hind Laboratories, Sunnyvale, Calif. Filed July 19, 1966.

HEB

For Washable Self-Emulsifying Base Preparation Incorporated as an Ingredient in a Medicament.
First use July 23, 1968.

SN 253,013. Cilag-Chemie Aktiengesellschaft, Schaffhausen, Switzerland. Filed Aug. 24, 1966.

NIRVANIL

Owner of Swiss Reg. No. 184,061, dated Nov. 11, 1960.
For Pharmaceutical Preparations.

SN 253,060. Tarmac Products, Inc., New York, N.Y. Filed Aug. 24, 1966.

TONOSEX

For Pharmaceutical Preparation for the Treatment of Neurosis, Physical and Mental Depression, Nervous Exhaustion, and Sexual Deficiencies.
First use February 1960.

SN 253,257. American Home Products Corporation, New York, N.Y. Filed Aug. 29, 1966.

FINTRAN

For Tranquillizing Preparation for Fish and Other Aquatic Organisms.
First use Aug. 19, 1966.

SN 256,182. American Home Products Corporation, New York, N.Y. Filed Oct. 11, 1966.

TEMPURETS

For Analgesic Tablets.
First use Sept. 16, 1966.

SN 256,184. American Home Products Corporation, New York, N.Y. Filed Oct. 11, 1966.

QUELLTRAN

Owner of Reg. No. 643,857.
For Scopolamine Hydrochloride Ingredient in a Calmative Preparation.
First use Sept. 16, 1966.

SN 257,336. Parke, Davis & Company, Detroit, Mich. Filed Oct. 27, 1966.

ABDECOL

Owner of Reg. No. 787,783.
For Multi-Vitamin Preparation.
First use on or before Jan. 1, 1945.

SN 260,495. American Home Products Corporation, New York, N.Y. Filed Dec. 12, 1966.

TENSOBAN

Owner of Reg. No. 821,913.
For Analgesic Preparation.
First use Nov. 23, 1966.

Class 19—Vehicles

SN 238,491. Champion Home Builders Co., Dryden, Mich. Filed Feb. 10, 1966.

Grandé

For Mobile Homes and House Trailers.
First use Jan. 4, 1966.

SN 238,603. Blackstone Corporation, Jamestown, N.Y. Filed Feb. 11, 1966.



Owner of Reg. No. 752,106.
For Heat Exchangers—Namely, Automotive Radiators, Automotive Radiator Cores, Automotive Radiator Tanks, Automotive Oil Coolers, and Automotive Heater Cores.
First use Nov. 12, 1965.

SN 262,084. Marubeni-Yamaguchi Bicycle Co., Ltd., Dai-ku, Tokyo, Japan. Filed Jan. 9, 1967.

CRYSTAL

For Bicycles and Parts Therefor.
First use May 30, 1966; in commerce May 30, 1966.

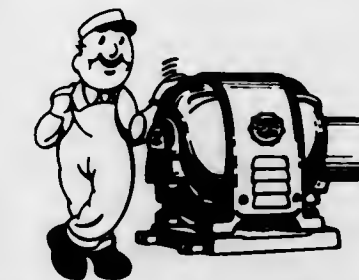
Class 21—Electrical Apparatus, Machines, and Supplies

SN 206,318. United Data Control, Inc., South El Monte, Calif. Filed Nov. 16, 1964.

TRAVEL-TALK

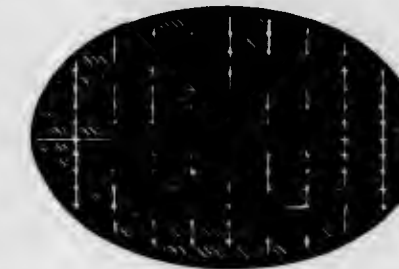
For Magnetic Tape Playback Equipment.
First use Apr. 10, 1964.
Subj. to Intf. with SN 202,925.

SN 221,936. The Klemle-Hankins Company, Toledo, Ohio, by change of name from The Klemle Company, Toledo, Ohio. Filed June 24, 1965.



The representation of an electric motor is disclaimed apart from the mark as shown.
For Electric Motors and Control Equipment Therefor.
First use Aug. 28, 1945.

SN 228,107. American Electronics Components Corp., Cincinnati, Ohio. Filed Sept. 20, 1965.



The drawing is lined for the color green; the color green is disclaimed as an integral portion of the mark. The mark comprises a horizontally disposed oval having a rectangular grid imposed thereon which underlies an essentially symmetrical sinuous design suggestive of an infinity symbol intersected by a sine wave.

For Electrical Components Used in the Manufacture and Testing of Radios and Electronic Devices—Namely, Insulated Terminals, Electrical Binding Posts, Transistor Sockets, Transistor Holders, Tube Sockets, Miniature Circuit Holders, High Voltage Connectors, and Transistor Clips.
First use Aug. 1, 1965.

SN 228,220. United States Rubber Company, New York, N.Y. Filed Sept. 20, 1965.

GUARDSMAN

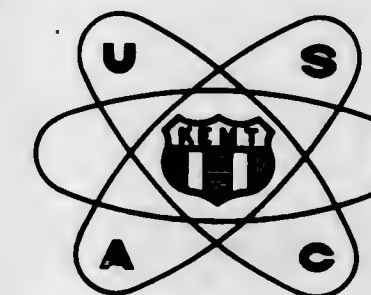
For Battery Cable.
First use Sept. 9, 1965.

SN 231,917. International Battery, Inc., Schiller Park, Ill. Filed Nov. 1, 1965.

POWERCELL

For Automotive Lead-Acid Storage Batteries.
First use at least as early as September 1965.

SN 240,130. U.S. Automatics Corp., Pewaukee, Wis. Filed Mar. 3, 1966.



The drawing is lined for the colors red and blue.
For Battery Chargers and Parts Therefor.
First use Feb. 11, 1965.

SN 249,778. Man, Incorporated, Westville, Ill. Filed July 7, 1966.

KLEEN-A-MAG

For Magnetic Trap Which Provides a Means for Removing and Cleaning a Magnet.
First use Jan. 21, 1964.

SN 255,376. Varian Associates, Palo Alto, Calif. Filed Sept. 28, 1966.



Owner of Reg. No. 582,256 and others.
For Electrical Apparatus, Machines and Supplies—Namely, Microwave and Radio Frequency Amplifiers, Filters, Mixers, Modulators, Oscillators, Transmitters, Receivers and Tubes; Microwave Duplexers, Detectors, Noise Generators, Capacitors, and Pressurized Guides; Electric Attenuators, Capacitors, Coils, Solenoids, Switches and Couplers; Power Supplies, Regulators, Rectifiers and Dividers; Frequency Multipliers, Diplexers and Stabilizers; Television Transmitters and Receivers, Diodes, Atmosphere and Vacuum Furnaces, and Electronic Ion-Getter Vacuum Pumps; and Electro, Permanent and Cryogenic Magnets and Magnetic Field Regulators.
First use Sept. 15, 1951.

Class 22—Games, Toys, and Sporting Goods

SN 220,456. Kristin Baybars, London, England, assignee of Brunswick Corporation, Chicago, Ill. Filed June 7, 1965.

OSTROBOGULOUS

For Toy Animal-Like Dolls.
First use at least as early as June 21, 1963; in commerce at least as early as June 21, 1963.

SN 223,124. The Haynes Company, Tulsa, Okla. Filed July 12, 1965.

SURE

Glyde

For Spray-Type Dressing Preparation for Bowling Shoe Soles, Snow Skis, and Water Skis.
First use Mar. 1, 1965.

SN 228,922. Edward L. Mobley, Jr., d.b.a. The Edward Mobley Co., Wadsworth, Ohio. Filed Sept. 29, 1965.

CANDY

For Fanciful Character Reproduced in the Form of a Squeeze-Type Toy Doll.
First use Feb. 27, 1959.

SN 234,126. Lakeside Industries, Inc., Minneapolis, Minn. Filed Dec. 7, 1965.

**FOO
CHU**

For Equipment Sold as a Unit for Playing a Fortune Telling Game.
First use on or about Nov. 10, 1965.

SN 238,120. Mattel, Inc., Hawthorne, Calif. Filed Jan. 10, 1966.

MR. SOUND SAYS

For Child's Toy Comprising a Phonograph Means and a Housing Having Pictorial Displays of Automobiles, Trains, Clocks, Musical Instruments, or the Like, for Reproducing Sounds Which Characterize and Are Associated With Such Pictured Items.
First use Dec. 10, 1965.

SN 240,205. Schaper Manufacturing Company, Inc., Minneapolis, Minn. Filed Mar. 4, 1966.

the last
Straw

For Parts or Equipment With Which a Game is Played Comprising a Playing Board, Wooden Straws, Receptacles for Such Straws and a Sectional Camel on Which the Receptacles rest.
First use Feb. 2, 1966.

SN 242,451. Head Ski Company, Inc., Timonium, Md. Filed Apr. 1, 1966.

360

For Snow Skis.
First use at least as early as Mar. 11, 1966.

SN 242,597. Harold Gevertz, d.b.a. Halmac Co., San Bruno, Calif., assignee of Halmac Co., San Bruno, Calif. Filed Apr. 4, 1966.

WONDER PUTT

For Golf Training Devices Comprising Tracks Having Indicia for Measuring Club Stroke and Ball Roll.
First use Mar. 21, 1966.

SN 243,672. Kalamazoo Sled and Toys, Inc., Kalamazoo, Mich. Filed Apr. 18, 1966.

CHAPARRAL—ROAD RUNNER

For Children's Vehicles and Parts Thereof—Namely, Sleds With Wheels.
First use Feb. 23, 1966.

SN 244,714. Kohner Bros., Inc., East Paterson, N.J. Filed May 2, 1966.

EASY BUILDER

For Construction Toy.
First use Feb. 18, 1966.

SN 245,015. Romper Room, Inc., Baltimore, Md. Filed May 5, 1966.

HAPPY JACK

For Jack-in-the-Box Toys.
First use Mar. 4, 1966.

SN 245,116. Lawrence Tackle Mfg. Corporation, New York, N.Y. Filed May 6, 1966.

Royce

For Fishing Reels.
First use Mar. 4, 1966.

SN 245,631. Curtis J. Tennyson, Charleston, S.C. Filed May 13, 1966.

BIGMOUTH

For Fish Hook Remover.
First use Apr. 4, 1966.

SN 245,675. Joseph C. Bode, d.b.a. Rol-O-Lure Company, Aurora, Ill. Filed May 16, 1966.

ROL-O-LURE

For Fishing Lures.
First use July 25, 1965.

SN 245,692. American Golf Testing Corporation, Tuscaloosa, Ala. Filed May 18, 1966.



For Golf Clubs and Golf Balls.
First use May 9, 1966.

SN 245,693. American Golf Testing Corporation, Tuscaloosa, Ala. Filed May 18, 1966.

Howard

For Golf Clubs and Golf Balls.
First use May 9, 1966.

SN 258,757. Mattel, Inc., Hawthorne, Calif. Filed Nov. 16, 1966.

LUCKY LOCKET KIDDLE

No claim of exclusive right, apart from the mark as shown, is made to the term "Locket" for the goods recited. Owner of Reg. Nos. 810,978 and 814,385.
For Dolls, Doll Clothing, and Doll Accessories.
First use Sept. 29, 1966.

SN 258,760. Mattel, Inc., Hawthorne, Calif. Filed Nov. 16, 1966.

STORYBOOK KIDDLES

No claim of exclusive right, apart from the mark as shown, is made to the term "Storybook" for the goods recited. Owner of Reg. Nos. 810,978 and 814,385.
For Dolls, Doll Clothing, and Doll Accessories.
First use Sept. 29, 1966.

SN 260,212. Mattel, Inc., Hawthorne, Calif. Filed Dec. 7, 1966.

MONTANA MOUSE

No claim of exclusive right, apart from the mark as shown, is made to the term "Mouse" for the goods recited.
For Toy Figures Representing a Mouse-Like Character, and Clothing and Accessories Therefor.
First use Nov. 14, 1966.

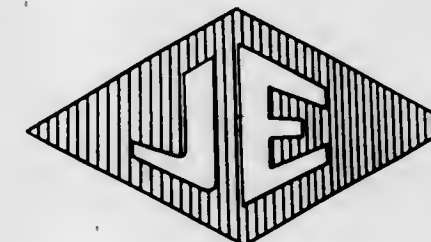
Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 234,002. Crompton & Knowles Corporation, Worcester, Mass. Filed Dec. 6, 1965.



The drawing is lined for the color red.
For Needle Felting Machine.
First use on or about Sept. 20, 1965.

SN 234,702. Johnson-Elms Corporation, Boylston, Mass. Filed Dec. 14, 1965.



The drawing is lined for the color red.
For Cutting Tools and Saw Blades.
First use Mar. 15, 1965.

SN 235,634. Dirilyte Company of America, Inc., Kokomo, Ind. Filed Jan. 3, 1966.

TUSCANY

For Flatware.
First use Oct. 1, 1965.

SN 235,683. Lincoln Manufacturing Co., Inc., Fort Wayne, Ind. Filed Jan. 3, 1966.

AUTO-VATOR

For Cafeteria-Type Elevator for Raising Dishes, Cups, Glasses, and the Like.
First use Nov. 24, 1965.

SN 235,778. Heimlich Brothers, Inc., New York, N.Y. Filed Jan. 4, 1966.

BUTT-KING

For Sewing Machines and Parts Thereof.
First use May 10, 1965.

SN 235,781. Jeffrey Gallon Manufacturing Company, Columbus, Ohio. Filed Jan. 4, 1966.

PERMACLAD

Owner of Reg. Nos. 581,245, 800,948, and others.
For Chain.
First use on or about Nov. 11, 1965.

SN 236,001. Daniel O. Noorlander, d.b.a. Bel-Mar Co., McFarland, Wis. Filed Jan. 7, 1966.

VISA-FLOW

For Inflations for Teat Cup Assemblies for Milking Machines.
First use Dec. 13, 1965.

SN 236,002. Daniel O. Noorlander, d.b.a. Bel-Mar Co., McFarland, Wis. Filed Jan. 7, 1966.

STA-ONS

For Retaining Discs for Teat Cup Assemblies for Milking Machines.
First use Dec. 13, 1965.

SN 236,003. Daniel O. Noorlander, d.b.a. Bel-Mar Co., McFarland, Wis. Filed Jan. 7, 1966.

BEL-MAR

For Teat Cup Assemblies for Milking Machines.
First use Dec. 13, 1965.

SN 236,342. The Alliance Machine Company, Alliance, Ohio. Filed Jan. 13, 1966.

Uni-Span

For Cranes in General and Particularly Gantry Type.
First use Sept. 17, 1965.

SN 236,399. Meyer Products, Inc., Cleveland, Ohio. Filed Jan. 13, 1966.

POWER ANGLING

For Snow Plows.
First use October 1962.

SN 236,451. Automatic Products Co., St. Paul, Minn. Filed Jan. 14, 1966.



Owner of Reg. No. 533,424.
For Coin-Operated Candy Dispensing Machines.
First use Dec. 9, 1964.

SN 236,606. Inland Manufacturing Company, Omaha, Nebr. Filed Jan. 17, 1966.

INLAND

Owner of Reg. Nos. 524,823, 776,558, and others.
For Abrasive Blasting Equipment, Parts Cleaning and Surface Conditioning Equipment, Dust Collectors, Combination Reclaimers and Dust Collectors, Combination Parts Cleaning and Surface Conditioning, Reclaimer and Dust Collector Equipment, and Accessories and Parts Thereof.
First use Nov. 18, 1964.

SN 236,822. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Jan. 19, 1966.

SATINA

For Stainless Steel Knives, Forks, and Spoons.
First use Dec. 16, 1965.

SN 237,608. Washington Forge, Incorporated, Englishtown, N.J. Filed Jan. 28, 1966.

FLEETWOOD

For Handles for Table and Kitchen Cutlery, Sold Only as a Part of Such Cutlery.
First use on or about May 1, 1956.

Class 25 — Locks and Safes

SN 241,718. William E. Winchester, d.b.a. Windy's Speedometer Service, Miami, Fla. Filed Mar. 23, 1966.

MILE-GUARD

For Seal for Speedometer and Odometer Cables.
First use Feb. 19, 1966.

SN 242,075. Valv-O-Matic, Inc., Minneapolis, Minn. Filed Mar. 28, 1966.

SKI BANK

The word "Ski" is disclaimed.
For Coin-Operated Locking Racks for the Safe Storage of Equipment Such as Skis and Ski Poles.
First use Sept. 9, 1965.

Class 26 — Measuring and Scientific Appliances

SN 233,878. Clay-Adams, Inc., New York, N.Y. Filed Dec. 3, 1965.

ADAMS A/1

Owner of Reg. Nos. 403,743, 759,200, and others.
For Pipettes.
First use on or about Nov. 15, 1955.

SN 235,419. Optische Werke G. Rodenstock, Munich, Germany. Filed Dec. 28, 1965.

YSARON

The word "Yaaron" is fanciful and has no literal meaning.
Owner of German Reg. No. 624,729, dated Oct. 27, 1950; and U.S. Reg. No. 685,918.
For Photographic and Projection Lenses.

SN 235,420. Optische Werke G. Rodenstock, Munich, Germany. Filed Dec. 28, 1965.

TRINAR

Owner of German Reg. No. 123,066, dated Aug. 13, 1909.
For Photographic and Projection Lenses.

SN 236,409. Optische Werke G. Rodenstock, Munich, Germany. Filed Jan. 13, 1966.

SIRONAR

The word "Sironar" is fanciful and has no literal meaning.
Owner of German Reg. No. 504,553, dated Jan. 24, 1938; and U.S. Reg. Nos. 661,360 and 662,540.
For Photographic and Projection Lenses.
First use 1938; in commerce 1938.

SN 236,446. American Pamcor, Incorporated, Berwyn, Pa. Filed Jan. 14, 1966.



Owner of Reg. Nos. 626,516, 799,367, and others.
For Electrical Programming Systems, Including Card, Pin-board and Patchcard Programming Systems.
First use at least as early as Oct. 21, 1965.

SN 239,992. Gustafson Manufacturing Company, Inc., Minneapolis, Minn. Filed Mar. 2, 1966.

AUTO-MEDIC

For Liquid Chemical Mixing and Measuring Device.
First use Oct. 1, 1959.

SN 242,050. MTS Systems Corporation, Minneapolis, Minn., assignee of Research, Incorporated, Minneapolis, Minn. Filed Mar. 28, 1966.

AMPAC

For Amplitude Controller for Cycling Load Specimen Testing Machines.
First use Oct. 15, 1964.

SN 242,060. A. O. Smith Corporation, Milwaukee, Wis. Filed Mar. 28, 1966.

FleetCon

For Automatic Card Operated Fuel Dispensing and Recording Equipment.
First use Feb. 1, 1966.

SN 242,144. Obrig Laboratories, Inc., Sarasota, Fla. Filed Mar. 29, 1966.

CON-O-COID

For Contact Lenses.
First use Mar. 17, 1966.

SN 255,882. Varian Associates, Palo Alto, Calif. Filed Sept. 28, 1966.



Owner of Reg. Nos. 582,256, 750,058, and others.
For Measuring and Scientific Appliances—Namely, Particle Accelerators, Electron Diffraction and X-Ray Equipment; Gas Chromatographs, Interferometers, Magnetometers, Spectrometers, Spectropolarimeters, Spectrophotometers, Gradiometers and Fluxmeters; Calorimeters, Electrometers, Electron Microscopes, Seismograph and Tiltmeter Geophysical Instruments; Vacuum Discharge and Ionization Gauges; and Digital Indicators, Plotters, and Graphic Recorders.
First use in or about January 1952 on magnetometers.

Class 27 — Horological Instruments

SN 239,086. Stylex Timecraft & Jewelry Corp., New York, N.Y. Filed Feb. 17, 1966.

ENID

For Ladies' Watches, Watch Movements, Clocks, Watch Dials, Parts of Watches, and Watch Casings.
First use Jan. 25, 1966.

SN 240,930. Pennant Watch Corp., New York, N.Y., assignee of Lucien Piccard Watch Corp., New York, N.Y. Filed Mar. 14, 1966.

PENNANT

For Watches.
First use Sept. 13, 1965.

SN 242,747. Ricoh Company, Ltd., Ohta-ku, Tokyo, Japan. Filed Apr. 5, 1966.

RICOH

Owner of Japanese Reg. No. 620,630, dated July 13, 1963.
For Watches, Clocks, and Parts Thereof.

SN 258,459. Societe Anonyme Revellsbayard, Saint-Nicolas-d'Allermont, Seine-Maritime, France. Filed Nov. 14, 1966.



Priority claimed under Sec. 44(d) on French Reg. No. 16,008, dated Aug. 17, 1966. Applicant disclaims any exclusive rights to the word "France" apart from the mark as shown.

For Clocks.
First use 1960; in commerce 1960; 1889 as to the trade-mark "Bayard."

Class 28 — Jewelry and Precious-Metal Ware

SN 238,192. Alfred Dunhill Limited, London, England. Filed Feb. 7, 1966.

DUNHILL

Owner of U.S. Reg. Nos. 155,951, 634,071, and others.
For Men's Jewelry—Namely, Cuff Links, Tie Bars, Tie Clasps, Tie Pins, Stud Sets, Key Chains, Key Rings, Belt Buckles and Money Clips; Women's Jewelry—Namely, Rings, Earrings, Bracelets, Chains, Pins and Broaches; and Precious-Metal Ware—Namely, Spoons.
First use 1922; in commerce 1922.

SN 241,060. Luciano Flor and Alserino P. Loureiro (partnership), New Bedford, Mass. Filed Mar. 15, 1966.

"GOING STEADY"

For Finger Rings and Pins.
First use Jan. 5, 1966.

SN 242,671. Fred Seltzer Corporation, d.b.a. Tiara Jewels, Ltd., Lincolnwood, Ill. Filed Apr. 4, 1966.

JEWELITE

For Finger Rings.
First use February 1962.

SN 254,305. Milglo Jewelry Mfg. Co., New York, N.Y. Filed Sept. 12, 1966.

REMEMBRANCE

For Bracelets Having a Family, Friendship or Romantic Significance.

First use in or about June 1954.
Subj. to Intf. with SN 261,125.

SN 261,125. Jacoby-Bender, Inc., Woodside, N.Y. Filed Dec. 22, 1966.

REMEMBRANCE

For Bracelets.
First use June 1965.
Subj. to Intf. with SN 254,305.

SN 261,418. Jewel Box Stores Corporation, Greensboro, N.C. Filed Dec. 27, 1966.

PERFECT LOVE

For Diamond Rings and Wedding Bands.
First use Sept. 20, 1966.

Class 29 — Brooms, Brushes, and Dusters

SN 241,162. Montclair Imports Inc., Westbury, N.Y. Filed Mar. 16, 1966.

MONTCLAIR

Owner of Reg. No. 751,340.
For Brushes for the Hair.
First use on or about Nov. 30, 1963.

SN 261,003. EZ Paint Corporation, Milwaukee, Wis. Filed Dec. 19, 1966.

THE TALKING ROLLER

No claim is made to the exclusive use of the word "Roller" alone.
For Paint Rollers.
First use Nov. 22, 1966.

Class 31 — Filters and Refrigerators

SN 238,326. Air Reduction Company, Incorporated, New York, N.Y. Filed Feb. 8, 1966.



No registration rights are claimed for the word "Freeze" apart from the mark as shown, but applicant waives none of its common law rights in the mark shown or any feature thereof.

For Freezing Apparatus Utilizing Cryogenic Fluids as the Freezing Medium.
First use Oct. 7, 1965.

Class 32 — Furniture and Upholstery

SN 231,670. Dexter Machine Company, Clarendon Hills, Ill. Filed Oct. 27, 1965.

SADDLE PONY

No registration rights are claimed for the word "Saddle" apart from the mark shown, but the applicant waives none of its common law rights in the mark or any feature thereof.
For Saddle Stand.
First use July 19, 1965.

SN 247,249. Nautilus Industries, Inc., Freeland, Pa. Filed June 3, 1966.



For Wall Mounted Cabinet for Household Utility Functions, Including Dispensing of Paper, Foli, Plastic Sheet, and the Like.
First use Feb. 24, 1966.

SN 247,575. Burris Manufacturing Company, Incorporated, Lincolnton, N.C. Filed June 8, 1966.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 239,386. The Coleman Company, Inc., Wichita, Kans. Filed Feb. 23, 1966.

UNI SEAL

For Oil and Gas Furnaces for Mobile Homes.
First use in or before July 1964.

SN 255,383. Varian Associates, Palo Alto, Calif. Filed Sept. 28, 1966.



Owner of Reg. Nos. 582,256, 750,058, and others.
For Heating, Lighting, and Ventilating Apparatus—Namely, Atmosphere and Vacuum Furnaces, and Induction Heating Tubes.
First use Feb. 11, 1964, on vacuum furnaces.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 239,767. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Feb. 28, 1966.



For Fan Belts and Radiator Hose.
First use Nov. 6, 1965.

SN 240,086. The Firestone Tire & Rubber Company, Akron, Ohio. Filed Mar. 3, 1966.

SUPER X-T

For Resilient Vehicle Tires.
First use Dec. 30, 1965.

SN 240,147. Armstrong Cork Company, Lancaster, Pa. Filed Mar. 4, 1966.

ACCOBEST

For Gasket.
First use Feb. 18, 1966.



The drawing is lined for the colors orange and red, but no claim is made to color.
For Chairs.
First use Mar. 31, 1965.

SN 247,949. Nopco Chemical Company, Newark, N.J. Filed June 13, 1966.

LUXURON

For Mattresses, Mattress Cores, and Polyurethane Foam in Bulk Form Used in Mattresses and Furniture Cushioning.
First use Apr. 20, 1966.

SN 248,769. Best Made Bedding Co. Inc., New York, N.Y. Filed June 23, 1966.

RESISTO-MAT

For Hospital Mattresses.
First use February 1954.

SN 248,825. Metalcraft Engineering Co., Lincoln, Nebr. Filed June 23, 1966.

BOOK-LOK

For Book Ends.
First use November 1965.

SN 249,011. Holmes Tire and Supply Co., Inc., Madison, Wis. Filed June 27, 1966.



For Cabinets and Consoles for Use by Others To House Motor Vehicle Testing Devices.
First use May 1, 1966.

Class 33 — Glassware

SN 236,764. Kastrup og Holmegaards Glasvaerker A/S, Copenhagen, Denmark. Filed Jan. 18, 1966.

KASTRUP-HOLMEGAARD

Owner of Reg. Nos. 437,994 and 690,239.
For Domestic Glassware and Artistic Glassware—Namely, Tumblers, Wine Glasses, Water Glasses, Bowls, Dishes, Jugs, Vases, Trays, Decanters for Wines and Spirits, and Bottles.
First use July 1, 1965; in commerce July 1, 1965.

Class 36—Musical Instruments and Supplies

SN 202,925. Glen Recording Company, Chicago, Ill. Filed Sept. 29, 1964.

TRAVEL TAPE

Applicant disclaims any exclusive claim to the word "Tape" apart from the mark shown.

For Pre-Recorded Travel Information and Talk on Magnetic Tape for Use by Travelers.

First use Sept. 8, 1964.

Subj. to Intf. with SN 206,318.

SN 234,078. The Seeburg Corporation, Chicago, Ill. Filed Dec. 6, 1965.

DISCOTHEQUE

Applicant disclaims the representations of a phonograph record and of a tone arm to play the phonograph record, apart from the mark as shown.

For Coin-Operated Phonographs.

First use Nov. 30, 1964.

SN 234,116. The Compo Company Limited, Lachine, Quebec, Canada. Filed Dec. 7, 1965.

LERO

For Phonograph Records.

First use Nov. 4, 1965; in commerce Nov. 4, 1965.

SN 234,762. Memorex Corporation, Santa Clara, Calif. Filed Dec. 16, 1965.

SIGMATAPE

For Magnetic Tape.

First use July 8, 1965.

SN 237,893. Veri-Sonic, Inc., Cleveland, Ohio. Filed Feb. 2, 1966.

VERI-SONIC

For Musical Percussion Instruments—Namely, Drum Sticks.

First use July 12, 1965.

SN 237,961. Goya Music Corporation, New York, N.Y. Filed Feb. 3, 1966.

RANGEMASTER

For Electric Guitars.

First use Aug. 1, 1965.

Class 37—Paper and Stationery

SN 237,157. Walter Reuter, Dusseldorf-Reisholz, Germany. Filed Jan. 24, 1966.

COPYFIX

Owner of German Reg. No. 653,970, dated Dec. 2, 1949.

For Carbon Paper, Transparent Manifold Paper, Plain Transfer and Color Transfer Paper for Mimeograph and Offset Printing and the Like.

SN 240,743. Kimball Systems, Inc., Belleville, N.J. Filed Mar. 11, 1966.

DATATAG

For Blank or Partially Printed Tags, Tickets, Labels, and the Like Used in Merchandising and Industrial Control.

First use Not later than October 1964.

SN 255,384. Varian Associates, Palo Alto, Calif. Filed Sept. 28, 1966.



Owner of Reg. Nos. 582,256, 602,973, and 738,963. For Recorder Paper.

First use in or about February 1961.

Class 38—Prints and Publications

SN 218,316. Publishers Newspaper Syndicate (joint venture), Chicago, Ill. Filed May 7, 1965.

ANN LANDERS

The name "Ann Landers" is fanciful. For Syndicated Newspaper Column.

First use Oct. 8, 1946.

SN 222,747. Publishers Newspaper Syndicate (joint venture), Chicago, Ill. Filed July 6, 1965.

TO YOUR GOOD HEALTH

For Syndicated Newspaper Column.

First use Aug. 2, 1954.

SN 229,509. Encyclopaedia Britannica, Inc., Chicago, Ill. Filed Oct. 7, 1965.



For Books, Booklets, and Encyclopaedias.

First use 1958; 1922 as to the word "Comptons."

SN 234,247. Scranton Publishing Co., Inc., Chicago, Ill. Filed Dec. 8, 1965.

WATER & SEWAGE WORKS

Owner of Reg. No. 430,682.

For Periodical Trade Magazine.

First use July 1946.

SN 234,478. Strombecker Corporation, Chicago, Ill. Filed Dec. 13, 1965.

INSIDE TRACK

For Magazine Devoted to Miniature Car Racing and Miniature Racing Cars.

First use in or before January 1965.

SN 234,770. Rohm & Haas Company, Philadelphia, Pa. Filed Dec. 16, 1965.



Owner of Reg. No. 797,392. For Product Information Leaflets and/or Brochures.

First use on or about Nov. 17, 1965.

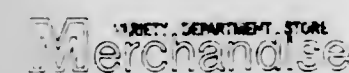
SN 236,436. The Sangamon Company, Taylorville, Ill. Filed Jan. 4, 1966.

THE NICEST WAY TO REMEMBER

For Greeting Cards.

First use Oct. 1, 1965.

SN 237,142. Merchandise Publishing Co., Inc., New York, N.Y. Filed Jan. 24, 1966.



Owner of Reg. Nos. 561,708, 563,744, and 703,712. For Trade Magazine.

First use Jan. 12, 1966.

SN 237,308. The Christian Science Publishing Society, Boston, Mass. Filed Jan. 26, 1966.

Kristen Videnskabs Herold

The translation of the mark into English is "The Herald of Christian Science." Owner of Reg. Nos. 678,634, 796,414, and others.

For Magazine Published Every Three Months in English and Danish.

First use June 10, 1963.

SN 238,263. Midwest Publications Company, Inc., Birmingham, Mich. Filed Feb. 7, 1966.

**Midwest Publications Company, Inc.**

Applicant disclaims any exclusive rights in the words "Midwest" and/or "Publication Company, Inc." apart from the mark as shown.

For General Reading Material Published by Applicant and Including Booklets, Textbooks, Directories, and the Like.

First use Sept. 22, 1965.

SN 239,507. Dow Jones & Company, Inc., New York, N.Y. Filed Feb. 24, 1966.

UP AND DOWN WALL STREET

For Section of a Newspaper.

First use Jan. 24, 1966.

SN 240,432. Harold Anthony Gregory, Worcester, Mass. Filed Mar. 8, 1966.

Ask Seek Knock

For Bookmarks and Greeting Cards.

First use Sept. 4, 1965.

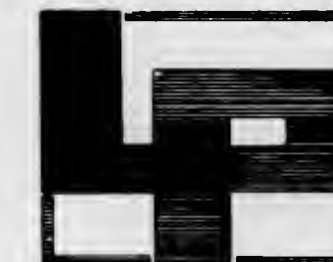
SN 243,534. Bettendorf Publications Inc., Chicago, Ill. Filed Apr. 15, 1966.

PACKAGING INNOVATOR

For Newsletter Relating to Packaging and Its Uses.

First use Apr. 8, 1966.

SN 244,231. Linear Products, Inc., New York, N.Y. Filed Apr. 25, 1966.



The drawing is lined for the color blue, but no claim is made with respect to color. For Printed Labels.

First use Apr. 30, 1964.

SN 246,888. Cycling Press, Inc., New York, N.Y. Filed May 31, 1966.

AMERICAN BICYCLIST AND MOTORCYCLIST

Owner of Reg. Nos. 207,454 and 421,679.
For Magazine Relating to Bicycling and Motorcycling.
First use 1934.

SN 253,911. Review and Herald Publishing Association, Takoma Park, Washington, D.C. Filed Sept. 6, 1966.

LIFE AND HEALTH

For Monthly Magazine.
First use January 1950; 1904 as to the mark "Life & Health."

SN 257,743. Xerox Corporation, Rochester, N.Y. Filed Nov. 2, 1966.

LIVING TEXT BOOK

Applicant disclaims exclusive rights in the words "Text Book" apart from the composite mark as shown.

For Newspaper Published for Students During the School Year; Textbooks; Visual Aids for Classroom Teaching, Including Wall Charts and Pictures.
First use Oct. 18, 1966.

SN 258,341. National Carl Schurz Association, Inc., Philadelphia, Pa. Filed Nov. 10, 1966.

T.A.P.

TEACHING AID PROJECT

Applicant disclaims the exclusive use of the words "Teaching Aid Project" apart from the mark as a whole.

For Periodical Publications—Namely, a Periodical Newsletter, and a Guidebook Consisting of a Teacher's Manual and Catalogues of Materials Relating to the Teaching of German.
First use Mar. 1, 1966.

SN 258,975. Bodybuilder Publications, Inc., Union City, N.J. Filed Nov. 18, 1966.

MR. AMERICA

For Magazine.
First use January 1959.

Class 39—Clothing

SN 237,899. Withit Company, Richardson, Tex. Filed Feb. 2, 1966.

WITHIT

For Juniors' Sweaters, Suits, Dresses, Blouses, Skirts, Slacks, Coats, and Lingerie.
First use Jan. 12, 1965.

SN 240,926. Lipton & Beserman, New York, N.Y. Filed Mar. 14, 1966.



For Men's Shirts, Sweaters, and Swimming Trunks.
First use Nov. 12, 1965.

SN 241,822. A. Sulka & Company, New York, N.Y. Filed Mar. 24, 1966.



For Men's Dress Shirts, Sports Shirts and Undershirts, Formal Shirts, Sport Coats and Jackets, Beach Jackets, Golf Jackets, Suburban Coats, Top Coats, Hosiery, Ties, Handkerchief Sets, Mufflers and Ascots, Raincoats and Hats, Hats, Gloves, Robes, Slacks and Shorts, Beachwear Including Cabana Sets, Bathing Trunks, Jackets and Robes, Sweaters, Vests, Formal and Sport, Pajamas, Slippers, Underwear, Shirts, and Shorts, and Long Underwear, Tie and Cummerbund Sets, Coat Liners, Dickies, Belts, Suspenders, Garters; Boys' Sweaters; and Women's Scarves, Mantillas, Sweaters, Shirts, Blouses, Pajamas, Raincoats and Hats, Handkerchiefs, and Robes.
First use 1893.

SN 243,124. Marie Ganee, Ltd., New York, N.Y. Filed Apr. 11, 1966.

Marie Ganee

For Women's Clothing—Namely, Dresses.
First use Mar. 25, 1966.

SN 245,204. Donald S. Lavigne, Inc., Miami, Fla. Filed May 9, 1966.

Thermal CHIEF

No claim is made to the word "Thermal," apart from the mark as shown, without waiving any common law rights therein.

For Combination Service and Dress Jacket for Law Enforcement Officers.
First use Apr. 10, 1966.

SN 245,668. R. G. Barry Corporation, Columbus, Ohio. Filed May 16, 1966.

PIM POMS

For Slippers and Sandals.
First use Apr. 1, 1960.

SN 245,692. D'Orelli Shoe Corp., Lawrence, Mass. Filed May 16, 1966.

a la benji

The mark is fanciful.
For Shoes.
First use May 2, 1966.

SN 245,719. The Kaynee Company, Greenville, S.C. Filed May 16, 1966.

CASUAL CLOSET

For Men's and Boys' Shirts, Sport Shirts, Pajamas, Jackets, Coats, and Trousers.
First use Apr. 15, 1966.

SN 246,255. A. S. Beck Shoe Corporation, New York, N.Y. Filed May 23, 1966.

JOHNNY BUZZARD BUCKS BY A.S. BECK

The name "Johnny Buzzard" is fanciful. The word "Bucks" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 693,556, 695,384, and others.
For Shoes.
First use Mar. 11, 1966.

SN 246,396. Superba Cravats, Inc., Rochester, N.Y. Filed May 23, 1966.

SANTEE

For Sport Shirts.
First use Feb. 21, 1966.

SN 246,444. Clementine J. Hager, d.b.a. Kitty Carol Co., San Antonio, Tex. Filed May 24, 1966.

KITTY-CAROL

For Women's Custom Clothing—Namely, Formal Gowns and Dressing Robes.
First use 1910.

SN 247,845. Taller Modes, Inc., New York, N.Y. Filed June 10, 1966.

TALLER MODES

Owner of Reg. Nos. 423,169 and 551,039.
For Women's and Girls' Dresses, Coats, Underwear, Suits, Slacks, Bathing Suits, Culottes, and Bicycle Pants.
First use Oct. 1, 1944.



For Men's Dress and Business Shirts, Formal Shirts, Sport Shirts, Knit Outer and Under Shirts, Sweaters, Pullovers, Pajamas, Robes, Cut and Sewn Underwear, Knitted Underwear, Athletic Shirts, T-Shirts, and Handkerchiefs.
First use December 1962.

SN 248,160. M. Nirenberg Sons, Inc., New York, N.Y. Filed June 15, 1966.

BIG 7

For Men's Shirts.
First use Feb. 25, 1964.

SN 248,424. Cole of California, Inc., Los Angeles, Calif. Filed June 20, 1966.

SHIFTEES

For Ladies' and Girls' Dresses, Shifts, Blouses, Skirts, and Shorts.
First use June 8, 1966.

SN 248,670. R. G. Barry Corporation, Columbus, Ohio. Filed June 22, 1966.

YOUR WONDERFUL WORLD OF SOFTNESS

For Slippers and Sandals.
First use October 1960.

SN 248,889. Burlington Industries, Inc., New York, N.Y. Filed June 24, 1966.



IF IT'S ANYTHING TO DO
WITH FABRIC WE DO IT
AT BURLINGTON.
AND WE DO MORE OF IT
THAN ANYONE IN THE WORLD.

Applicant disclaims the weave design and the wording "If It's Anything To Do With Fabric We Do It at Burlington, and We Do More of It Than Anyone in the World" apart from the mark as shown. Owner of Reg. Nos. 138,483, 504,523, and 740,085.

For Men's, Women's, and Children's Hosiery.
First use Apr. 26, 1966.

SN 249,531. Hat Corporation of America, New York, N.Y. Filed July 5, 1966.

POCKET HAT

Applicant disclaims the exclusive right to the use of the word "Hat."
For Men's and Women's Hats.
First use Mar. 9, 1966.

SN 249,741. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed July 7, 1966.

DELASORBS

Owner of Reg. No. 789,262.
For Diapers.
First use June 2, 1966.

SN 250,072. The Woodlin Shirt Corp., Carteret, N.J. Filed July 11, 1966.

DAGGER

For Men's Shirts.
First use May 1966.

SN 250,139. H. Daroff & Sons, Inc., Philadelphia, Pa. Filed July 13, 1966.

TRAVEL TESTED

For Suits, Topcoats, Sport Coats, and Slacks.
First use on or about Sept. 3, 1957.

SN 250,266. General Niteware Corp., New York, N.Y. Filed July 14, 1966.

KERWOOD

For Pajamas.
First use July 5, 1966.

SN 250,267. General Nitewear Corp., New York, N.Y. Filed July 14, 1966.

SLEEP-CREST

For Pajamas.
First use July 5, 1966.

SN 250,322. M. Wile & Company, Inc., Buffalo, N.Y. Filed July 14, 1966.

GLOBE CIRCLER

For Men's Suits and Sport Jackets.
First use June 13, 1966.

SN 250,337. Arnold Constable Corporation, New York, N.Y. Filed July 15, 1966.

CHICATIQUE

For Women's and Girls' Dresses, Coats, Hats, and Underwear.
First use Jan. 1, 1966.

SN 251,816. Oliver Gintel, Inc., New York, N.Y. Filed Aug. 5, 1966.

RIVULETTE

For Furs and Fur Apparel.
First use July 17, 1966.

SN 252,261. Kayser-Roth Corporation, New York, N.Y. Filed Aug. 12, 1966.

CANTALON

For Ladies' Hosiery.
First use July 25, 1966.

SN 254,261. Dayco Corporation, Dayton, Ohio. Filed Sept. 12, 1966.

LUNAR LOAFERS

No claim is made to the word "Loafers" apart from the mark as shown.
For Footwear.
First use on or about Aug. 15, 1966.

SN 256,429. Cinderella Knitting Mills, Inc., Denver, Pa. Filed Oct. 14, 1966.



Royal Coach

For Men's and Boys' Underwear—Namely, T-Shirts, Shorts, and Undershirts.
First use 1958.

SN 258,345. Roger M. Levin, d.b.a. Chief Levin's, Easton, Pa. Filed Nov. 10, 1966.



MEN HOUSE

For Women's Wear—Namely, Dresses, Coats, Blouses, Suits, Hats, Slacks, Shorts, Sweaters, and Skirts.
First use July 5, 1965.

SN 258,581. J. Press, Inc., New Haven, Conn. Filed Nov. 14, 1966.

J. PRESS

For Men's and Young Men's Wearing Apparel and Accessories—Namely, Ties, Shirts, Overcoats, Topcoats, Sport Jackets, Belts, Braces, Rainwear, Suits, Formal Wear—Namely, Dinner Coats, Dinner Trousers, Dinner Waistcoats, Cummerbunds, Evening Dress Suits, Including Tail Coats and Trousers, Hats, Mufflers, Caps, Gloves, Sweaters, Slacks, Jackets, Vests, Socks, and Underwear; and Women's Wearing Apparel and Accessories—Namely, Skirts, Sweaters, Suits, Coats, Rainwear, Handkerchiefs, Gloves, Scarves, and Hats.
First use at least prior to September 1902.
Subj. to Intf. with SN 235,511.

SN 260,307. Knize-Ten Ltd., New York, N.Y. Filed Dec. 8, 1966.

KNIZE

Owner of Reg. Nos. 335,159 and 592,843.
For Men's Suits, Overcoats, and Haberdashery—Namely, Shirts, Ties, Ascots, Socks, Underwear, Sweaters, Mufflers, Gloves, Robes and Dressing Gowns, Pajamas, Handkerchiefs, Hats, Belts, Suspenders and Garters, Slippers, Beach Shoes, Bathing Suits, and Cabana Sets; and Ladies' Suits, Coats, Blouses, Stoles, and Scarves.
First use at least as early as during 1941 on men's suits and overcoats.

SN 262,085. Concord Manufacturing Corp., Lowell, Mass. Filed Jan. 9, 1967.



OTTO'S

For Men's Nylon Tricot Pajamas.
First use Dec. 22, 1966.

SN 262,381. D'Orsay Mills, Inc., Reading, Pa. Filed Jan. 12, 1967.

STARFIRE 70

For Men's Hosiery.
First use Aug. 31, 1964.

SN 262,503. Morpul, Inc., Greensboro, N.C. Filed Jan. 6, 1967.



MORPUL

Owner of Reg. Nos. 428,356, 624,114, and 675,607.
For Hosiery.
First use Nov. 15, 1945.

Class 40—Fancy Goods, Furnishings, and Notions

SN 228,992. Clean Electrics Ltd., London, England. Filed Sept. 30, 1965.

JET-SET

For Hair Rollers and Heating Cases Therefor.
First use April 1965; in commerce Aug. 14, 1965.
Subj. to Intf. with SN 239,335.

SN 234,309. Stanley Comb Products Corp., d.b.a. Stanley Combs Products Co., New York, N.Y. Filed Dec. 9, 1965.

STANCE

For Combs.
First use Jan. 1, 1961.

SN 242,922. Pharmaceutical Laboratories, Inc. (Delaware corporation), Jersey City, N.J., assignee of Pharmaceutical Laboratories, Inc. (New Jersey corporation), Plainfield, N.J. Filed Apr. 7, 1966.

DAUPHINE

For Women's Notions—Namely, Bobby Pins.
First use on or about Feb. 10, 1966.

SN 257,909. Denton Plastic Products Corp., Southampton, Pa. Filed Nov. 4, 1966.

PERMAPEARL

For Buttons.
First use Feb. 4, 1966.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 248,890. Burlington Industries, Inc., New York, N.Y. Filed June 24, 1966.



Burlington

IF IT'S ANYTHING TO DO
WITH FABRIC WE DO IT
AT BURLINGTON.
AND WE DO MORE OF IT
THAN ANYONE IN THE WORLD

Applicant disclaims the weave design and the wording "If It's Anything To Do With Fabric We Do It at Burlington, and We Do More of It Than Anyone in the World," apart from the mark as shown. Owner of Reg. Nos. 138,483, 504,523, and 740,085.

For Greige and Finished Fabrics in the Piece of All Types for Use in Men's, Women's, and Children's Apparel, in Home Furnishings, Carpets and Rugs, and in the Industrial Field.
First use Apr. 22, 1966.

SN 252,590. Pleasant Valley Finishing Co., Inc., New York, N.Y. Filed Aug. 17, 1966.

IRON SHED

For Piece Goods of Cotton, Synthetics and Synthetic Blends.
First use July 20, 1966.

SN 252,692. J. P. Stevens & Co., Inc., New York, N.Y. Filed Aug. 18, 1966.

DELTA-PRESS

Owner of Reg. Nos. 341,045, 782,503, and others.
For Piece Goods of One or More Natural Fibers, Including Wool and Cotton or of Synthetic Fibers or Blends of the Foregoing Treated With a Chemical Agent.
First use Apr. 28, 1966.

SN 253,024. Fieldcrest Mills, Inc., Spray, N.C. Filed Aug. 24, 1966.



A fineau

For Textile Rugs and Carpeting.
First use July 29, 1966.

SN 253,057. J. P. Stevens & Co., Inc., New York, N.Y. Filed Aug. 24, 1966.

STEVENS-PRESS

For Piece Goods of One or More Natural Fibers Including Wool and Cotton, or of Synthetic Fibers or Cellulosic Fibers or Blends of the Foregoing.
First use Aug. 17, 1966.

Class 43—Thread and Yarn

SN 248,892. Burlington Industries, Inc., New York, N.Y.
Filed June 24, 1966.



IF IT'S ANYTHING TO DO
WITH FABRIC WE DO IT
AT BURLINGTON.
AND WE DO MORE OF IT
THAN ANYONE IN THE WORLD.

Applicant disclaims the weave design and the wording "If It's Anything To Do With Fabric We Do It at Burlington, and We Do More of It Than Anyone in the World," apart from the mark as shown. Owner of Reg. Nos. 138,483, 504,528, and 740,085.

For Yarns.
First use Apr. 29, 1966.

SN 252,166. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Aug. 11, 1966.

CORDURA

Owner of Reg. Nos. 326,327, 596,842, and 598,346.
For Yarn.
First use July 8, 1966.

SN 252,599. Spinnerin Yarn Co., Inc., South Hackensack, N.J. Filed Aug. 17, 1966.

CARESSE

For Yarns of Synthetic Fibers for Hand Knitting.
First use Nov. 8, 1965.

SN 252,704. American Enka Corporation, Enka, N.C. Filed Aug. 5, 1966.

ENCRON

Owner of Reg. Nos. 409,392, 797,927, and others.
For Synthetic Thread and Yarn.
First use July 20, 1966.

Class 44—Dental, Medical, and Surgical Appliances

SN 239,335. Sunbeam Corporation, Chicago, Ill. Filed Feb. 21, 1966.

JET SET

For Hair Dryers.
First use Sept. 2, 1964.
Subj. to Intf. with SN 228,992.

SN 246,567. Hush-Noise Corporation, Muskegon, Mich. Filed May 25, 1966.

HUSH-TONE

For Hearing Appliances, Specifically Speech Clarifiers and Hearing Aids.
First use Mar. 29, 1966.

SN 246,738. Schick Electric, Inc., Lancaster, Pa. Filed May 27, 1966.

CONSOLETTTE

For Hair Dryer.
First use on or before Feb. 15, 1964.

SN 257,658. Sorenson Research Corp., Salt Lake City, Utah.
Filed Oct. 31, 1966.

CVP INFUSOR

Without waiving any of its common law rights, applicant hereby disclaims the word "Infusor" apart from the mark as shown. Owner of Reg. Nos. 769,232 and 795,641.
For Catheters and Catheter Placement Units.
First use July 27, 1966.

Class 45—Soft Drinks and Carbonated Waters

SN 246,395. Sun Drop Sales Corporation of America, St. Louis, Mo. Filed May 23, 1966.



Owner of Reg. Nos. 289,655, 821,362, and others.
For Carbonated Soft Drink.
First use October 1965; April 1929 as to "Sun Drop."

SN 262,095. Brookdale Beverage Company, d.b.a. Great Mountain Beverages, Clifton, N.J. Filed Jan. 9, 1967.

GREAT MOUNTAIN

For Soft Drinks.
First use Dec. 20, 1966.

Class 46—Foods and Ingredients of Foods

SN 187,817. Thrivo Co., Inc., d.b.a. Good Eatin' Dog Food Co., Philadelphia, Pa. Filed Mar. 2, 1964.

**GOOD
EATIN'**

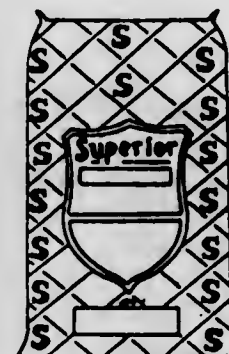
Owner of Reg. No. 407,570.
For Dog Food.
First use on or about Dec. 10, 1942.

SN 202,288. Mariscos Del Golfo S.A. de C.V., Merida, Mexico. Filed Sept. 21, 1964.

COLOSSUS

For Fresh Shrimp and Frozen Shrimp.
First use Apr. 22, 1964; in commerce Apr. 22, 1964.

SN 206,140. Anderson, Clayton & Co., d.b.a. Superior Feed Mills, Houston, Tex., assignee of Doric Corporation, Oklahoma City, Okla. Filed Nov. 13, 1964.



Owner of Reg. Nos. 191,828, 624,680, and others.
For Feed for Poultry, including Hens, Chicks, Pullets, Poults, and Turkeys, and Feed for Dogs and Rabbits.
First use Jan. 1, 1927.

SN 207,034. Frionor Norsk Frossenlisk A/L, Jersey City, N.J. Filed Nov. 27, 1964.



The words "U-Fry-Em," apart from the mark as shown, are disclaimed. Owner of Reg. Nos. 563,826, 574,204, and 605,559.
For Frozen Sea Food—Namely, Breaded Haddock.
First use May 1963.

SN 208,491. Ralston Purina Company, St. Louis, Mo. Filed Dec. 18, 1964.



The drawing is lined for red, but no claim to color is made. Owner of Reg. Nos. 85,569, 773,299, and others.
For Canned Tuna for Cats.
First use Nov. 2, 1964.

SN 210,520. Bauer & Loewy Trading Corp., d.b.a. B & L, New York, N.Y. Filed Jan. 25, 1965.

JONKERS

The Dutch word "Jonkers" means "young noblemen."
For Cocoa Powder.
First use Jan. 4, 1965.

SN 213,748. Armour and Company, Chicago, Ill. Filed Mar. 10, 1965.

COLORADO GOLD CUT STEAK

Applicant disclaims the words "Colorado" and "Steak" apart from the mark as shown.
For Meat Products—Namely, Fresh Steaks.
First use on or prior to Jan. 21, 1965.

SN 223,152. Con-Stan Industries, Inc., El Monte, Calif., assignee of Nutritional Science Corporation, El Monte, Calif. Filed July 12, 1965.

NUTRI-CAL

Owner of Reg. No. 637,956.
For Low Calorie Concentrated Vitamin, Mineral, and Protein Food in Powder Form for Use as a Weight-Reducing Diet.
First use February 1961.

SN 227,805. Allied Supermarkets, Inc., Detroit, Mich. Filed Sept. 15, 1965.

country kitchen

For Bacon, Lunch Meat, Sausage, Cheese, Cole Slaw, Potato Salad, Meat Salads, Jello Salads, and Fruit Salads.
First use Dec. 1, 1961, on cheese.
Subj. to Intf. with SN 237,510.

SN 233,234. Peavey Company, Minneapolis, Minn. Filed Nov. 22, 1965.

CONSTELLATION

For Prepared Cake and Doughnut Mix Sold Only in Bulk to Bakeries and Restaurants for Use in Baking the End Products.
First use October 1962.

SN 233,235. Peavey Company, Minneapolis, Minn. Filed Nov. 22, 1965.

CELESTIAL

For Prepared Cake and Doughnut Mix Sold Only in Bulk to Bakeries and Restaurants for Use in Baking the End Products.
First use October 1962.

SN 234,576. Ohio Pure Foods, Inc., Akron, Ohio. Filed Dec. 14, 1965.

**DAIRYLINE**

Owner of Reg. Nos. 704,067 and 744,139.
For Orange Juice.
First use Dec. 12, 1964; Nov. 19, 1959, as to "Dairyline" for margarine.

SN 234,798. Peter Hand Foundation, Inc., Waukegan, Ill., by change of name from Blatchford Calf Meal Company, Waukegan, Ill. Filed Dec. 17, 1965.

BLATCHFORD'S

For Livestock Feeds for Both Mixing and Feeding Unmixed.
First use approximately 1891.

SN 234,826. Kadison Laboratories, Inc., Chicago, Ill. Filed Dec. 17, 1965.



For Ground Spices.
First use Nov. 11, 1965.

SN 235,301. H. J. Heinz Company, Pittsburgh, Pa. Filed Dec. 27, 1965.

LA CUMBRE

"La Cumbre" is translated into English as "the top."
For Canned Food Products—Namely, Peppers, Mixed Vegetables; Strawberry, Pear, Papaya and Peach Nectar, Sliced Pears, Pineapple, Papaya and White Peaches, Catsup, Tomato Puree, and Salmon.

First use in or about 1937 on canned peppers.

SN 236,439. Constantino Riera Muniz, S.A., Villaviciosa, Asturias, Spain. Filed Jan. 10, 1966.



No claim of exclusive right is made to "Sidra," said word being the name of the goods. The English equivalent of "Escanciador" is "cupbearer." Owner of Spanish Reg. No. 432,906, dated Oct. 26, 1964.
For Cider.

SN 236,574. Dessaux Fils, Orleans, France. Filed Jan. 17, 1966.

DESSAUX FILS

For Vinegar, Mustard, Gherkins, and Tarragon Leaves.
First use 1923 on vinegar; in commerce 1923.

SN 237,510. Associated Wholesale Grocers of Arkansas, Inc., Little Rock, Ark. Filed Jan. 25, 1966.

COUNTRY KITCHEN

For Prepared Meat Products, Frankfurters, Sausage, and Bacon.
First use on or about Aug. 28, 1965.
Subj. to Intf. with SN 227,805.

SN 238,338. Burrus Mills, Incorporated, d.b.a. Burrus Mill and Elevator Company, Dallas, Tex. Filed Feb. 8, 1966.



The picture of the girl is fanciful. Owner of Reg. Nos. 50,479, 762,831, and others.
For Wheat Flour, Whole Wheat Flour, Corn Meal, Corn Meal Mix, Corn Bread Mix, Biscuit Mix, and Quick Grits.
First use Nov. 29, 1962.

SN 238,339. Burrus Mills, Incorporated, d.b.a. Burrus Mill and Elevator Company, Dallas, Tex. Filed Feb. 8, 1966.

BURRUS

Owner of Reg. Nos. 551,300, 762,831, and others.
For Wheat Flour, Whole Wheat Flour, Corn Meal, Corn Meal Mix, Corn Bread Mix, Pancake Mix, Biscuit Mix, and Quick Grits.
First use Nov. 29, 1962.

SN 239,833. United Biscuit Company of America, Melrose Park, Ill. Filed Feb. 28, 1966.

PEANOATERS

For Cookies.
First use Jan. 10, 1966.

SN 240,120. Steele Canning Company, Springdale, Ark. Filed Mar. 3, 1966.



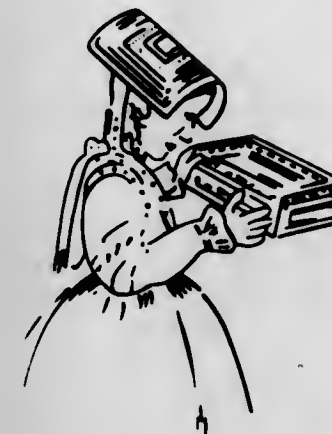
Owner of Reg. Nos. 323,089 and 670,711.
For Canned Spinach.
First use Dec. 22, 1965.

SN 240,463. J. D. Mullen Co., Inc., Palestine, Ill. Filed Mar. 8, 1966.

MULLEN'S

For French Dressing, Imitation French Dressing, and Barbecue Sauce.
First use Jan. 15, 1945.

SN 240,944. Marie Nicol (nee Tanguy), d.b.a. Mme. Tanguy, Quimper, Finistere, France. Filed Mar. 14, 1966.



The figure shown in the drawing does not represent any particular living individual. Owner of French Reg. No. 2,225, dated Sept. 7, 1964 (Quimper); Natl. Inst. No. 232,899.
For Food and Food Products—Namely, Cakes and Pancakes.
First use 1932; in commerce 1953.

SN 241,594. Dorothy Lamour Enterprises, Ltd., Brooklandville, Md. Filed Mar. 22, 1966.



For Worcestershire Sauce, Meat Sauces, and Cake.
First use Dec. 15, 1965.

SN 243,365. Vitafrese Co., Inc., Kent, Wash. Filed Apr. 13, 1966.

CAKE WALK

The word "Cake," separate and apart from the mark, is disclaimed.
For Frozen Comestibles Containing Ice Cream or Ice Milk as an Ingredient or Part Thereof—Namely, Ice Cream and Ice Milk Bars.
First use on or about Sept. 3, 1964.

SN 243,398. Beatrice Foods Co., Chicago, Ill. Filed Apr. 14, 1966.

SNORKELS

For Candy.
First use Apr. 4, 1966.

SN 243,641. Consolidated Foods Corporation, Chicago, Ill. Filed Apr. 18, 1966.

Nancy Hanks

"Nancy Hanks" is the name of a deceased person.
For Pickles.
First use May 18, 1925.



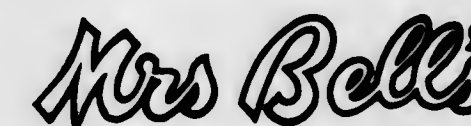
For Dietary Foods—Namely, Breads, Cakes, Cookies, Muffins, Pies, Jams, Jellies, Candies, Ice Cream, Breakfast Cereals, Flours, Flavoring Extracts, Cooking Oils, Noodles, and Salad Dressings.
First use 1926.

SN 243,732. Topsy's International, Inc., Kansas City, Mo. Filed Apr. 18, 1966.

TOPSY'S

For Popcorn.
First use July 1, 1950.

SN 248,764. Atlantic Preserving Company, Inc., Atlanta, Ga. Filed Apr. 19, 1966.



Owner of Reg. No. 811,789.
For Mayonnaise, Salad Dressing, Barbecue Sauce, and Relish Spreads.
First use January 1929.

SN 244,249. Ralston Purina Company, St. Louis, Mo. Filed Apr. 25, 1966.

FIELD 'N FARM

For Dog Food.
First use Dec. 16, 1965.

SN 244,525. Quality Bakers of America Cooperative, Inc., New York, N.Y. Filed Apr. 28, 1966. COLLECTIVE MARK.



The portrait of the girl is fanciful. Owner of Reg. Nos. 401,161, 783,290, and 796,863.
For Cookies and Cakes.
First use Oct. 25, 1963.

SN 244,744. Safeway Stores, Incorporated, Oakland, Calif. Filed May 2, 1966.



Applicant disclaims the words "Guaranteed Product" apart from the mark as shown. Owner of Reg. Nos. 226,854, 740,319, and others.
For Fresh Fruits and Fresh Vegetables.
First use Dec. 27, 1965.

SN 244,812. Dubuque Packing Company, Dubuque, Iowa. Filed May 3, 1966.

DEVIL DOG

No claim is made to the word "Dog," apart from the mark as presented without waiving any common law rights therein.
For Hot Sausage.
First use Dec. 1, 1965.

SN 244,952. Alamo Products Company, Alamo, Tex. Filed May 5, 1966.



For Canned Beans.
First use Mar. 28, 1966.

SN 245,005. Nash's Coffee, Inc., Minneapolis, Minn. Filed May 5, 1966.



For Coffee.
First use 1940.

SN 245,055. Basic Food Materials, Inc., North Bergen, N.J. Filed May 6, 1966.

SPICENT

For Spices and Blends and Mixtures of Spices.
First use July 8, 1957.

SN 245,077. Henri's Food Products Company, Inc., Milwaukee, Wis. Filed May 6, 1966.



No claim is made to the expression "One Cal" apart from the mark as shown. Owner of Reg. Nos. 666,666, 755,632, and others.
For Salad Dressing.
First use Apr. 7, 1966.

SN 245,354. Tillamook County Creamery Association, Tillamook, Oreg. Filed May 10, 1966.



For Cheese.
First use Apr. 8, 1966.

SN 246,013. Freez-Ette Corporation, d.b.a. Chick-N-Treat Division, Atlanta, Ga. Filed May 17, 1966.



For Marinade and Breeding for Frying Chickens.
First use June 1, 1961.

SN 246,543. Di Giorgio Corporation, d.b.a. Sunnyland Juice Corporation, San Francisco, Calif. Filed May 25, 1966.

SPOOK

For Non-Carbonated Fruit Drinks Containing Water.
First use Apr. 25, 1966.

SN 246,759. Dairyland Food Laboratories, Inc., Waukesha, Wis. Filed May 27, 1966.

LBO

For Enzyme Modified Milk Fat Compositions To Be Used for Food Purposes.
First use Apr. 17, 1961.

SN 248,237. The Kroger Co., Cincinnati, Ohio. Filed June 16, 1966.

WISHBONE

For Frozen Poultry Packaged for the Retail Trade—Name-ly, Chickens, Turkeys, Ducks, and Game Hens.
First use at least as early as Nov. 16, 1961.

SN 248,522. The Quaker Oats Company, Chicago, Ill. Filed June 20, 1966.



The design is not a representation of any living person. The drawing is lined for shading only. Owner of Reg. No. 816,709.
For Breakfast Cereal.
First use November 1965; May 27, 1965, as to "Quake."

SN 254,424. The Jel Sert Company, Belwood, Ill. Filed Sept. 14, 1966.



The drawing is lined for blue. Owner of Reg. Nos. 223,900, 300,762, and 519,292.
For Drink Mix in Powder Form for Making Flavored Food Drinks.
First use June 17, 1964.

SN 256,510. The Morrison Milling Co., Denton, Tex. Filed Oct. 17, 1966.



The drawing is lined for yellow.
For Pancake Mix.
First use Sept. 9, 1966.

SN 257,915. Donald C. Linn, Mount Prospect, Ill. Filed Nov. 4, 1966.

EIFFEL TOWER BURGER

The word "Burger" is disclaimed apart from the mark as shown.
For Hamburger Sandwiches.
First use on or about Aug. 16, 1962.

SN 257,916. Donald C. Linn, Mount Prospect, Ill. Filed Nov. 4, 1966.

FRENCH POODLE

For Hot Dog Sandwiches.
First use on or about Aug. 16, 1962.

SN 258,870. John Morrell & Co., Ottumwa, Iowa. Filed Nov. 17, 1966.

HUNTMASTER

Owner of Reg. Nos. 363,069, 536,254, and 558,989.
For Refrigerated Cooked Ham, Sliced Bacon, Sausage, and Fresh Pork.
First use Feb. 8, 1966.

SN 259,153. Phoenix Gems, Inc., Phoenix, Ariz. Filed Nov. 21, 1966.

PERMA-GUARD

Owner of Reg. No. 753,554.
For Natural Mineral Feed Supplement To Be Used in Animal and Poultry Feed.
First use Feb. 13, 1962.

SN 261,435. R. H. McCracken & Co., Inc., Chicago, Ill. Filed Dec. 27, 1966.

CHEVERON

For Chocolate Powders for Making Chocolate Food Drinks.
First use Sept. 23, 1966.

SN 262,834. Blue Goose Growers, Inc., Fullerton, Calif. Filed Jan. 19, 1967.



For Fresh Citrus Fruits.
First use 1919.

SN 262,996. Campbell Soup Company, Camden, N.J. Filed Jan. 23, 1967.

EFFICIENT

For Soup Mixes, Soup Bases, and Frozen Prepared Entrees.
First use May 3, 1966.

SN 263,001. Dave Walsh Company, Inc., d.b.a. Dave Walsh Co., Oxnard, Calif. Filed Jan. 23, 1967.

COMING UP

For Fresh Vegetables and Fruits.
First use Dec. 5, 1966.

Class 47 — Wines

SN 233,553. Castellblanch S.A., Barcelona, Spain. Filed Nov. 26, 1965.

CASTELLBLANCH

"Castellblanch" is the Catalan word meaning "white castle." Owner of Spanish Reg. No. 73,348, dated July 18, 1929.

For Wines.

First use July 1929; in commerce November 1955.

Class 48 — Malt Beverages and Liquors

SN 236,198. The Queen City Brewing Company, Cumberland, Md. Filed Jan. 11, 1966.



For Beer.

First use December 1952.

SN 236,424. Sterling Brewers, Inc., Evansville, Ind. Filed Jan. 13, 1966.

MICKEY'S

Owner of Reg. No. 784,925.

For Malt Liquor.

First use Feb. 21, 1964.

Class 49 — Distilled Alcoholic Liquors

SN 239,813. Societe St-Raphael, Societe Anonyme, Paris (Seine), France. Filed Feb. 28, 1966.

Wodka
du Comte Arthur
Tarnowski

The name "Comte Arthur Tarnowski" refers to a living individual whose consent is of record. Without waiving its common law rights herein no claim is made to the word "Wodka" apart from the mark as shown. Owner of French Reg. No. 530,323, dated Apr. 15, 1965 (Paris); Natl. Inst. No. 246,100.

For Vodka.

SN 242,666. Charles Rosenblum, d.b.a. Stuart Lloyd Co., New York, N.Y. Filed Apr. 4, 1966.

TWELVE KILT

For Scotch Whisky.

First use September 1942.

SN 251,319. Old Boone Distillery Co., Louisville, Ky. Filed July 29, 1966.

ARCHANGEL

For Vodka.

First use Dec. 16, 1965.

SN 261,425. James B. Beam Distilling Co., d.b.a. The Clear Spring Distilling Co., Chicago, Ill. Filed Dec. 27, 1966.

KINGKORN

The word "Korn" is disclaimed apart from the mark as shown.

For Corn Whiskey.

First use Aug. 15, 1934.

SN 261,426. James B. Beam Distilling Co., Chicago, Ill. Filed Dec. 27, 1966.

COLONEL
JAMES B. BEAM

The name "Colonel James B. Beam" is that of a deceased individual. Owner of Reg. Nos. 371,871, 563,109, and others.

For Whiskey.

First use Jan. 25, 1935.

SN 262,999. Tuoni & Canepa, Leghorn, Italy. Filed Jan. 23, 1967.

TUACA

For Demi Sec Liqueur.

First use Mar. 1, 1960; in commerce Mar. 1, 1960.

Class 50 — Merchandise Not Otherwise Classified

SN 236,496. Thomas S. Kulka, d.b.a. Pro-Tex Reel Band Co., Cleveland, Ohio. Filed Jan. 14, 1966.

VINYLBAND

For Protective Retaining Means for Film or Sound Reels.

First use June 22, 1954.

SN 238,270. Nasco, Inc., Springfield, Tenn. Filed Feb. 7, 1966.



The diagonal lining on the drawing forms a part of the mark.

For Portable Barber Shop, Including a Prefabricated Building, Sign, Furniture, Furnishings, Heating and Air Conditioning Equipment, and a Vacuum Clipper System.

First use June 14, 1965.

SN 242,785. John Thomas Batts, Inc., Zeeland, Mich. Filed Apr. 6, 1966.

JOHN THOMAS BATTS

The name "John Thomas Batts" does not identify any particular living individual.

For Garment Hangers.

First use in or about 1911.

SN 242,786. John Thomas Batts, Inc., Zeeland, Mich. Filed Apr. 6, 1966.

BATTS

For Garment Hangers.

First use in or about 1911.

SN 248,820. Hobbyfish, Inc., Miami, Fla. Filed Apr. 20, 1966.

HOBBYFISH

For Aquariums and Ornamental Accessories Therefor.

First use Mar. 15, 1965.

SN 252,774. Up-Right, Inc., Berkeley, Calif. Filed Aug. 19, 1966.



For purposes of registration and reserving its common law rights, applicant disclaims the representation of the goods in the design apart from the mark as used.

For Scaffolding.

First use July 7, 1966.

SN 259,368. Colbert Die Cast Co. Inc., South Gate, Calif. Filed Nov. 25, 1966.

PERSONA PLATE

The word "Plate" is hereby disclaimed apart from the mark as shown.

For Name Plates for Doors, Walls, and Desks.

First use Dec. 15, 1956.

Class 51 — Cosmetics and Toilet Preparations

SN 238,261. The Mennen Company, Morristown, N.J. Filed Feb. 7, 1966.

THE COMPLEAT MAN

For Men's Skin Lotions and Cologne.

First use Jan. 20, 1966.

Subj. to Intf. with SN 244,397.

SN 240,636. Natcon Chemical Co. Incorporated, Plainview, N.Y. Filed Mar. 10, 1966.

STATUS

For Hair Conditioner Cream, Scalp Reviver, All-Purpose Cream, Skin Lotion, and Hand Lotion.

First use Feb. 3, 1966.

SN 244,397. Complete Woman, Inc., Chicago, Ill. Filed Apr. 27, 1966.



THE COMPLETE WOMAN

For Kit of Ladies' Toiletries Containing Skin Freshener and Toner, Cleansing Oil, Moisturizer, and Cotton Pads Used for the Application of or in Connection With Such Toiletries.

First use Mar. 15, 1965.

Subj. to Intf. with SN 238,261 and SN 241,487.

SN 245,341. Chas. Pfizer & Co., Inc., New York, N.Y. Filed May 10, 1966.

WITH IT

For Cologne, Perfume, Hand Cream, and After Shave Lotion.

First use Apr. 19, 1966.

SN 245,560. Bristol-Myers Company, New York, N.Y. Filed May 13, 1966.

VALE

For Underarm Deodorant.

First use Mar. 19, 1945.

SN 246,324. Gebruder Kleiner, Berlin, Germany. Filed May 23, 1966.

BLUES

Owner of German Reg. No. 770,761, dated July 29, 1957.

For Eau de Parfum and Parfum.

SN 246,359. The Procter & Gamble Company, Cincinnati, Ohio. Filed May 23, 1966.

HEADWIND

For Hair Spray.

First use Feb. 28, 1966.

SN 246,361. The Procter & Gamble Company, Cincinnati, Ohio. Filed May 23, 1966.

BOUNDLESS

For Personal Deodorant.

First use Feb. 28, 1966.

SN 246,544. Maurice Fabricant, d.b.a. Fabricant, New York, N.Y. Filed May 25, 1966.

WILLING

For Perfume and Toilet Water.

First use Mar. 12, 1953.

TM 32

OFFICIAL GAZETTE

APRIL 4, 1967

SN 246,855. Avon Products, Inc., New York, N.Y. Filed May 31, 1966.

CROSSWINDS

For Men's Toiletries—Namely, Cologne, After Shave Lotion, After Shave Spray, Cream Hair Dress, Talc, and Aerosol Deodorant.

First use May 20, 1966.

SN 246,858. Avon Products, Inc., New York, N.Y. Filed May 31, 1966.

WINDJAMMER

For Men's Toiletries—Namely, Cologne, After Shave Lotion, After Shave Spray, Cream Hair Dress, Talc, and Aerosol Deodorant.

First use May 20, 1966.

SN 246,981. Yardley of London, Inc., Totowa, N.J. Filed May 31, 1966.

LIME AND LEATHER

Applicant disclaims any exclusive right in the word "Lime," apart from the mark as shown.

For Men's Toiletries—Namely, After Shaving Lotion and Cologne.

First use May 18, 1966.

Subj. to Intf. with SN 250,463.

SN 247,099. Samuel Bonat & Bro., Inc., West Paterson, N.J. Filed June 2, 1966.

SPOTLIGHT

For Cold Permanent Waving Preparations.

First use May 10, 1961.

SN 248,777. Chadbourn Gotham, Inc., Charlotte, N.C. Filed June 23, 1966.

SoFchét

For Leg Cosmetic Skin Softener for Smoothing on Stockings.

First use May 26, 1966.

SN 248,778. Chesebrough-Pond's Inc., d.b.a. Prince Matchabelli, New York, N.Y. Filed June 23, 1966.

SHEER ESSENCE

Applicant disclaims the word "Essence" apart from the mark as shown.

For Cologne.

First use May 27, 1966.

SN 250,941. Helene Curtis Industries, Inc., Chicago, Ill. Filed July 25, 1966.

CONTROL/PLUS

For Cold Permanent Waving Lotion and Hair Spray.

First use on or about Feb. 8, 1966.

SN 256,627. Professional Aids Corp., Port Washington, N.Y. Filed Oct. 18, 1966.

LAV-O-DERM

For Medicated Skin Cleanser and Make-Up Remover.

First use 1964.

Class 52—Detergents and Soaps

SN 233,872. Clairol Incorporated, New York, N.Y., assignee of Bristol-Myers Company, New York, N.Y. Filed Dec. 3, 1965.

LIVE

Owner of Reg. No. 695,418.

For Hair Shampoo.

First use June 15, 1965.

SN 241,487. The Mennen Company, Morristown, N.J. Filed Mar. 21, 1966.

THE COMPLEAT MAN

For Men's Toiletry Soap.

First use Mar. 8, 1966.

Subj. to Intf. with SN 244,397.

SN 241,488. The Mennen Company, Morristown, N.J. Filed Mar. 21, 1966.

TOUR PAC

For Men's Toiletry Soap.

First use Mar. 8, 1966.

SN 246,857. Avon Products, Inc., New York, N.Y. Filed May 31, 1966.

CROSSWINDS

For Hair Shampoo and Toilet Soap.

First use May 20, 1966.

SN 246,859. Avon Products, Inc., New York, N.Y. Filed May 31, 1966.

WINDJAMMER

For Hair Shampoo and Toilet Soap.

First use May 20, 1966.

APRIL 4, 1967

U. S. PATENT OFFICE

TM 33

SN 249,010. Hillyard Enterprises, Inc., St. Joseph, Mo. Filed June 27, 1966.

SN 260,698. Holland-Rantos Company, Inc., New York, N.Y. Filed Dec. 14, 1966.

Surga-phène

Owner of Reg. No. 433,892.
For Hexachlorophene Liquid Soap for Surgical Scrubbing.
First use June 1, 1966.

SN 251,324. Chas. Pfizer & Co., Inc., New York, N.Y. Filed July 29, 1966.

NEW WOMAN

For Toilet Soap.
First use June 24, 1966.

SN 252,237. Huntington Laboratories, Inc., Huntington, Ind. Filed Aug. 12, 1966.

BEAUCOUP

The English translation of French word "Beaucoup" is "much" or "many."

For Germicidal Cleaner for Institutional Use.

First use Aug. 5, 1966.



Owner of Reg. Nos. 290,475, 809,174, and others.
For Chemically Treated Tissues for Cleaning the Face and Hands, and Other Parts of the Person.
First use Aug. 30, 1965.

SN 262,100. The Procter & Gamble Company, Cincinnati, Ohio. Filed Jan. 9, 1967.

PILE-UP

For Rug Shampoo.

First use July 12, 1966.

SERVICE MARKS**Class 100—Miscellaneous**

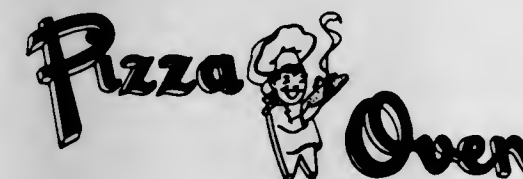
SN 229,534. Associated Oil & Gas Co., d.b.a. Long Mile Rubber Company, Dallas, Tex. Filed Oct. 7, 1965.

SN 202,876. Unified Free Will Baptist Church, New Haven, Conn. Filed Sept. 28, 1964.

UNIFIED FREE WILL BAPTIST CHURCH

For Organization Service—Namely, Organizing and Consolidating Churches, Promotion of Unity, Discipline and Knowledge of Religion, and Providing Opportunity for Discussion and Communication Among Ministers and Laymen.
First use Dec. 21, 1963.

SN 214,990. JKJ Corporation, d.b.a. Pizza Oven, and Pizza Oven Italian Restaurant, Denver, Colo. Filed Mar. 25, 1965.



No claim is made to the word "Pizza" apart from its use in the present mark.

For Restaurant Services.

First use in or about July 1955.

TM 837 O.G.—2



For Tire Retread Testing.
First use on or about Sept. 27, 1965.

SN 237,246. NeighborGood Stores, Inc., Monroeville, Pa. Filed Jan. 25, 1966.

NeighborGood

For Promoting and Designing Shopping Centers for Others, Including the Furnishing of Building Plans and Specifications and Rendering Technical Advice to Merchants Regarding the Financing and Marketing Potential of Shopping Center Stores.
First use Jan. 6, 1966.

SN 243,523. America-West Motor Hotels, Inc., Seattle, Wash. Filed Apr. 15, 1966.

AMERICA WEST

For Motel and Hotel Services.

First use Mar. 5, 1966.

SN 243,808. Wells Petroleum Company, Chicago, Ill. Filed Apr. 15, 1966.

BigAMERICA

For Lodging and Restaurant Services for Truck Drivers.
First use Nov. 6, 1965.

SN 247,705. Donald C. Linn, Mt. Prospect, Ill. Filed June 9, 1966.



For Restaurant Services.
First use on or about Aug. 16, 1962.

SN 247,706. Donald C. Linn, Mt. Prospect, Ill. Filed June 9, 1966.

French Cafes



The words "French Cafes" are disclaimed apart from the mark as shown.

For Restaurant Services.
First use on or about Aug. 16, 1962.

Class 101 — Advertising and Business

SN 228,928. Nosco, Inc., Waukegan, Ill. Filed Sept. 29, 1965.

NOSCO

For Printing and Lithographing Services for Others.
First use Jan. 2, 1907.

SN 229,003. Glendinning Enterprises, Inc., Westport, Conn. Filed Sept. 30, 1965.

GRAB BAG

For Promoting the Sale of the Goods and Services of Others by Means of Services Related to Promotional Game Programs of the Public-Participation Type, for Retail Businesses of Others—Namely, Originating, Planning, Devising Materials for, and Implementing Such Programs.
First use Mar. 4, 1965.

SN 231,264. Southeastern Personnel, Inc., Atlanta, Ga. Filed Oct. 22, 1965.



The mark consists of a fanciful showing of the letters "SP." For Providing Employable Executive-Type Personnel for Business Firms.
First use on or about Nov. 14, 1961.

SN 244,916. Mister Donut of America, Inc., Westwood, Mass. Filed May 4, 1966.

SUCCESSMANSHIP

For Rendering Technical Assistance to Operators of Doughnut Shops in All Phases of Their Business.
First use Dec. 12, 1965.

SN 245,360. Welcome Wagon International, Inc., Memphis, Tenn. Filed May 10, 1966.



The words "Member" and "International," and the numerical notation "1928" are disclaimed, apart from the mark as shown. The mark includes a fanciful representation of the letters "WW." Owner of Reg. Nos. 439,421, 735,805, and others.

For Community Services in Bringing Civic, Religious, Social, and Commercial Information to the Public, Through Individual Home Visits Made in Person by Its Representatives, as a Public Service and in Behalf of Interested Sponsors.

First use July 16, 1965; July 1928 as to the words "Welcome Wagon."

Class 102 — Insurance and Financial

SN 196,759. Bankers Investment Company, Hutchinson, Kans. Filed June 30, 1964.



For Personal Loan Services.
First use on or about May 6, 1964.

SN 240,980. Sun Life Assurance Company of Canada, Montreal, Quebec, Canada. Filed Mar. 14, 1966.

FOLLOW THE SUN FOR LIFE

For Underwriting of Individual and Group Life, Health, Accident, and Disability Insurance Protection.
First use Mar. 19, 1965.

SN 240,981. Sun Life Assurance Company of Canada, Montreal, Quebec, Canada. Filed Mar. 14, 1966.



For Underwriting of Individual and Group Life, Health, Accident, and Disability Insurance Protection.
First use Mar. 19, 1965; 1885 in a different form.

SN 241,158. The Manufacturers Life Insurance Company, Toronto, Ontario, Canada. Filed Mar. 16, 1966.

MANULIFE PROTECTOR

For Life Insurance Underwriting Services.
First use Dec. 15, 1965.

SN 242,499. Julian K. Roosevelt, New York, N.Y. Filed Apr. 1, 1966.

ROOSEVELT & SON

For Management of Investments in Corporate Stocks and Bonds.
First use January 1797.

SN 243,072. American National Insurance Company, Galveston, Tex. Filed Apr. 11, 1966.



The words "Insurance Company" are disclaimed apart from the mark as shown. The design feature of the mark contains a ligature of the letters "A" and "N," which are lined for the color blue.

For Underwriting Life, Health, Hospitalization, and Accident Insurance.
First use Dec. 10, 1965.

SN 243,812. United States National Bank of Oregon, Portland, Oreg. Filed Apr. 19, 1966.

MONEY MINDER

No claim is made to the word "Money" apart from the mark as shown.
For Supplying Applicant Banks' Customers With Periodic Income and Expenditure Reports Based on Checks and Deposits Made Out by Customers During the Specific Period.
First use Mar. 10, 1966.

SN 246,215. Utica Mutual Insurance Company, Utica, N.Y. Filed May 20, 1966.

UTICA MUTUAL

Insurance that starts with YOU
For Underwriting Various Types of Insurance, Including Casualty, Fidelity and Surety, Fire and Property, Inland Marine, Ocean Marine, and Accident and Health.
First use September 1965.

Class 103 — Construction and Repair

SN 203,889. David H. Redden, d.b.a. Kwality-Kwik Associates, Pompano Beach, Fla. Filed Oct. 13, 1964.



For Dry Cleaning Services.
First use Mar. 1, 1964.

SN 229,361. Kwiki Corporation, Minneapolis, Minn. Filed Oct. 5, 1965.



For Providing Automatic Coin Operated Carwashing Service.
First use June 1, 1965.

SN 236,985. General Precision, Inc., Binghamton, N.Y. Filed Jan. 21, 1966.

LINK

Owner of Reg. No. 438,568.
For Repair, Maintenance, Modification, Testing, and Adjusting of Electronic Equipment.
First use about 1935.

SN 243,850. Degree Corporation, Kansas City, Kans. Filed Apr. 20, 1966.



For Automotive Repair and Maintenance Services.
First use Mar. 28, 1966.

Class 104 — Communication

SN 230,308. Truth Publishing Company, Inc., Elkhart, Ind. Filed Oct. 15, 1965.



The words "Indiana" and "Group" are disclaimed. The mark includes a fanciful showing of the letters "CG." For Radio and Television Broadcasting Services. First use Nov. 30, 1964.

Class 105 — Transportation and Storage

SN 223,571. Novo Services, Inc., New York, N.Y. Filed July 16, 1965.

BONDEDentification

For Storage of Television Film for Advertising Agencies. First use June 1, 1965.

SN 244,565. British West Indian Airways Limited, New York, N.Y. Filed Apr. 29, 1966.

SUNJET

For Air Transportation of Passengers in Combination With Travel Tours. First use in or about November 1964.

SN 246,207. Summitours of New England, Inc., Boston, Mass. Filed May 20, 1966.

WESTERN CARNIVAL

The word "Western" is disclaimed apart from the mark as shown.

For Arranging and Conducting Tours. First use Apr. 11, 1966. Subj. to Intf. with SN 255,761.

SN 248,390. Global Van Lines, Anaheim, Calif. Filed June 20, 1966.



Owner of Reg. No. 661,769. For Arranging for the Shipment of Goods and for Transportation of Goods by Motor Vehicle, Air, Water, or Rail. First use on or about May 10, 1966.

Class 107 — Education and Entertainment

SN 239,364. Raymond E. Andrew, d.b.a. Andrew-Columbus Barber College, Columbus, Ohio. Filed Feb. 23, 1966.



The drawing is lined for the color red, but no claim is made to color as a feature of the mark. Applicant disclaims the word "Method" and the representation of the scissors and comb as used apart from the mark. For Teaching of Barbering. First use 1934.

SN 240,092. Joshua E. Gentry, St. Louis, Mo. Filed Mar. 3, 1966.

WHEN SINGERS MEET

For Musical Performances—Namely, Gospel, Religious and Spiritual Singing Rendered Through the Medium of Personal Appearances. First use 1943.

SN 255,385. Varian Associates, Palo Alto, Calif. Filed Sept. 28, 1966.



Owner of Reg. Nos. 582,256, 750,058, and others. For Conducting Seminars and Giving Lectures in the Field of Vacuum Technology. First use January 1963.

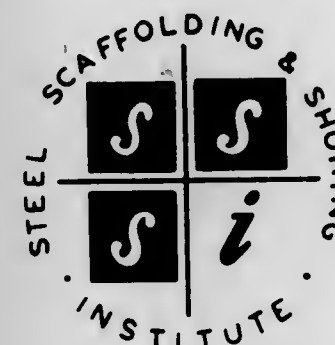
SN 259,205. Empire Theatre, Los Angeles, Calif. Filed Nov. 22, 1966.



For Entertainment Service in the Form of Brief Religious Television Programs. First use Feb. 28, 1966.

COLLECTIVE MEMBERSHIP MARKS**Class 200**

SN 230,203. Steel Scaffolding and Shoring Institute, Cleveland, Ohio. Filed Oct. 14, 1965.



For Indicating Membership in a National Trade Association. First use July 8, 1965.

SN 233,982. American Optometric Association, Inc., St. Louis, Mo. Filed Dec. 6, 1965.



The drawing is lined for the color red. The design feature shown in the upper rectangle of the mark is the representation of an eye. For Indicating Membership in the Applicant Association. First use Dec. 12, 1963.

CERTIFICATION MARKS**Class A — Goods**

SN 228,223. Verified Audit Circulation Corporation, Los Angeles, Calif. Filed Sept. 20, 1965.



The mark certifies the accuracy of the user's statements as to newspaper or magazine circulation. For Newspapers and Magazines. First use on or about July 1, 1952.

TRADEMARK REGISTRATIONS ISSUED PRINCIPAL REGISTER

Class 1—Raw or Partly Prepared Materials

- 826,612. TOVIS M-63. Toho Rayon Company, Limited. MULTIPLE CLASS (Classes 1, 42, and 43). SN 195,466. Pub. 1-17-67. Filed 6-11-64.
- 826,613. SEPAROL. Fosco International Limited. SN 233,710. Pub. 9-6-66. Filed 12-1-65.
- 826,614. SUPER-X. Lauhoff Grain Company. SN 246,328. Pub. 1-17-67. Filed 5-23-66.
- 826,615. MISCELLANEOUS DESIGN. Pioneer Hi-Bred Corn Company. SN 247,830. Pub. 1-17-67. Filed 6-10-66.
- 826,616. SULFAGLAS. Fiberfil, Inc. SN 247,908. Pub. 1-17-67. Filed 6-13-66.
- 826,617. SPECTRA-FOIL. Hastings & Co., Inc. SN 248,038. Pub. 1-17-67. Filed 6-14-66.
- 826,618. BEAULO. Armour and Company. SN 248,097. Pub. 1-17-67. Filed 6-15-66.
- 826,619. ATTACLAY. Minerals & Chemicals Philipp Corporation. SN 257,003. Pub. 1-17-67. Filed 10-24-66.

Class 2—Receptacles

- 826,620. POP TAB. Olympia Brewing Company. SN 180,321. Pub. 9-22-64. Filed 11-1-63.
- 826,621. PARK. Park Manufacturing Company. SN 211,917. Pub. 1-17-67. Filed 2-12-65.
- 826,622. CLARION. Brunswick Corporation. MULTIPLE CLASS (Classes 2, 18, 23, 37, 44, and 52). SN 213,291. Pub. 1-17-67. Filed 3-4-65.
- 826,623. DEN CADDY. Atlantic Products Corporation. SN 226,891. Pub. 1-17-67. Filed 9-1-65.
- 826,624. COMFORT CUP AND DESIGN. Sweetheart Plastics, Inc. SN 231,285. Pub. 1-17-67. Filed 10-22-65.
- 826,625. CONVENTIONEER. Erell Manufacturing Company. SN 240,872. Pub. 1-17-67. Filed 3-14-66.
- 826,626. BAR-FAST. Floral Development Corp. SN 241,136. Pub. 1-17-67. Filed 3-16-66.
- 826,627. CRISP-A-TIER. Rexall Drug and Chemical Company, d.b.a. Tupperware. SN 241,885. Pub. 1-17-67. Filed 3-23-66.
- 826,628. PANABIN. Pennsylvania Box & Lumber Company, Inc. SN 243,015. Pub. 1-17-67. Filed 4-8-66.
- 826,629. BLADE-TAINER. Du-Mor Blade Company. SN 255,679. Pub. 1-17-67. Filed 10-4-66.
- 826,630. RAINBOWLADER. International Minerals & Chemical Corporation. SN 257,864. Pub. 1-17-67. Filed 11-3-66.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

- 826,631. FLITEWAY. United States Trunk Company, Inc., d.b.a. United States Luggage. SN 242,865. Pub. 1-17-67. Filed 4-11-66.

Class 4—Abrasives and Polishing Materials

- 826,632. SNAP-ON. Snap-On Tools Corporation. SN 200,498. Pub. 1-17-67. Filed 8-24-64.

- 826,633. EPIC. Armstrong Cork Company. SN 208,804. Pub. 5-17-66. Filed 12-24-64.
- 826,634. SLOWDOWN. Barrier Chemicals, Inc. SN 231,019. Pub. 1-17-67. Filed 10-22-65.
- 826,635. SHOWDOWN. Barrier Chemicals, Inc. SN 231,020. Pub. 1-17-67. Filed 10-22-65.
- 826,636. CAREFREE. Manufacturers' Marketing Co., U.S.A., Inc. SN 234,355. Pub. 1-17-67. Filed 12-10-65.
- 826,637. AMER-SHEEN. American-Lincoln Corporation. SN 235,460. Pub. 1-17-67. Filed 12-29-65.
- 826,638. PLENO-7. Plasticon Chemicals, Inc. SN 238,445. Pub. 1-17-67. Filed 2-9-66.
- 826,639. S AND DESIGN. Morton International, Inc. MULTIPLE CLASS (Classes 4, 6, 16, 29, and 52). SN 240,231. Pub. 11-1-66. Filed 3-7-66.

Class 5—Adhesives

- 826,640. BIND-ALL. Earle Jennings and Associates Incorporated. SN 222,847. Pub. 1-17-67. Filed 7-7-65.
- 826,641. VINYL-TITE. Standard Chemical Products, Inc. SN 222,876. Pub. 1-17-67. Filed 7-7-65.
- 826,642. ADCOTE. Morton International, Inc. MULTIPLE CLASS (Classes 5, 6, and 16). SN 232,046. Pub. 9-13-66. Filed 11-3-65.

Class 6—Chemicals and Chemical Compositions

- 826,639. (See Class 4 for this trademark.)
- 826,642. (See Class 5 for this trademark.)
- 826,643. CONRECOR. C. J. Webb, Jr., Inc., by change of name from Chas. J. Webb Sons Co., Inc. SN 220,983. Pub. 1-3-67. Filed 6-11-65.
- 826,644. LEPAGE'S. Le Page's, Inc. SN 221,379. Pub. 1-17-67. Filed 6-17-65.
- 826,645. SUPERB. Archer-Daniels-Midland Company. SN 231,529. Pub. 1-17-67. Filed 10-24-65.
- 826,646. SNOWFLAKE. Archer-Daniels-Midland Company. SN 231,531. Pub. 1-17-67. Filed 10-24-65.
- 826,647. SILBOND. Stauffer Chemical Company. SN 236,526. Pub. 12-13-66. Filed 1-14-66.
- 826,648. L & M. L & M-Surco Mfg., Inc. MULTIPLE CLASS (Classes 6 and 12). SN 239,524. Pub. 1-17-67. Filed 2-21-66.
- 826,649. LUFIBROL. Badische Anilin- & Soda-Fabrik Aktiengesellschaft. SN 245,284. Pub. 10-25-66. Filed 5-10-66.
- 826,650. AVERT. Bristol-Myers Company. SN 247,104. Pub. 1-17-67. Filed 6-2-66.
- 826,651. CMRL-1415-SER. The Governors of the University of Toronto, d.b.a. Connaught Medical Research Laboratories. SN 248,698. Pub. 1-17-67. Filed 6-22-66.
- 826,652. CMRL-1415-D. The Governors of the University of Toronto, d.b.a. Connaught Medical Research Laboratories. SN 248,699. Pub. 1-17-67. Filed 6-22-66.
- 826,653. CMRL-1415-SCV. The Governors of the University of Toronto, d.b.a. Connaught Medical Research Laboratories. SN 248,700. Pub. 1-17-67. Filed 6-22-66.
- 826,654. CMRL-1420. The Governors of the University of Toronto, d.b.a. Connaught Medical Research Laboratories. SN 248,701. Pub. 1-17-67. Filed 6-22-66.

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- 826,655. CMRL-1415-DSCV. The Governors of the University of Toronto, d.b.a. Connaught Medical Research Laboratories. SN 248,702. Pub. 1-17-67. Filed 6-22-66.
- 826,656. CMRL-1415. The Governors of the University of Toronto, d.b.a. Connaught Medical Research Laboratories. SN 248,703. Pub. 1-17-67. Filed 6-22-66.
- 826,657. CMRL-1415-ATM. The Governors of the University of Toronto, d.b.a. Connaught Medical Research Laboratories. SN 248,704. Pub. 1-17-67. Filed 6-22-66.
- 826,658. CALERT. Chevron Chemical Company. SN 248,779. Pub. 1-17-67. Filed 6-23-66.
- 826,659. WEED-N-CHICK. J. & L. Adikes, Inc. SN 249,021. Pub. 1-17-67. Filed 6-27-66.
- 826,660. TIGER. Stauffer Chemical Company. SN 256,483. Pub. 1-17-67. Filed 10-14-66.
- 826,661. SHOWDOWN. International Minerals & Chemical Corporation. SN 257,239. Pub. 1-17-67. Filed 10-26-66.

Class 8—Smokers' Articles, Not Including Tobacco Products

- 826,662. LONSDALE. Alfred Dunhill of London, Inc. SN 252,988. Pub. 1-17-67. Filed 8-24-66.
- 826,663. J-3. Japan Gas Lighter Corp. SN 256,218. Pub. 1-17-67. Filed 10-11-66.

Class 10—Fertilizers

- 826,664. AGRISTIM. Chas. Pfizer & Co., Inc. SN 256,793. Pub. 1-17-67. Filed 10-20-66.

Class 11—Inks and Inking Materials

- 826,665. INK-CELL-ON. Burroughs Corporation. SN 237,806. Pub. 1-17-67. Filed 2-2-66.
- 826,666. INSTAMID. Claremont Polychemical Corporation. SN 249,138. Pub. 1-17-67. Filed 6-28-66.

Class 12—Construction Materials

- 826,648. (See Class 6 for this trademark.)
- 826,667. STRUCTOFORM. Sohio Chemical Company. SN 213,368. Pub. 8-30-66. Filed 3-4-65.
- 826,668. ARMED GARD. Reilly Tar & Chemical Corporation. MULTIPLE CLASS (Classes 12 and 16). SN 219,910. Pub. 1-17-67. Filed 5-27-65.
- 826,669. GRANASET. Cement Enamel Development, Inc. SN 220,634. Pub. 8-2-66. Filed 6-8-65.
- 826,670. HARDBOARD AND DESIGN. Hardboard Fabricators Corp. SN 221,598. Pub. 1-17-67. Filed 6-21-65.
- 826,671. AKEMI. "Akemi" Chemisch-Technische Spezialfabrik Erich Hontsch. SN 230,221. Pub. 1-17-67. Filed 10-15-65.
- 826,672. NUFOLD. Nufold Corporation. SN 230,876. Pub. 11-8-66. Filed 10-21-65.
- 826,673. TRIPLE-T. National Gypsum Company. SN 231,837. Pub. 5-17-66. Filed 10-29-65.
- 826,674. MARVELWOOD. Marvin Kramer, d.b.a. Kramer Associates. SN 232,321. Pub. 1-17-67. Filed 11-8-65.
- 826,675. TERA DECK. Tera-Lite Mfg. Company, Inc. SN 232,798. Pub. 1-17-67. Filed 11-16-65.
- 826,676. R REPUBLIC AND DESIGN. Republic Gypsum Company. SN 232,861. Pub. 1-17-67. Filed 11-17-65.

- 826,677. MET-L-STRUT. Unistrut Corporation. SN 233,150. Pub. 1-17-67. Filed 11-22-65.
- 826,678. SIX RECTANGLES (DESIGN). Metropolitan Brick, Inc. SN 233,295. Pub. 1-17-67. Filed 11-26-65.
- 826,679. DEEP CORE. Pacific Corrugated Culvert Co. SN 233,523. Pub. 1-17-67. Filed 11-29-65.
- 826,680. CAR COVE. Oscar J. Swenson. SN 233,648. Pub. 1-17-67. Filed 11-30-65.
- 826,681. ETC. Perfect Paint Products, Inc. MULTIPLE CLASS (Classes 12 and 16). SN 233,736. Pub. 1-17-67. Filed 12-1-65.
- 826,682. AMCRETE. American Fire Clay & Products Company. SN 234,101. Pub. 1-17-67. Filed 12-7-65.
- 826,683. "CUSHION-GRIP." The Tremco Manufacturing Company. SN 235,240. Pub. 1-17-67. Filed 12-23-65.
- 826,684. REYNOPLY. Reynolds Metals Company. SN 236,649. Pub. 1-17-67. Filed 1-17-66.
- 826,685. VISTA-PANEL AND DESIGN. The Vista-Lux Hardboard Company. SN 236,682. Pub. 1-17-67. Filed 1-17-66.
- 826,686. KOLTON. The Herrick Company Steel Products. SN 237,838. Pub. 1-17-67. Filed 2-2-66.
- 826,687. HYLITE. Pittsburgh Plate Glass Company. SN 238,006. Pub. 1-17-67. Filed 2-3-66.
- 826,688. COURBETTE. Sooner Moulding Corporation. SN 239,330. Pub. 1-17-67. Filed 2-21-66.
- 826,689. "GASKET WALL." Volkmer Manufacturing Company. SN 239,354. Pub. 1-17-67. Filed 2-21-66.
- 826,690. 3M. Minnesota Mining and Manufacturing Company. SN 240,318. Pub. 1-17-67. Filed 3-7-66.
- 826,691. FLEXWELD. United States Plywood Corporation. SN 240,486. Pub. 11-1-66. Filed 3-8-66.
- 826,692. THRIVE CENTER AND DESIGN. Honeggers' & Co., Inc. SN 240,912. Pub. 1-17-67. Filed 3-14-66.
- 826,693. COLECO. Coleco Industries, Inc. SN 241,432. Pub. 1-17-67. Filed 3-21-66.
- 826,694. UNICRYLIC. Pecora Chemical Corporation. SN 241,507. Pub. 1-17-67. Filed 3-21-66.
- 826,695. WATER-TROL. A. O. Smith Harvestore Products, Inc. SN 241,938. Pub. 1-17-67. Filed 3-25-66.
- 826,696. ELCO AND DESIGN. Elliott Lumber Company. SN 242,578. Pub. 1-17-67. Filed 4-4-66.
- 826,697. TAPECOAT. The Tapecoat Company, Inc. MULTIPLE CLASS (Classes 12 and 16). SN 242,681. Pub. 1-17-67. Filed 4-4-66.
- 826,698. HEART TRTD. J. H. Baxter & Co. SN 242,787. Pub. 1-17-67. Filed 4-6-66.
- 826,699. HEART TRTD ETC. AND DESIGN. J. H. Baxter & Co. SN 242,788. Pub. 1-17-67. Filed 4-6-66.
- 826,700. MISCELLANEOUS DESIGN. Indiana Limestone Company, Inc. SN 243,245. Pub. 1-17-67. Filed 4-12-66.
- 826,701. FORM-FIX. Symons Mfg. Company. SN 244,267. Pub. 1-17-67. Filed 4-25-66.
- 826,702. UNIGRID. Rollform Incorporated. SN 244,621. Pub. 1-17-67. Filed 4-29-66.
- 826,703. WEATHR-X-NINETY. Masonite Corporation. SN 244,998. Pub. 1-17-67. Filed 5-5-66.
- 826,704. FRONTIER. Weyerhaeuser Company. SN 245,036. Pub. 1-17-67. Filed 5-5-66.
- 826,705. ADJUST-A-FOLD. American Door Company, Inc. SN 245,376. Pub. 1-17-67. Filed 5-11-66.
- 826,706. ENVIRO-WALL. Hough Manufacturing Corporation. SN 245,484. Pub. 1-17-67. Filed 5-12-66.
- 826,707. ENVIRO-FLEX. Hough Manufacturing Corporation. SN 245,485. Pub. 1-17-67. Filed 5-12-66.
- 826,708. JONES AND DESIGN. Georgia-Pacific Corporation. SN 245,653. Pub. 1-17-67. Filed 5-10-66.
- 826,709. XLRT EXCELLART AND DESIGN. The Carter-Waters Corporation. SN 246,265. Pub. 1-17-67. Filed 5-23-66.
- 826,710. DEAN WITHIN LETTER D. Dean Floor Covering Co., Inc. SN 248,783. Pub. 1-17-67. Filed 6-23-66.
- 826,711. LEVELINE. Atlas Enameling Company, Inc. SN 251,695. Pub. 1-17-67. Filed 8-4-66.

- 826,712. KOPINE. Brooks-Willamette Corporation. SN 252,312. Pub. 1-17-67. Filed 8-15-66.
 826,713. RIVER JACKS. Joseph Busik, Jr., d.b.a. Delaware Quarries. SN 252,313. Pub. 1-17-67. Filed 8-15-66.
 826,714. TRU-KOR. Brooks-Willamette Corporation. SN 252,327. Pub. 1-17-67. Filed 8-15-66.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

- 826,715. LRE AND DESIGN. Lafayette Radio Electronics Corporation. MULTIPLE CLASS (Classes 13, 21, 23, 26, 32, 34, and 36). SN 223,858. Pub. 1-17-67. Filed 7-21-65.
 826,716. HYDRO SPA AND DESIGN. Aquatech Corporation. SN 231,801. Pub. 8-2-66. Filed 10-29-65.
 826,717. MISCELLANEOUS DESIGN. Associated Spring Corporation. MULTIPLE CLASS (Classes 13, 19, 21, 22, 23, and 35). SN 232,643. Pub. 1-17-67. Filed 11-15-65.
 826,718. MCKAY. The McKay Company. SN 235,925. Pub. 1-17-67. Filed 1-6-66.
 826,719. MOORE RANE AND DESIGN. Moore-Rane Mfg. Co. SN 236,121. Pub. 1-17-67. Filed 1-10-66.
 826,720. AARCAL. Aluminum Company of America. SN 243,521. Pub. 1-17-67. Filed 4-15-66.
 826,721. GROOVE TWIST. Wadsworth Equipment Company. SN 245,633. Pub. 1-17-67. Filed 5-13-66.

Class 14—Metals and Metal Castings and Forgings

- 826,722. TOOL-SAVER. Reynolds Metals Company. SN 234,303. Pub. 1-17-67. Filed 2-14-66.
 826,723. MET-1. General Aniline & Film Corporation. SN 238,515. Pub. 1-17-67. Filed 2-10-66.
 826,724. PIGLETS. The Bradley Metal Company. SN 238,702. Pub. 1-17-67. Filed 2-14-66.
 826,725. DACROMETAL. Diamond Alkali Company. SN 256,411. Pub. 1-17-67. Filed 10-14-66.

Class 15—Oils and Greases

- 826,726. QUAKER-MATIC ETC. AND DESIGN. Quaker Oil Corporation. SN 193,406. Pub. 4-13-65. Filed 5-13-64.
 826,727. COMPETITION AND FLAG DESIGN. Cromwell Oil Company. SN 237,670. Pub. 1-17-67. Filed 2-1-66.
 826,728. DOUBLE CIRCLE. Farmland Industries, Inc., by change of name from Consumers Cooperative Association. SN 238,500. Pub. 12-20-66. Filed 2-10-66.
 826,729. LITH-GARD. Farmland Industries, Inc., by change of name from Consumers Cooperative Association. SN 238,501. Pub. 12-20-66. Filed 2-10-66.
 826,730. L-S-C. Radiator Specialty Company. SN 239,931. Pub. 1-17-67. Filed 3-1-66.
 826,731. A ALEMITE AND DESIGN. Stewart-Warner Corporation. SN 243,035. Pub. 1-17-67. Filed 4-8-66.
 826,732. J-3. Japan Gas Lighter Corp. SN 256,219. Pub. 1-17-67. Filed 10-11-66.

Class 16—Protective and Decorative Coatings

- 826,639. (See Class 4 for this trademark.)
 826,642. (See Class 5 for this trademark.)
 826,668. (See Class 12 for this trademark.)

- 826,681. (See Class 12 for this trademark.)
 826,697. (See Class 12 for this trademark.)
 826,733. GALVANOX. Wyandotte Chemicals Corporation. SN 230,735. Pub. 1-17-67. Filed 10-20-65.
 826,734. MODEL CRAFT. Model Wallpaper and Paint Company. SN 231,170. Pub. 1-17-67. Filed 10-22-65.
 826,735. TAPETRA. Henkel & Cie., G.m.b.H. SN 231,684. Pub. 1-17-67. Filed 10-27-65.
 826,736. GLAZE GARD. Pittsburgh Plate Glass Company, d.b.a. Barreled Sunlight Paint Company. MULTIPLE CLASS (Classes 16 and 52). SN 232,379. Pub. 1-17-67. Filed 11-9-65.
 826,737. GLIDAIR. The Glidden Company. SN 232,399. Pub. 1-17-67. Filed 11-9-65.
 826,738. "AMPRUF" ETC. AND DESIGN. Acme Quality Paints, Inc. SN 235,085. Pub. 1-17-67. Filed 12-22-65.
 826,739. LIFEMASTER. The Glidden Company. SN 235,182. Pub. 1-17-67. Filed 12-23-65.
 826,740. UNOCOAT. Union Oil Company of Boston. SN 235,873. Pub. 8-23-66. Filed 1-5-66.
 826,741. RUST-PRO. Penn Petroleum Corporation. SN 238,443. Pub. 1-17-67. Filed 2-9-66.
 826,742. PAL-COTE. Pratt & Lambert, Incorporated. SN 239,929. Pub. 1-17-67. Filed 3-1-66.
 826,743. DOG (DESIGN). Wolverine Shoe and Tanning Corporation. SN 242,693. Pub. 1-17-67. Filed 4-4-66.
 826,744. POLYCOP. U.S. Marine Coatings, Inc. SN 243,199. Pub. 1-17-67. Filed 4-11-66.
 826,745. DELSTAR. Pittsburgh Plate Glass Company. SN 244,351. Pub. 1-17-67. Filed 4-26-66.
 826,746. STAMPEDE AND DESIGN. The Smith-Alsop Paint and Varnish Company. SN 244,751. Pub. 1-17-67. Filed 5-2-66.
 826,747. ALVCOLITE. Lawter Chemicals, Inc. SN 245,206. Pub. 1-17-67. Filed 5-9-66.
 826,748. ALVCOTE. Lawter Chemicals, Inc. SN 245,208. Pub. 1-17-67. Filed 5-9-66.
 826,749. GEMFAX. Interchemical Corporation. SN 246,569. Pub. 1-17-67. Filed 5-25-66.
 826,750. SELECTROFOAM. Pittsburgh Plate Glass Company. SN 246,602. Pub. 1-17-67. Filed 5-25-66.
 826,751. QERAMI-COTE AND DESIGN. Harris Paint Co. SN 246,683. Pub. 1-17-67. Filed 5-26-66.
 826,752. CORICONE. The Coricone Corporation. SN 255,755. Pub. 1-17-67. Filed 10-5-66.
 826,753. DACROMET. Diamond Alkali Company. SN 256,412. Pub. 1-17-67. Filed 10-14-66.

Class 17—Tobacco Products

- 826,754. SMS AND DESIGN. Faber, Coe & Gregg, Inc. SN 234,019. Pub. 9-20-66. Filed 12-6-65.
 826,755. TRAFALGAR. The American Tobacco Company. SN 238,481. Pub. 1-17-67. Filed 2-10-66.
 826,756. 245 PARK. The American Tobacco Company. SN 241,224. Pub. 1-17-67. Filed 3-17-66.
 826,757. VISTA. General Cigar Co., Inc. SN 244,482. Pub. 1-17-67. Filed 4-28-66.
 826,758. BANDWAGON. Bayuk Cigars Incorporated. SN 245,669. Pub. 1-17-67. Filed 5-16-66.
 826,759. CHESTERFIELD AND LABEL DESIGN (GREEN AND GOLD). Liggett & Myers Tobacco Company. SN 246,697. Pub. 1-17-67. Filed 5-26-66.
 826,760. CHESTERFIELD AND LABEL DESIGN (RED AND MAROON). Liggett & Myers Tobacco Company. SN 246,698. Pub. 1-17-67. Filed 5-26-66.
 826,761. DAC. Detroit Athletic Club. SN 254,923. Pub. 1-17-67. Filed 9-22-66.

Class 18—Medicines and Pharmaceutical Preparations

- 826,622. (See Class 2 for this trademark.)
 826,762. PENDICLOX. Beecham Group Limited, d.b.a. Beecham Research Laboratories, assignee of Beecham Research Laboratories Inc. SN 226,819. Pub. 6-7-66. Filed 3-14-66.
 826,763. HALIVER. Parke, Davis & Company. SN 230,069. Pub. 1-3-67. Filed 10-13-65.
 826,764. ASTHMATUSSIN-T. A. H. Robins Company, Incorporated. SN 244,378. Pub. 1-17-67. Filed 4-27-66.
 826,765. ASTHMATUSSIN. A. H. Robins Company, Incorporated. SN 244,380. Pub. 1-17-67. Filed 4-27-66.
 826,766. CHEMOVAG. Betan Company, Inc. SN 246,863. Pub. 1-17-67. Filed 5-31-66.
 826,767. GERI-PEN. Betan Company, Inc. SN 246,869. Pub. 1-17-67. Filed 5-31-66.
 826,768. THERABLOAT. Norden Laboratories, Inc. SN 247,717. Pub. 1-17-67. Filed 6-9-66.
 826,769. HYDROCIL. Fuller Pharmaceutical Company. SN 249,754. Pub. 1-17-67. Filed 7-7-66.
 826,770. PANTHO-FOAM. U.S. Vitamin & Pharmaceutical Corporation. SN 250,109. Pub. 1-17-67. Filed 7-12-66.
 826,771. TRI-UNE. Paul S. Paschal, d.b.a. Tri-Une Chemical Company. SN 250,296. Pub. 1-17-67. Filed 7-14-66.
 826,772. ASCRIPTIN. William H. Rorer, Inc. SN 250,693. Pub. 1-17-67. Filed 7-20-66.
 826,773. FLEXAMYCIN. Chas. Pfizer & Co., Inc. SN 251,229. Pub. 1-17-67. Filed 7-28-66.
 826,774. DACTIL-OB. Colgate-Palmolive Company. SN 251,383. Pub. 1-17-67. Filed 8-1-66.
 826,775. TEF. Chas. Pfizer & Co., Inc. SN 257,240. Pub. 1-17-67. Filed 10-26-66.
 826,776. TOS. Chas. Pfizer & Co., Inc. SN 257,241. Pub. 1-17-67. Filed 10-26-66.

Class 19—Vehicles

- 826,717. (See Class 13 for this trademark.)
 826,777. VELVET-RIDE. White Motor Corporation. SN 223,369. Pub. 1-17-67. Filed 7-14-65.
 826,778. ROWIL. Rowil Cycle Corporation. SN 224,795. Pub. 1-17-67. Filed 8-2-65.
 826,779. HONDA. Honda Giken Kogyo Kabushiki Kaisha (Honda Motor Co. Ltd.). MULTIPLE CLASS (Classes 19 and 23). SN 231,969. Pub. 1-17-67. Filed 11-2-65.
 826,780. SPACE AGE. Space Age Camper Co., Inc. SN 237,045. Pub. 1-17-67. Filed 1-21-66.
 826,781. AITKIN. Aitkin Iron Works, Inc. MULTIPLE CLASS (Classes 19 and 23). SN 237,191. Pub. 1-17-67. Filed 1-25-66.
 826,782. SPACE AGE AND DESIGN. Space Age Camper Co., Inc. SN 238,677. Pub. 1-17-67. Filed 2-11-66.
 826,783. SEC O2. Sierra Engineering Company. MULTIPLE CLASS (Classes 19 and 44). SN 239,192. Pub. 1-17-67. Filed 2-21-66.
 826,784. TRI-CHEM. United States Borax & Chemical Corporation. SN 239,837. Pub. 1-17-67. Filed 2-28-66.
 826,785. SIESTA. Pickup Tops Manufacturing Co. SN 239,926. Pub. 1-17-67. Filed 3-1-66.
 826,786. SIESTA AND DESIGN. Pickup Tops Manufacturing Co. SN 239,927. Pub. 1-17-67. Filed 3-1-66.
 826,787. FORMULA V. H. P. Snyder Manufacturing Company, Inc. SN 257,128. Pub. 1-17-67. Filed 10-25-66.

Class 20—Linoleum and Oiled Cloth

- 826,788. DURON. Duron Paint Manufacturing Company, Inc. MULTIPLE CLASS (Classes 20 and 37). SN 227,937. Pub. 1-17-67. Filed 9-16-65.
 826,789. SOFT WALL. Colamco, Inc. SN 233,077. Pub. 1-17-67. Filed 11-22-65.
 826,790. VILLAGE SQUARE. Congoleum-Nairn Inc. SN 244,466. Pub. 1-17-67. Filed 4-28-66.
 826,791. DEAN WITHIN LETTER D. Dean Floor Covering Co., Inc. SN 248,785. Pub. 1-17-67. Filed 6-23-66.

Class 21—Electrical Apparatus, Machines, and Supplies

- 826,715. (See Class 13 for this trademark.)
 826,717. (See Class 13 for this trademark.)
 826,792. FUJI ELECTRIC. Fuji Denki Seizo Kabushiki Kaisha, d.b.a. Fuji Electric Mfg. Co., Ltd. MULTIPLE CLASS (Classes 21 and 26). SN 177,053. Pub. 1-17-67. Filed 9-16-63.
 826,793. FUJITSU. Fujitsu Limited. MULTIPLE CLASS (Classes 21, 23, and 26). SN 209,049. Pub. 1-17-67. Filed 12-30-64.
 826,794. FUJITSU LIMITED. Fujitsu Limited. MULTIPLE CLASS (Classes 21, 23, and 26). SN 209,050. Pub. 1-17-67. Filed 12-30-64.
 826,795. TRACOR. Tracor, Inc. MULTIPLE CLASS (Classes 21, 26, and 27). SN 214,060. Pub. 1-17-67. Filed 3-15-65.
 826,796. PHOTOFAB. Magnetics, Inc. MULTIPLE CLASS (Classes 21, 26, and 50). SN 217,124. Pub. 10-18-66. Filed 4-22-65.
 826,797. ASTROLOCK. Astrodata, Inc. SN 217,260. Pub. 1-17-67. Filed 4-26-65.
 826,798. TITACON. Steatite and Porcelain Products Limited. SN 220,701. Pub. 1-17-67. Filed 6-8-65.
 826,799. LAND DESIGN. Z & T Importing Co., Inc. MULTIPLE CLASS (Classes 21 and 36). SN 225,702. Pub. 1-17-67. Filed 8-16-65.
 826,800. BEAM EYE. Matsushita Electric Industrial Co., Ltd. SN 225,882. Pub. 1-17-67. Filed 8-17-65.
 826,801. ACCUROTOR. Stratford Retreat House, assignee of JFD Electronics Corporation. SN 227,844. Pub. 1-17-67. Filed 9-15-65.
 826,802. AQUAFLASH. La Spirotechnique. SN 232,702. Pub. 1-17-67. Filed 11-15-65.
 826,803. BRASCH ELECTRODUCT AND DESIGN. Brasch Manufacturing Company, Inc. SN 235,620. Pub. 1-17-67. Filed 1-3-66.
 826,804. POWERPOLE. Anderson Power Products Inc. SN 238,036. Pub. 1-17-67. Filed 2-4-66.
 826,805. SPHER-O-DYNE. Shure Brothers, Incorporated. SN 238,120. Pub. 1-17-67. Filed 2-4-66.
 826,806. SOLO-PHONE. Shure Brothers, Incorporated. SN 238,121. Pub. 1-17-67. Filed 2-4-66.
 826,807. ADJUSTODYNE. Sabina Electrical Company, d.b.a. Advance Electric. SN 238,301. Pub. 1-17-67. Filed 2-7-66.
 826,808. FLEETMASTER. United States Rubber Company. SN 238,804. Pub. 1-17-67. Filed 2-14-66.
 826,809. TU-TONE. Sheffield Plastics, Inc. SN 242,849. Pub. 1-17-67. Filed 4-6-66.
 826,810. RADIOORDER. Concord Electronics Corporation. SN 252,708. Pub. 1-17-67. Filed 8-19-66.

Class 22 — Games, Toys, and Sporting Goods

- 826,717. (See Class 13 for this trademark.)
 826,811. E. FABER. Eberhard Faber Inc. SN 221,910. Pub. 1-17-67. Filed 6-24-65.
 826,812. HIGH TOM. The "Bingo King" Company, Incorporated. SN 242,206. Pub. 1-17-67. Filed 3-30-66.
 826,813. SOFT BREEZE. The "Bingo King" Company, Incorporated. SN 242,208. Pub. 1-17-67. Filed 3-30-66.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

- 826,822. (See Class 2 for this trademark.)
 826,715. (See Class 13 for this trademark.)
 826,717. (See Class 13 for this trademark.)
 826,779. (See Class 19 for this trademark.)
 826,781. (See Class 19 for this trademark.)
 826,793. (See Class 21 for this trademark.)
 826,794. (See Class 21 for this trademark.)
 826,814. HYDRA-SLIDE. J. C. Bamford (Excavators) Limited. SN 179,017. Pub. 5-3-66. Filed 10-15-63.
 826,815. LINE-MASTER. Sandefur Engineering Co., Inc. MULTIPLE CLASS (Classes 23 and 32). SN 196,722. Pub. 1-17-67. Filed 6-29-64.
 826,816. E WITH UPSWEPT ARROW (DESIGN). Carrier Corporation. MULTIPLE CLASS (Classes 23, 31, and 34). SN 207,459. Pub. 1-17-67. Filed 12-4-64.
 826,817. RACEWAY AND DESIGN. Saginaw Products Corporation. SN 208,117. Pub. 1-17-67. Filed 12-14-64.
 826,818. POLI-WASH. Charles K. Williams. MULTIPLE CLASS (Classes 23 and 103). SN 211,969. Pub. 1-17-67. Filed 2-15-65.
 826,819. HOLLEY. Holley Carburetor Company. SN 212,536. Pub. 1-17-67. Filed 2-23-65.
 826,820. JAYHAWK. Jayhawk Manufacturing Co., Inc. SN 221,005. Pub. 5-31-66. Filed 6-21-65.
 826,821. ATLANTIS AQUAJET. Oscar Enterprises Incorporated, d.b.a. Atlantis Pump Co. SN 221,749. Pub. 1-17-67. Filed 6-22-65.
 826,822. DILODER. The Minster Machine Company. SN 222,398. Pub. 1-17-67. Filed 6-30-65.
 826,823. PNEUMAFLOAT. Cookton Pneumatics, Inc. SN 226,627. Pub. 1-17-67. Filed 8-27-65.
 826,824. GRESIN MINNEAPOLIS AND DESIGN. Gresin Manufacturing Company. SN 227,029. Pub. 1-17-67. Filed 9-2-65.
 826,825. KEY KUT. The Originators Engineering and Development Company. SN 229,119. Pub. 1-17-67. Filed 10-1-65.
 826,826. TURNAREEL. Midland-Ross Corporation. SN 229,668. Pub. 1-17-67. Filed 10-8-65.
 826,827. SPRECHERCUT. Solomon Sprecher, d.b.a. Sprecher. SN 232,358. Pub. 1-17-67. Filed 11-8-65.
 826,828. MASTER TAB AND DESIGN. Bramco Inc., by merger and change of name from Bradshaw Manufacturing Company, Inc. SN 232,660. Pub. 10-25-66. Filed 11-15-65.
 826,829. HYDRA-MELT. Huntingdon Industries, Inc. SN 232,919. Pub. 1-17-67. Filed 11-18-65.
 826,830. VAC-U-LOK AND DESIGN. Vacuum Processes, Inc. SN 232,950. Pub. 1-17-67. Filed 11-18-65.
 826,831. HEX-MASTER. Dawn Research Corporation. SN 233,251. Pub. 1-17-67. Filed 11-24-65.
 826,832. NUBBINS. Garrett Enumclaw Co. SN 234,412. Pub. 1-17-67. Filed 12-13-65.
 826,833. 620. Vermette Machine Company, Inc. SN 234,790. Pub. 1-17-67. Filed 12-16-65.

- 826,834. TY-FLEX. The Osborn Manufacturing Company. SN 236,840. Pub. 10-18-66. Filed 1-19-66.
 826,835. ANIMATED DESIGN. Oxwall Tool Co., Ltd. SN 237,376. Pub. 1-17-67. Filed 1-26-66.
 826,836. AVISTRAPPER. FMC Corporation. SN 239,138. Pub. 1-17-67. Filed 2-18-66.
 826,837. MONARCH. Gary Industries, Inc., d.b.a. Vall Manufacturing Company, assignee of Vall Manufacturing Company. SN 239,350. Pub. 1-17-67. Filed 2-21-66.
 826,838. BUTTON-MASTER. Chandler Machine Company. SN 239,380. Pub. 1-17-67. Filed 2-23-66.
 826,839. PNEUMOL. Delaware Tool Steel Corporation. SN 239,390. Pub. 1-17-67. Filed 2-23-66.
 826,840. C AND DESIGN. Champion Pneumatic Machinery Company, Inc. SN 243,634. Pub. 1-17-67. Filed 4-18-66.

Class 24 — Laundry Appliances and Machines

- 826,841. NEWPOL. Domar, S.A. MULTIPLE CLASS (Classes 24 and 31). SN 193,138. Pub. 1-17-67. Filed 5-11-64.
 826,842. TUP-PINS. Rexall Drug and Chemical Company, d.b.a. Tupperware. SN 241,886. Pub. 1-17-67. Filed 3-23-66.

Class 26 — Measuring and Scientific Appliances

- 826,715. (See Class 13 for this trademark.)
 826,792. (See Class 21 for this trademark.)
 826,793. (See Class 21 for this trademark.)
 826,794. (See Class 21 for this trademark.)
 826,795. (See Class 21 for this trademark.)
 826,796. (See Class 21 for this trademark.)
 826,843. ARISTO-AIRE. Delbert C. Hewitt. SN 212,777. Pub. 1-17-67. Filed 2-25-65.
 826,844. USIFROID PROCEDES RIEUTORD AND DESIGN. Societe d'Utilisation Scientifique et Industrielle du Froid Usifroid. SN 228,411. Pub. 8-16-66. Filed 9-22-65.
 826,845. SCAN FILE. The Mosler Safe Co. SN 233,623. Pub. 1-17-67. Filed 11-30-65.
 826,846. JLI AND DESIGN. William H. Johnston Laboratories, Inc. SN 236,095. Pub. 1-17-67. Filed 1-10-66.
 826,847. ARAD AND DESIGN. Ion Exchange Products, Inc. SN 237,842. Pub. 1-17-67. Filed 2-2-66.
 826,848. ANSCOVISION. General Aniline & Film Corporation. SN 238,072. Pub. 1-17-67. Filed 2-4-66.
 826,849. ROMELCO. Fotomatic Corporation. SN 238,948. Pub. 1-17-67. Filed 2-16-66.
 826,850. AUTOCON. Automatic Control Company. SN 239,204. Pub. 1-17-67. Filed 2-21-66.
 826,851. PYRO AND DESIGN. New Castle Products, Inc. SN 247,996. Pub. 1-17-67. Filed 6-14-66.
 826,852. MILE-O-METER. Andrew J. White. SN 251,978. Pub. 1-17-67. Filed 8-8-66.

Class 27 — Horological Instruments

- 826,795. (See Class 21 for this trademark.)
 826,853. HAPPY HOME ETC. AND DESIGN. F. W. Woolworth Co. SN 237,063. Pub. 1-17-67. Filed 1-21-66.
 826,854. HAPPY HOME AND DESIGN. F. W. Woolworth Co. SN 237,509. Pub. 1-17-67. Filed 1-27-66.

Class 28 — Jewelry and Precious-Metal Ware

- 826,855. CIRO. Ciro of Bond Street, Inc. SN 239,968. Pub. 1-17-67. Filed 3-2-66.

Class 29 — Brooms, Brushes, and Dusters

- 826,639. (See Class 4 for this trademark.)

Class 31 — Filters and Refrigerators

- 826,816. (See Class 23 for this trademark.)
 826,841. (See Class 24 for this trademark.)
 826,856. PAUL AND DESIGN. Air Reduction Company, Incorporated, assignee of Paul Chemical Co. SN 192,312. Pub. 6-7-66. Filed 4-29-64.
 826,857. PAUL. Air Reduction Company, Incorporated, assignee of Paul Chemical Co. SN 192,314. Pub. 5-31-66. Filed 4-29-64.

Class 32 — Furniture and Upholstery

- 826,715. (See Class 13 for this trademark.)
 826,815. (See Class 23 for this trademark.)
 826,858. CHARM HOUSE. Arkwright Merchandising Corporation. SN 196,758. Pub. 12-8-64. Filed 6-30-64.
 826,859. PERM-A-QUILT. Knight of Rest Products. SN 203,663. Pub. 4-13-65. Filed 10-9-64.
 826,860. TAN O DOWN AND DESIGN. New York Feather Co., Inc. SN 211,834. Pub. 12-28-65. Filed 2-11-65.
 826,861. SAFCO PRODUCTS AND DESIGN. Fidelity File Box, Inc., d.b.a. Safco Products Co. SN 236,981. Pub. 1-17-67. Filed 1-21-66.
 826,862. RIVERLY HOUSE. Rhodes, Inc. SN 244,741. Pub. 1-17-67. Filed 5-2-66.
 826,863. FILMFRIDGE. Visual Graphics Corporation. SN 245,121. Pub. 1-17-67. Filed 5-6-66.
 826,864. ORTHO-RESTIVE. Jackson Mattress Company, Inc. SN 245,314. Pub. 1-17-67. Filed 5-10-66.
 826,865. ELJA. Jackson Mattress Company, Inc. SN 245,315. Pub. 1-17-67. Filed 5-10-66.
 826,866. PEABODY AND DESIGN. New Castle Products, Inc. SN 247,296. Pub. 1-17-67. Filed 6-6-66.
 826,867. RIVERLY HALL. Rhodes, Inc. SN 247,970. Pub. 1-17-67. Filed 6-13-66.

Class 33 — Glassware

- 826,868. BRAVO. Anchor Hocking Glass Corporation. SN 239,864. Pub. 1-17-67. Filed 3-1-66.
 826,869. ANCHOR-LOK. Anchor Hocking Glass Corporation. SN 240,402. Pub. 1-17-67. Filed 3-8-66.

Class 34 — Heating, Lighting, and Ventilating Apparatus

- 826,715. (See Class 13 for this trademark.)
 826,816. (See Class 23 for this trademark.)
 826,870. VOLUMAIRE AND DESIGN. Chore-Time Equipment, Inc. SN 213,295. Pub. 1-17-67. Filed 3-4-65.

- 826,871. AFFCO. Affiliated Inclinator Corporation. SN 216,465. Pub. 11-29-66. Filed 4-14-65.
 826,872. CHARM HOUSE. Arkwright Merchandising Corporation. SN 228,978. Pub. 8-16-66. Filed 9-30-65.
 826,873. AIRFLO. Maxon Premix Burner Company, Inc. SN 241,486. Pub. 11-8-66. Filed 3-21-66.
 826,874. ACORN. The J. B. Williams Company, Inc. SN 242,949. Pub. 1-17-67. Filed 4-7-66.
 826,875. BANNER. The J. B. Williams Company, Inc. SN 242,951. Pub. 1-17-67. Filed 4-7-66.
 826,876. TORCH AID. Fred Cuff, d.b.a. Torch Aid Industries. SN 243,966. Pub. 1-17-67. Filed 4-21-66.
 826,877. MINI/LINE. Slant/Fin Corporation. SN 244,362. Pub. 1-17-67. Filed 4-26-66.
 826,878. INFRA-MATIC AND DESIGN. J & J Soft Pretzel Co., Inc., d.b.a. J & J Products Co., Inc. SN 257,335. Pub. 1-17-67. Filed 10-27-66.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

- 826,717. (See Class 13 for this trademark.)
 826,879. KOMETA. Oy Kovametall Ab. SN 218,570. Pub. 1-17-67. Filed 5-11-65.
 826,880. ESKIMO. United States Rubber Company. SN 219,087. Pub. 1-18-66. Filed 5-17-65.
 826,881. DOUBLE CIRCLE. Farmland Industries, Inc., by change of name from Consumers Cooperative Association. SN 233,997. Pub. 12-20-66. Filed 12-6-65.

Class 36 — Musical Instruments and Supplies

- 826,715. (See Class 13 for this trademark.)
 826,799. (See Class 21 for this trademark.)
 826,882. DISC TEEN AND DESIGN. The Seeburg Corporation. SN 224,557. Pub. 1-17-67. Filed 7-29-65.
 826,883. BIG FIVE. Big-Five. SN 227,389. Pub. 1-17-67. Filed 9-8-65.
 826,884. PAR RECORDS AND DESIGN. Gordon C. Fikejs, d.b.a. Par Records. SN 229,083. Pub. 1-17-67. Filed 10-1-65.
 826,885. TRAVELANGUAGE. Stacy Keach. SN 232,563. Pub. 1-17-67. Filed 11-12-65.
 826,886. AMWAY. Amway Corporation. SN 243,294. Pub. 1-17-67. Filed 4-13-66.
 826,887. WELTRON AND DESIGN. Womack Electronics, Inc. SN 250,624. Pub. 1-17-67. Filed 7-20-66.

Class 37 — Paper and Stationery

- 826,622. (See Class 2 for this trademark.)
 826,788. (See Class 20 for this trademark.)
 826,888. EZ. Gulf States Paper Corporation. SN 190,514. Pub. 10-20-64. Filed 4-7-64.
 826,889. EZ AND DESIGN. Gulf States Paper Corporation. SN 191,286. Pub. 9-1-64. Filed 4-16-64.
 826,890. DOWN-E-SOF. Groveton Papers Company. SN 215,734. Pub. 1-17-67. Filed 4-5-65.
 826,891. TIGER PADS BY JUDI AND DESIGN. Judi. SN 227,682. Pub. 12-13-66. Filed 9-13-65.
 826,892. RECORDA-SCRIP. Clifford G. Lontz, d.b.a. Illiana Business Systems. SN 228,828. Pub. 1-17-67. Filed 9-28-65.
 826,893. CUSH 'N MATIC. Frank T. Johmann. SN 239,774. Pub. 1-17-67. Filed 2-28-66.

- 826,894. COYLON. L & J Products Corp. SN 248,252. Pub. 1-17-67. Filed 6-16-66.
 826,895. UTL. Cory Corporation. SN 248,429. Pub. 1-17-67. Filed 6-20-66.
 826,896. PASCO. The Paper Supply Company. SN 250,913. Pub. 1-17-67. Filed 7-25-66.
 826,897. PASCO AND DESIGN. The Paper Supply Company. SN 251,686. Pub. 1-17-67. Filed 8-4-66.

Class 38—Prints and Publications

- 826,898. JOPA. Jopa, Inc., assignee of Club Management. Inc. SN 223,869. Pub. 9-20-66. Filed 7-21-65.

Class 39—Clothing

- 826,899. PLYFOAM. Plymouth Rubber Company, Inc. SN 213,477. Pub. 11-16-65. Filed 3-5-65.
 826,900. "FLASH N DASH" AND DESIGN. Autry Rubber Company. SN 214,413. Pub. 1-17-67. Filed 3-18-65.
 826,901. AFTER FIVE. S. Rudofker's Sons, Inc. SN 217,790. Pub. 11-2-65. Filed 4-30-65.
 826,902. FORUM. Forum Sportswear, Inc. SN 218,858. Pub. 1-17-67. Filed 5-14-65.
 826,903. JUDY JRS. OF DALLAS. Raden Mfg. Co. SN 219,815. Pub. 11-15-66. Filed 5-26-65.
 826,904. JORRAY FURS. Jorray Furs Inc. SN 220,218. Pub. 1-18-66. Filed 6-2-65.
 826,905. SHAVE 'N' ROBE. Host Pajamas, Inc. SN 220,659. Pub. 4-26-66. Filed 6-8-65.
 826,906. M MOTHERCARE AND DESIGN. Mothercare Limited. SN 220,783. Pub. 1-17-67. Filed 6-9-65.
 826,907. CETRYL AND DESIGN. Societe Rhodiaceta. SN 222,071. Pub. 12-14-65. Filed 6-25-65.
 826,908. SEA ROVERS. The Puritan Sportswear Corp. SN 226,079. Pub. 1-17-67. Filed 8-19-65.
 826,909. RAIN PETS. Adele Kaempf. SN 226,243. Pub. 1-17-67. Filed 8-23-65.
 826,910. RAIN CAPER. Adele Kaempf. SN 226,244. Pub. 1-17-67. Filed 8-23-65.
 826,911. ACRIACA. Somerset Knitting Mills, Inc. SN 226,301. Pub. 1-17-67. Filed 8-23-65.
 826,912. AUDREY-JANE. Trend Centers, Inc., d.b.a. Trend Centers. SN 226,309. Pub. 1-17-67. Filed 8-23-65.
 826,913. GOLF MATES AND DESIGN. David H. Smith, Inc. SN 227,968. Pub. 1-17-67. Filed 9-16-65.
 826,914. JANIS LEE. Wentworth Manufacturing Company. SN 229,389. Pub. 1-17-67. Filed 10-5-65.
 826,915. STEPPY BY GREGG DRADDY. Gregg Draddy, Inc. SN 229,957. Pub. 1-17-67. Filed 10-12-65.
 826,916. SHEER EASE. Maldenform, Inc. SN 230,268. Pub. 1-17-67. Filed 10-15-65.
 826,917. GRID COAT. J. H. Kellman Co., Inc. SN 232,995. Pub. 1-17-67. Filed 11-19-65.
 826,918. TRAILMASTER. Winer Sportswear, Inc. SN 234,093. Pub. 1-17-67. Filed 12-15-65.
 826,919. CLAMJAM AND DESIGN. Gunnin Manufacturing Company. SN 235,293. Pub. 1-17-67. Filed 12-27-65.
 826,920. OLIVINO. Hart Schaffner & Marx. SN 235,777. Pub. 1-17-67. Filed 1-4-66.
 826,921. DEBBIE LEWIS ETC. AND DESIGN. William T. Lewis, d.b.a. Lewis Salon Shoes. SN 235,835. Pub. 1-17-67. Filed 1-5-66.
 826,922. CROYDOR AND CROWN DESIGN. Respolco AG. SN 237,873. Pub. 1-17-67. Filed 2-2-66.
 826,923. GILBERRE. S. L. Gilbert Company, Inc. SN 238,210. Pub. 1-17-67. Filed 2-7-66.
 826,924. ANNE KLEIN. Anne Klein, Inc. SN 238,477. Pub. 1-17-67. Filed 2-10-66.
 826,925. ALLURA-FRAME. Beatrice Y. Brunelle, d.b.a. Beatrice Brunelle. SN 238,703. Pub. 10-18-66. Filed 2-14-66.
 826,926. STABLE MATES. General Sportswear Company, Inc. SN 239,141. Pub. 1-17-67. Filed 2-18-66.
 826,927. SILCONTROL. Maldenform, Inc. SN 239,530. Pub. 1-17-67. Filed 2-24-66.
 826,928. MISTY. Gaylor Products, Incorporated. SN 240,171. Pub. 1-17-67. Filed 3-4-66.
 826,929. COUNTER-PART. Maldenform, Inc. SN 240,931. Pub. 1-17-67. Filed 3-14-66.
 826,930. MAD-73. Town and Country Shoes, Inc. SN 240,987. Pub. 1-17-67. Filed 3-14-66.
 826,931. GRETTEL. Gretel, Inc. SN 242,004. Pub. 1-17-67. Filed 3-28-66.
 826,932. WEE EDITIONS. Wee Editions, Inc. SN 242,409. Pub. 1-17-67. Filed 3-31-66.
 826,933. 9950. Donald S. Lavigne, Inc. SN 242,457. Pub. 1-17-67. Filed 4-1-66.
 826,934. COMFORT CLING. Sears, Roebuck and Co. SN 242,506. Pub. 1-17-67. Filed 4-1-66.
 826,935. WRANGLER. Blue Bell, Inc. SN 242,709. Pub. 1-17-67. Filed 4-5-66.
 826,936. MICHAEL WEBB. Philip Rothenberg & Co., Inc. SN 243,265. Pub. 1-17-67. Filed 4-12-66.
 826,937. PETITE PHILIPPE. Marie Phillips, Inc. SN 243,347. Pub. 1-17-67. Filed 4-13-66.
 826,938. FASTASTIC. Defender, Inc. SN 244,805. Pub. 1-17-67. Filed 5-3-66.
 826,939. TANKINI. Defender, Inc. SN 244,806. Pub. 1-17-67. Filed 5-3-66.
 826,940. ADJUSTO-FORM. De Luxe Girdlecraft Co., Inc. SN 244,887. Pub. 1-17-67. Filed 5-4-66.
 826,941. SWITCH CRAFT. Junlorite, Inc. SN 245,081. Pub. 1-17-67. Filed 5-8-66.
 826,942. SHOW ME. The Lovable Company. SN 245,405. Pub. 1-17-67. Filed 5-11-66.
 826,943. COOL NOTES. Endicott Johnson Corporation. SN 245,916. Pub. 1-17-67. Filed 5-18-66.
 826,944. BODY CONTOUR. The Barbizon Corporation. SN 246,030. Pub. 1-17-67. Filed 5-19-66.
 826,945. P.D.Q. AND DESIGN. Andrew Geller, Inc. SN 246,069. Pub. 1-17-67. Filed 5-19-66.
 826,946. MR. GOLF AND DESIGN. Biltwell Company, Inc. SN 251,374. Pub. 1-17-67. Filed 8-1-66.
 826,947. SEASPUN. Seaspun, Inc. SN 251,569. Pub. 1-17-67. Filed 8-2-66.
 826,948. UNDERKNACK. Jantzen Inc. SN 256,410. Pub. 1-17-67. Filed 10-14-66.
 826,949. REGENCY. Reid-Meredith, Inc. SN 244,356. Pub. 1-17-67. Filed 4-26-66.

Class 40—Fancy Goods, Furnishings, and Notions

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

- 826,612. (See Class 1 for this trademark.)
 826,950. MIRACLET. Toyo Rayon Co., Ltd. SN 191,457. Pub. 6-15-65. Filed 4-17-64.
 826,951. CETRYL AND DESIGN. Societe Rhodiaceta. SN 222,072. Pub. 2-22-66. Filed 6-25-65.
 826,952. TANGLETWEED BY BRAETAN. Braetan Juniors, Inc. SN 238,954. Pub. 1-17-67. Filed 1-7-66.

- 826,953. COLOR FORECAST COLLECTION. United Merchants and Manufacturers, Inc. SN 236,530. Pub. 12-27-66. Filed 1-14-66.
 826,954. GILDEMUSTER AND DESIGN. Gilde Für Textile Raumkultur Gesellschaft Mit Beschränkter Haftung. SN 237,109. Pub. 1-17-67. Filed 1-24-66.
 826,955. FORECAST. Chatham Manufacturing Company. SN 238,608. Pub. 12-27-66. Filed 2-11-66.
 826,956. SEE AMERITEX FIRST. United Merchants and Manufacturers, Inc. SN 241,712. Pub. 1-17-67. Filed 3-23-66.
 826,957. DEAN WITHIN LETTER D. Dean Floor Covering Co., Inc. SN 248,784. Pub. 1-17-67. Filed 6-23-66.
 826,958. APROPEAU. Fieldcrest Mills, Inc. SN 248,992. Pub. 1-17-67. Filed 6-27-66.
 826,959. CAMP-SITE. Deering Milliken, Inc. SN 249,306. Pub. 1-17-67. Filed 6-30-66.
 826,960. MISTIQUE. Fieldcrest Mills, Inc. SN 249,317. Pub. 1-17-67. Filed 6-30-66.
 826,961. VERI-WISP. Stacy Fabrics Corp. SN 249,452. Pub. 1-17-67. Filed 7-1-66.
 826,962. BRAIDWATER. Hamilton Adams Imports Limited. SN 257,332. Pub. 1-17-67. Filed 10-27-66.
 826,963. POCKETS UNLIMITED. Deering Milliken, Inc. SN 257,333. Pub. 1-17-67. Filed 10-27-66.
 826,964. POLYBEAU. Cone Mills Corporation. SN 257,551. Pub. 1-17-67. Filed 10-31-66.
 826,965. POLYCAY. Cone Mills Corporation. SN 257,552. Pub. 1-17-67. Filed 10-31-66.
 826,966. POLY BASKET. Cone Mills Corporation. SN 257,553. Pub. 1-17-67. Filed 10-31-66.
 826,967. POLYFASHION. Cone Mills Corporation. SN 257,554. Pub. 1-17-67. Filed 10-31-66.
 826,968. POLY TEEN. Cone Mills Corporation. SN 257,555. Pub. 1-17-67. Filed 10-31-66.
 826,969. LOCHMORE. Deering Milliken, Inc. SN 257,557. Pub. 1-17-67. Filed 10-31-66.
 826,970. GALANTE. Deering Milliken, Inc. SN 257,558. Pub. 1-17-67. Filed 10-31-66.

Class 43—Thread and Yarn

- 826,612. (See Class 1 for this trademark.)
 826,971. CETRYL AND DESIGN. Societe Rhodiaceta. SN 222,073. Pub. 12-14-65. Filed 6-25-65.
 826,972. NYTELLE. The Firestone Tire & Rubber Company. SN 234,276. Pub. 8-9-66. Filed 12-9-65.
 826,973. NATTE ROYAL. Filatures Prouvost & Cie, La Lainiere de Roubaix. SN 238,946. Pub. 1-17-67. Filed 2-16-66.
 826,974. ESCALADE. Filatures Prouvost & Cie, La Lainiere de Roubaix. SN 241,887. Pub. 1-17-67. Filed 3-25-66.
 826,975. ARLY. Spinnerin Yarn Co., Inc. SN 247,076. Pub. 1-17-67. Filed 6-1-66.
 826,976. COLOR STORM. Deering Milliken, Inc. SN 247,586. Pub. 1-17-67. Filed 6-8-66.
 826,977. COLOR FAIR. Deering Milliken, Inc. SN 247,783. Pub. 1-17-67. Filed 6-10-66.
 826,980. E FACTOR AND DESIGN. Henry P. Boos Dental Laboratories, Inc. SN 238,700. Pub. 10-18-66. Filed 2-14-66.
 826,981. ERYTHROLYZER. Milton Roy Company. SN 242,779. Pub. 1-17-67. Filed 4-6-66.
 826,982. SIT-N-SIP. Harlan M. Buck of Connecticut, Inc. SN 244,184. Pub. 1-17-67. Filed 4-25-66.
 826,983. SAUNDA AND DESIGN. Health Products, Inc. MULTIPLE CLASS (Classes 44 and 51). SN 248,941. Pub. 1-17-67. Filed 6-27-66.
 826,984. SYMBOL OF HEART BEAT PULSE (DESIGN). Electromagnetic Probe Company, Inc. SN 250,428. Pub. 1-17-67. Filed 7-18-66.
 826,985. CYCLOMATIC. Stylors, Inc. SN 255,028. Pub. 1-17-67. Filed 9-23-66.
 826,986. TEEM AND DESIGN. PepsiCo., Inc. SN 256,698. Pub. 1-17-67. Filed 10-19-66.
 826,987. LITTLE SIZZLERS. Geo. A. Hormel & Company, assignee of Stark, Wetzel & Co. Inc. SN 119,435. Pub. 6-22-65. Filed 5-5-61.
 826,988. OH BOY! OBERTO. Oberto Sausage Co. SN 215,884. Pub. 10-25-66. Filed 4-6-65.
 826,989. YUMEPOLLS. Confection Products Corporation, assignee of Harold L. Jones. SN 221,061. Pub. 12-13-66. Filed 6-14-65.
 826,990. OH BOY! OBERTO. Oberto Sausage Co. SN 223,154. Pub. 10-25-66. Filed 7-12-65.
 826,991. COFFEE BOX. Coffee Boy, Inc., by change of name from Vic Culver Company, d.b.a. Vic Culver Co. SN 231,953. Pub. 11-15-66. Filed 11-1-65.
 826,992. FLEXI-PACK. Campbell Soup Company. SN 237,065. Pub. 11-29-66. Filed 1-26-66.
 826,993. LOTSADOTS. Mason, Au & Magenheimer Confy. Mfg. Co., Inc. SN 243,001. Pub. 1-17-67. Filed 4-8-66.
 826,994. SIPREN. Mead Johnson & Company. SN 243,695. Pub. 1-17-67. Filed 4-18-66.
 826,995. ADD-A-SAUCE. Stange Co. SN 247,179. Pub. 1-17-67. Filed 6-3-66.
 826,996. CLARK. Philip Morris Incorporated, d.b.a. Clark Gum Co. SN 251,863. Pub. 1-17-67. Filed 8-8-66.

Class 48—Malt Beverages and Liquors

- 826,997. HOME-TAP. Home-Tap Company, assignee of Atlantic Brewing Company. SN 212,279. Pub. 12-13-66. Filed 2-18-65.

Class 44—Dental, Medical, and Surgical Appliances

- 826,622. (See Class 2 for this trademark.)
 826,783. (See Class 19 for this trademark.)
 826,978. DESIGN OF BEAVER. Rudolph Beaver, Inc., assignee of Rudolph Beaver. SN 208,528. Pub. 1-17-67. Filed 12-21-64.
 826,979. HORIZON. Brunswick Corporation. SN 213,290. Pub. 1-17-67. Filed 3-4-65.

Class 49—Distilled Alcoholic Liquors

- 826,998. SAMBUCA ROMANA AND DESIGN. Ditta Pace-Gipsa-Giacomo Pace Societa in Accomandita Semplice. SN 221,159. Pub. 11-1-66. Filed 6-15-65.
 826,999. FOLLIGNY. Societe Anonyme Jules Robin, Ancienne Maison Jules Robin et Cie, d.b.a. Folligny & Co. SN 253,554. Pub. 1-17-67. Filed 8-31-66.
 827,000. LIMBO. Hiram Walker & Sons, Inc. SN 256,499. Pub. 1-17-67. Filed 10-17-66.

827,001. SHIP'S WHEEL. Hiram Walker & Sons, Inc. SN 256,506. Pub. 1-17-67. Filed 10-17-66.
827,002. FIRST CABIN. Hiram Walker & Sons, Inc. SN 256,508. Pub. 1-17-67. Filed 10-17-66.

Class 50—Merchandise Not Otherwise Classified

826,796. (See Class 21 for this trademark.)
827,003. GRAD-LINE. Grad-Line, Inc. SN 245,076. Pub. 1-17-67. Filed 5-6-66.
827,004. AIRYTREAD. Allen Industries, Inc. SN 246,989. Pub. 1-17-67. Filed 6-1-66.
827,005. ASCOE. Asten-Hill Mfg. Company. SN 247,091. Pub. 1-17-67. Filed 6-1-66.
827,006. TRIM-A-PAC. Hub Floral Manufacturing Company. SN 247,123. Pub. 1-17-67. Filed 6-2-66.
827,007. DELLA ROBBIA. Boys Republic. SN 249,943. Pub. 1-17-67. Filed 7-11-66.

Class 51—Cosmetics and Toilet Preparations

826,983. (See Class 44 for this trademark.)
827,008. SEA HORSE AND BATHTUB (DESIGN). Prof. Sauerbruch-Praparate Bottger Kommanditgesellschaft. SN 222,616. Pub. 9-20-66. Filed 7-2-65.
827,009. NEW STAR NAIL. Hother Hellenberg A/S. SN 223,413. Pub. 1-10-67. Filed 7-15-65.
827,010. TOMAHAWK. Menley & James Laboratories, Ltd., assignee of Smith Kline & French Laboratories. SN 226,086. Pub. 12-20-66. Filed 8-19-65.
827,011. ELECTRONIC HOT LATHER. Eversharp, Inc. SN 232,827. Pub. 11-22-66. Filed 11-17-65.
827,012. ORGANICORE. La Maur, Inc. SN 233,609. Pub. 6-21-66. Filed 11-30-65.
827,013. SI BLONDE. L'Oreal. SN 237,362. Pub. 1-17-67. Filed 1-26-66.
827,014. JELVYN. Adams National Industries (Pty.) Ltd. SN 254,086. Pub. 1-17-67. Filed 9-9-66.
827,015. CLYATRESS. Redken Laboratories, Inc. SN 254,848. Pub. 1-17-67. Filed 9-21-66.
827,016. BRIGADIER. Puerto Rico Distillers, Inc., d.b.a. Puerto Rico Distilling Co. SN 256,498. Pub. 1-17-67. Filed 10-17-66.
827,017. SBS. Sugar Beet Products Company. MULTIPLE CLASS (Classes 51 and 52). SN 257,225. Pub. 1-17-67. Filed 10-26-66.

Class 52—Detergents and Soaps

826,622. (See Class 2 for this trademark.)
826,639. (See Class 4 for this trademark.)
826,736. (See Class 16 for this trademark.)
827,017. (See Class 51 for this trademark.)
827,018. OFFSET. The Procter & Gamble Company. SN 240,340. Pub. 1-3-67. Filed 3-7-66.
827,019. OPPO. Cohoon Products Corporation. SN 245,685. Pub. 1-17-67. Filed 5-16-66.
827,020. ALP. The Procter & Gamble Company. SN 245,753. Pub. 1-17-67. Filed 5-16-66.
827,021. OBEY. Roux Laboratories, Inc. SN 257,024. Pub. 1-17-67. Filed 10-24-66.
827,022. OBAX. Roux Laboratories, Inc. SN 257,025. Pub. 1-17-67. Filed 10-24-66.

827,023. NOGU. National Distributors, Inc. SN 257,136. Pub. 1-17-67. Filed 10-25-66.
827,024. MOONSUN MANOR. Alberto-Culver Company. SN 257,435. Pub. 1-17-67. Filed 10-27-66.

Service Marks

Class 100—Miscellaneous

827,025. MR. STEAK AND DESIGN. Mr. Steak, Inc. SN 160,982. Pub. 12-3-63. Filed 1-18-63.
827,026. BRICKMOBILE. Champion Brick Company. SN 187,010. Pub. 1-17-67. Filed 2-19-64.
827,027. THE THREE FOUNTAINS. The Three Fountains, Inc., by change of name from Westminster Enterprises, Ltd., d.b.a. The Three Fountains Restaurant. SN 221,667. Pub. 1-10-67. Filed 6-21-65.
827,028. SQUARE-V (DESIGN). Moleculon Research Corporation. SN 244,058. Pub. 1-17-67. Filed 4-22-66.
827,029. LUMS AND DESIGN. Lum's, Inc. SN 256,033. Pub. 1-17-67. Filed 10-10-66.

Class 101—Advertising and Business

827,030. "INSTANT BINGO." Creative Merchandising, Inc., assignee of John D. Helkes, d.b.a. John Helkes Enterprises. SN 227,290. Pub. 11-22-66. Filed 9-7-65.

Class 102—Insurance and Financial

827,031. 76 UNION AND DESIGN. Union Oil Company of California. SN 242,295. Pub. 1-17-67. Filed 3-30-66.

Class 103—Construction and Repair

826,818. (See Class 23 for this trademark.)
827,032. 78 UNION AND DESIGN. Union Oil Company of California. SN 242,296. Pub. 1-17-67. Filed 3-30-66.

Class 106—Material Treatment

827,033. FORT SYNOCHLOR. United Merchants and Manufacturers, Inc. SN 247,421. Pub. 1-17-67. Filed 6-6-66.
827,034. SYNOCHLOR. United Merchants and Manufacturers, Inc. SN 247,422. Pub. 1-17-67. Filed 6-6-66.

Class 107—Education and Entertainment

827,035. IT'S A MATTER OF LAW. Hennepin County Bar Association, Inc. SN 242,362. Pub. 1-17-67. Filed 3-31-66.
827,036. JETS AND DESIGN. Gotham Football Club, Inc. SN 252,054. Pub. 1-17-67. Filed 8-10-66.
827,037. JETS. Gotham Football Club, Inc. SN 255,799. Pub. 1-17-67. Filed 10-5-66.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 39—Clothing

827,038. Abbott Laboratories, Inc., North Chicago, Ill., assignee of The Faultless Rubber Company, Ashland, Ohio. SN 219,701. Filed P.R. 5-25-65; Am. S.R. 6-15-66.

HAND CARE

For Gloves.
First use Apr. 30, 1965.

TRADEMARK REGISTRATIONS RENEWED

57,184. BADGER. Cl. 2. 11-6-06.	229,736. BLUE RIBBON AND DESIGN. Cl. 46. 7-5-27.
58,667. ELEPHANT. Cl. 37. 12-18-06.	229,816. THERMOS. Cl. 2. 7-5-27.
58,668. KANGAROO. Cl. 37. 12-18-06.	422,984. LADY ETHEL AND DESIGN. Cl. 51. 8-20-46.
59,446. CLASPED HANDS (DESIGN). Cl. 52. 1-8-07.	424,901. URANIUM. Cl. 42. 10-29-46.
59,887. T. Cl. 48. 1-22-07.	425,655. BOURRASQUE. Cl. 51. 11-26-46.
60,496. ARTGUM. Cl. 37. 2-12-07.	425,656. BRUMES. Cl. 51. 11-26-46.
60,583. M AND DESIGN. Cl. 19. 2-12-07.	425,657. SHAKE-HANDS. Cl. 51. 11-26-46.
61,057. PURINA. Cl. 46. 3-5-07.	425,658. SORTILEGE. Cl. 51. 11-26-46.
61,064. PURINA. Cl. 46. 3-5-07.	426,364. MA GRIFFE. Cl. 51. 12-24-46.
61,694. BLUE-JAY. Cl. 18. 4-2-07.	426,640. FERROCLIP. Cl. 12. 1-7-47.
61,758. PELLITOL. Cl. 18. 4-2-07.	426,911. WASTE MASTER AND DESIGN. Cl. 21. 1-21-47.
62,577. CRESCENT AND DESIGN. Cl. 25. 5-14-07.	426,923. PAMECO. Cl. 18. 1-21-47.
62,784. DIXON. Cl. 1. 5-28-07.	426,952. CAL-CAP AND DESIGN. Cl. 46. 1-21-47.
63,250. VULCAN. Cl. 34. 6-11-07.	426,988. VITENE. Cl. 16. 1-21-47.
63,423. DIETZ AND DESIGN. Cl. 33. 6-18-07.	427,159. LURLEEN. Cl. 39. 1-28-47.
63,595. VIAVI. Cl. 18. 6-25-07.	427,252. KENDEX. Cl. 15. 2-4-47.
63,609. LINK BELT. Cl. 23. 7-2-07.	427,256. CHALLENGE. Cl. 26. 2-4-47.
64,125. BUDWEISER. Cl. 48. 7-23-07.	427,295. IMPERIAL AND DESIGN. Cl. 37. 2-4-47.
214,404. ESKIMO. Cl. 21. 6-22-26.	427,824. RELIABLE. Cl. 26. 2-25-47.
217,081. FLORAL DESIGN. Cl. 51. 8-24-26.	427,825. STERLING. Cl. 26. 2-25-47.
222,296. INOTON. Cl. 18. 12-28-26.	428,106. FANDE. Cl. 23. 3-11-47.
222,759. HERSHEY'S. Cl. 46. 1-11-27.	428,125. KENSOL. Cl. 6. 3-11-47.
223,420. PERMATILE. Cl. 12. 2-1-27.	428,166. DEMANDER. Cl. 39. 3-11-47.
223,866. MISCELLANEOUS DESIGN. Cl. 37. 2-15-27.	428,377. IH. Cl. 19. 3-25-47.
223,944. BENDER'S FOOD. Cl. 46. 2-15-27.	428,428. RIVAL. Cl. 26. 3-25-47.
224,317. DEFENDER. Cl. 2. 2-22-27.	428,663. CERBINOL. Cl. 18. 4-1-47.
224,367. MONARCH AND DESIGN. Cl. 46. 2-22-27.	429,246. PLASTIN. Cl. 14. 4-29-47.
225,092. DIVERSOL. Cl. 52. 3-8-27.	429,137. OLD BAY. Cl. 46. 4-22-47.
225,452. STURDITE AND DESIGN. Cl. 50. 3-22-27.	429,337. CARWOOD. Cl. 39. 4-29-47.
226,130. STARLIGHT. Cl. 46. 3-29-27.	429,575. BULL'S EYE (DESIGN). Cl. 9. 5-6-47.
226,543. LABELLE AND DESIGN. Cl. 14. 4-12-27.	429,696. CALCO. Cl. 13. 5-13-47.
226,806. THONET. Cl. 32. 4-19-27.	429,843. L'IL BEE. Cl. 39. 5-20-47.
226,826. RIALTO. Cl. 35. 4-19-27.	430,010. EVERPOINT. Cl. 29. 6-3-47.
227,549. TOROSUS. Cl. 37. 5-10-27.	430,195. COVINYLBLAK. Cl. 16. 6-10-47.
228,365. DA-Z. Cl. 16. 5-31-27.	430,803. CORLON. Cl. 20. 6-24-47.
228,468. NEDLAM. Cl. 39. 5-31-27.	430,822. GOLDEN NEED. Cl. 46. 6-24-47.
228,718. S & C AND DESIGN. Cl. 21. 6-7-27.	430,919. NAMACO. Cl. 32. 7-1-47.
228,923. LITTLE GIANT. Cl. 34. 6-14-27.	431,408. HOME BEAUTIFUL. Cl. 32. 7-22-47.
229,264. FLOOR-O-LITE. Cl. 16. 6-21-27.	431,447. OLD RARITY. Cl. 17. 7-22-47.
229,399. COMET ALUMINUM AND DESIGN. Cl. 13. 6-28-27.	431,615. ARRESTONE. Cl. 12. 7-29-47.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued Feb. 14, 1961

711,037. SILVEX. Cl. 1.	711,104. WORLD HEALTH INSTITUTE, LTD., AND DESIGN. Cl. 18.
711,041. FELURAGENIC. Cl. 1.	711,106. OLIVEEN. Cl. 18.
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 711,375. DESIGNER CUT & SEW DRESSKIT. Cl. 40.
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 711,379. FLEURS DE FRANCE. Cl. 50.
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 711,381. TOUCH AND SET. Cl. 51.
 711,382. THE OIL FIELD LAXATIVE. Cl. 52.
 711,383. XLENT. Cl. 52.
 711,385. LA EXTERMINADORA. Cl. 103.
 711,386. VELVA-GLAZE. Cl. 106.

REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

The following marks registered under the act of 1905, or the act of 1881, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.

Class 1—Raw or Partly Prepared Materials

215,819. July 27, 1926. English China Clays Limited, St. Austell, England. Pub. by English Clays Lovering Pochin & Co. Ltd., St. Austell, England.

STOCKALITE

For Colloidal Clays, etc.

215,820. July 27, 1926. English China Clays Limited, St. Austell, England. Pub. by English Clays Lovering Pochin & Co. Ltd., St. Austell, England.

DEVOLITE

For Colloidal Clays, etc.

Class 6—Chemicals and Chemical Compositions

215,302. July 13, 1926. English China Clays Limited, St. Austell, England. Pub. by English Clays Lovering Pochin & Co. Ltd., St. Austell, England.

DEVOLITE

For Colloidal Clays, etc.

215,303. July 13, 1926. English China Clays Limited, St. Austell, England. Pub. by English Clays Lovering Pochin & Co. Ltd., St. Austell, England.

STOCKALITE

For Colloidal Clays.

Class 12—Construction Materials

231,249. Aug. 16, 1927. Plastic Products Company, Detroit, Mich. Pub. by The Gibson-Homans Company, Cleveland, Ohio.

Plastoid

For Putties.

425,808. Dec. 3, 1946. Laurence J. McKnight, Cleveland, Ohio. Pub. by registrant.

FIXAG

For Adjustable Load Bearing Metal Posts, Columns, etc.

Class 18—Medicines and Pharmaceutical Preparations

222,838. Jan. 11, 1927. The Norwich Pharmacal Company, Norwich, N.Y. Pub. by registrant.

Zemacol

For Medicinal Preparations for the Treatment of the Skin.

426,917. Jan. 21, 1947. Professional Pharmacal Co., Inc., San Antonio, Tex. Pub. by registrant.



For Ear Drops.

Class 21—Electrical Apparatus, Machines, and Supplies

363,405. Dec. 27, 1938. McGraw Electric Company, Chicago, Ill. and St. Louis, Mo. Pub. by McGraw-Edison Company, Elgin, Ill.

MOTORTRON

For Fuses and Circuit Makers and Breakers.

423,525. Sept. 3, 1946. Campbell Products Company, Chicago, Ill. Pub. by Deltrol Corp., d.b.a. Campbell Products Co., Bellwood, Ill.

LATHER KING

For Electrically Operated Lather Producing Machines.

428,977. Apr. 15, 1947. Syracuse Ornamental Co., Syracuse, N.Y. Pub. by Rexall Drug and Chemical Company, d.b.a. Syroco, Los Angeles, Calif.

Woodite

For Radio Knobs, etc.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

59,348. Jan. 8, 1907. The De Laval Separator Company, Poughkeepsie, N.Y. Pub. by registrant.

ALPHA

For Centrifugal Separators.

TM 837 O.G.—3

225,216. Mar. 15, 1927. The Torrington Company, Torrington, Conn. Pub. by registrant.



For Knitting Machine Needles.

426,024. Dec. 10, 1946. American Swiss File & Tool Company, Elizabeth, N.J. Pub. by Wallace-Murray Corporation, d.b.a. Heller Tool Co., New York, N.Y.

AMSWISS

For Files.

Class 27—Horological Instruments

427,536. Feb. 11, 1947. Waltham Watch Company, Chicago, Ill. Pub. by registrant.

DURATEST

For Watches.

427,537. Feb. 11, 1947. Waltham Watch Company, Chicago, Ill. Pub. by registrant.

TECHNATEST

For Watches.

Class 39—Clothing

373,278. Sept. 15, 1936. Witchell-Shell Company, Chicago, Ill. Pub. by A. R. Hyde & Sons Co., Cambridge, Mass.



For Athletic Shoes—Namely, Football, Baseball, Track, etc.

427,660. Feb. 18, 1947. Swan Shoe Company, Inc., Baltimore, Md. Pub. by registrant.

PUNCHO

For Slippers Made of Leather, etc.

435,302. Dec. 16, 1947. Franklin Hosiery Mills, Inc., Williamsport, Pa. Pub. by Rexall Drug and Chemical Company, Los Angeles, Calif.

Spunter

For Hosiery.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

222,555. Jan. 4, 1927. Spartan Mills, Spartanburg, S.C. Pub. by registrant.

PRINCESS

For Cotton Piece Goods—Namely, Gray Goods.

222,875. Jan. 11, 1927. Spartan Mills, Spartanburg, S.C. Pub. by registrant.

*SPARTAN
MILLS*

For Cotton Piece Goods.

Class 46—Foods and Ingredients of Foods

145,467. Aug. 2, 1921. N.V. Stoom Chocolade- & Cacao-fabriek "Kwatta," Breda, Netherlands. Pub. by N.V. Chocolade- en Cacao-fabriek "Kwatta," Breda, Netherlands.

KWATTA

For Chocolate.

Class 51—Cosmetics and Toilet Preparations

221,901. Dec. 14, 1926. Guaranteed Products, Inc., New York, N.Y. Pub. by Associated Laboratories, Inc., New York, N.Y.

BLONDEX

For Face Powder and Hair Tonic.

222,407. Jan. 4, 1927. Guaranteed Products, Inc., d.b.a. Coolene Laboratories, New York, N.Y. Pub. by Associated Laboratories, Inc., d.b.a. Vitamin-Quota, New York, N.Y.

COOLENE

For Foot Cream.

INDEX OF REGISTRANTS

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- Abbott Laboratories, Inc., North Chicago, Ill. from The Faultless Rubber Co., Ashland, Ohio. 827,038. Cl. 39.
Acme Quality Paints, Inc., Detroit, Mich. 826,738. pub. 1-17-67. Cl. 16.
Adams, Hamilton, Imports Ltd., New York, N.Y. 826,962. pub. 1-17-67. Cl. 42.
Adams National Industries, Durban, South Africa. 827,014. pub. 1-17-67. Cl. 51.
Adikes, J. & L., Inc., Jamaica, N.Y. 826,659. pub. 1-17-67. Cl. 6.
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Aeroplastics Corp., Venice, Calif. 711,166. can. Cl. 22.
Affiliated Incinerator Corp., Detroit, Mich. 826,871. pub. 11-29-66. Cl. 34.
Air Reduction Co., Inc., New York, N.Y., from Paul Chemical Co., Buena Park, Calif. 826,856-7, pub. 6-7-66. Cl. 31.
Aitkin Iron Works, Inc., Aitkin, Minn. 826,781. pub. 1-17-67. Multiple Class (Classes 19 and 23).
"Akemi" Chemisch-Technische Spezialfabrik Erich Hontsch, Nuremberg, Germany. 826,071. pub. 1-17-67. Cl. 12.
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Alberto-Culver Co., Melrose Park, Ill. 827,024. pub. 1-17-67. Cl. 52.
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Aluminum Co. of America, Pittsburgh, Pa. 826,720. pub. 1-17-67. Cl. 13.
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American Doll & Toy Corp., Brooklyn, N.Y. 711,172. can. Cl. 22.
American Door Co., Inc., South Bend, Ind. 826,705. pub. 1-17-67. Cl. 12.
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American Fire Clay & Products Co., Canfield, Ohio. 826,682. pub. 1-17-67. Cl. 12.
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American Swiss File & Tool Co., Elizabeth, N.J., by Wallace Murray Corp., d.b.a. Heller Tool Co., New York, N.Y. 428,024. 12(c) pub. 4-4-67. Cl. 23.
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Amway Corp., Ada, Mich. 826,886. pub. 1-17-67. Cl. 36.
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Anderson Power Products Inc., Boston, Mass. 826,804. pub. 1-17-67. Cl. 21.
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Arnstelner, Anton, d.b.a. Salzburger Skifabrik, Mittersill, Pinzgau, Austria. 711,171. can. Cl. 22.
Art & Sign Brush Mfg. Corp., Long Island City, N.Y. 430,010. ren. 4-4-67. Cl. 29.
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Associated Spring Corp., Bristol, Conn. 826,717. pub. 1-17-67. Multiple Class (Classes 13, 19, 21, 22, 23, and 35).
Asten-Hill Mfg. Co., Philadelphia, Pa. 827,005. pub. 1-17-67. Cl. 50.
Astrodata, Inc., Anaheim, Calif. 826,797. pub. 1-17-67. Cl. 21.
Atlantic Brewing Co.: See—
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Atlantic Products Corp., Trenton, N.J. 826,623. pub. 1-17-67. Cl. 2.
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Automatic Control Co., St. Paul, Minn. 826,850. pub. 1-17-67. Cl. 26.
Autry Rubber Co., Dallas, Tex. 826,900. pub. 1-17-67. Cl. 39.
Back Supporter, Inc., Rochester, N.Y., from The Spring-Air Co., Chicago, Ill. 711,221. can. Cl. 32.
Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. 826,649. pub. 10-25-66. Cl. 6.
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Barrier Chemicals, Inc., Warwick, N.Y. 826,634-5. pub. 1-17-67. Cl. 4.
Bauer & Black, Chicago, Ill., to The Kendall Co., Walpole, Mass. 61,694. ren. 4-4-67. Cl. 18.
Baxter, J. H. & Co., San Francisco, Calif. 826,698-9. pub. 1-17-67. Cl. 12.
Bayuk Cigars Inc., Philadelphia, Pa. 826,758. pub. 1-17-67. Cl. 17.
Beacon Chemical Industries, Inc., Cambridge, Mass. 711,070. can. Cl. 6.
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Beecham Group Ltd., trading as Beecham Research Laboratories, Brentford, Middlesex, England, from Beecham Research Laboratories, Inc., Clifton, N.J. 826,762. pub. 6-7-66. Cl. 18.
Beecham Research Laboratories, Inc.: See—
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Benger's Food Ltd., Manchester, England, to Fisons Pharmaceuticals Ltd., Loughborough, England. 223,944. ren. 4-4-67. Cl. 46.
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Betan Co., Inc., Knoxville, Tenn. 826,766-7. pub. 1-17-67. Cl. 18.
Big Five, San Antonio, Tex. 826,883. pub. 1-17-67. Cl. 36.
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"Bingo King" Co., Inc., The, Englewood, Colo. 826,812-3. pub. 1-17-67. Cl. 22.
Binney & Smith Co., to Columbian Carbon Co., New York, N.Y. 430,195. ren. 4-4-67. Cl. 16.
Bloch, Ivan, d.b.a. Ivan Bloch & Associates, Portland, Oreg. 711,335. can. Cl. 100.
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Bloopers, Inc., Central Valley, N.Y. 711,255. can. Cl. 38.
Blue Bell, Inc., Greensboro, N.C. 826,935. pub. 1-17-67. Cl. 39.
Boos, Henry P., Dental Laboratories, Minneapolis, Minn. 826,950. pub. 10-18-66. Cl. 44.
Boys Republic, Boys Republic, Calif. 827,007. pub. 1-17-67. Cl. 50.
Bradley Metal Co., The, Cleveland, Ohio. 826,724. pub. 1-17-67. Cl. 14.
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Bristol-Myers Co., New York, N.Y. 826,650. pub. 1-17-67. Cl. 8.
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Brooks-Willamette Corp., Portland, Oreg. 826,712, pub. 1-17-67. Cl. 12.
 Brooks-Willamette Corp., Portland, Oreg. 826,714, pub. 1-17-67. Cl. 12.
 Brown, Lida, Designs, Inc., New York, N.Y. 711,375, canc. Cl. 40.
 Brunelle, Beatrice Y., d.b.a. Beatrice Brunell, Los Angeles, Calif. 826,925, pub. 10-18-66. Cl. 39.
 Brunn, Gustave C., d.b.a. Baltimore Spice Co., Baltimore, Md., to The Baltimore Spice Co., Garrison, Md. 429,137, ren. 4-4-67. Cl. 46.
 Brunswick Corp., Chicago, Ill. 826,822, pub. 1-17-67. Multiple Class (Classes 2, 18, 23, 37, 44, and 52).
 Brunswick Corp., Chicago, Ill. 826,979, pub. 1-17-67. Cl. 44.
 Buck, Harlan M., of Connecticut, Inc., Holbrook, Mass. 826,982, pub. 1-17-67. Cl. 44.
 Bulova Watch Co., Inc., Flushing, N.Y. 711,234, canc. Cl. 36.
 Burlington Mills Inc., Burlington, Wis. 711,175, canc. Cl. 22.
 Burroughs Corp., Detroit, Mich. 826,665, pub. 1-17-67. Cl. 11.
 Busik, Joseph, Jr., d.b.a. Delaware Quarries, Lumberville, Pa. 826,713, pub. 1-17-67. Cl. 12.
 CL & J Products Corp., Boston, Mass. 826,894, pub. 1-17-67. Cl. 37.
 Cal-Cap Fisheries, Wilmington, Calif., to Anthony S. Ostolich, d.b.a. Cal-Cap Food Co., San Pedro, Calif. 426,952, ren. 4-4-67. Cl. 46.
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 California Brass Mfg. Co., Los Angeles, Calif., to California Brass Mfg. Co., Chio, Calif. 429,696, ren. 4-4-67. Cl. 13.
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 Campbell Products Co., Chicago, Ill., by Deltrol Corp., d.b.a. Campbell Products Co., Bellwood, Ill. 423,525, 12(c) pub. 4-4-67. Cl. 21.
 Campbell Soup Co., Camden, N.J. 826,992, pub. 11-29-66. Cl. 46.
 Campboree Mfg. Co., Detroit, Mich. 711,163, canc. Cl. 22.
 Caprico International, Inc., New York, N.Y. 711,174, canc. Cl. 22.
 Caron Corp., New York, N.Y. 217,081, ren. 4-4-67. Cl. 51.
 Carpenter, L. E., & Co., Inc., Newark, N.J., to The Holliston Mills, Inc., Norwood, Mass. 225,452, ren. 4-4-67. Cl. 50.
 Carrier Corp., Syracuse, N.Y. 826,816, pub. 1-17-67. Multiple Class (Classes 23, 31 and 34).
 Carter-Waters Corp., The, Kansas City, Mo. 826,709, pub. 1-17-67. Cl. 12.
 Carwood Mfg. Co., Winder, Ga., to Chadbourn Gotham, Inc., Charlotte, N.C. 428,166, ren. 4-4-67. Cl. 39.
 Carwood Mfg. Co., Winder, Ga., to Chadbourn Gotham, Inc., Charlotte, N.C. 429,337, ren. 4-4-67. Cl. 39.
 Cary Chemicals, Inc., New Brunswick, N.J. 711,043, canc. Cl. 1.
 Cement Enamel Development, Inc., Detroit, Mich. 826,669, pub. 8-2-66. Cl. 12.
 Chadbourn Gotham, Inc.: See—
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 Champion Brick Co., Baltimore, Md. 827,026, pub. 1-17-67. Cl. 40.
 Champion Pneumatic Machinery Co., Inc., Princeton, Ill. 826,840, pub. 1-17-67. Cl. 23.
 Chandler Machine Co., Ayer, Mass. 826,838, pub. 1-17-67. Cl. 23.
 Charmour Products Inc., New York, N.Y. 711,381, canc. Cl. 51.
 Chatham Mfg. Co., Elkin, N.C. 826,955, pub. 12-27-66. Cl. 42.
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 Chevron Chemical Co., San Francisco, Calif. 826,658, pub. 1-17-67. Cl. 6.
 Chore-Time Equipment, Inc., Milford, Ind. 826,870, pub. 1-17-67. Cl. 34.
 Ciro of Bond Street, Inc., New York, N.Y. 826,855, pub. 1-17-67. Cl. 28.
 Claremont Polychemical Corp., Roslyn Heights, N.Y. 826,666, pub. 1-17-67. Cl. 11.
 Clark Gum Co.: See—
 Philip Morris Inc.
 Club Management, Inc.: See—
 Jopa, Inc.
 Coffee Boy, Inc., from Vic Culver Co., Durante, Calif. 826,991, pub. 11-15-66. Cl. 46.
 Coloon Products Corp., Jackson, Miss. 827,019, pub. 1-17-67. Cl. 52.
 Colamco, Inc., San Gabriel, Calif. 826,789, pub. 1-17-67. Cl. 20.
 Coleco Industries, Inc., Hartford, Conn. 826,693, pub. 1-17-67. Cl. 12.
 Colgate-Palmolive Co., New York, N.Y. 826,774, pub. 1-17-67. Cl. 18.
 Columbia Bag & Paper Co., Long Island City, to Union Camp Corp., New York, N.Y. 224,317, ren. 4-4-67. Cl. 2.
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 Cone Mills Corp., Greensboro, N.C. 826,964-8, pub. 1-17-67. Cl. 42.
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Congoleum-Nairn Inc., Kearny, N.Y. 826,790, pub. 1-17-67. Cl. 20.
 Connaught Medical Research Laboratories: See—
 Governors of the University of Toronto, The.
 Consolidated Foods Corp.: See—
 Reid, Murdoch & Co.
 Consumers Cooperative Association: See—
 Farmland Industries, Inc.
 Cookton Pneumatics, Inc., Hyattsville, Md. 826,823, pub. 1-17-67. Cl. 23.
 Coolene Laboratories: See—
 Guaranteed Products, Inc.
 Copease Corp., New York, N.Y. 711,188, canc. Cl. 23.
 Copease Corp., New York, N.Y. 711,323, canc. Cl. 50.
 Coricone Corp., The, Chicago, Ill. 826,752, pub. 1-17-67. Cl. 10.
 Cory Corp., Chicago, Ill. 826,895, pub. 1-17-67. Cl. 37.
 Craft House Trees Corp., Chicago, Ill. 711,320, canc. Cl. 50.
 Crane, William M. Co., New York, N.Y., to Vulcan-Hart Corp., Baltimore, Md. 68,250, ren. 4-4-67. Cl. 34.
 Creative Merchandising, Inc., Denver, Colo., from J. D. Helkes, d.b.a. John Helkes Enterprises, Corona Del Mar, Calif. 827,030, pub. 11-22-66. Cl. 101.
 Cromwell Oil Co., Los Angeles, Calif. 826,727, pub. 1-17-67. Cl. 15.
 Cuff, Fred, d.b.a. Torch Aid Industries, Paducah, Ky. 826,876, pub. 1-17-67. Cl. 34.
 Davidson, Edward M., to Roll-O-Graphic, Inc., and Rolcor Products, Inc., New York, N.Y. 426,988, ren. 4-4-67. Cl. 18.
 Davis Mfg. Co., Inc.: See—
 Greever-Lotapelsch Mfg. Co.
 Dawn Research Corp., Newark, N.J. 826,831, pub. 1-17-67. Cl. 23.
 Da-Z Mfg. Co.: See—
 Rumpf, Gustav A.
 Dean Floor Covering Co., Inc., Parsippany, N.J. 826,710, pub. 1-17-67. Cl. 12.
 Dean Floor Covering Co., Inc., Parsippany, N.J. 826,791, pub. 1-17-67. Cl. 20.
 Dean Floor Covering Co., Inc., Parsippany, N.J. 826,957, pub. 1-17-67. Cl. 42.
 Deering Milliken, Inc., New York, N.Y. 826,959, pub. 1-17-67. Cl. 42.
 Deering Milliken, Inc., New York, N.Y. 826,963, pub. 1-17-67. Cl. 42.
 Deering Milliken, Inc., New York, N.Y. 826,969-70, pub. 1-17-67. Cl. 42.
 Deering Milliken, Inc., New York, N.Y. 826,976-7, pub. 1-17-67. Cl. 43.
 Defender, Inc., Philadelphia, Pa. 826,938-9, pub. 1-17-67. Cl. 39.
 Delarbree, Jean J.: See—
 Societe Fleurs De Paris.
 De Laval Separator Co., The, Poughkeepsie, N.Y. 59,348, 12(c) pub. 4-4-67. Cl. 23.
 Delaware Quarries: See—
 Busik, Joseph, Jr.
 Delaware Tool Steel Corp., Wilmington, Del. 826,839, pub. 1-17-67. Cl. 23.
 Deltrol Corp.: See—
 Campbell Products Co.
 De Luxe Girdlecraft Co., Inc., New York, N.Y. 826,940, pub. 1-17-67. Cl. 39.
 Dental Insurance Plan Inc., New York, N.Y. 711,345, canc. Cl. 102.
 Detroit Athletic Club, Detroit, Mich. 826,761, pub. 1-17-67. Cl. 17.
 Deutsch Molding Corp., Long Beach, Calif. 711,149, canc. Cl. 21.
 Diamond Alkali Co., Cleveland, Ohio. 826,725, pub. 1-17-67. Cl. 14.
 Diamond Alkali Co., Cleveland, Ohio. 826,753, pub. 1-17-67. Cl. 16.
 Dietz, R. E., Co., Syracuse, N.Y. 63,423, ren. 4-4-67. Cl. 33.
 Dietz, R. E., Co., Syracuse, N.Y. 228,923, ren. 4-4-67. Cl. 34.
 Ditta Pace-Gipsa-Giacomo Pace Societa In Accomandita Semplice, Rome, Italy. 826,998, pub. 11-1-66. Cl. 49.
 Diversey Corp.: See—
 Diversey Mfg. Co.
 Diversey Mfg. Co., to The Diversey Corp., Chicago, Ill. 225,092, ren. 4-4-67. Cl. 52.
 Dixon, Joseph, Crucible Co., The, Jersey City, N.J. 62,784, ren. 4-4-67. Cl. 1.
 Domar, S.A., Barcelona, Spain. 826,841, pub. 1-17-67. Multiple Class (Classes 24 and 31).
 Dow Chemical Co., The: See—
 Pitman-Myers Co.
 Westbury Chemical Co., Inc.
 Draddy, Gregg, Inc., New York, N.Y. 826,915, pub. 1-17-67. Cl. 39.
 Du-Mor Blade Co., Pennsauken, N.J. 826,629, pub. 1-17-67. Cl. 2.
 Dunhill, Alfred, of London, Inc., New York, N.Y. 826,662, pub. 1-17-67. Cl. 8.
 Duron Paint Mfg. Co., Inc., Beltsville, Md. 826,788, pub. 1-17-67. Multiple Class (Classes 20 and 37).
 Eberhard Faber Inc., Wilkes-Barre, Pa. 711,252, canc. Cl. 37.
 Eberhard Faber Inc., Wilkes-Barre, Pa. 826,611, pub. 1-17-67. Cl. 22.
 Electromagnetic Probe Co., Inc., Winston-Salem, N.C. 826,984, pub. 1-17-67. Cl. 44.
 Elliott Lumber Co., Danville, Ill. 826,696, pub. 1-17-67. Cl. 12.
 Endicott Johnson Corp., Endicott, N.Y. 826,943, pub. 1-17-67. Cl. 39.

English China Clays Ltd., by English Clays Lovering Pochin & Co. Ltd., St. Austell, England. 215,302-3, 12(c) pub. 4-4-67. Cl. 6.
 English China Clays Ltd., by English Clays Lovering Pochin & Co. Ltd., St. Austell, England. 215,819-20, 12(c) pub. 4-4-67. Cl. 1.
 English Clays Lovering Pochin & Co. Ltd.: See—
 English China Clays Ltd.
 Erell Mfg. Co., Chicago, Ill. 826,625, pub. 1-17-67. Cl. 2.
 Eversharp, Inc., Milford, Conn. 827,011, pub. 11-22-66. Cl. 51.
 FMC Corp., Philadelphia, Pa. 826,836, pub. 1-17-67. Cl. 23.
 Faber, Coe & Gregg, Inc., Newark, N.J. 826,754, pub. 9-20-66. Cl. 17.
 Faber-Castell, A. W., Pencil Co.: See—
 Sommer, Adolph.
 Farmland Industries, Inc., from Consumers Cooperative Association, Kansas City, Mo. 826,728-9, pub. 12-20-66. Cl. 15.
 Farmland Industries, Inc., from Consumers Cooperative Association, Kansas City, Mo. 826,881, pub. 12-20-66. Cl. 35.
 Faultless Rubber Co., The: See—
 Abbott Laboratories, Inc.
 Fiberfil, Inc., Evansville, Ind. 826,616, pub. 1-17-67. Cl. 1.
 Fidelity File Box, Inc., d.b.a. Safco Products Co., Minneapolis, Minn. 826,861, pub. 1-17-67. Cl. 32.
 Fieldcrest Mills, Inc., Spray, N.C. 826,958, pub. 1-17-67. Cl. 42.
 Fieldcrest Mills, Inc., Spray, N.C. 826,960, pub. 1-17-67. Cl. 42.
 Fikejs, Gordon C., d.b.a. Par Records, Fairfield, Iowa. 826,884, pub. 1-17-67. Cl. 36.
 Filatures Prouvost & Cie, La Lainiere De Roubaix, Roubaix (Nord), France. 826,973-4, pub. 1-17-67. Cl. 43.
 Firestone Tire & Rubber Co., The, Akron, Ohio. 826,972, pub. 8-9-66. Cl. 43.
 Fisher, H. C., Eppingham, Ill. 711,336, canc. Cl. 100.
 Fisons Pharmaceuticals Ltd.: See—
 Bengers Food Ltd.
 Floral Development Corp., Holliston, Mass. 826,626, pub. 1-17-67. Cl. 2.
 Flynn & Emrich Co., Baltimore, Md. 428,106, ren. 4-4-67. Cl. 23.
 Folligny & Co.: See—
 Societe Anonyme Jules Robin, Ancienne.
 Forum Sportswear, Inc., New York, N.Y. 826,902, pub. 1-17-67. Cl. 39.
 Fosco International Ltd., Birmingham, England. 826,613, pub. 9-6-66. Cl. 1.
 Fotomatic Corp., Indianapolis, Ind. 826,849, pub. 1-17-67. Cl. 26.
 Founders Furniture, Inc., Pleasant Garden, N.C. 711,222, canc. Cl. 32.
 Frackman, Hy, d.b.a. Alean Carved Wedding Ring Co., New York, N.Y. 711,214, canc. Cl. 28.
 Franch'sche Verlagshandlung W. Keller & Co., Stuttgart, Germany. 711,160, canc. Cl. 22.
 Franklin Hosiery Mills, Inc., Williamsport, Pa., by Rexall Drug and Chemical Co., Los Angeles, Calif. 435,302, 12(c) pub. 4-4-67. Cl. 39.
 Franwill, Inc., Indianapolis, Ind. 711,306, canc. Cl. 46.
 Fuji Electric Mfg. Co., Ltd.: See—
 Fuji Denki Seiso Kabushiki Kaisha.
 Fujitsu Ltd., Kawasaki, Japan. 826,793-4, pub. 1-17-67. Multiple Class (Classes 21, 23, and 26).
 Fuller Pharmaceutical Co., Minneapolis, Minn. 826,769, pub. 1-17-67. Cl. 18.
 Garrett Ennumclaw Co., Ennumclaw, Wash. 826,832, pub. 1-17-67. Cl. 23.
 Garry Laboratories, Inc., Buffalo, N.Y. 711,365, canc. Cl. 16.
 Garry Industries, Inc., d.b.a. Vall Mfg. Co., from Vall Mfg. Co., Chicago, Ill. 826,887, pub. 1-17-67. Cl. 25.
 Gaylor Products, Inc., Chicago, Ill. 826,928, pub. 1-17-67. Cl. 39.
 Gee Co., Chicago, Ill. 711,349, canc. Cl. 103.
 Geller, Andrew, Inc., Brooklyn, N.Y. 826,945, pub. 1-17-67. Cl. 39.
 General Aniline & Film Corp., New York, N.Y. 826,723, pub. 1-17-67. Cl. 14.
 General Aniline & Film Corp., New York, N.Y. 826,848, pub. 1-17-67. Cl. 26.
 General Cigar Co., Inc., New York, N.Y. 826,757, pub. 1-17-67. Cl. 17.
 General Foods Corp., White Plains, N.Y. 711,309, canc. Cl. 46.
 General Mills, Inc.: See—
 Red Star Milling Co., The.
 General Optics, Inc., Denver, Colo. 711,116, canc. Cl. 18.
 General Refractories Co., Philadelphia, Pa. 426,640, ren. 4-4-67. Cl. 12.
 General Sportswear Co., Inc., Ellenville, N.Y. 826,926, pub. 1-17-67. Cl. 39.
 Genesco, Inc., Nashville, Tenn. 711,281, canc. Cl. 39.
 Georgia Co., Inc., The, New York, N.Y. 711,285, canc. Cl. 42.
 Georgia-Pacific Corp., Portland, Oreg. 826,708, pub. 1-17-67. Cl. 12.
 Gibson-Homans Co., The: See—
 Plastic Products Co.
 Gilbert, S. L. Co., Inc., New York, N.Y. 826,923, pub. 1-17-67. Cl. 39.
 Glide Fur Textile Raumkultur Gesellschaft mit beschränkter Haftung, Essen, Germany. 826,954, pub. 1-17-67. Cl. 42.
 Glidden Co., The, Cleveland, Ohio. 826,737, pub. 1-17-67. Cl. 16.
 Glidden Co., The, Cleveland, Ohio. 826,739, pub. 1-17-67. Cl. 16.

Gossard, H. W., Co., The, Chicago, Ill. 711,282, canc. Cl. 39.
 Gotham Football Club, Inc., New York, N.Y. 827,036-7, pub. 1-17-67. Cl. 107.
 Governors of the University of Toronto, The, d.b.a. Connaught Medical Research Laboratories, Toronto, Ontario, Canada. 826,651-7, pub. 1-17-67. Cl. 6.
 Grad-Line, Inc., Woodinville, Wash. 827,003, pub. 1-17-67. Cl. 50.
 Greever-Lotapelsch Mfg. Co., to Davis Mfg. Co., Inc., Knoxville, Tenn. 229,736, ren. 4-4-67. Cl. 46.
 Green Mfg. Co., Minneapolis, Minn. 826,824, pub. 1-17-67. Cl. 23.
 Greta, Inc., Mamaroneck, N.Y. 826,931, pub. 1-17-67. Cl. 39.
 Groveton Papers Co., Groveton, N.H. 826,890, pub. 1-17-67. Cl. 37.
 Guaranteed Products, Inc., by Associated Laboratories, Inc., New York, N.Y. 221,901, 12(c) 4-4-67. Cl. 51.
 Guaranteed Products, Inc., d.b.a. Coolene Laboratories, by Associated Laboratories, Inc., New York, N.Y. 222,407, 12(c) pub. 4-4-67. Cl. 51.
 Gulf States Paper Corp., Tuscaloosa, Ala. 826,888-9, pub. 10-20-64. Cl. 37.
 Gunnin Mfg. Co., Dawson, Ga. 826,919, pub. 1-17-67. Cl. 39.
 Hall, Fletcher, d.b.a. Cedacote Mfg. Co., Memphis, Tenn. 711,102, canc. Cl. 16.
 Hardboard Fabricators Corp., Newark, N.J. 826,670, pub. 1-17-67. Cl. 12.
 Harris Paint Co., Tampa, Fla. 826,751, pub. 1-17-67. Cl. 16.
 Hart, Schaffner & Marx, Chicago, Ill. 826,920, pub. 1-17-67. Cl. 39.
 Hastings & Co., Inc., Philadelphia, Pa. 826,617, pub. 1-17-67. Cl. 1.
 Health Products, Inc., Chicago, Ill. 826,983, pub. 1-17-67. Multiple Class (Classes 44 and 51).
 Helkes, John D.: See—
 Creative Merchandising, Inc.
 Helkes, John, Enterprises: See—
 Helkes, John D.
 Heller Tool Co.: See—
 American Swiss File & Tool Co.
 Henkel & Cie., G.m.b.H., Dusseldorf-Holthausen, Germany. 826,735, pub. 1-17-67. Cl. 16.
 Hennepin County Bar Association, Inc., Minneapolis, Minn. 827,036, pub. 1-17-67. Cl. 107.
 Herrick Co. Steel Products, The, Midland, Tex. 826,686, pub. 1-17-67. Cl. 12.
 Hershey Chocolate Co., Hershey, Pa., to Hershey Corp., Naples, Fla. 222,759, ren. 4-4-67. Cl. 46.
 Hershey Corp.: See—
 Hershey Chocolate Co.
 Hewitt, Delbert C., Portland, Oreg. 826,843, pub. 1-17-67. Cl. 26.
 Hiebert, John, d.b.a. Hiebert Mfg. Co., Hillsboro, Kans. 711-203, canc. Cl. 23.
 Hiebert Mfg. Co.: See—
 Hiebert, John.
 Hill Chemical Co., Idaho Falls, Idaho. 713,380, canc. Cl. 15.
 Hillyard Chemical Co., to Hillyard Enterprise, Inc., St. Joseph, Mo. 229,264. Cl. 16.
 Hillyard Enterprise, Inc.: See—
 Hillyard Chemical Co.
 Hinkle Contracting Corp., Paris, Ky. 711,178, canc. Cl. 22.
 Hokuu Chain Mfg. Co., Ltd., Tokyo, Japan. 711,187, canc. Cl. 23.
 Holley Carburetor Co., Warren, Mich. 826,819, pub. 1-17-67. Cl. 23.
 Holliston Mills, Inc.: See—
 Carpenter, L. E., & Co., Inc.
 Home-Tap Co., from Atlantic Brewing Co., Chicago, Ill. 826,997, pub. 12-19-66. Cl. 46.
 Honda Giken Kogyo Kabushiki Kaisha (Honda Motor Co., Ltd.), Tokyo, Japan. 826,779, pub. 1-17-67. Multiple Class (Classes 19 and 23).
 Honeggers' & Co., Inc., Fairbury, Ill. 826,692, pub. 1-17-67. Cl. 12.
 Hormel, Geo. A., & Co., Austin, Minn., from Stark, Wetsel & Co., Inc., Indianapolis, Ind. 826,987, pub. 6-22-65. Cl. 46.
 Host Pajamas, Inc., New York, N.Y. 826,905, pub. 4-26-66. Cl. 39.
 Hother Hellenberg A/S, Danish Co., Copenhagen, Denmark. 827,009, pub. 1-10-67. Cl. 51.
 Hough Mfg. Corp., Janesville, Wis. 826,708-7, pub. 1-17-67. Cl. 12.
 Hub Floral Mfg. Co., Boston, Mass. 827,006, pub. 1-17-67. Cl. 50.
 Huntingdon Industries, Inc., Bethayres, Pa. 826,829, pub. 1-17-67. Cl. 23.
 Hyde, A. B., & Sons Co.: See—
 Wittichell-Shell Co.
 I.H. Mfg. Co., Inc., New York, N.Y. 711,157, canc. Cl. 21.
 Illiana Business Systems: See—
 Lonta, Clifford G.
 Independent Board for Presbyterian Foreign Missions, The, Philadelphia, Pa. 711,268, canc. Cl. 38.
 Indiana Limestone Co., Inc., Bedford, Ind. 826,700, pub. 1-17-67. Cl. 12.
 Industrial Rayon Corp., Cleveland, Ohio. 711,042, canc. Cl. 1.
 Insul-8-Corp., San Carlos, Calif. 711,151, canc. Cl. 21.
 Interchemical Corp., New York, N.Y. 826,749, pub. 1-17-67. Cl. 16.
 International Harvester Co., to International Harvester Co., Chicago, Ill. 428,377, ren. 4-4-67. Cl. 19.
 International Minerals & Chemical Corp., Skokie, Ill. 826,630, pub. 1-17-67. Cl. 2.

International Minerals & Chemical Corp., Skokie, Ill. 826,601, pub. 1-17-67. Cl. 6.
 International Paper Co., New York, N.Y. 427,295, ren. 4-4-67. Cl. 37.
 Investorview, Inc., Westwood, N.J. 711,257, can. Cl. 38.
 Ion Exchange Products, Inc., Chicago, Ill. 826,847, pub. 1-17-67. Cl. 28.
 Ives, H. B. Co., The, New Haven, Conn. 62,577, ren. 4-4-67. Cl. 25.
 JFD Electronics Corp.: See—
 Stratford Retreat House.
 J & J Products Co. Inc.: See—
 J & J Soft Pretzel Co. Inc.
 J. & J. Soft Pretzel Co., Inc., d.b.a. J & J Products Co., Inc., Pennsauken, N.J. 826,878, pub. 1-17-67. Cl. 34.
 Jackson Mattress Co., Inc., Fayetteville, N.C. 826,864-5, pub. 1-17-67. Cl. 32.
 Jantzen Inc., Portland, Ore. 826,948, pub. 1-17-67. Cl. 39.
 Japan Gas Lighter Corp., New York, N.Y. 826,663, pub. 1-17-67. Cl. 8.
 Japan Gas Lighter Corp., New York, N.Y. 826,732, pub. 1-17-67. Cl. 15.
 Jaunty Fabric Corp., The, Scranton, Pa. 711,283, can. Cl. 42.
 Jayhawk Mfg. Co., Inc., Hutchinson, Kans. 826,820, pub. 5-31-68. Cl. 23.
 Jennings, Earle and Associates Inc., Seattle, Wash. 826,840, pub. 1-17-67. Cl. 5.
 Johannmann, Frank T., Berkeley Heights, N.J. 826,893, pub. 1-17-67. Cl. 37.
 Johnston, William H., Laboratories, Inc., Baltimore, Md. 826,846, pub. 1-17-67. Cl. 28.
 Jones, Harold L.: See—
 Confection Products.
 Jopa, Inc., Arlington, Va., from Club Management, Inc., Alexandria, Va. 826,898, pub. 9-20-66. Cl. 38.
 Joray Furs Inc., New York, N.Y. 826,904, pub. 1-18-66. Cl. 39.
 Judi, Beverly Hills, Calif. 826,891, pub. 12-13-66. Cl. 37.
 Juji Denki Selsu Kabushika Kaisha, d.b.a. Juji Electric Mfg. Co., Ltd., Kawasaki, Japan. 826,792, pub. 1-17-67. Multiple Class (Classes 21 and 26).
 Juniorite, Inc., New York, N.Y. 826,941, pub. 1-17-67. Cl. 39.
 Kaempf, Adele, New York, N.Y. 826,909-10, pub. 1-17-67. Cl. 39.
 Kellman, J. H., Co., Inc., New York, N.Y. 826,917, pub. 1-17-67. Cl. 39.
 Kendall Co., The: See—
 Bauer & Black.
 Kendall Refining Co., Bradford, Pa., to Witco Chemical Co., Inc., New York, N.Y. 427,252, ren. 4-4-67. Cl. 15.
 Kendall Refining Co., Bradford, Pa., to Witco Chemical Co., Inc., New York, N.Y. 428,125, ren. 4-4-67. Cl. 6.
 King-Seely Thermos Co.: See—
 American Thermos Bottle Co., The.
 Klein, Anne, Inc., New York, N.Y. 826,924, pub. 1-17-67. Cl. 39.
 Knapp Products Inc., Lodi, N.J. 711,089, can. Cl. 6.
 Knight of Rest Products, Newark, N.J. 826,859, pub. 4-13-66. Cl. 52.
 Kramer Associates: See—
 Kramer, Marvin.
 Kramer, Marvin, d.b.a. Kramer Associates, Hicksville, N.Y. 826,674, pub. 1-17-67. Cl. 12.
 L & M-Surco Mfg., Inc., Dallas, Tex. 826,848, pub. 1-17-67. Cl. 12.
 La Exterminadora, Inc., Pittsburgh, Pa. 711,885, can. Cl. 103.
 Lafayette Radio Electronics Corp., Syosset, N.Y. 826,715, pub. 1-17-67. Multiple Class (Classes 13, 21, 23, 26, 32, 34, and 36).
 La Maur, Inc., Minneapolis, Minn. 827,012, pub. 6-21-66. Cl. 51.
 Lane Ltd.: See—
 Lane Tobacco Ltd.
 Lane Tobacco Ltd., n.b.c.o.n.t. Lane Ltd., to Lane Ltd., New York, N.Y. 431,447, ren. 4-4-67. Cl. 17.
 La Spirotechnique, Paris, France 826,802, pub. 1-17-67. Cl. 21.
 Latrobe Steel and Coupler Co., Philadelphia, Pa., to Midland-Ross Corp., Cleveland, Ohio. 60,535, ren. 4-4-67. Cl. 19.
 Laughoff Grain Co., Danville, Ill. 826,614, pub. 1-17-67. Cl. 1.
 Lavigne, Donald S., Inc., Miami, Fla. 826,933, pub. 1-17-67. Cl. 39.
 Law, Hartland, and Herbert E. Law, to The Viavi Co., San Francisco, Calif. 63,595, ren. 4-4-67. Cl. 18.
 Lawter Chemicals, Inc., Chicago, Ill. 826,747-8, pub. 1-17-67. Cl. 16.
 Le Gallon, S.A., Neuilly, France, to American Parfums Corp., Carson City, Nev. 425,655-8, ren. 4-4-67. Cl. 51.
 Lepage's, Inc., Pittsburgh, Pa. 826,844, pub. 1-17-67. Cl. 6.
 Lever Bros. Co., New York, N.Y. 59,446, ren. 4-4-67. Cl. 52.
 Lewis Salon Shoes: See—
 Lewis, William T.
 Lewis, William T., d.b.a. Lewis Salon Shoes, Tucson, Ariz. 826,921, pub. 1-17-67. Cl. 39.
 Liggett & Myers Tobacco Co., New York, N.Y. 826,759-60, pub. 1-17-67. Cl. 17.
 Limoneira Co., Santa Paula, Calif. 430,822, ren. 4-4-67. Cl. 46.
 Ling-Belt Co., Chicago, Ill. 63,609, ren. 4-4-67. Cl. 23.
 Lockley Machine Co., New Castle, Pa. 426,911, ren. 4-4-67. Cl. 21.
 Lotts, Clifford G., d.b.a. Illiana Business Systems, Lansing, Ill. 826,892, pub. 1-17-67. Cl. 37.

L'Oreal, Paris, France. 827,013, pub. 1-17-67. Cl. 51.
 Lovable Co., The, Atlanta, Ga. 826,842, pub. 1-17-67. Cl. 39.
 Lufkin Rule Co., The, Saginaw, Mich. 427,256, ren. 4-4-67. Cl. 26.
 Lufkin Rule Co., The, Saginaw, Mich. 428,428, ren. 4-4-67. Cl. 26.
 Lufkin Rule Co., The, to The Lufkin Rule Co., Saginaw, Mich. 427,824-5, ren. 4-4-67. Cl. 26.
 Lum's Inc., Miami Beach, Fla. 827,029, pub. 1-17-67. Cl. 100.
 Lynchburg Hosiery Mills, Inc., Lynchburg, Va. 711,373, can. Cl. 39.
 M & R Dietetic Laboratories, Inc.: See—
 Purdue Frederick Co., The.
 Magnetics, Inc., East Butler, Pa. 826,798, pub. 10-18-66. Multiple Class (Classes 21, 26, and 50).
 Maldenform, Inc., New York, N.Y. 826,916, pub. 1-17-67. Cl. 39.
 Maldenform, Inc., New York, N.Y. 826,927, pub. 1-17-67. Cl. 39.
 Maldenform, Inc., New York, N.Y. 826,929, pub. 1-17-67. Cl. 39.
 Malden Knitting Mills, Malden, Mass. 228,468, ren. 4-4-67. Cl. 39.
 Mann Research Laboratories, Inc., New York, N.Y. 711,068, can. Cl. 6.
 Manufacturers' Marketing Co., U.S.A., Inc., New York, N.Y. 826,036, pub. 1-17-67. Cl. 4.
 Marlin Firearms Co., The, New Haven, Conn. 429,575, ren. 4-4-67. Cl. 9.
 Marquette, Art & Sally: See—
 Marquette, Sarah D.
 Marquette, Sarah D., d.b.a. Art & Sally Marquette, Santa Barbara, Calif. 711,293, can. Cl. 46.
 Mason, Au & Magenheimer Confy. Mfg. Co., Inc., Mineola, N.Y. 826,993, pub. 1-17-67. Cl. 46.
 Masonite Corp., Chicago, Ill. 826,703, pub. 1-17-67. Cl. 12.
 Massengill, S. H., Co., The, Bristol, Tenn. 711,118, can. Cl. 18.
 Matsushita Electric Industrial Co., Ltd., Osaka, Japan. 826,800, pub. 1-17-67. Cl. 21.
 Maxon Premix Burner Co., Inc., Muncie, Ind. 826,873, pub. 11-8-66. Cl. 34.
 McCrea Equipment Co.: See—
 McCrea, C. Leslie.
 McCrea, C. Leslie, d.b.a. McCrea Equipment Co., Washington, D.C. 711,226, can. Cl. 34.
 McGraw-Edison Co.: See—
 McGraw Electric Co.
 McGraw Electric Co., Chicago, Ill., and St. Louis, Mo., by McGraw-Edison Co., Elgin, Ill. 363,405, 12(c) pub. 4-4-67. Cl. 21.
 McKay Co., The, Pittsburgh, Pa. 826,718, pub. 1-17-67. Cl. 13.
 McKnight, Laurence J., Cleveland, Ohio. 425,808, 12(c) pub. 4-4-67. Cl. 12.
 Mead Johnson & Co., Evansville, Ind. 826,994, pub. 1-17-67. Cl. 46.
 Menley & James Laboratories, from Smith Kline & French Laboratories, Philadelphia, Pa. 827,019, pub. 12-20-66. Cl. 51.
 Metropolitan Brick, Inc., Canton, Ohio. 826,678, pub. 1-17-67. Cl. 12.
 Midland-Ross Corp.: See—
 Latrobe Steel and Coupler Co.
 Midland-Ross Corp., Cleveland, Ohio. 826,826, pub. 1-17-67. Cl. 23.
 Mid-States Gummed Paper Co., Chicago, Ill., to Minnesota Mining and Mfg. Co., St. Paul, Minn. 228,866, ren. 4-4-67. Cl. 37.
 Military Post Suppliers, Newark, N.J. 711,380, can. Cl. 50.
 Minerals & Chemicals Philipp Corp., Menlo Park, N.J. 826,619, pub. 1-17-67. Cl. 1.
 Minnesota Mining and Mfg. Co.: See—
 Mid-States Gummed Paper Co.
 Minnesota Mining and Mfg. Co., St. Paul, Minn. 826,690, pub. 1-17-67. Cl. 12.
 Minister Machine Co., The, Minster, Ohio. 826,822, pub. 1-17-67. Cl. 23.
 Mirro Aluminum Co.: See—
 Aluminum Goods Mfg. Co.
 Mr. Steak, Inc., Denver, Colo. 827,025, pub. 12-3-63. Cl. 100.
 Model Wallpaper and Paint Co., Taylor, Mich. 826,734, pub. 1-17-67. Cl. 16.
 Modern Research, Inc., Clinton, Ind. 711,825, can. Cl. 51.
 Mecculon Research Corp., Cambridge, Mass. 827,028, pub. 1-17-67. Cl. 100.
 Moore-Rane Mfg. Co., Corvallis, Ore. 826,719, pub. 1-17-67. Cl. 13.
 Morris, Philip, Inc., d.b.a. Clark Gum Co., New York, N.Y. 826,996, pub. 1-17-67. Cl. 46.
 Morton International, Inc., Chicago, Ill. 826,839, pub. 11-1-66. Multiple Class (Classes 4, 6, 18, 29, and 52).
 Morton International, Inc., Chicago, Ill. 826,842, pub. 9-13-66. Multiple Class (Classes 5, 6, and 16).
 Mosler Safe Co., The, Hamilton, Ohio. 826,845, pub. 1-17-67. Cl. 26.
 Mostow Co., The, Skokie, Ill. 711,154, can. Cl. 21.
 Mothercare Ltd., London, England. 826,908, pub. 1-17-67. Cl. 39.
 Moxon, B. H., & Sons Ltd., Kirkburton, Huddersfield, England. 711,284, can. Cl. 42.
 N.V. Chocolate-en Cacaoafabriek "Kwatta": See—
 N.V. Stoom Chocolate- & Cacaoafabriek "Kwatta."
 N.V. Stoom Chocolate- & Cacaoafabriek "Kwatta" Middenlaan, by N.V. Chocolate-en Cacaoafabriek "Kwatta," Breda, Netherlands. 145,467, 12(c) pub. 4-4-67. Cl. 46.
 Nashua Corp., Nashua, N.H. 711,246, can. Cl. 37.

National Distributors, Inc., Nashua, N.H. 827,023, pub. 1-17-67. Cl. 52.
 National Gypsum Co., Buffalo, N.Y. 826,873, pub. 5-17-66. Cl. 12.
 National Mattress Co., Huntington, W. Va. 430,919, ren. 4-4-67. Cl. 32.
 National Mattress Co., Huntington, W. Va. 431,408, ren. 4-4-67. Cl. 32.
 National Reloading Mfg. Association Inc., Ithaca, N.Y. 711,381, can. Cl. 200.
 National Travel Association, Inc., Minneapolis, Minn. 711,263, can. Cl. 38.
 New Castle Products, Inc., New Castle, Ind. 826,851, pub. 1-17-67. Cl. 28.
 New Castle Products, Inc., New Castle, Ind. 826,866, pub. 1-17-67. Cl. 32.
 New York Feather Co., Inc., Brooklyn, N.Y. 826,860, pub. 12-28-65. Cl. 32.
 New York Herald Tribune Inc., New York, N.Y. 711,276, can. Cl. 38.
 Norden Laboratories, Inc., Lincoln, Nebr. 826,768, pub. 1-17-67. Cl. 18.
 Norwich Pharmacal Co., The, Norwich, N.Y. 222,838, 12(c) pub. 4-4-67. Cl. 18.
 Nufold Corp., Philadelphia, Pa. 826,672, pub. 11-8-66. Cl. 12.
 Oberto Sausage Co., Seattle, Wash. 826,988, pub. 10-25-66. Cl. 46.
 Oberto Sausage Co., Seattle, Wash. 826,990, pub. 10-25-66. Cl. 46.
 Oceana Import Co., Inc., Boston, Mass. 711,145, can. Cl. 21.
 Old Town Corp., Brooklyn, N.Y. 711,248, can. Cl. 37.
 Olympia Brewing Co., Olympia, Wash. 826,620, pub. 9-22-64. Cl. 2.
 Originators Engineering and Development Co., The, Fort Worth, Tex. 826,825, pub. 1-17-67. Cl. 23.
 Osborn Mfg. Co., The, Cleveland, Ohio. 826,834, pub. 10-18-66. Cl. 23.
 Oscar Enterprises Inc., d.b.a. Atlantis Pump Co., Berkeley, Calif. 826,821, pub. 1-17-67. Cl. 23.
 Ostoch, Anthony S.: See—
 Cal-Cap Fisheries.
 Orwall Tool Co., Ltd., Flushing, N.Y. 826,835, pub. 1-17-67. Cl. 23.
 Oy Kovametalli Ab, Lintuvaara, Finland. 826,879, pub. 1-17-67. Cl. 35.
 Pacific Corrugated Culvert Co., Irwindale, Calif. 826,679, pub. 1-17-67. Cl. 12.
 Paper Supply Co., The, Baltimore, Md. 826,896-7, pub. 1-17-67. Cl. 37.
 Par Records: See—
 Ekejs, Gordon C.
 Para-Lax Corp., from The Photo-Line Corp., Tulsa, Okla. 711,382, can. Cl. 52.
 Park Mfg. Co., Grant Park, Ill. 826,621, pub. 1-17-67. Cl. 2.
 Parke, Davis & Co., Detroit, Mich. 826,763, pub. 1-3-67. Cl. 18.
 Paschal, Paul S., d.b.a. Tri-Una Chemical Co., Wake Forest, N.C. 826,771, pub. 1-17-67. Cl. 18.
 Paul Chemical Co.: See—
 Air Reduction Co., Inc.
 Peck's Products Co.: See—
 Rumpf, Gustav A.
 Pecora Chemical Corp., Philadelphia, Pa. 826,694, pub. 1-17-67. Cl. 12.
 Pelican State Laboratory: See—
 Smith, Euclid B.
 Penn Petroleum Corp., Detroit, Mich. 826,741, pub. 1-17-67. Cl. 16.
 Pennex Products Co., Verona, Pa. 426,923, ren. 4-4-67. Cl. 18.
 Pennex Products Co., Verona, Pa. 422,984, ren. 4-4-67. Cl. 51.
 Pennsylvania Box & Lumber Co., Inc., Warminster, Pa. 826,628, pub. 1-17-67. Cl. 2.
 PepsiCo, Inc., New York, N.Y. 826,986, pub. 1-17-67. Cl. 45.
 Percos, Inc.: See—
 Societe a Responsabilite Limite Carven.
 Perfect Paint Products, Inc., Brentwood, Md. 826,681, pub. 1-17-67. Multiple Class (Classes 12 and 16).
 Permanent Filter Corp., Los Angeles, Calif. 711,140, can. Cl. 19.
 Pervel Industries, Inc.: See—
 Plastic Film Corp.
 Peter's Bag & Novelty Corp., New York, N.Y. 711,048, can. Cl. 2.
 Pfizer, Chas., & Co., Inc., New York, N.Y. 826,664, pub. 1-17-67. Cl. 10.
 Pfizer, Chas., & Co., Inc., New York, N.Y. 826,773, pub. 1-17-67. Cl. 18.
 Pfizer, Chas., & Co., Inc., New York, N.Y. 826,775-8, pub. 1-17-67. Cl. 18.
 Phillips, Marie, Inc., New York, N.Y. 826,937, pub. 1-17-67. Cl. 39.
 Photo-Line Corp., The: See—
 Para-Lac Corp.
 Pickup Tops Mfg. Co., Sunnyvale, Calif. 826,785-6, pub. 1-17-67. Cl. 19.
 Pillsbury Co., The, Minneapolis, Minn. 711,314, can. Cl. 46.
 Pioneer Hi-Bred Corn Co., Des Moines, Iowa. 826,815, pub. 1-17-67. Cl. 1.
 Pitman-Myers Co., Indianapolis, Ind., to The Dow Chemical Co., Midland, Mich. 61,758, ren. 4-4-67. Cl. 18.
 Pittsburgh Plate Glass Co., Pittsburgh, Pa. 826,687, pub. 1-17-67. Cl. 12.

Pittsburgh Plate Glass Co., d.b.a. Barreled Sunlight Paint Co., Newark, N.J. 826,736, pub. 1-17-67. Multiple Class (Classes 16 and 52).
 Pittsburgh Plate Glass Co., Pittsburgh, Pa. 826,745, pub. 1-17-67. Cl. 16.
 Pittsburgh Plate Glass Co., Pittsburgh, Pa. 826,750, pub. 1-17-67. Cl. 16.
 Plastic Film Corp., New York, N.Y., to Pervel Industries Inc., Plainfield, Conn. 429,246, ren. 4-4-67. Cl. 14.
 Plastic Products Co., Detroit, Mich., by The Gibson-Homans Co., Cleveland, Ohio. 231,249, 12(c) pub. 4-4-67. Cl. 12.
 Plasticon Chemicals, Inc., Long Island City, N.Y. 826,638, pub. 1-17-67. Cl. 4.
 Plymorth Rubber Co., Inc., Canton, Mass. 826,890, pub. 11-16-65. Cl. 39.
 Pratt & Lambert, Inc., Buffalo, N.Y. 826,742, pub. 1-17-67. Cl. 16.
 Procter & Gamble Co., The, Cincinnati, Ohio. 711,333, can. Cl. 52.
 Procter & Gamble Co., The, Cincinnati, Ohio. 827,018, pub. 1-3-67. Cl. 52.
 Procter & Gamble Co., The, Cincinnati, Ohio. 827,020, pub. 1-17-67. Cl. 52.
 Professional Pharmacal Co., Inc., San Antonio, Tex. 426,917, 12(c) pub. 4-4-67. Cl. 18.
 Prof. Sauerbruch-Frappart Botter Kommanditgesellschaft, Berlin, Germany. 827,008, pub. 9-20-66. Cl. 51.
 Public Service Tire Corp.: See—
 Public Service Tire & Rubber Co., Inc.
 Public Service Tire & Rubber Co., Inc., to Public Service Tire Corp., Brooklyn, N.Y. 226,826, ren. 4-4-67. Cl. 35.
 Puerto Rico Distillers, Inc., d.b.a. Puerto Rico Distilling Co., Arecibo, Puerto Rico. 827,061, pub. 1-17-67. Cl. 51.
 Puerto Rico Distilling Co.: See—
 Puerto Rico Distillers, Inc.
 Purdue Frederick Co., The, New York, N.Y., from M & R Dietetic Laboratories, Inc., Columbus, Ohio. 711,132, can. Cl. 18.
 Puritan Sportswear Corp., The, Altoona, Pa. 826,908, pub. 1-17-67. Cl. 39.
 Quaker Oil Corp., St. Louis, Mo. 826,726, pub. 4-13-65. Cl. 15.
 Raden Mfg. Co., Dallas, Tex. 826,903, pub. 11-15-66. Cl. 39.
 Radiator Specialty Co., Charlotte, N.C. 826,730, pub. 1-17-67. Cl. 15.
 Ralston Purina Co., St. Louis, Mo. 61,057, ren. 4-4-67. Cl. 46.
 Ralston Purina Co., St. Louis, Mo. 61,064, ren. 4-4-67. Cl. 46.
 Red Star Milling Co., The, Wichita, Kans., to General Mills, Inc., Minneapolis, Minn. 226,150, ren. 4-4-67. Cl. 46.
 Redken Laboratories, Inc., Van Nuys, Calif. 827,015, pub. 1-17-67. Cl. 51.
 Regal Knitting Co., Inc., New York, N.Y. 711,278, can. Cl. 39.
 Reid, Murdoch & Co., to Consolidated Foods Corp., Chicago, Ill. 224,367, ren. 4-4-67. Cl. 46.
 Reid-Meredith, Inc., Lawrence, Mass. 826,949, pub. 1-17-67. Cl. 40.
 Reilly Tar & Chemical Corp., Indianapolis, Ind. 826,658, pub. 1-17-67. Multiple Class (Classes 12 and 16).
 Republic Gypsum Co., Lubbock, Tex. 826,676, pub. 1-17-67. Cl. 12.
 Respolco AG, Zurich, Switzerland. 826,922, pub. 1-17-67. Cl. 39.
 Rexall Drug and Chemical Co.: See—
 Syracuse Ornamental Co.
 Franklin Hosiery Mills, Inc.
 Rexall Drug and Chemical Co., d.b.a. Tupperware, Los Angeles, Calif. 826,842, pub. 1-17-67. Cl. 24.
 Rexall Drug and Chemical Co., d.b.a. Tupperware, Los Angeles, Calif. 826,627, pub. 1-17-67. Cl. 2.
 Reynolds Metals Co., Richmond, Va. 826,684, pub. 1-17-67. Cl. 12.
 Reynolds Metals Co., Richmond, Va. 826,722, pub. 1-17-67. Cl. 14.
 Rhodes, Inc., Atlanta, Ga. 826,862, pub. 1-17-67. Cl. 32.
 Rhodes, Inc., Atlanta, Ga. 826,867, pub. 1-17-67. Cl. 32.
 Robins, A. H., Co., Inc., Richmond, Va. 826,764-5, pub. 1-17-67. Cl. 18.
 Rolcor Products, Inc.: See—
 Davidson, Edward M.
 Rollform Inc., Ann Arbor, Mich. 826,702, pub. 1-17-67. Cl. 12.
 Roll-O-Graphic, Inc.: See—
 Davidson, Edward M.
 Rorer, William H., Inc., Fort Washington, Pa. 826,772, pub. 1-17-67. Cl. 18.
 Rothenberg, Philip, & Co., Inc., New York, N.Y. 826,936, pub. 1-17-67. Cl. 39.
 Roux Laboratories, Inc., New York, N.Y. 827,021-2, pub. 1-17-67. Cl. 52.
 Rowll Cycle Corp., Hewlett, N.Y. 826,778, pub. 1-17-67. Cl. 19.
 Roy, Milton, Co., Philadelphia, Pa. 826,981, pub. 1-17-67. Cl. 44.
 Rudofker's, S. Sons, Inc., Philadelphia, Pa. 826,901, pub. 11-2-65. Cl. 39.
 Rumpf, Gustav A., d.b.a. Da-Z Mfg. Co., Jenkintown, Pa., to Peck's Products Co., St. Louis, Mo. 228,365, ren. 4-4-67. Cl. 16.
 S & C Electric Co.: See—
 Schweitzer and Conrad.
 Sabina Electrical Co., d.b.a. Advance Electric, Anaheim, Calif. 826,807, pub. 1-17-67. Cl. 21.
 Safco Products Co.: See—
 Fidelity File Box, Inc.
 Saf-Dive Mfg. Corp., Miami, Fla. 711,162, can. Cl. 22.

Saginaw Products Corp., Saginaw, Mich. 826,817, pub. 1-17-67. Cl. 23.
 Salzbunger Skifabrik: See—
 Arnsteiner, Anton.
 San Juan Grocery Corp., New York, N.Y. 711,106, canc. Cl. 18.
 Sandefur Engineering Co., Inc., Lawndale, Calif. 826,815, pub. 1-17-67. Multiple Class (Classes 23 and 32).
 Scharmann Machine Corp., New York, N.Y. 711,204-5, canc. Cl. 23.
 Scharmann Machine Corp., New York, N.Y. 711,207, canc. Cl. 23.
 Schering Corp., Bloomfield, N.J. 711,258, canc. Cl. 38.
 Schuler Chocolates, Inc., Winona, Minn. 711,377, canc. Cl. 46.
 Schweitzer and Conrad to S & C Electric Co., Chicago, Ill. 228,718, ren. 4-4-67. Cl. 21.
 Scott Paper Co., Chester, Pa. 711,253, canc. Cl. 37.
 Sears, Roebuck and Co., Chicago, Ill. 711,083, canc. Cl. 12.
 Sears, Roebuck and Co., Chicago, Ill. 826,934, pub. 1-17-67. Cl. 39.
 Seaspan, Inc., Green's Farms, Conn. 826,947, pub. 1-17-67. Cl. 39.
 Seeburg Corp., The, Chicago, Ill. 828,882, pub. 1-17-67. Cl. 36.
 Shannon Hosiery Mills, Inc., Columbus, Ga., to Chadbourne Gotham, Inc., Charlotte, N.C. 427,159, ren. 4-4-67. Cl. 39.
 Sheffield Plastics, Inc., Sheffield, Mass. 826,809, pub. 1-17-67. Cl. 21.
 Shellbuilder Co., The, Houston, Tex. 711,044, canc. Cl. 17.
 Shure Brothers, Inc., Evanston, Ill. 826,805-6, pub. 1-17-67. Cl. 21.
 Sierra Engineering Co., Sierra Madre, Calif. 826,783, pub. 1-17-67. Multiple Class (Classes 19 and 23).
 Silberline Mfg. Co., Inc., Stamford, Conn. 711,037, canc. Cl. 1.
 Slant/Fin Corp., Greenvale, N.Y. 826,877, pub. 1-17-67. Cl. 34.
 Smith, A. O., Harvestore Products, Inc., Arlington Heights, Ill. 826,895, pub. 1-17-67. Cl. 12.
 Smith-Allsup Paint and Varnish Co., Terre Haute, Ind. 826,746, pub. 1-17-67. Cl. 16.
 Smith, David H., Inc., Lynn, Mass. 826,913, pub. 1-17-67. Cl. 39.
 Smith, Euclid B., d.b.a. Pelican State Laboratory, New Orleans, La. 711,383, canc. Cl. 52.
 Smith Kline & French Laboratories: See—
 Menley & James Laboratories, Ltd.
 Snap-On Tools Corp., Kenosha, Wis. 826,832, pub. 1-17-67. Cl. 4.
 Snyder, H. P. Mfg. Co., Inc., Little Falls, N.Y. 826,787, pub. 1-17-67. Cl. 19.
 Societe a Responsabilite Limite Carven, Paris, France, to Percos, Inc., New York, N.Y. 426,364, ren. 4-4-67. Cl. 51.
 Societe Anonyme des Laboratoires du Docteur Debat, Paris, France. 222,296, ren. 4-4-67. Cl. 18.
 Societe Anonyme Jules Robin, Acienne, d.b.a. Folligny & Co., Cognac (Charente), France. 826,999, pub. 1-17-67. Cl. 49.
 Societe d'Utilisation Scientifique et Industrielle du Froid Util-froid, Boulogne (Seine), France. 826,844, pub. 8-16-66. Cl. 26.
 Societe Fleurs de Paris, from Delarbre Jean Jacques (nee Veyre Viviane), Paris, France. 711,379, canc. Cl. 50.
 Societe Rhodiaceta, Paris, France. 826,907, pub. 12-14-65. Cl. 39.
 Societe Rhodiaceta, Paris, France. 826,951, pub. 2-22-66. Cl. 42.
 Societe Rhodiaceta, Paris, France. 826,971, pub. 12-14-65. Cl. 43.
 Sohio Chemical Co., Cleveland, Ohio. 826,667, pub. 8-30-66. Cl. 12.
 Somerset Knitting Mills, Inc., Philadelphia, Pa. 826,911, pub. 1-17-67. Cl. 39.
 Sommer, Adolph, Cambridge, Mass., to A. W. Faber-Castell Pencil Co., Inc., Newark, N.J. 60,496, ren. 4-4-67. Cl. 37.
 Sooner Moulding Corp., Oklahoma City, Okla. 826,688, pub. 1-17-67. Cl. 12.
 Space Age Camper Co., Inc., Wakarusa, Ind. 826,780, pub. 1-17-67. Cl. 19.
 Space Age Camper Co., Inc., Wakarusa, Ind. 826,782, pub. 1-17-67. Cl. 19.
 Spartan Mills, Spartanburg, S.C. 222,555, 12(c) pub. 4-4-67. Cl. 42.
 Spartan Mills, Spartanburg, S.C. 222,875, 12(c) pub. 4-4-67. Cl. 42.
 Spinnerin Yarn Co., Inc., South Hackensack, N.J. 826,975, pub. 1-17-67. Cl. 43.
 Spiro, Jack, & Co., Inc., New York, N.Y. 429,843, ren. 4-4-67. Cl. 39.
 Sportsman's Golf Corp., Melrose Park, Ill. 711,170, canc. Cl. 22.
 Spray-Vac: See—
 Wosepka, George R.
 Sprecher: See—
 Sprecher, Solomon.
 Sprecher, Solomon, d.b.a. Sprecher, New York, N.Y. 826,827, pub. 1-17-67. Cl. 23.
 Spring-Air Co., The: See—
 Back Supporter, Inc.
 Stacy Fabrics Corp., New York, N.Y. 826,961, pub. 1-17-67. Cl. 42.
 Stacy Keach, Studio City, Calif. 826,885, pub. 1-17-67. Cl. 36.
 Standard Chemical Products, Inc., Hoboken, N.J. 826,641, pub. 1-17-67. Cl. 5.

Stange Co., Chicago, Ill. 826,995, pub. 1-17-67. Cl. 46.
 Stark, Wetzel & Co., Inc.: See—
 Hormel, Geo. A., & Co.
 Stauffer Chemical Co., New York, N.Y. 826,847, pub. 12-13-66. Cl. 6.
 Stauffer Chemical Co., New York, N.Y. 826,860, pub. 1-17-67. Cl. 6.
 Steatite and Porcelain Products Ltd., Stourport-on-Severn, England. 826,798, pub. 1-17-67. Cl. 21.
 Stewart-Warner Corp., Chicago, Ill. 826,731, pub. 1-17-67. Cl. 15.
 Stratford Retreat House, White Plains, from JFD Electronics Corp., Brooklyn, N.Y. 826,801, pub. 1-17-67. Cl. 21.
 Stylors, Inc., Jacksonville, Fla. 826,985, pub. 1-17-67. Cl. 44.
 Sugar Beet Products Co., Saginaw, Mich. 827,017, pub. 1-17-67. Multiple Class (Classes 51 and 52).
 Swan Shoe Co., Inc., Baltimore, Md. 427,660, 12(c) pub. 4-4-67. Cl. 39.
 Sweetheart Plastics, Inc., Wilmington, Mass. 826,824, pub. 1-17-67. Cl. 2.
 Swans, Oscar J., Branford, Conn. 826,680, pub. 1-17-67. Cl. 12.
 Symons Mfg. Co., Des Plaines, Ill. 826,701, pub. 1-17-67. Cl. 12.
 Syracuse Ornamental Co., Syracuse, N.Y., by Rexall Drug and Chemical Co., d.b.a. Syroco, Los Angeles, Calif. 428,977, 12(c) pub. 4-4-67. Cl. 21.
 Syroco: See—
 Syracuse Ornamental Co.
 Tapecoat Co., Inc., The, Evanston, Ill. 826,697, pub. 1-17-67. Multiple Class (Classes 12 and 16).
 Tennent Caledonian Breweries Ltd.: See—
 Tennent, J. & P., Ltd.
 Tennent, J. & P., Ltd. to Tennent Caledonian Breweries Ltd., Glasgow, Scotland. 59,887, ren. 4-4-67. Cl. 48.
 Tera-Lite Mfg. Co., Inc., San Jose, Calif. 826,675, pub. 1-17-67. Cl. 12.
 Thonet Bros., Inc., to Thonet Industries, Inc., New York, N.Y. 226,806, ren. 4-4-67. Cl. 32.
 Thonet Industries, Inc.: See—
 Thonet Bros., Inc.
 Three Fountains, Inc., The, from Westminster Enterprises, Ltd., d.b.a. The Three Fountains Restaurant, St. Louis, Mo. 827,027, pub. 1-10-67. Cl. 100.
 Three Fountains Restaurant, The: See—
 Westminster Enterprises, Ltd.
 Toho Rayon Co. Ltd., Tokyo, Japan. 826,612, pub. 1-17-67. Multiple Class (Classes 1, 42, and 43).
 Torch Aid Industries: See—
 Cuff, Fred.
 Torrington Co., The, by The Torrington Co., Torrington, Conn. 225,216, 12(c) pub. 4-4-67. Cl. 23.
 Town and Country Shoes, Inc., St. Louis, Mo. 826,930, pub. 1-17-67. Cl. 39.
 Toyo Rayon Co., Ltd., Tokyo, Japan. 826,980, pub. 6-15-65. Cl. 42.
 Tracor, Inc., Austin, Tex. 826,795, pub. 1-17-67. Multiple Class (Classes 21, 26, and 27).
 Tremco Mfg. Co., The, Cleveland, Ohio. 826,683, pub. 1-17-67. Cl. 12.
 Trend Centers: See—
 Trend Centers, Inc.
 Trend Centers, Inc., d.b.a. Trend Centers, New York, N.Y. 826,912, pub. 1-17-67. Cl. 39.
 Tri-Una Chemical Co.: See—
 Paschal, Paul S.
 Tupperware: See—
 Rexall Drug and Chemical Co.
 Union Bag & Paper Co., The, to Union Camp Corp., New York, N.Y. 57,184, ren. 4-4-67. Cl. 2.
 Union Bag & Paper Co., The, to Union Camp Corp., New York, N.Y. 58,867-8, ren. 4-4-67. Cl. 37.
 Union Camp Corp.: See—
 Union Bag & Paper Co., The.
 Columbia Bag & Paper Corp.
 Union Oil Co. of California, Los Angeles, Calif. 827,031-2, pub. 1-17-67. Cl. 102.
 Union Oil Co. of Boston, Revere, Mass. 826,740, pub. 8-23-66. Cl. 16.
 Unistrut Corp., Wayne, Mich. 826,677, pub. 1-17-67. Cl. 12.
 United Electric Products Co., Bronx, N.Y. 711,047, canc. Cl. 2.
 United Electrical Mfg. Co., Adrian, Mich., to McGraw-Edison Co., Elgin, Ill. 214,404, ren. 4-4-67. Cl. 21.
 United Merchants and Mfg., Inc., New York, N.Y. 827,038-4, pub. 1-17-67. Cl. 108.
 United Merchants and Manufacturers, Inc., New York, N.Y. 826,953, pub. 12-27-66. Cl. 42.
 United Merchants and Manufacturers, Inc., New York, N.Y. 826,956, pub. 1-17-67. Cl. 42.
 United States Borax & Chemical Corp., Los Angeles, Calif. 826,784, pub. 1-17-67. Cl. 19.
 United States Luggage: See—
 United States Trunk Co., Inc.
 U.S. Marine Coatings, Inc., Sarasota, Fla. 826,744, pub. 1-17-67. Cl. 16.
 U.S. Pharmaceuticals, Inc., Hollywood, Fla. 711,137, canc. Cl. 18.
 United States Plywood Corp., New York, N.Y. 826,691, pub. 11-1-66. Cl. 12.
 U.S. Vitamin & Pharmaceutical Corp., New York, N.Y. 826,770, pub. 1-17-67. Cl. 18.
 United States Rubber Co., New York, N.Y. 826,808, pub. 1-17-67. Cl. 21.
 United States Rubber Co., New York, N.Y. 826,880, pub. 1-18-66. Cl. 35.
 United States Trunk Co., Inc., d.b.a. United States Luggage, Fall River, Mass. 826,631, pub. 1-17-67. Cl. 3.

Upjohn Co., The, Kalamazoo, Mich. 711,129, canc. Cl. 18.
 Vacuum Processes, Inc., Richardson, Tex. 826,830, pub. 1-17-67. Cl. 23.
 Vail Mfg. Co.: See—
 Gary Industries, Inc.
 Velveray Corp., Clifton, N.J. 711,380, canc. Cl. 106.
 Vermette Machine Co., Inc., Hammond, Ind. 826,833, pub. 1-17-67. Cl. 23.
 Viavi Co., The.
 Law, Hartland, and Herbert E. Law.
 Vibrite Corp., Milwaukee, Wis. 711,237, canc. Cl. 37.
 Vic Culver Co.: See—
 Coffee Boy, Inc.
 Vista-Lux Hardboard Co., The, Baltimore, Md. 826,685, pub. 1-17-67. Cl. 12.
 Visual Graphics Corp., New York, N.Y. 826,863, pub. 1-17-67. Cl. 32.
 Vitello, Charles: See—
 Bristol-Myers Co.
 Volkmer Mfg. Co., Dallas, Tex. 826,689, pub. 1-17-67. Cl. 12.
 Vulcan-Hart Corp.: See—
 Crane, William M., Co.
 Wadsworth Equipment Co., Akron, Ohio. 826,721, pub. 1-17-67. Cl. 13.
 Walker, Hiram, & Sons, Inc., Peoria, Ill. 827,000-2, pub. 1-17-67. Cl. 49.
 Wallace-Murray Corp.: See—
 American Swiss File & Tool Co.
 Waltham Watch Co., Waltham, Mass., by Waltham Watch Co., Chicago, Ill. 427,536-7, 12(c) pub. 4-4-67. Cl. 27.
 Webb, C. J., Jr., from Chas. J. Webb Sons Co., Inc., Philadelphia, Pa. 826,643, pub. 1-3-67. Cl. 6.
 Webb, Chas. J., Sons Co., Inc.: See—
 Webb, C. J., Jr.
 Wee Editions, Inc., New York, N.Y. 826,932, pub. 1-17-67. Cl. 39.
 Wentworth Mfg. Co., Lake City, S.C. 826,914, pub. 1-17-67. Cl. 39.
 Westbury Chemical Co., Inc., New York, N.Y., to The Dow Chemical Co., Midland, Mich. 428,663, ren. 4-4-67. Cl. 18.
 Westminster Enterprises, Ltd.: See—
 The Three Fountains, Inc.
 Weyerhaeuser Co., Tacoma, Wash. 826,704, pub. 1-17-67. Cl. 12.
 Wheeling Steel Corp., Wheeling, W. Va. 226,543, ren. 4-4-67. Cl. 14.
 White, Andrew J., South Lee, N.H. 826,852, pub. 1-17-67. Cl. 26.
 White Laboratories, Inc., Kenilworth, N.J. 711,114, canc. Cl. 18.
 White Motor Corp., Cleveland, Ohio. 826,777, pub. 1-17-67. Cl. 19.
 Whiting Paper Co., Princeton, N.J. 711,239, canc. Cl. 37.
 Williams, Charles K., Ottawa, Ontario, Canada. 826,818, pub. 1-17-67. Multiple Class (Classes 23 and 103).
 Williams, J. B., Co., Inc., The, Thomaston, Conn. 826,874-5, pub. 1-17-67. Cl. 34.
 Wilson, Hugh D., Hollywood, Calif. 711,041, canc. Cl. 1.
 Winer Sportswear, Inc., Paterson, N.J. 826,918, pub. 1-17-67. Cl. 39.
 Wittchell-Sheill Co., Chicago, Ill., by A. R. Hyde & Sons Co., Cambridge, Mass. 338,768, 12(c) pub. 4-4-67. Cl. 39.
 Witco Chemical Co., Inc.: See—
 Kendall Refining Co.
 Wolverine Shoe and Tanning Corp., Rockford, Mich. 826,743, pub. 1-17-67. Cl. 16.
 Womack Electronics, Inc., Danville, Va. 826,887, pub. 1-17-67. Cl. 36.
 Woolworth, F. W., Co., New York, N.Y. 826,853-4, pub. 1-17-67. Cl. 27.
 Wosepka, George R., d.b.a. Spray-Vac, Billings, Mont. 711,331, canc. Cl. 52.
 Wullschlegel & Co., to Wullschlegel and Co., Inc., New York, N.Y. 424,901, ren. 4-4-67. Cl. 42.
 Wullschlegel and Co., Inc.: See—
 Wullschlegel & Co.
 Wyandotte Chemicals Corp., Wyandotte, Mich. 826,733, pub. 1-17-67. Cl. 16.
 Z & T Importing Co., Inc., Los Angeles, Calif. 826,799, pub. 1-17-67. Multiple Class (Classes 21 and 36).
 Zeoluc Corp., New York, N.Y. 711,340-1, canc. Cl. 101.

Number 2

341

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF FEBRUARY 27, 1967

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager..... Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	9-16-63	11-30-61
GENERAL ORGANIC CHEMISTRY, GROUP 120—G. D. MITCHELL, Manager..... Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	7-25-63	9-12-61
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—M. STERMAN, Manager..... Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	11-18-63	1-16-62
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager..... Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	10-7-63	3-27-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager..... Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	7-2-63	10-23-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—M. L. LEVY, Manager..... Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	9-6-63	8-26-63
SECURITY, GROUP 220—S. BOYD, Manager..... Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	9-15-64	6-5-63
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—E. J. SAX, Manager..... Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	7-26-63	7-3-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—F. M. STRADER, Manager..... Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	7-19-63	11-3-61
PHYSICS, GROUP 280—R. L. EVANS, Manager..... Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	1-13-64	6-24-63
DESIGNS, GROUP 290—S. BOYD, Manager..... Industrial Arts; Household, Personal and Fine Arts.	10-22-65	4-20-65
Total number of pending applications (excluding Designs).....		191,346
Total number of Design applications pending.....		4,094
Total number of applications awaiting action (excluding Designs).....		140,448
Total number of Design applications awaiting action.....		2,484
Date of oldest new application awaiting action.....		July 2, 1963
Date of oldest amended application awaiting action.....		July 3, 1961

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during April 1967, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*.

Patents..... Numbers 2,502,408 to 2,505,747, inclusive

Plant Patents..... Numbers 990 to 997, inclusive

Filing Date
of Case
Action

Amended

11-30-61

9-12-61

1-16-62

3-27-62

10-23-61

8-26-63

6-6-63

7-3-61

11-3-61

6-24-63

4-20-66

191,346

4,094

140,448

2,484

y 2, 1963

y 3, 1961

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)

Actual Filing Date
of Oldest Case
Awaiting Action

MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.

	New	Amended
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager..... Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid, Flexible and Special Receptacles and Packages.	4-6-65	9-16-63
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager..... Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Wood- working; Tools; Cutlery; Jacks; Fasteners.	1-3-65	10-25-62
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager..... Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Ex- cavating; Fishing, Etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toilettry; Printing; Type- writers; Stationery; Information Dissemination.	10-23-64	7-16-62
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager..... Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	7-1-65	2-28-64
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager..... Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Struc- tures.	4-5-65	4-26-63
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager..... Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufac- ture; Sewing Machines; Winding and Reeling.	2-5-65	7-25-62

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37, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE FRED P. WINSLOW

No. 7527. Decided September 22, 1966

[53 CCPA ¹; 365 F.2d 1017; 151 USPQ 48]

1. PATENTABILITY—OBVIOUSNESS—WORDS AND PHRASES—"PIN" AND ROD.

Where the principal difference between what is claimed and the prior art resides in the "at least one depending pin" of claims 1 and 3 and the "pin means" of other claims, and where the reference relied upon "is in the very same art" and has "a rod" extending through aligned holes, the pins in appellant's machine and the rod in the reference performing the same function, almost in the very same way, *Held* "We see no patentable distinction between a rod and a pin, that being a mere choice of terminology. Appellant could properly have called his pins short rods; nor do we see anything unobvious in using two, if desired, instead of one."

2. SAME—COMBINING REFERENCES—OBVIOUSNESS—35 U.S.C. 103.

"We think the proper way to apply the 103 obviousness test to a case like this is to first picture the inventor as working in his shop with the prior art references—which he is presumed to know—hanging on the walls around him. One then notes that what applicant Winslow built here he admits is basically a Gerbe bag holder having air-blast bag opening to which he has added two bag retaining pins. If there were any bag holding problem in the Gerbe machine when plastic bags were used, their flaps being gripped only by spring pressure between the top and bottom plates, Winslow would have said to himself, 'Now what can I do to hold them more securely?' Looking around the walls, he would see Hellman's envelopes with holes in their flaps hung on a rod. He would then say to himself, 'Ha! I can punch holes in my bags and put a little rod (pin) through the holes. That will hold them! After filling the bags, I'll pull them off the pins as does Hellman. Scoring the flap should make tearing easier.'"

3. SAME—SAME—SAME—SAME.

"Thus does appellant make his claimed invention merely by applying knowledge clearly present in the prior art. Section 103 requires us to presume full knowledge by the inventor of the prior art in the field of his endeavor. We see no 'hindsight reconstruction' here, but only selection and application by the Examiner of very pertinent art. That is his duty."

4. SAME—PARTICULAR SUBJECT MATTER—"APPARATUS FOR AND METHOD OF OPENING, FILLING AND CLOSING THERMOPLASTIC BAGS."

The refusal of certain claims in an application entitled "Apparatus for and Method of Opening, Filling and Closing Thermoplastic Bags," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 48,668.

AFFIRMED.

Charles E. Brown (Vincent L. Ramik of counsel) for appellant.

Clarence W. Moore (Jere W. Sears of counsel) for the Commissioner of Patents.

Before WORLEY, Chief Judge, and RICH, MARTIN, SMITH, and

ALMOND, Jr., Associate Judges

RICH, J., delivered the opinion of the court.

This appeal is from the unanimous decision of the Patent Office Board of Appeals,¹ adhered to upon reconsideration, affirming the Examiner's rejection of apparatus claims 1, 3, and 11-18 and article claim 9, all remaining claims in application Serial No. 48,668, filed August 10, 1960, for "Apparatus for and Method of Opening, Filling

¹ Consisting of Examiners-in-Chief Brewrink, Manian and Freehof, the latter writing the opinion.

APRIL 11, 1967

U. S. PATENT OFFICE

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and Closing Thermoplastic Bags." The appeal has been withdrawn as to claim 9.

The invention is an apparatus for packaging articles within flexible plastic bags by supplying a jet of air to the uppermost bag of a stack of bags to open it to permit the insertion of the article. The bags are generally rectangular and have an opening at one end. One of the walls is provided with an extension, or flap, which projects beyond the mouth and which contains a plurality of transversely aligned holes. Perforations extending from each hole to the edge of the flap weaken it so it can be torn from retaining pins. The bags are stacked, with their flap sides down, and placed on a horizontal support plate supported at one end on a spring-biased hinge. The plate is depressed when loaded with bags, pivoting on its hinge. Upon release, the spring urges the support upwardly toward an upper plate member having pins depending therefrom which pass through the holes in the bag flaps and into openings provided in the lower support plate. Only the flap of each bag underlies the upper plate member, which functions as a stop against unlimited upward movement of the stack of bags and which, in conjunction with the lower support, acts to clamp or sandwich the flaps of the bags, the pins passing through the flap holes.

The uppermost bag is opened by directing an air blast across the top plate member and into the mouth thereof. An article is then inserted, either automatically or manually, through the mouth which is kept open by continuing the blast. The bag is then pulled longitudinally in a direction parallel to and away from the air blast, thereby tearing the flap along the perforated lines and removing the filled bag from the pin. The bag is then closed and heat sealed.

All the appealed claims define an apparatus for opening and filling bags, there being no provision for closing or sealing the bags once filled. Claims 1 and 3 require but one depending pin. Remaining claims 11-18 are patterned after certain claims in a patent² to one Altman, Jr., hereafter Altman, which is not relied on by the Patent Office in support of the rejection.

Claims 1 and 16 read:

1. An apparatus for use in opening and filling bags of the type having a mouth and a flap extending beyond the mouth, said apparatus comprising an air blast source, means for directing air from said air blast source into the mouth of a bag to open the bag and hold the same open, said air directing means including a plate member adapted to overlap flaps of the bags, and a bag support extending generally in the direction of the air blast and having an end portion underlying said plate member for cooperation therewith to engage and temporarily hold flaps of the bags during the opening thereof said plate member having at least one depending pin for passage through bag flaps, and said bag support and portion having an opening to permit the passage of said pin therethrough, whereby bag flaps are simultaneously both clamped between the plate member and the bag support end portion and are firmly anchored against longitudinal movement by the pin.

16. In a bagging and filling machine wherein air is supplied to the uppermost of a pile of flexible plastic bags in a package of flexible plastic bags, each said bag comprising two contiguous walls when the bag is in folded condition, one of said walls extending beyond the other to form a lip, said lip having a pair of spaced openings therethrough, said bags being positioned with said openings in alignment, pin means extending through said openings and slidable relative thereto, said pin means having upper and lower ends, means yieldingly urging said package of bags upwardly, the improvement comprising stop means mounted

² No. 3,044,233, July 17, 1962. According to the Solicitor, as initially presented, appellant's claims 11-16 were said to correspond generally to Altman's claims 1, 2, 10, 13, 15 and 16, respectively. Appellant's subsequently presented claims 17 and 18 were said in turn to correspond to his own claims 11 and 13, respectively, except for calling the stack of bags an "assembly" rather than a "package."

on said machine against which the package of bags is urged upwardly, said stop means having portions thereof engaging and locating the upper ends of said pin means.

The Examiner rejected the claims remaining on appeal as unpatentable over:

Gerbe, 2,673,016, March 23, 1954.

Hellman, 1,794,517, March 3, 1931.

Rhoades, 991,245, May 2, 1911.

Gerbe discloses a bagging and filling machine employing a stack of bags, an enclosure for the stack, a bag support and plate member, and an air blast source. The stack is positioned and aligned by the enclosure around the three closed sides of the bags, and the support and plate member cooperate to clamp the bags at the open end. If the bags have no flaps extending from the bottom surface of each bag, the operator may free the top surface manually or this may be done automatically by a cam arrangement and a cooperating extending metal tab or finger. In either case the bottom surface is clamped fast. Alternatively, the top surface of the bags may be cut away slightly in the form of a curve generally conforming to the top plate, or tongue, in order "to free it," or at least sufficiently so that the plate and support clamp only a minimal portion of the top surface and all of the bottom surface of the bag at its open edge.

Hellman discloses an apparatus for filling envelopes or bags with piston rings after first opening them by means of an air blast. (The numbers here referred to appear in the Board's opinion as quoted infra.) The bags are held vertically on a rod 16, slightly inclined from the horizontal, which passes through a hole in each flap and which terminates in a recessed portion of an opposing plate member 5. A follower plate 20 slides by gravity down the inclined rod, urging the bags toward the opposing plate 5, thereby producing a clamping action. The bag nearest the opposing plate 5 is opened by an air jet after which a piston ring drops from above, tearing the bag free from the support rod by ripping the flap, causing the bag to fall into a hopper. The bag is then sealed.

Rhoades discloses an apparatus for suspending a stack of paper bags in a vertical position, employing a piercing point which pierces the open end portions of some of the bags as they approach the position from which they are removed. A spring-loaded member urges the bags against the piercing point and back stop. The bags are constructed with a curved front edge surface so that the piercing point pierces only one side of the bag at the open end.

The Board said:

The patent to Gerbe discloses a bagging and filling machine of the same general character as that disclosed by appellant. The essential issue with respect to patentability resides in a consideration of the difference in the means employed to hold a stack of bags. Appellant employs a plurality of pins which pass through openings in the stack of bags. Such pins are not disclosed in Gerbe. Gerbe relies on the clamping action and a stop member for holding the bags in position. The Examiner held that in view of Hellman and Rhoades it would not be patentable to modify the Gerbe apparatus to employ pins of the character claimed.

It is our opinion that the disclosure in the patent to Hellman showing the use of a pin for holding bags in position while the outermost bag is being opened by an air blast is sufficiently related to Gerbe's apparatus as to suggest the desirability of using pins for maintaining the Gerbe bags in position. In Hellman the relationship between the pin 16, the member 5 and the plate 20 which is urged toward the member 5 is functionally equivalent to the relationship

between appellant's pins, the plate and the support. While the patent to Rhoades does not disclose the use of an air blast, it does disclose the use of a clamping pin for maintaining a plurality of bags in position while the uppermost bag is being opened and removed. We are of the opinion that the patents to Hellman and Rhoades would render obvious to one skilled in the art a modification of the Gerbe apparatus wherein pins would be provided passing through openings in the bag flaps in the manner claimed by appellant.

We agree with that analysis. Moreover, as we view this case, [1] the principal difference between what is claimed and the prior art resides in the "at least one depending pin" of claims 1 and 3 and the "pin means" as described in the other claims, which are so worded as apparently to require at least two pins, as the bags have two holes through all of which the "pin means" extend.

Hellman is in the very same art and has "pin means," notwithstanding the fact he calls it a "rod." It extends through aligned holes in the bag flaps to hold them against the air blast which opens them so that they may be individually filled, the bags being torn off of the pin just as are appellant's, when filled. We see no patentable distinction between a rod and a pin, that being a mere choice of terminology. Appellant could properly have called his pins short rods. Nor do we see anything unobvious in using two, if desired, instead of one. Hellman "aligned" his bags by hanging them by one centered hole. The pins in appellant's machine and the rod in Hellman perform the very same function—bag holding during air blast—almost in the very same way.

Further, we see nothing important in the change from a vertical to a horizontal position of the bags. The change requires only obvious mechanical adaptations such as substituting a spring to push up instead of a weight to slide down.

Appellant presents the usual argument that hindsight reconstruction has been employed by the Examiner and the Board. We disagree with that position. [2] We think the proper way to apply the 103 obviousness test to a case like this is to first picture the inventor as working in his shop with the prior art references—which he is presumed to know—hanging on the walls around him. One then notes that what applicant Winslow built here he admits is basically a Gerbe bag holder having air-blast bag opening to which he has added two bag retaining pins. If there were any bag holding problem in the Gerbe machine when plastic bags were used, their flaps being gripped only by spring pressure between the top and bottom plates, Winslow would have said to himself, "Now what can I do to hold them more securely?" Looking around the walls, he would see Hellman's envelopes with holes in their flaps hung on a rod. He would then say to himself, "Ha! I can punch holes in my bags and put a little rod (pin) through the holes. That will hold them! After filling the bags, I'll pull them off the pins as does Hellman. Scoring the flap should make tearing easier."

[3] Thus does appellant make his claimed invention merely by applying knowledge clearly present in the prior art. Section 103 requires us to presume full knowledge by the inventor of the *prior* art in the field of his endeavor. We see no "hindsight reconstruction" here, but only selection and application by the Examiner of very pertinent art. That is his duty.

[4] The decision of the Board is affirmed.

AFFIRMED.

WORLEY, *Chief Judge*, concurs in the result.

SMITH, J., dissenting.

The issue phrased in the statutory language of section 103 is whether the differences between the invention claimed and the prior art are such that the invention as a whole would have been obvious to one of ordinary skill in the bagging and filling machine art at the time of appellant's invention.

The principal reference is Gerbe which discloses a bagging and filling machine employing a stack of bags, an enclosure, a bag support underlying a plate member, and an air blast source. The bags are roughly positioned in Gerbe by an enclosure around the closed end and two sides of the stack of bags. The bag support and plate member cooperate to clamp the open end of the bags. Gerbe discloses three alternatives to facilitate opening the bags. Where there is no flap extending from the bottom surface at the open end of the bag, the operator may free the top surface manually or this may be done automatically by a cam arrangement and a cooperating extending metal tab or finger. Alternately, the top surface of the bags may be cut away slightly in the form of a curve so that the plate member clamps only a minimal portion of the top surface and all of the bottom surface of the bag at the open edge.

Hellman discloses an apparatus for filling envelopes employing an air blast. The envelopes are held vertically by a rod which passes through a hole in each envelope flap. The rod is inclined and a follower plate slides along the rod in descending fashion urging the envelopes towards an abutting surface causing a clamping action. The envelope is removed from the rod by tearing the flap portion from the hole to the flap edge.

Rhoades discloses an apparatus for holding a stack of bags in a vertical position employing a piercing point which pierces the open end portions of the bag. A spring loaded member urges the bags into the piercing point and back stop. The bags are constructed with a curved front edge surface so that the piercing point pierces only the bottom surface of the bag at the open end.

I agree with appellant's arguments concerning the deficiencies in each of the references and combinations of the references. Gerbe does not teach the concept of aligning pins extending from the plate member which cooperate with a flap having holes and perforated flap sections. Appellant's apparatus is clearly a simplified improvement over the Gerbe apparatus.

Similarly, Rhoades does not disclose alignment means and is no more than a simple wall device for hanging a number of bags within convenient reach. The bags are held by combining the action of the piercing point and friction. It need not be considered further.

The problem lies in determining what Gerbe in view of Hellman taught one of ordinary skill without the benefit of the after acquired knowledge of appellant's teaching. It is apparent that the rod-follower combination of Hellman requires the force of gravity to operate and will not work in a horizontal position. Further, without the reconstruction taught by appellant the combination of Gerbe and Hellman per se would be nonfunctional. What is required is that, as taught by appellant, only the rod concept of Hellman be extracted and that it then be incorporated into Gerbe. Further, the rod must be made into a pin and then located on the clamping plate so as to extend downwardly therefrom. The concept of alignment, first disclosed by appellant, is not present in such a prior art combination. To meet this aspect, what is required is the incorporation of a double

rod system, converted to pins, to provide two points of location. Only after this further modification can the sides and end boxing system of Gerbe be discarded. Only when all this is done do we finally realize an apparatus similar to that claimed by appellant.

What appellant discovered had not occurred to Gerbe, the most recent inventor of subject matter closest to that here claimed. I assume that the Gerbe device is operable. Appellant, however, points out several practical difficulties inherent in the Gerbe construction which appellant proposes to eliminate. The end stop in Gerbe requires a degree of longitudinal rigidity in the bags, lest they tend to crumple against it as the successive uppermost bags are removed. Gerbe thus found it necessary to bow the stack of bags by providing special edge supports to assure such rigidity. Also, the stop is not seen to be of any help in retaining an inflated bag. Since the frictional hold exerted by the tongue of the bag may not be great, it may well yield to a sliding force such as might be exerted by an operator's thumb on a repetitive basis. Thus, concern is justified that the air blast could blow the bag away before it could be filled. Also, in Gerbe the stack of bags is held by friction only. The success of the clamping action requires that each bag assert a frictional force against the next bag yet the top bag must be easily removed without upsetting the clamping action. The removal of the top bag may well cause several bags to follow thus upsetting the clamping action.

To say that a pin cooperating with aligning holes in a bag flap extension is the obvious answer to eliminating the drawbacks in Gerbe, is, I think, an unwarranted simplification which results only from hindsight reasoning. A comparison of the respective devices clearly indicates the differences between appellant's device and those of Hellman and Gerbe.

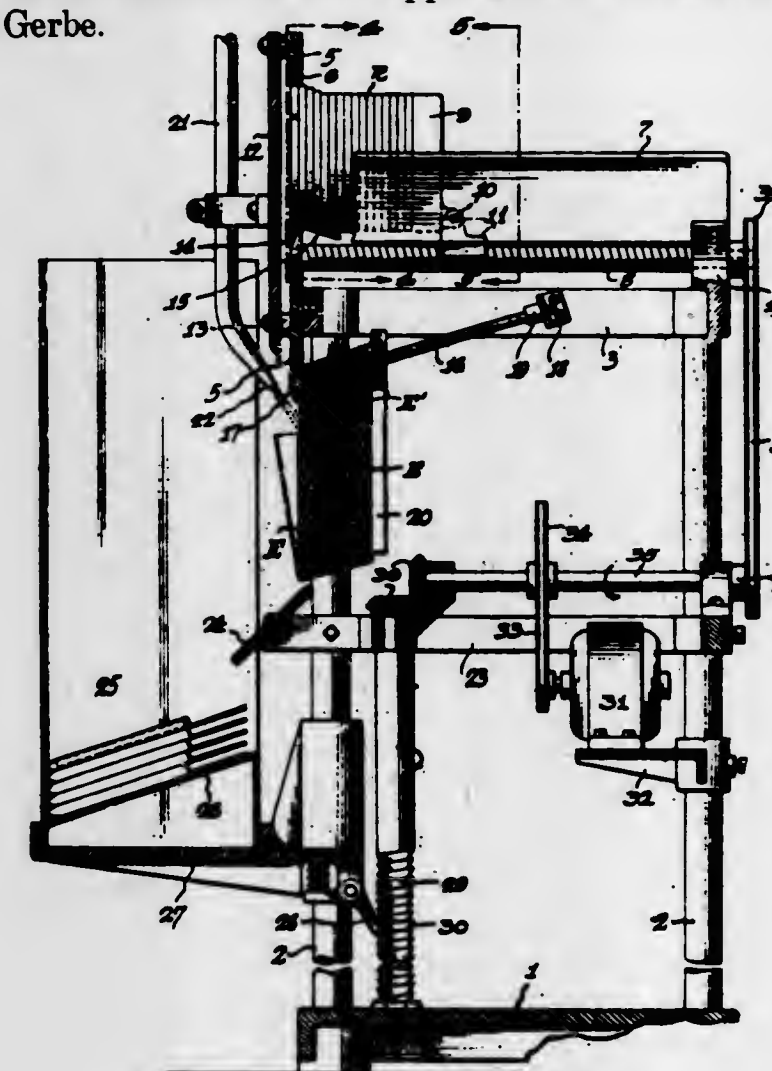
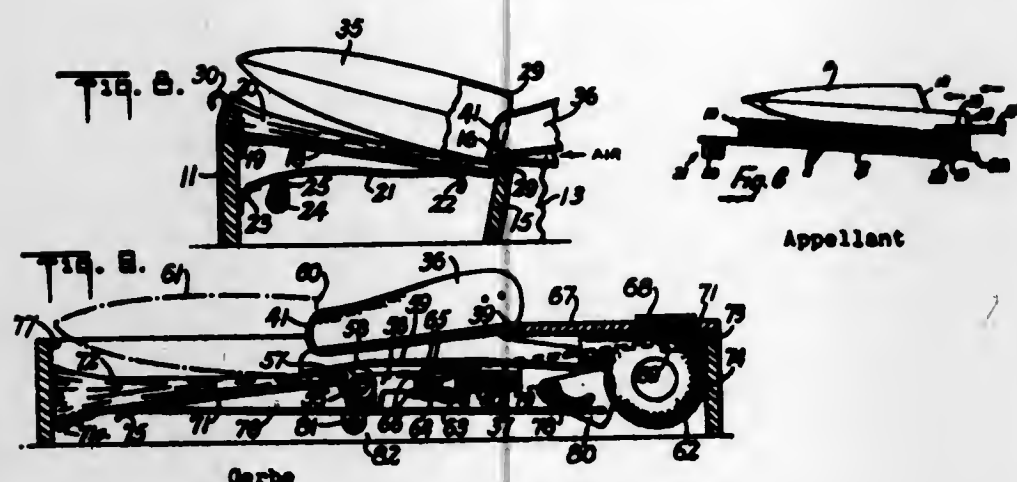


Fig. 1.

Hellman



The problem as I see it is that the simplicity of appellant's device has obscured the unobvious merits of appellant's improvement over prior art devices. It is apparent from the above drawings that appellant's device clearly distinguishes itself from the prior art apparatus. All he has is a spring board, a clamping plate with pins, and an air funnel. The appealed claims to this structure are direct and uncomplicated. Appellant does not have a complicated structure from which he may create limitations for his claims in an effort to distinguish over prior art devices. Rather, his claims distinguish over the prior art by the absence of complicated structure; his claimed invention is simplicity itself in the art of opening and filling thermo-plastic bags.

I would reverse the decision of the Board.

In the United States Patent Office Commissioner's Decision

EX PARTE H. WITTUR AND COMPANY

Trademark: CAMELOT. Serial No. 211,001

Decided December 30, 1966

1. TRADEMARK—INTERFERENCE—APPLICATION AND REGISTERED MARK—TRADEMARK RULE 2.91(c).

Trademark Rule 2.91(c) provides that an interference will not be declared between an application and a registration issued prior to the filing date of the application except upon specific authorization of the Commissioner. On the other hand, as to a registration which issued subsequent to the filing date of application, the practice of voluntarily setting up an interference on the ground that the applicant's application and the registrant's application were co-pending was discontinued in 1962. This change of procedure was made because Trademark Rule 2.96 provides that in the event the final decision in the interference is adverse to the registrant, a registration to the applicant will not be authorized so long as the interfering registration remains on the register.

2. SAME—SAME—SAME.

In view of the fact that even if the applicant prevails, the cited registration would still remain on the register and be a reference until it was cancelled under the provisions of section 14 of the Act of 1946, it is not considered desirable to declare an interference in such circumstances. Therefore, under the present practice an interference proceeding will not be instituted between an application and a registration, except for very unusual circumstances.

3. SAME—SAME—SAME—CANCELLATION VS. INTERFERENCE.

It is believed that a cancellation proceeding is the most expeditious way of determining the rights of the parties since the prior rights of the parties and likelihood of confusion would be determined in the same proceeding. (See *Bisceglia Brothers Wine Co. v. The Globe Distributing Company*, 107 USPQ 301, and *Speedway Manufacturing Company v. Lockwood Hardware*

Mfg. Co., 111 USPQ 48.) One of the reasons for the practice of not declaring an interference between an application and a registration is to reduce the number of proceedings before the Patent Office. The rationale here is that it is unreasonable to have two proceedings when one will accomplish the same purpose.

4. SAME—SAME—SAME—SAME—BURDEN ON LATER APPLICANT.

Since applicant filed its application for registration subsequent to the registrant, it would have the burden of going forward and establishing prior rights in an interference proceeding and further that burden would not be changed if applicant sought to cancel the cited registration. It is, therefore, not believed that the denial of the petition would prejudice the rights of the applicant.

ON PETITION.

DENIED.

REYNOLDS, *First Assistant Commissioner*.

This is a petition filed under the provisions of Trademark Rule 2.146 requesting the Commissioner to authorize the institution of an interference between Trademark Application Serial No. 211,001, filed on January 29, 1965 in the name of H. Wittur and Company and Trademark Registration No. 786,798, issued on March 16, 1965 to Nichimen Co., Inc.

An inspection of the pending application shows that registration has been refused in view of Registration No. 786,798. The date of use asserted in the application is prior to the filing date of the application which resulted in the registration.

A request for a declaration of interference with Trademark Registration No. 786,798 was made by the applicant on August 19, 1965, four months subsequent to the date of issue of the cited registration and was denied by the examiner of trademarks in an office action dated January 3, 1966.

[1] Trademark Rule 2.91(c) provides that an interference will not be declared between an application and a registration issued prior to the filing date of the application except upon specific authorization of the Commissioner. On the other hand, as to a registration which issued subsequent to the filing date of the application, the practice of voluntarily setting up an interference on the ground that the applicant's application and the registrant's application were co-pending was discontinued in 1962. This change of procedure was made because Trademark Rule 2.96 provides that in the event the final decision in the interference is adverse to the registrant, a registration to the applicant will not be authorized so long as the interfering registration remains on the register.

[2] In view of the fact that even if the applicant prevails, the cited registration would still remain on the register and be a reference until it was cancelled under the provisions of section 14 of the Act of 1946, it is not considered desirable to declare an interference in such circumstances. Therefore, under the present practice an interference proceeding will not be instituted between an application and a registration, except for very unusual circumstances.

Petitioner states, in effect, that an interference proceeding should be instituted because (1) the reference registration and applicant's application were co-pending and (2) a petition to cancel is a burdensome and unreasonable alternative to an interference.

These arguments are not believed to be sufficient reasons to change the usual practice as, contrary to petitioner's urging, both an interference and a cancellation proceeding are equally burdensome to a

litigant. While applicant's application and registrant's application were co-pending, it appears that the former was filed after the expiration of the period for filing an opposition against the co-pending application. Thus it was filed subsequent to the time the examiner of trademarks had made a search of the pending applications for conflicting marks, so that the examiner was not aware of the fact that applicant's application was pending.

Marks are published in the OFFICIAL GAZETTE subject to opposition and any person who believes that he would be damaged by the registration of a mark on the Principal Register may oppose the same. No notice of opposition to registration was received. There is some burden on the applicant to be aware of which applications are pending.

[3] It is believed that a cancellation proceeding is the most expeditious way of determining the rights of the parties since the prior rights of the parties and likelihood of confusion would be determined in the same proceeding. (See *Bisceglia Brothers Wine Co. v. The Globe Distributing Company*, 107 USPQ 301, and *Speedway Manufacturing Company v. Lockwood Hardware Mfg. Co.*, 111 USPQ 48.) One of the reasons for the practice of not declaring an interference between an application and a registration is to reduce the number of proceedings before the Patent Office. The rationale here is that it is unreasonable to have two proceedings when one will accomplish the same purpose.

[4] Since applicant filed its application for registration subsequent to the registrant, it would have the burden of going forward and establishing prior rights in an interference proceeding and further that burden would not be changed if applicant sought to cancel the cited registration. It is, therefore, not believed that the denial of the petition would prejudice the rights of the applicant.

For the foregoing reasons the petition is denied.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,715,309, N. Rosenstein and A. J. Rosenstein, SYNTHETIC CONTINUOUS FILAMENT YARN IN THE CONTINUOUS FILAMENT YARN STATE; 3,101,521, A. J. Rosenstein, N. Rosenstein, and T. F. Suggs, METHOD OF PRODUCING CRIMPED CONTINUOUS FILAMENT YARN; 3,164,882, N. Rosenstein and A. J. Rosenstein, APPARATUS AND METHOD FOR CRIMPING OF NATURAL AND SYNTHETIC TEXTILE MATERIAL; 3,230,508, N. Rosenstein and A. J. Rosenstein, APPARATUS FOR CRIMPING OF NATURAL

AND SYNTHETIC TEXTILE MATERIALS; 3,238,591, N. Rosenstein, YARN TWIST CONTROL APPARATUS AND METHOD; 3,271,836, N. Rosenstein, METHOD OF MAKING DISTORTED CRIMPED YARN; 3,273,220, N. Rosenstein and A. J. Rosenstein, APPARATUS FOR THE CRIMPING OF NATURAL AND SYNTHETIC TEXTILE MATERIALS, filed Jan. 11, 1967, D.C., E.D. Va. (Richmond), Dpc. 5098, *Spunize Company of America, Inc. v. Allied Chemical Corp.*

REISSUES

APRIL 11, 1967

Matter enclosed in heavy brackets [] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,188

HYDROCARBON CONVERSION PROCESS

Charles Newton Kimberlin, Jr., and Elroy Merle Gladrow, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Original No. 2,971,903, dated Feb. 14, 1961, Ser. No. 638,232, Feb. 5, 1957. Application for reissue Aug. 24, 1962, Ser. No. 219,349
21 Claims. (Cl. 208—120)

12. A process for upgrading hydrocarbons which com-

prises contacting a hydrocarbonaceous fluid in a conversion zone at elevated temperatures with a crystalline metallic aluminosilicate catalyst having uniform pore openings between about 6 and about 15 Angstrom units, said material being the sole conversion catalyst in said zone and recovering an upgraded hydrocarbon product having a molecular weight no higher than said first named hydrocarbonaceous fluid.

PATENTS

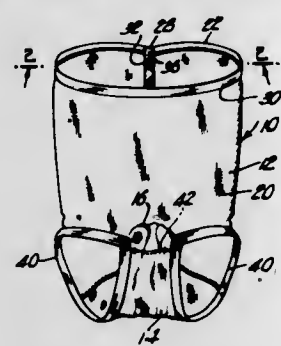
GRANTED APRIL 11, 1967

GENERAL AND MECHANICAL

3,312,981

NETHER GARMENT

Mary H. McGuire, East Brunswick, N.J., and Nicholas Wehrmann, North Wilkesboro, N.C., assignors to Johnson & Johnson, a corporation of New Jersey
Filed Nov. 22, 1963, Ser. No. 325,694
4 Claims. (Cl. 2-224)



1. A light weight sanitary panty having a stretchable body portion and a relatively nonstretchable crotch portion, said body portion comprising a tubular rib-knit fabric containing, by weight, from about 87% to about 95% stretch yarn and from about 13% to about 5% spandex yarn knit in an alternating pattern ranging from every other course being spandex yarn to every fourth course being spandex yarn, said stretch yarn being extensible about 120%, said spandex yarn being floated across from one to two wales, said panty having a waist-encircling portion which extends downwardly in a V-shaped configuration at the rear of said panty, and a nonextensible tape which extends downward from said waist-encircling portion at said V to the rear of said crotch portion, said tape being secured to said waist-encircling portion and to said crotch portion.

3,312,982

WEATHER-RESISTANT WEARING APPAREL

Bradford Dean Pitman, 6 Tanager Road, Attleboro, Mass. 02703
Filed Jan. 29, 1965, Ser. No. 429,035
6 Claims. (Cl. 2-232)



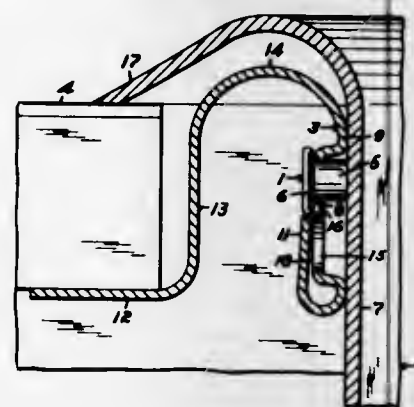
1. A detachably engaged ski boot and ski pant combination comprising first zipper means circumferentially attached at or near the upper edge of said boot such that the midpoint of said first zipper means is generally aligned with the center of the back of said boot, second complementary zipper means circumferentially attached inside the leg of said pant such that the midpoint of said second zipper means is generally in alignment with the back-center of said leg of said pant and is spaced apart from and above the lower edge thereof, said first and second zipper means being detachably engaged to each other, said pant leg having material with lateral stretch in the vicinity of the front-center portion of the lower edge thereof, said upper edge of said boot and said first zipper means being overlapped by said lower edge of said pant and wherein said pant leg has, in addition, an elongated pocket portion laterally disposed near the bottom front edge of said pant, said pocket portion having disposed therein an elongated semi-rigid material adapted to impart shape and rigidity to the bottom of said pant leg.

the leg of said pant such that the midpoint of said second zipper means is generally in alignment with the back-center of said leg of said pant and is spaced apart from and above the lower edge thereof, said first and second zipper means being detachably engaged to each other, said pant leg having material with lateral stretch in the vicinity of the front-center portion of the lower edge thereof, said upper edge of said boot and said first zipper means being overlapped by said lower edge of said pant and wherein said pant leg has, in addition, an elongated pocket portion laterally disposed near the bottom front edge of said pant, said pocket portion having disposed therein an elongated semi-rigid material adapted to impart shape and rigidity to the bottom of said pant leg.

3,312,983

FASTENING SYSTEM FOR SUPPORTING AND STABILIZING A SHEET METAL STRUCTURE

Arnold O. Jansson, Arlington, and Stuart T. Shears, Belmont, Mass., assignors to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Nov. 2, 1965, Ser. No. 546,033
5 Claims. (Cl. 4-187)



1. A fastening system for stabilizing a sheet metal structure which is supported by and suspended from an adjacent support wherein an extension of the sheet metal structure overlies the upper surface of the support and the body of the structure is spaced from the support comprising: a plurality of small studs each having a shank and a head and each being adapted to be secured to an external side surface of the sheet metal structure at the end of the shank remote from the head without perforation of the structure whereby the head of each stud will be spaced from but lie in close proximity to the external side surface of the structure with the underside of the head facing inwardly toward the side surface of the structure, and a plurality of resilient brackets adapted to engage the heads of each of the studs after the shank of each stud has been affixed to the structure, each of said brackets comprising a generally flat base portion, an upwardly embossed portion having a stud-receiving slot, said slot having a portion capable of receiving the head of the stud and a narrow portion connected thereto capable of receiving the shank of the stud when the bracket is moved laterally with respect to the stud whereby the head will overlies portions of said embossed portion adjacent the narrow portion of the slot, a stud-locking spring finger extending upwardly from said base

APRIL 11, 1967

GENERAL AND MECHANICAL

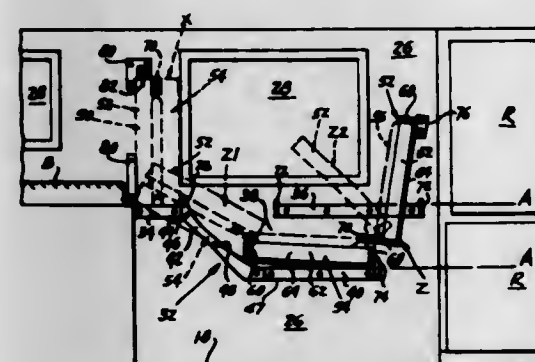
355

portion and overlying portions of said slot, said spring finger being deflectable away from the base portion responsive to the passage of the head of the stud through the slot and being positioned to return to its normal location to engage the stud head when the shank of the stud is seated in the narrow portion of the slot whereby said stud is prevented from becoming accidentally disengaged from the clip, and support-engaging means extending outwardly from the base portion capable of engaging the support to stabilize the sheet metal structure.

3,312,984

FOLDING COUCH BED ARRANGEMENT

Gordon M. Hagstrom, Rte. 1, Box 324, Hurley, Wis. 54534
Filed Jan. 28, 1966, Ser. No. 523,601
20 Claims. (Cl. 5-12)



1. A bed-sofa arrangement comprising a plurality of substantially planar elements, means for securing the elements together for enabling the elements to have pivotal movement relative to each other, support structure for enabling the elements to be disposed in a plurality of positions, a first position which is for storage, a separate second position defining a bed and a separate third position defining a sofa, and devices for maintaining the elements in substantially parallel relationship relative to each other in the first position, in substantially co-planar relationship relative to each other in the second position and in an angular relationship relative to each other in the third position.

3,312,985

INVALID BED WITH LIFTING MECHANISM

Cornelius J. Callaghan, Columbus, Ohio, assignor to Invalidlift Corporation, Columbus, Ohio, a corporation of Ohio
Filed July 5, 1966, Ser. No. 562,839
14 Claims. (Cl. 5-66)

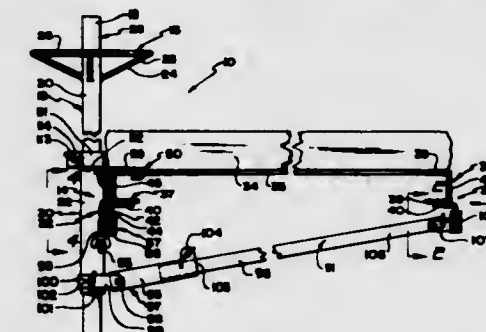


1. An invalid bed-lift apparatus comprising a sub-frame assembly adapted to be maintained in a relatively fixed position, an elongated mattress section for supporting an invalid thereon disposed in overlying relationship to said sub-frame assembly, and means interposed between and operatively connected with said sub-frame assembly and said mattress section for selective displacement of said mattress section between a horizontally disposed position and a relatively elevated, horizontally disposed position or a relatively inclined position, said means includes lift means carried by said sub-frame assembly and connected to said mattress section at a point intermediate the ends thereof forming a fulcrum point about which said mattress section may rotate in a vertical plane and selectively operable for displacement of said fulcrum point in a vertical plane, and lever means interconnected between said sub-frame assembly and said mattress section and lift means for controlling the rotation of said mattress section about said fulcrum point in predetermined relationship to vertical displacement of said fulcrum point, said lever means being operable to maintain said mattress section horizontally disposed during vertical displacement of said fulcrum point by said lift means between a first position and a relatively elevated, second position, and rotating said mattress section to an inclined position during vertical displacement of said fulcrum point by said lift means between said second position and a third, further elevated position.

3,312,986

BEDSIDE SUPPORT

Brock M. Fahrni, 1761 Drummond Drive, and Edward J. Smith, 3444 W. 5th Ave., both of Vancouver, British Columbia, Canada
Filed Apr. 19, 1965, Ser. No. 449,123
Claims priority, application Canada, Apr. 25, 1964, 901,243
8 Claims. (Cl. 5-92)

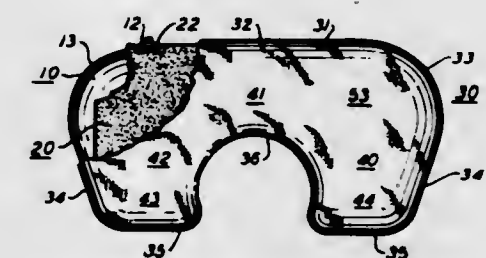


1. In combination with a bed having side frame members, a bedside support comprising an elongated standard having an upper portion extending above the bed at one side thereof, means rigidly connecting the standard to a side frame member, an annular handgrip spacedly encircling the upper portion of the standard below the latter's upper end, and a plurality of at least three elongated rods extending between the handgrip and standard to rigidly secure the former to the latter.

3,312,987

SMALL WRINKLE-FREE FACE PILLOWS

William M. Emery, 44 Pittsford Way, New Providence, N.J. 07974
Filed Apr. 21, 1965, Ser. No. 449,706
2 Claims. (Cl. 5-337)

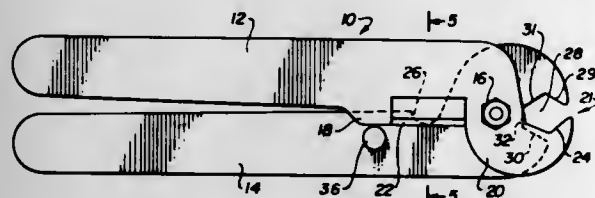


1. A head pillow comprising a C-shaped restrictive closable outer cover and an inflatable bladder therein of substantially the same size and shape before inflation, said restrictive cover being shaped and proportioned to provide after inflation of said bladder a relatively thicker long side and two substantially conical ends of lesser tapered thickness extending normal to said long side, a sleeve having at least one open end comprised of a layer of thin foam material loosely surrounding said bladder,

said tapered ends providing increasing forces tending to expand said bladder rendering said cover increasingly taut and wrinkle free as the weight of the head of the user is applied to their lessening area.

3,312,988 CUTTER-WRENCH

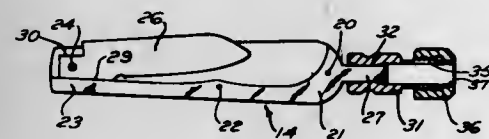
John K. Shannon, Kenosha, Wis., assignor to Quick Cable Corporation, Racine, Wis., a corporation of Wisconsin
Filed May 3, 1965, Ser. No. 452,786
4 Claims. (Cl. 7-5.3)



1. A cutter-wrench combination tool for cutting a cable and the like, for stripping the insulation from the cable, for securing a terminal to the cable and for securing the terminal to a connector comprising: a pair of legs pivotally secured to one another in overlying relationship; a cutting edge formed on one of said legs in close proximity to the pivotal connection point, cable retaining means formed in the other one of said legs in a position such that said cutting edge will engage a cable to cut said cable and to cut and strip the insulation from said cable when it is retained by said cable retaining means and said pair of legs are pivoted with respect to one another to a first and a second pivotal position, respectively; a slot formed in the end of one of said legs which is adapted to receive a predetermined shaped fastener, said slot having two parallel side walls and two end walls which are angled toward one another; an edge of the end of the other one of said legs is substantially U-shaped and adapted to substantially enclose and to clamp said fastener within said slot when said pair of legs are pivotally forced toward one another to thereby securely grip said fastener therein to prevent movement and slippage.

3,312,989 COMBINED POCKET KNIFE AND ROD HANDLE

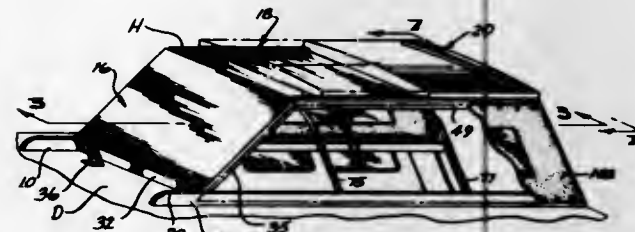
Alfonso F. Paolantonio, Providence, R.I., assignor to Colonial Knife Company, Inc., a corporation of Rhode Island
Filed July 6, 1965, Ser. No. 469,411
2 Claims. (Cl. 7-11)



1. A combined implement of the class described, having a handle comprising spaced plates, spring means between said plates, pins extending through said plates and spring means fixing one end of the spring means with reference to said plates, the other end of the spring means being free and movable with reference to said plates, said spring means at its fixed end having arm means of the same piece of material projecting in a direction lengthwise of the plates beyond the plates, a sleeve receiving said arm means in one end portion and split to provide a plurality of jaws at the other end thereof and means for contracting said jaws.

3,312,990 RETRACTABLE CABIN HATCH FOR BOATS

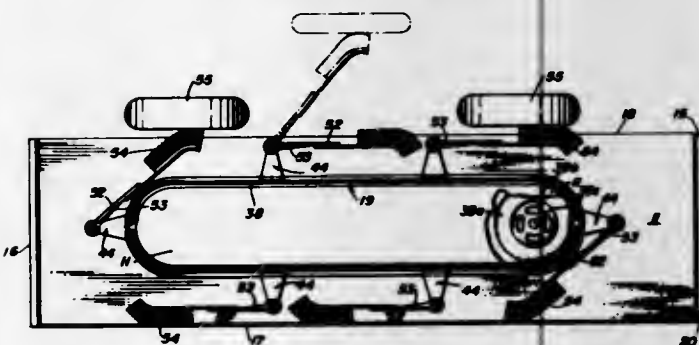
Charles William Lapworth, 505 30th St.,
Newport Beach, Calif. 92460
Filed Dec. 22, 1965, Ser. No. 515,689
7 Claims. (Cl. 9-1)



1. A boat construction that includes:
a generally flat cabin deck formed with a longitudinal hatch opening defined by a pair of longitudinal side coamings and a transverse front coaming;
a front panel having its front end pivotally connected to said front coaming;
an intermediate panel having its front end pivotally connected to the rear end of said front panel;
a rear slide panel that is longitudinally slidably supported by said intermediate panel;
a pair of like transverse generally U-shaped support arms having a pair of vertical side legs connected by a horizontal bight;
front and rear pivot pins on said side coamings at longitudinally spaced points along said hatch opening approximately equal to the length of said intermediate panel;
and pocket means on the underside of said intermediate panel for receiving the bights of said support arms to thereby maintain said intermediate and rear slide panels in a horizontal raised position above said hatch opening with said front panel extending downwardly and forwardly to said front coaming, with said bights being removable from said pocket means whereby said support arms are pivotable downwardly to a horizontal position within said coamings, said panels then being lowerable to a horizontal position covering said hatch opening.

3,312,991 DEVICE FOR WASHING TIRES

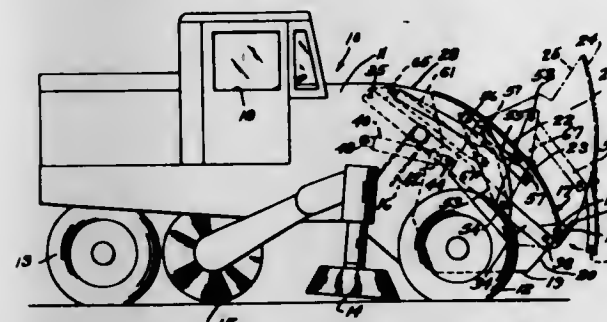
Nils I. Matson, 22 N. Cowley Road,
Riverside, Ill. 60546
Filed Mar. 24, 1964, Ser. No. 354,215
5 Claims. (Cl. 15-21)



2. An automobile tire washing device and the like comprising means providing an endless track; a driven conveyor; a plurality of brush holding brackets carried along said track by said conveyor; brush members connected to said brackets, and means for extending said brushes toward and away from said track.

3,312,992 SELF-RELEASING HOPPER LOCK

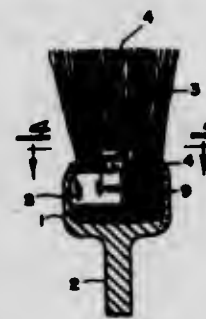
Robert F. Schmidt, Elgin, Henry A. Leidecker, Wheaton, and Donald G. Kirk, Elgin, Ill., assignors to Elgin Sweeper Company, Elgin, Ill., a corporation of Delaware
Filed June 29, 1964, Ser. No. 378,641
15 Claims. (Cl. 15-83)



14. A street sweeper comprising,
a body,
a dirt hopper provided with a sweepings inlet and a discharge outlet adjacent thereto,
means for directing sweepings into said sweepings inlet,
arm means joining said dirt hopper with said body,
means for elevating said dirt hopper,
a dump door swingably mounted on said dirt hopper,
self releasable latch means joining said door with said hopper, and
means for turning said dirt hopper over and outwardly beyond said arm means to place the dirt hopper in an unloading position and thereby operating the releasable latch means allowing movement of the dump door to discharge the contents of said hopper.

3,312,993 BRUSH CONSTRUCTION

Brooks E. Nelson, Chagrin Falls, Ohio, assignor to The Osborn Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 11, 1965, Ser. No. 424,542
5 Claims. (Cl. 15-180)



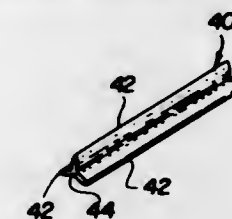
1. An end brush comprising a circular holder and a plurality of parallel bundles of brush material secured therein, each said bundle comprising a quantity of parallel bristles with the basal portion of each bundle tightly encircled by a band around the same, the basal portions of said bundles substantially entirely filling said holder, and centrally located means acting to deflect adjacent bristles outwardly of said holder to form an annular brush face of enhanced bristle density.

3,312,994 BRUSH DEVICE FOR CLEANING, SCOURING AND POLISHING

Julius Fazio, 1135 Francisco St.,
San Francisco, Calif. 94109
Filed Mar. 1, 1965, Ser. No. 436,006
5 Claims. (Cl. 15-180)

1. In a rotary brush device: a rotary base, a connector mounted on said base, said connector being provided

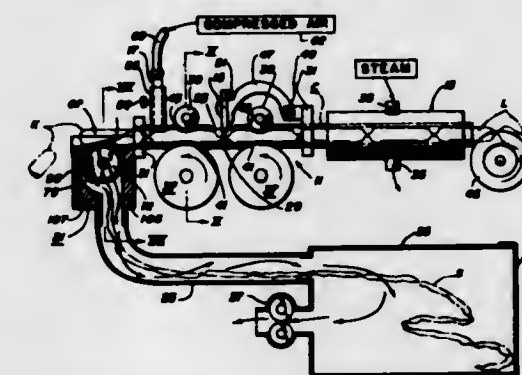
with means for detachably securing said brush device to a rotary drive mechanism, and bristles with relatively deep longitudinally extending grooves secure to said base on a side opposite said connector, said bristles having cross sectional configuration characterized by an odd number



ber of relatively sharp outer surface engaging fins formed by said grooves, each of said outer surface engaging fins terminating in a single longitudinally extending sharp edge for scouring and polishing the wall surface of a pan being cleaned.

3,312,995 APPARATUS FOR SKINNING A CHAIN OF SAUSAGES AND THE LIKE

Don Q. Garey, Bartlett, Tenn., assignor, by mesne assignments, to Ranger Tool Company, Inc., a corporation of Tennessee
Filed Sept. 28, 1966, Ser. No. 584,621
13 Claims. (Cl. 17-1)



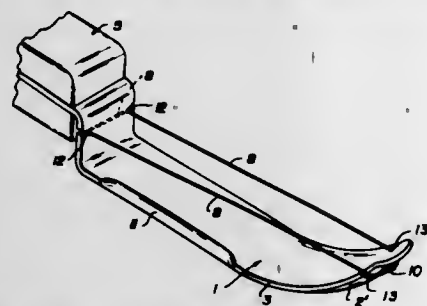
1. Apparatus for skinning a chain of sausages and the like comprising trackway structure, means for conveying the sausages successively along said trackway structure in a moving chain of sausages, means for slitting successively the skin casings of the moving chain of sausages, compressed air means including means providing crossed air streams directed towards opposite sides of the sausages and under the casings thereof adjacent the slit in the skin casings for the lifting thereof and including means providing air streams directed downwardly to urge the skin casings downwardly on either side of the sausages, said trackway structure including tubular means surrounding the sausages while being subjected to said air streams for acting as back-up means to contain the air and cause the air to move longitudinally of the sausages and provide an effective use of air, and air suction means for remotely separating successively the meat kernels and the skin casings of the chain of sausages.

3,312,996 FISH SCALING TOOL

George Gordon, 11726 100th Ave., Edmonton,
Alberta, Canada
Filed Apr. 19, 1965, Ser. No. 449,111
4 Claims. (Cl. 17-7)

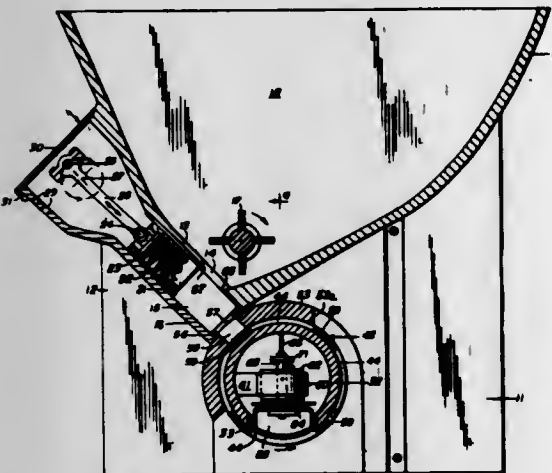
1. A fish scaling tool comprising a bowed, elastic back member having at one end thereof an angularly disposed extension, a handle secured to said extension extending in a plane generally parallel with the longitudinal plane of said back member, a wire loop member extending from one end of said back member to the other to provide a pair of spaced, parallel descaling wires, the ends

of said back member being provided with means for engaging said wire loop member to maintain said spaced



parallel wires under tension whereby said wires may be moved under the scales of a fish to remove them from the fish.

3,312,997
PATTY MAKING MACHINE
Frederic P. Merrele, 5609 Wilson Lane,
Bethesda, Md. 20014
Filed Feb. 3, 1965, Ser. No. 430,117
9 Claims. (Cl. 17-32)

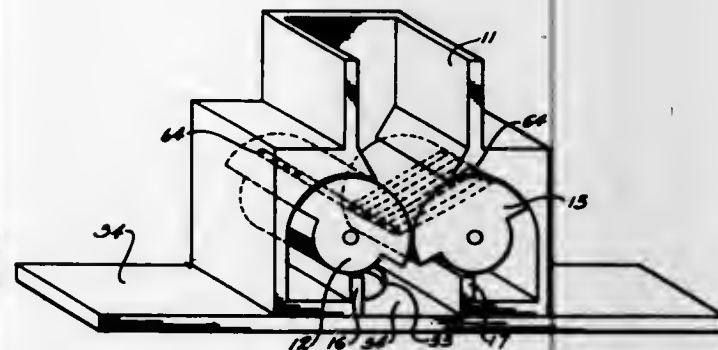


1. A machine for producing meat patties comprising an elongated hopper adapted to contain ground meat, a plurality of meat compression chambers near the bottom of the hopper to receive meat from the hopper, said hopper having opening means communicating with said chambers, movable means in the hopper to propel meat through the opening means into the chambers, pistons associated with said compression chambers to compress the ground meat therein, said chambers having outlets for compressed ground meat at corresponding ends thereof, a stationary supporting sleeve arranged beneath the hopper and extending lengthwise thereof and spaced from said outlets, a patty-forming sleeve surrounding said stationary supporting sleeve and rotatably mounted thereon and having circumferentially spaced groups of patty-forming openings therein adapted to pass adjacent to the outlets of said chambers, compressed meat in said chambers then adapted to enter the patty-forming openings through said outlets, and movable means on said stationary supporting sleeve to eject meat patties from the openings of the patty-forming sleeve at a point during the rotational cycle of the latter.

3,312,998
MEAT PATTY MACHINE
Owen P. Barnes, Jr., Warner Robins, Ga., assignor, by mesne assignments, of one-half to Dreyfus L. Fountain, Warner Robins, Ga.
Filed Mar. 1, 1965, Ser. No. 435,874
5 Claims. (Cl. 17-32)

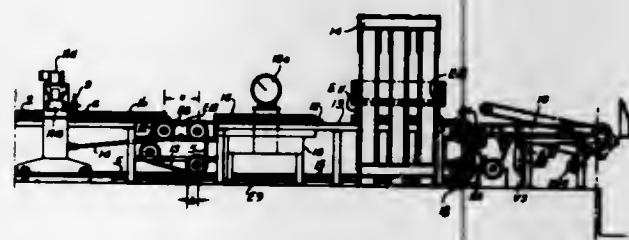
1. In a device of the character described, in combination, a supporting framework, a plurality of feed rollers mounted thereon, said rollers having indented portions

for receiving ground meat, cam means for actuating said rollers, a plate positioned beneath said rolls, a patty receiving aperture in said plate, and link means for recip-



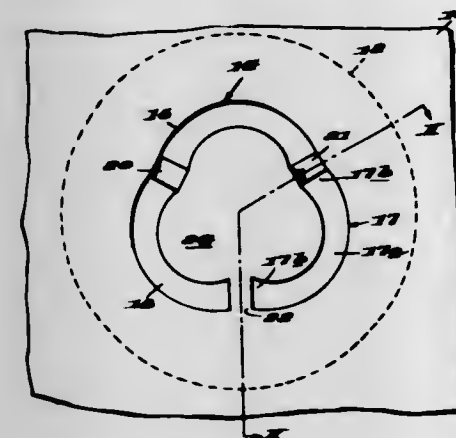
rocating said plate from a point of filling to a point of discharge, at least one of said rollers defining an aperture therein to permit the discharge of ground meat.

3,312,999
APPARATUS FOR THE CONTINUOUS MANUFACTURE OF BOARDS FROM PARTICLE-LIKE SUBSTANCES
Ernst Greten, Springe, Hannover, Germany, and Peter Vajda, North Vancouver, British Columbia, Canada, assignors to Böhre Metallwerk K.G., Springe, near Hannover, Germany, a corporation of Germany
Filed Aug. 9, 1963, Ser. No. 341,211
Claims priority, application Germany, Feb. 22, 1963, B 70,840
7 Claims. (Cl. 18-4)



1. An apparatus for the manufacture of boards from particles comprising particle-dispensing means at a forming station adapted to deposit particles for forming a mat, separating means adapted to separate a mat formed by said particle-dispensing means into sections of predetermined lengths, preliminary pressing means, weighing means located between said particle-dispensing means and said preliminary pressing means, further pressing means located beyond said preliminary pressing means, transport means for moving a mat from said forming station successively to said weighing means, said preliminary pressing means and said further pressing means and including a section between said preliminary pressing means and said further pressing means movable upward above the normal path of movement of the mat from said preliminary pressing means toward said further pressing means, preliminary press control means operated by said weighing means to suspend operation of said preliminary pressing means in open position when a mat of undesired weight has been moved into registry with said preliminary pressing means by said transport means, and mat-rejecting means including a hopper beneath said upwardly movable section of said transport means and means to move upward said upwardly movable section of said transport means when a mat section of undesired weight has been detected for dumping such mat section from the open preliminary pressing means into said hopper.

3,313,000
SPINNERET PLATE
Richard Young Hays, Kinston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 13, 1965, Ser. No. 471,527
4 Claims. (Cl. 18-8)



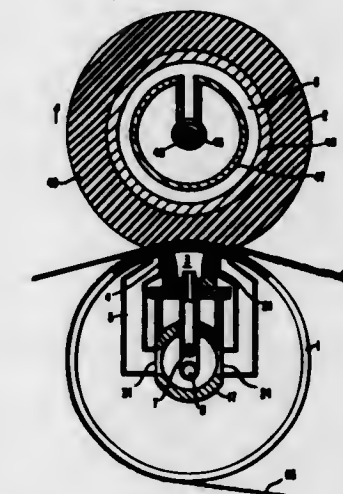
1. A spinneret plate provided with at least one nozzle having a discharge capillary opening into one face of the plate, said capillary being defined by a substantially symmetrical pattern of arcuate, end-to-end slots interrupted by webs, each slot progressively increasing in width from a minimum at its mid-point to a maximum adjacent its ends.

3,313,001
MELT SPINNING APPARATUS
Theron G. Finzel, Westlake, and Kenneth M. McLellan, Mentor, Ohio, assignors to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Sept. 24, 1965, Ser. No. 490,023
3 Claims. (Cl. 18-8)



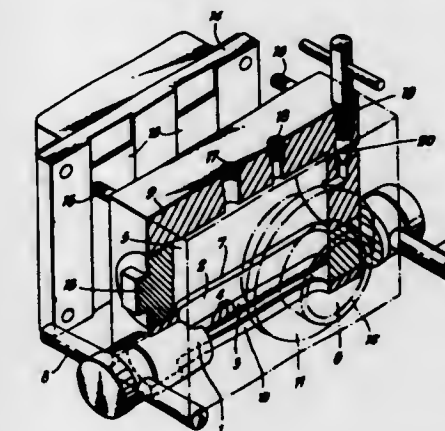
1. A melt spinning head including a shroud about a spinneret in said head and said spinneret extending into said shroud, said shroud comprising at least two generally coextensive elements one within the other and spaced from each other, the outer element being secured in gas tight sealing relationship with the spinning head and the inner element being spaced from said head permitting a flow of attempter gases over its edge, means securing said inner element in a spaced relation to said outer element the space between said elements being adapted to admit and direct attempter gases therethrough then reversely downwardly along with spun filaments, and access means for introduction of said attempter gases at about the base of the outer element.

3,313,002
APPARATUS FOR HEAT TREATING SHEET MATERIAL
Nathaniel Couvers Wyeth, Rosedale, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 4, 1965, Ser. No. 477,211
3 Claims. (Cl. 18-10)



1. An apparatus for heat-treating a continuous length of sheet material comprising a compressible roll in rolling engagement with a hollow drum around which is trained a foraminous belt over which a sheet advances between the roll and drum, said drum having its circumferential surface interrupted by perforations and said compressible roll being urged against the drum and deformed thereby so as to form an extended nip zone, and residing within said drum a stationary fluid treatment chamber having an inlet for provision of hot treating fluid, the said chamber opening on the inner surface of the drum and communicating with drum perforations in the nip region to provide a heat-treatment area, seals mounted on said chamber and operatively urged against the inner surface of the drum so that the heat-treatment fluid in the chamber is confined to the region of the nip, and exhaust means in the nip region adjacent the heat-treatment area for carrying away fluid leakage past the seals and outside of the heat-treatment area.

3,313,003
EXTRUSION DIES FOR PLASTIC MATERIALS
John Vincent O'Brien, Poulton, England, assignor to Brown and Williamson Tobacco Corporation, Louisville, Ky., a corporation of Delaware
Filed Oct. 2, 1964, Ser. No. 401,172
Claims priority, application Great Britain, Oct. 4, 1963, 39,224/63
3 Claims. (Cl. 18-12)

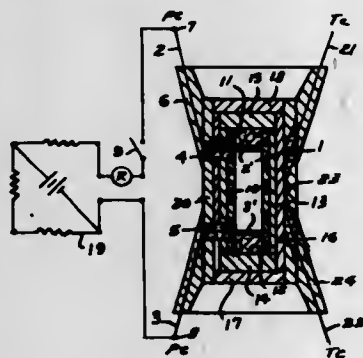


1. A die head extruding apparatus for extruding plastic material comprising a body having a chamber that is adapted to receive under pressure said material to be

extruded and a substantially cylindrical bore, a nozzle holder having a substantially cylindrical portion rotatably mounted within said chamber bore between a first position and a second position, said holder having a slotted intermediate portion, a separate nozzle assembly mounted across the slotted intermediate portion and dividing said chamber into an upper and a lower chamber section and having means for passing the extrudable material from said upper chamber section to said lower chamber section, said nozzle assembly being rigidly connected within said holder, and means for rotating said holder approximately 180° between said first and second position in relation to said chamber whereby the direction of the nozzle assembly in relation to the direction of flow of said extrudable material is diametrically reversed thereby to clear blocking material from said nozzle.

3,313,004 HIGH PRESSURE ELECTRICAL RESISTANCE CELL

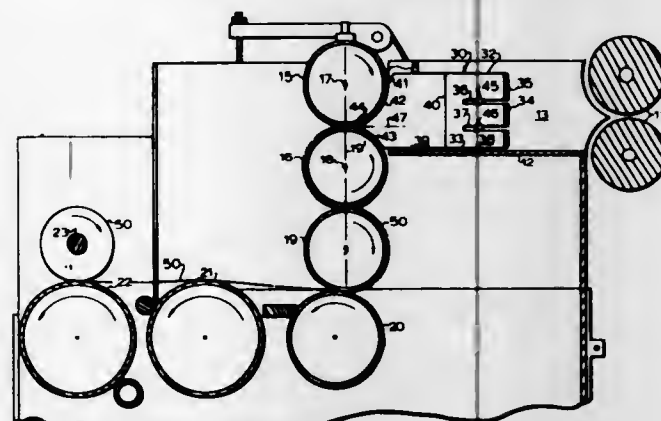
Fred W. Vahldiek, 5851 Barrett Drive, Dayton, Ohio 45431, and Charles T. Lynch, 387 Cherrywood Drive, Fairborn, Ohio 45324
Filed June 14, 1965, Ser. No. 463,970
2 Claims. (Cl. 18—34)



1. The high-pressure and high-temperature reaction apparatus containing a reaction vessel within a punch and die assembly of the belt type that minimizes the poisson effect comprising a first boron nitride cylinder as a specimen housing first reaction cell for the disposition therein of the specimen to be tested; a graphite cylinder concentric with and radially outwardly from the boron nitride cylinder through the cylinder lengths; a lava plug within each opposite end of the boron nitride cylinder; a graphite disk overlying each of the opposite ends of both the first boron nitride cylinder and the graphite cylinder; a second boron nitride cylinder radially outside of and concentric with both the first boron nitride cylinder and the graphite cylinder and in the opposite ends of which the said graphite disks are positioned; a pair of frusto-conical lava walls spaced from and opening away from each other on the outside of the graphite cylinder and the walls extending axially beyond the opposite ends of the graphite cylinder in open frusto-conical funnel contour end portions; a pair of alumina sheathed thermocouple lead wires encased within the lava walls and joined in their hot junction in contact with the outer surface of the second boron nitride cylinder and beneath the lava cylinder about midway between the opposite cylinder ends; a pair of alumina sheathed platinum resistance wires encased within the lava walls substantially remote diametrically from the thermocouple lead wires; a pair of platinum resistance-wire encasing alumina plugs extending radially through the walls of the lava cylinder, the graphite cylinder and through both the first and the second boron nitride cylinders to within the specimen test chamber, and a pair of platinum sheet contacts at the opposite ends of the reaction cell provided by the first boron nitride cylinder and each platinum sheet contact welded to its end of its platinum resistance wire.

3,313,005 LAP GUIDE FOR PICKING MACHINES

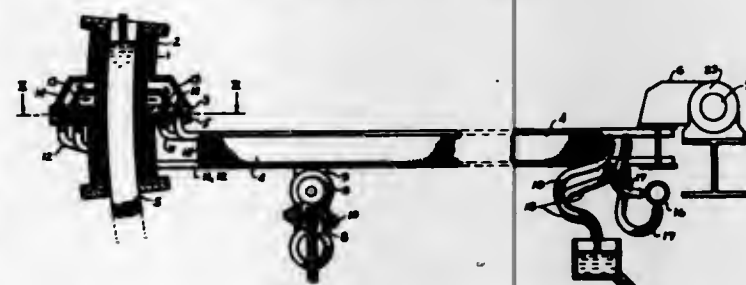
Oscar U. Moon, Lanett, Ala., assignor to The Tillery Metal Products Company, Inc., West Point, Ga., a corporation of Georgia
Filed Oct. 28, 1963, Ser. No. 319,146
3 Claims. (Cl. 19—39)



2. A lap guide for a picking machine of the class having a lap trough along which a lap is fed to a pair of opposed calendar rolls, said lap guide comprising flat mounting plates adjacent the edges of said lap, each mounting plate having a flat lap directing flange integrally joined thereto along a common edge defining the front edge of said mounting plate and the rear edge of said lap directing flange, said lap directing flanges being angled slightly with respect to said mounting plates, said mounting plates being provided with means for adjustably securing said mounting plates to the inside surface of the side walls of said trough, said means permitting said mounting plates to be adjustably positioned into various positions along said side walls, said lap directing flanges being constructed and arranged to project along the end of said walls of said trough and being adapted to direct said edges of said lap laterally inwardly of the axis of said trough when said lap passes thereby while maintaining a single layer of said lap, each of said lap directing flanges having a pair of arcuate concave front edges, one above the other, which approach each other toward the forwardmost portion of said lap directing flange and form a cusp, one of said front edges having a curvature corresponding to the periphery of one of said calendar rolls and lying closely adjacent thereto, the other front edge having a curvature corresponding to the periphery of the other of said calendar rolls and lying closely adjacent thereto.

3,313,006 CONTINUOUS CASTING PLANT

Jacques Barbé, St-Etienne, Loire, France, and Alfred Turnovszky, Zurich, Switzerland, assignors to Aktiengesellschaft der von Moos-Schen Eisenwerke, Lucerne, Switzerland and to Concast AG., Zurich, Switzerland
Filed July 9, 1964, Ser. No. 381,405
Claims priority, application Switzerland, July 12, 1963, 8,725/63
3 Claims. (Cl. 22—57.2)

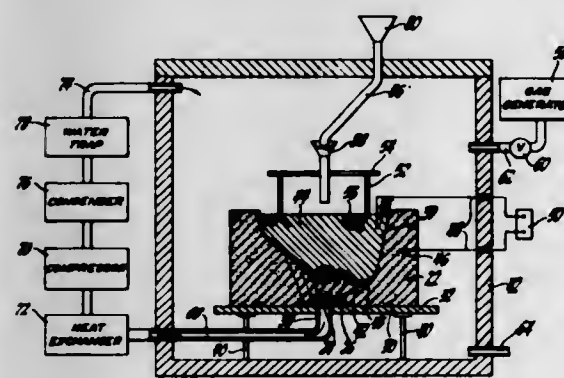


1. A continuous casting plant comprising an arcuate curved open-ended mould, said mould being provided with a water jacket having passages for cooling water

flow therethrough, said mould being provided with a mounting flange including apertures communicating with said passages in said water jacket, a lever, one end of said lever being pivotally mounted, a mould mounting table located at the other end of said lever, said mould mounting table being provided with apertures mating with the apertures in said mounting flange of said mould to couple said apertures when said mould is mounted in said lever, at least one pipe positioned along said lever and connecting said apertures in said mould mounting table to a source of cooling water at said pivoted end of said lever, thereby to enable feeding of cooling water to said jacket from a source separated from said casting mould and to enable replacement of said mould without disconnecting said source.

3,313,007 METHOD OF MAKING SHEET METAL FORMING DIES

Kenneth F. James and Alexander H. Joyce, Detroit, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 22, 1963, Ser. No. 303,783
7 Claims. (Cl. 22—204)



7. A method of forming a precision cast-to-size brazed shot die, said method comprising the steps of forming a contoured mold cavity in a ceramic mold so that the contoured surface of the cavity-defining walls of said mold substantially duplicates the size and shape of the contoured working face of the die ultimately formed in said cavity, said mold comprising, by weight, about 84% to 91% nepheline syenite sand, about 5% to 8% calcium aluminate, and about 4% to 8% sodium silicate, said walls of said mold having a coefficient of thermal expansion which is substantially equal to the coefficient of thermal expansion of said shot over a temperature range from about room temperature to an elevated temperature of at least the melting point of said braze, covering the lower contoured surface of said cavity with a thin layer of steel shot particles having a mesh size ranging from about -40 mesh to about +200 mesh, said layer being embodied in said working face of said die to facilitate machining of said working face after said die is formed, said layer having a thickness ranging from about 1/2 inch to 1 1/2 inch, filling the remaining portion of said cavity with said shot particles and spherical steel filler particles, said filler particles being intermingled with said shot particles in said cavity, said filler particles having a diameter ranging from about 3/8 inch to 3/4 inch, gradually heating said mold to a temperature of about 1400° F. in a reducing atmosphere containing, by volume, about 2% to 3% hydrogen and the balance nitrogen to prevent oxidation of said particles, heating said mold from said temperature of about 1400° F. to an elevated temperature range in a reducing atmosphere containing, by volume, at least about 10% to 15% hydrogen to reduce any metal oxides on said particles in said cavity and to cause said cavity to expand, said elevated temperature range varying from about 1650° F. to about 1725° F., decreasing

the hydrogen content of said atmosphere to a concentration ranging, by volume, from about 2% to 3% when said mold is heated to said elevated temperature range to facilitate the brazing of said particles together, pouring a molten brazing alloy into said enlarged cavity when the temperature of said mold is within said elevated temperature range to cause said alloy to flow into said cavity and fill the voids between said particles in said cavity, and alloy comprising, by weight, about 35% to 55% copper, 25% to 40% zinc, 5% to 25% manganese, 0% to 10% nickel, 0% to 5% aluminum, 0% to 3% silicon, 0% to 10% tin and about 0% to 5% antimony, gradually cooling said mold in said atmosphere so that said alloy solidifies and brazes said shot particles and said filler particles together to form said die, said die contracting on cooling to substantially attain the initial size and shape of said cavity, and subsequently removing said die from said cavity.

3,313,008 TROUSER HOOK AND EYE

Gilbert A. Littell and William T. Rowles, Lexington, Ky., assignors to Talon, Inc., a corporation of Pennsylvania
Filed Dec. 24, 1964, Ser. No. 421,042
3 Claims. (Cl. 24—224)



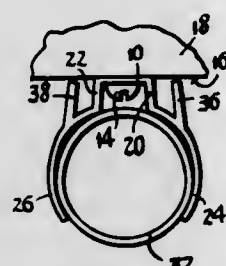
1. In a fastening device of the hook and eye type, the combination of, an eye member having a substantially cylindrical central portion with a flanged portion arranged about the periphery at one end thereof and means arranged at the end opposite to said flanged portion for attaching said eye member to the article with which it is to be used, a hook member with which said eye member is adapted to interengage comprising a substantially C-shaped member having a lateral opening in one side thereof and including an outer face wall and an inwardly extending side flanged wall disposed about a C-shaped opening with said outer face wall having opposed arcuated edge portions at said lateral opening, the diameter of the C-shaped opening bounded by the innermost edge of said outer face wall being slightly greater than that of the cylindrical portion of said eye member and with the distance between said arcuated edge portions thereof being slightly less than the diameter of the cylindrical portion of said eye member, said eye member adapted to spread the opposed arcuated edge portions of said outer face wall and pass through said lateral opening into the C-shaped opening with said outer face wall overlying said flanged portion of said eye member and with the portions of said inwardly extending side flanged wall carrying said outer face wall located adjacent to said lateral opening being resiliently deformed upon passage of said eye,

means carried by the side flanged wall of said hook member and spaced from said lateral opening for attaching the same to an article with which it is adapted to be used.

3,313,009 SPRING CLIP

Frank S. Beckerer, Easton, Conn., assignor to Beckson Manufacturing, Inc., Bridgeport, Conn., a corporation of Connecticut

Filed Mar. 12, 1965, Ser. No. 439,267
3 Claims. (Cl. 24-257)



3. A releasing type holder construction for objects, said construction comprising a generally flat wall member and a dual-pressure range, one-piece spring clip of resilient substance carried by said wall member, said spring clip comprising, in combination:

- a central base portion defining a planar rear surface engaged with said wall member,
- means rigidly securing said base portion to the wall member against all movement with respect thereto,
- a pair of resilient clip arms extending forward from opposite edges of the base, said arms being in opposed relation and being adapted to embrace between them an object which is to be held, and
- reinforcing projections extending rearward from the clip arms at points thereon spaced from the base, said projections having rear extremities which are disposed appreciably forward of the plane defined by said wall member and said projections shifting rearward when the arms are flexed apart by the object to be held, thereby to locate the said rear extremities in the said plane for effecting engagement with the wall member whereby the arms are backed-up and stiffened so as to more securely hold the object.

3,313,010

APPARATUS FOR PRODUCING A CONTINUOUS WEB OR CONTINUOUS ROW OF BODIES

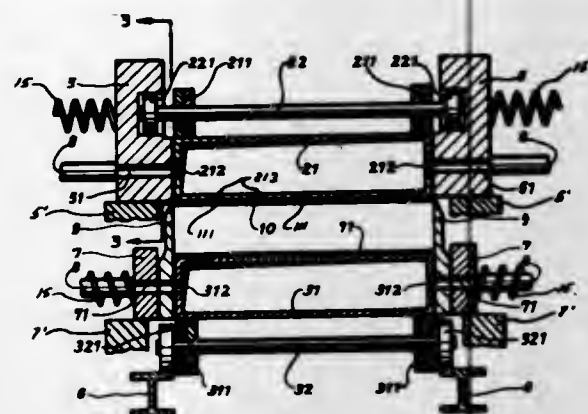
Erich Betz, Worms, Germany, assignor to Deutsche Linoleum-Werke Aktiengesellschaft, Maximiliansau, Germany

Filed Aug. 11, 1964, Ser. No. 388,814
Claims priority, application Germany, Aug. 17, 1963, D 42,271

14 Claims. (Cl. 25-99)

2. Apparatus for producing a continuous web or a continuous row of bodies from a selected material comprising, in combination, support means; a pair of endless conveyor means each formed from a plurality of hollow, box-shaped plates having opposite side walls, said plates being hingedly connected to each other and each of said plates being formed in each of said side walls with open passage means therethrough having an outer end and an inner end communicating with the interior of the hollow plate; two pairs of roller means turnably mounted on said support means and respectively supporting said pair of endless conveyor means for movement along a path in which one of said conveyor means has a lower run and the other an upper run arranged adjacent and facing said lower run to define an elongated space between said runs; a plurality of channel means stationarily

mounted on said support means, said stationarily mounted channel means being respectively arranged adjacent said opposite side walls of said plates and having stationary outlet ends arranged at least along said upper and lower runs so as to communicate with said outer ends of said passage means in said side walls of said plates at least



during movement thereof along said upper and lower runs, respectively, for feeding a fluid into the interior of each plate through the passage means in one side wall and for discharging fluid through the passage means in the other side wall; and means for feeding material into the space between said upper and lower runs.

3,313,011

METHOD OF TEXTURING TRIACETATE YARN

Robert J. Loftin and Earl H. Hartgrove, Charlotte, N.C., assignors to Celanese Corporation, a corporation of Delaware

Filed Oct. 14, 1963, Ser. No. 316,074
11 Claims. (Cl. 28-76)



9. Process for obtaining a knitted fabric of cellulose triacetate of relatively high bulk comprising:

- feeding a cellulose triacetate yarn at a first feed rate to a twisting zone;
- twisting said yarn such that it contains about 30 to 46 turns per inch;
- heating said twisted yarn in a first temperature zone to a temperature of about 180 to 200° C. for a period of about 3.0 to 0.03 seconds;
- substantially untwisting the twisted yarn while feeding it at a second feed rate to a second temperature zone, said second feed rate being about 101 to 104% that of said first feed rate;
- heating said untwisted yarn to a temperature of about 175 to 192° C.;
- advancing the yarn beyond said temperature zone at a rate of about 96 to 70% that of said second feed rate;

- taking up the yarn at a rate of about 97.6 to 107.9% of said last-mentioned rate;
- knitting the yarn into a fabric;
- tumble drying the knitted fabric at a temperature of at least 220° F. for a period of at least 20 minutes; and
- contacting the fabric with steam at a temperature of about 250 to 280° F. for a period of about 20 to 40 minutes.

3,313,012

METHOD FOR MAKING A PNP DEVICE BY DIFFUSING

Russell K. Long, Jack P. Mize, and Roland T. Windecker, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Nov. 13, 1963, Ser. No. 323,340
5 Claims. (Cl. 29-25.3)



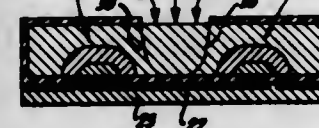
1. A method of making an all-planar diffused PNP device comprising the steps of oxidizing an N-type silicon slice, removing the oxide in selected areas, diffusing a P-type impurity into one face of said silicon slice and into first selected areas on the face opposite said one face so that said P-type impurity diffused in said one face and said first selected areas will extend through said N-type silicon slice to form continuous P-type regions through said slice, growing an oxide to cover said first selected diffused areas, removing said oxide in a second selected area on the face opposite said one face, diffusing a P-type impurity into the opening in the oxide to form a second P-type region distinct from said first selected diffused areas, growing an oxide over said P-type region, removing said oxide in a third selected area on the face opposite said one face, diffusing an N-type impurity to form an N-type region in said second P-type region, growing an oxide over said N-type region, removing the oxide exposing a portion of said second P-type region and said N-type region and evaporating contact material to alloy with said exposed region.

3,313,013

METHOD OF MAKING SOLID-STATE CIRCUITRY

Jay T. Last, Los Altos, Calif., assignor to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware

Original application Aug. 15, 1960, Ser. No. 49,717, now Patent No. 3,158,788, dated Nov. 24, 1964. Divided and this application Oct. 5, 1964, Ser. No. 401,540
6 Claims. (Cl. 29-25.3)

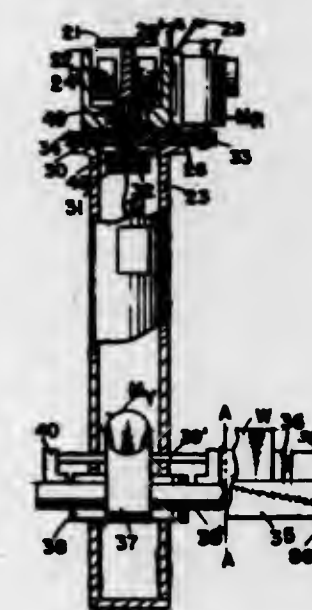


1. An improved process of manufacturing solid-state electronic circuits comprising forming a plurality of junction-type semiconductor devices adjacent the surface of a single wafer of semiconducting material, forming an insulating protective coating upon the wafer surface whereat rectifying junctions of the devices emerge and extending between the devices, etching at least one channel through the wafer from a back side thereof to, but

not through said protective coating intermediate the devices, and filling said channels with an insulating material while bonding same to the wafer to rejoin the portions of the wafer proper and provide electrical isolation between portions of the wafer separated by said insulation.

3,313,014 AUTOMATIC PRODUCTION APPARATUS AND METHOD

Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08841
Filed Apr. 8, 1965, Ser. No. 465,812
21 Claims. (Cl. 29-33)



7. An automatic production apparatus comprising:
- means for holding and prepositioning work,
 - machine means for performing various operations on work retained by said holding means,
 - means for conveying said holding means with respect to said machine means,
 - a multi-circuit program controller including means for generating a sequence of control signals,
 - means for moving said holding means and selectively positioning same in operative relationship with said machine means for operatively positioning the work held thereby with respect to said machine means,
 - means for coupling said program controller with said machine means upon operatively positioning said holding means with said machine means and causing said program controller to generate control signals,
 - means for using said signals to control said machine means to execute predetermined operations on work retained by said holding means and,
 - means operative in response to the operation of said program controller for uncoupling said holding means and said machine means and causing said holding means to be moved by said conveying means away from said machine means.

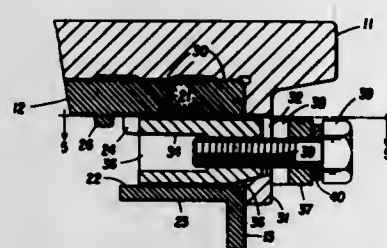
3,313,015

METHOD OF AFFIXING REPLACEABLE ROLL CRUSHER SHELLS

Edward O. Spangler, Cedar Rapids, Iowa, assignor to Iowa Manufacturing Company of Cedar Rapids, Iowa
Original application Aug. 1, 1963, Ser. No. 299,421, now Patent No. 3,231,205, dated Jun. 5, 1966. Divided and this application June 1, 1965, Ser. No. 460,399
3 Claims. (Cl. 29-148.4)

1. A method of accommodating axial growth of each of a plurality of arcuate, axially extending segments of a generally annular roll shell for encompassing the outer

periphery of a generally cylindrical spider rotatable about its axis, said method comprising: disposing each of said segments upon said spider periphery concentrically with respect thereto, applying forces independent of each other adjacent the respective axial ends of said segment directed generally radially inwardly with respect to said segment and spider in order to draw said ends down against the outer periphery of said spider, said forces



being applied by separate means adjacent each of said segment ends and independently releasable to allow removal of said segment from said spider, permitting each of said segment ends to move axially with respect to and independently of said spider and the releasable means at the other of said segment ends while at the same time maintaining said radially inwardly directed forces upon said segment ends.

3,313,016

METHOD OF PRODUCING A CRANKSHAFT

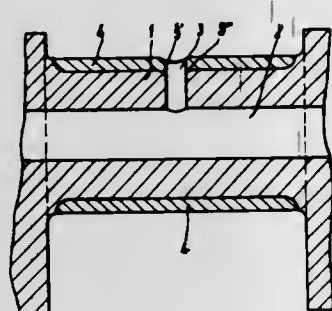
Gerhard Seulen and Friedrich Scheffler, Remscheid, and Otto Gunser, Nürtingen, Germany, assignors to AEG-Elotherm G.m.b.H., Remscheid-Hasten, Germany, and Gebr. Heller Maschinenfabrik G.m.b.H., Nürtingen, Germany

Filed July 23, 1965, Ser. No. 474,385

Claims priority, application Germany, July 24, 1964,

A 46,678

5 Claims. (Cl. 29-149.5)



1. A method of producing an oil hole with an outlet opening into the peripheral surface of a crankpin portion or main bearing portion of a crankshaft, which comprises heating the peripheral layer of a said portion containing the said surface so that in the width region thereof which is to contain the said outlet the heating is to a depth not greater than that in the remaining width of said surface layer and quenching the thus heated portion to obtain a hardened layer, then forming the oil hole in the said region at least through the hardened layer by electrochemical erosion of the material.

3,313,017

FABRICATION OF ELECTRICAL APPARATUS

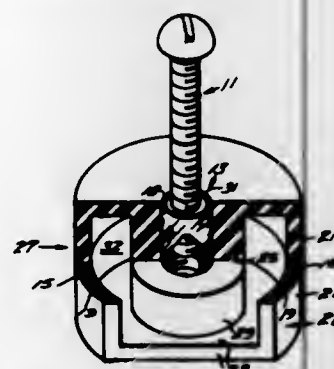
Bazil R. Zingali, Haverhill, Mass., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 12, 1962, Ser. No. 230,193

5 Claims. (Cl. 29-155.58)

1. A method of fabricating an electrical device comprising the steps of: shrinking an envelope of heat shrinkable material about a forming element,

coating mating surfaces of a two-piece body of material and the outside surface of the formed envelope with an adhesive substance, mating the corresponding surfaces of the body with the envelope portion of the forming element located in an aperture in the body,



bonding the adhesive coated surfaces, withdrawing the forming element leaving the formed heat shrinkable material on the walls of the aperture, and inserting into the aperture adjusting means which is arranged to vary the electrical characteristics of the device.

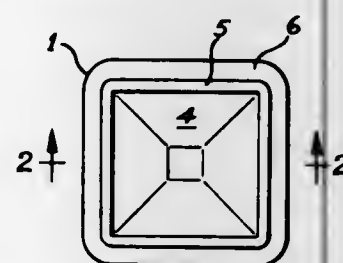
3,313,018

METHOD OF MAKING DIAPHRAGM MEANS FOR ACOUSTIC TRANSLATING DEVICES

George C. Tibbetts, Camden, Maine, assignor to Tibbetts Industries, Inc., Camden, Maine, a corporation of Maine

Original application July 6, 1962, Ser. No. 208,057, now Patent No. 3,166,148, dated Jan. 19, 1965. Divided and this application Apr. 20, 1964, Ser. No. 361,134

3 Claims. (Cl. 29-169.5)



1. A method of making a diaphragm means for an acoustic translating device comprising the steps of: forming in the shape of a diaphragm portion and a surround portion a blank of a laminate sheet comprising two materials of differing elastic moduli, relieving stresses in the material of lower elastic modulus to mold its natural shape substantially to the form defined by the material of higher elastic modulus, and removing said material of higher elastic modulus at said surround portion.

3,313,019

TOOL FOR PULLING A PIN FROM A PIPE PROTECTOR

Alfred G. Fuseller, Lafayette, La., assignor to Byron Jackson Inc., Long Beach, Calif., a corporation of Delaware

Filed Sept. 7, 1965, Ser. No. 485,213

2 Claims. (Cl. 29-252)

1. A tool for pulling a pin from a pipe protector that encircles the pipe, the pipe protector having a shoulder lying in a plane substantially at right angles to the axis of the pipe, the pin being disposed generally parallel to the axis of the pipe and provided with a head portion projecting outwardly from said end surface, said tool comprising in combination:

(a) a base;

(b) a pair of tines extending laterally from one side of said base, said tines being adapted to rest against the shoulder of said pipe protector and spaced to straddle the projecting head portion of said pin, said tines having outer ends adapted to rest against the pipe for lining up said pin between said tines;

(c) hook means positionable between said tines for engaging the projecting head portion of said pin;



(d) means for mounting said hook means on said base for movement of said hook means away from a position between said tines to withdraw the pin from the pipe protector through the space between said tines;

(e) said means for mounting said hook means including fluid-powered, piston and cylinder means for effecting said movement; and

(f) said mounting means cooperating with said tines when the tines are resting against the pipe and the shoulder whereby to assure the engagement of said hook means with the pin.

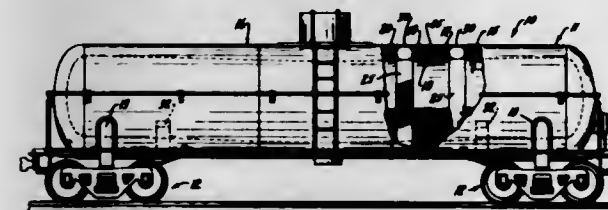
3,313,020

METHOD OF MANUFACTURING AN INSULATED CONTAINER

William B. Kramkopf, Lombard, Ill., assignor to Union Tank Car Company, Chicago, Ill., a corporation of Illinois

Filed Aug. 21, 1962, Ser. No. 218,270

20 Claims. (Cl. 29-455)



5. A method of manufacturing an insulated container, comprising the steps of: positioning an inner container relative to an outer shell so that a space is defined between said inner container and said outer shell, then forming a barrier in surrounding relationship with said inner container and within said outer shell to seal off a compartment in said space in substantially fluid tight relationship from the remainder of said space, charging said compartment with insulating foam forming reactants whereby said reactants foam to form a core portion of insulating material in said compartment between said inner container and said outer shell, and introducing foam forming reactants to the remainder of said space to form insulating material therein.

18. A method of manufacturing a structural member, comprising the steps of: positioning a pair of continuous face members relative to each other so that a space is defined therebetween, positioning inflatable means between said face members and then inflating said inflatable means so as to seal off said space into a plurality of compartments, and charging said compartments with foam forming reactants, whereby said reactants foam to form a core of material between said face members.

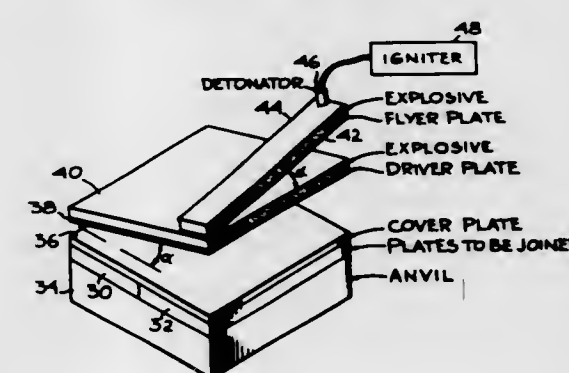
3,313,021

EXPLOSIVE BUTT WELDING

Edward S. Wright, Los Altos, and Arthur E. Bayce, Menlo Park, Calif., assignors to Stanford Research Institute, Menlo Park, Calif., a corporation of California

Filed Mar. 2, 1964, Ser. No. 348,463

5 Claims. (Cl. 29-484)



1. A method of butt welding two metal plates together comprising placing the two metal plates on an anvil with the ends to be butt welded adjacent, but not abutting one another;

positioning a driver plate over the region of the adjacent edges to be joined;

providing sufficient explosive on said driver plate to provide, on ignition, a lateral deformation in said adjacent plates exceeding the distance therebetween, to cause said plates to impact with a velocity sufficiently great that the impact pressure is well above the yield strength of said plates, said explosives being selected to cause the impact front to move at a velocity less than the velocity of sound in either of said two plates; and

igniting said explosives to generate a shock pressure wave to drive said driver plate against the surface of both of said plates to thereby cause said driver plate to apply a shock pressure wave to the surfaces of both said plates normal to said adjacent ends to provide said lateral deformation and said impact front velocity in said two metal plates.

3,313,022

METHOD OF MAKING A COUNTERSUNK RIVETED JOINT

Donald F. Leonhart, Youngstown, Ohio, assignor to The Youngstown Steel Door Company, Cleveland, Ohio

Filed Aug. 31, 1964, Ser. No. 393,313

7 Claims. (Cl. 29-509)

1. A method of riveting a plurality of metal sheets having large and small apertures therein which consists of inserting through said apertures a rivet having a head, a shank, and an end portion with the head being adjacent to one side of the sheets and the shank extending through the sheets, the sheet with the larger aperture therein being between the outer sheet and the head of the rivet, holding said rivet head axially immobile and applying sufficient axial force against the end of the rivet shank to upset said rivet shank, compressing said shank so it expands and deforms the metal sheet nearest the rivet end,

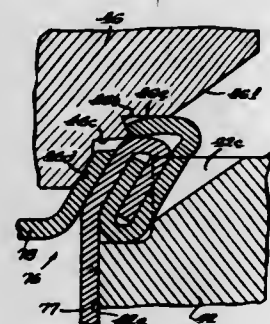
and displaces a portion of said sheet into the larger rivet aperture of the adjacent metal sheet, the rivet shank being further compressed and shortened, and assuming a substantially bulbous shape and occupying the space



created by the deformed metal sheet, the rivet shank being still further compressed until the end of said rivet shank is flush with the outer surface of the sheet nearest the rivet end, the entire riveting operation being done in one, continuous, uninterrupted process.

3,313,023 CAN OPENER

Ivar Jepson, South Duxbury, Mass., and Sophocles J. Dokos, Chicago, and Sigmund H. Bielak, Downers Grove, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Original application Sept. 19, 1962, Ser. No. 224,634, now Patent No. 3,216,103, dated Nov. 9, 1965. Divided and this application Sept. 10, 1965, Ser. No. 486,339
8 Claims. (Cl. 30-4)



1. A cutter for a can opener comprising a wheel having an annular cutting edge formed by a conical surface engaging a downwardly facing annular shoulder, an annular surface on said wheel spaced above said cutting edge by a distance substantially equal to the thickness of the can cover to be cut and a can portion extending outwardly and upwardly from said annular surface.

3,313,024

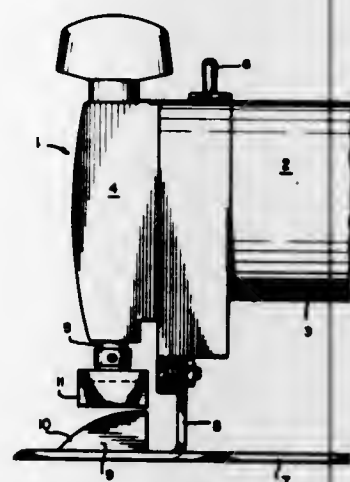
POWER-OPERATED CUTTING TOOL

Frank C. Bogusch, Jr., Greenfield, and James A. DeCarteret, Bernardston, Mass., assignors to Millers Falls Company, Greenfield, Mass., a corporation of Massachusetts

Filed July 16, 1965, Ser. No. 472,453
3 Claims. (Cl. 30-273)

1. A cutting tool comprising:
a tool frame containing a tongue mounted for reciprocation in said frame and a motor driving said tongue causing it to reciprocate;
an elongated cutter blade located near one end of said reciprocating tongue with a cutting edge extending forwardly and toward said one end of said tongue;
means mounted on said tool frame and supporting said blade with the space on each side of said blade being free from obstructions so that when said tool is orientated with the cutting edge projecting upwardly, a work sheet resting on said cutting edge will depend downwardly on both sides of the blade; and

a presser foot mounted on said one end of said reciprocating tongue and arranged to press the work sheet located between said foot and said blade against said blade to cut said work sheet progressively from the



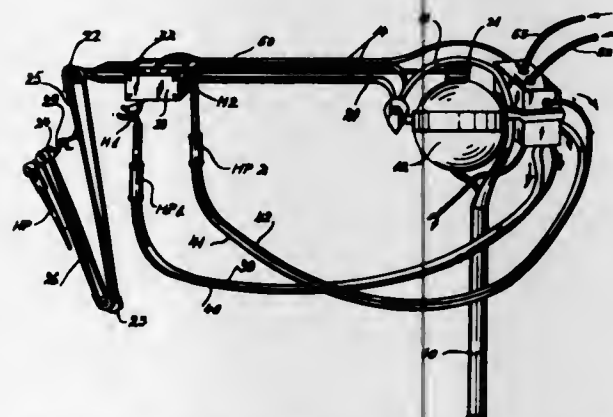
bottom face of the work sheet as said tool is moved along said work sheet;
said presser foot including a slot adapted to receive said cutting edge as said presser foot reciprocates.

3,313,025

DENTAL TREATMENT APPLIANCE

Fred Hertz, 166-21 20th Ave.,
Whitestone, N.Y. 11357

Filed Jan. 20, 1964, Ser. No. 338,760
15 Claims. (Cl. 32-23)



1. A dental treatment appliance assembly, comprising a switch and hanger box, means on said box for mounting the same at a working position of a dentist, a movable hanger extending outwardly of said box, an air-driven handpiece removably mounted on the hanger, a switch in said box operatively coupled to the hanger for actuation when the handpiece is removed from the hanger; a fluid distribution and control box, means on the control box for mounting the same at a position remote from the switch and hanger box out of the way of said working position of the dentist, a supply source of air under pressure external of said control box, a solenoid operated air valve in the control box, a conduit connecting said air supply source and said valve to supply pressurized air thereto, a supply source of water under pressure external of said control box, a solenoid operated water valve in the control box, a water supply conduit connecting said water supply source and said water valve to supply water under pressure thereto, an air conveying conduit connecting said air valve and said handpiece for driving the same, a water conveying conduit connecting said water valve and said handpiece for supplying coolant water thereto, a power supply, electric current conducting lines connecting said power supply, said switch and said valves for

actuating the valves to supply air and water to the handpiece when the handpiece is lifted from said hanger, and foot operable control means for controlling supply of air and water to the handpiece.

3,313,026 SELECTIVELY VARIABLE TELESCOPIC SIGHT RETICULE

Alfred A. Akin, Jr., West Covina, Calif., assignor to
David P. Bushnell, Pasadena, Calif.

Filed July 13, 1965, Ser. No. 471,661
2 Claims. (Cl. 33-50)



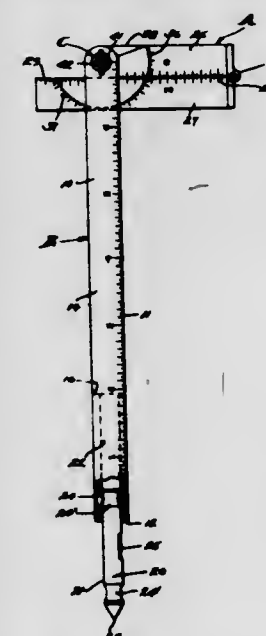
1. In combination with a telescopic gun sight having a tubular casing, a reticule mounted internally therein by a support substantially in a plane perpendicular to the longitudinal axis of the casing and a retractible element for accentuating the reticule center, wherein the improvement comprises, means pivotally mounting the retractible element on the support for displacement in a plane parallel to the plane of said reticule, magnetic actuating means mounted for movement between limits internally of the casing displacing said retractible element between operative and retracted positions corresponding to said limits, a selectively movable magnet, and guide means mounting the magnet exteriorly on the casing in operative relation to the magnetic actuating means for magnetically transferring movement to the actuating means between said limits thereof.

3,313,027

FOLDABLE SURVEYING INSTRUMENT

Henson U. Blackwood, 830 S. Fairfax Road,
Bakersfield, Calif. 93307

Filed May 11, 1965, Ser. No. 454,916
5 Claims. (Cl. 33-105)



1. A foldable surveying instrument comprised of complementary elements and including, an elongated body element having an edge, a sectional arm having an inner

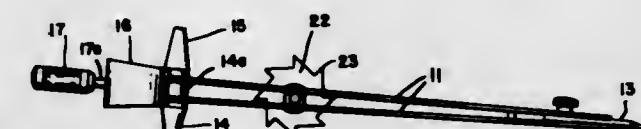
section element pivotally joined to one end portion of the body element on an axis space inwardly from the edge thereof and having an outer section element hinged to lie alongside the inner section, and calibrated protracting arcs scribed in the two sections on identical radii concentric with the axis of pivotal joinder when the inner arm section and outer arm section lie alongside each other, whereby the edge of the body element intersects the combined arc when the said sections are angularly disposed to the body.

3,313,028

DRAWING COMPASS

Robert W. Selleck, 2952 Senter Road,
San Jose, Calif. 95111

Filed May 4, 1965, Ser. No. 453,073
2 Claims. (Cl. 33-156)



1. In a drafting device such as a drawing compass, divider or the like, the combination comprising a pair of arms, threaded members attached to said mid portions of each of said arms together so that the other end parts of said arms may be moved toward or away from each other, a threaded rod extending between the mid portions of said arms, threaded members attached to said mid portions of said arms engaging the threads of said rod, a finger engaging member attached to said rod for rotating said rod, said finger engaging member is substantially circular and the surface thereof is provided with tooth-like projections directionally related to the direction of rotation of said finger engaging member shaped to facilitate determining the direction of rotation of said finger engaging member from the feel of said projections to the touch, the threads on said threaded rod and said threaded members being such that rotation of said rod in one direction spreads said other end parts of said arms, and rotating it in the other direction brings said other end parts together, said pivoting means having an axis about which said arms are adapted to be rotated, and prop means attached to the opposite sides of said pivoting means extending away from said pivoting means substantially in the direction of said axis thereof, said prop means holding the pivoted end parts of said arms for holding these end parts of said arms in elevated position when the compass is reclined on a supporting surface, said prop means being long enough so that it supports said finger engaging member away from said supporting surface.

3,313,029

LOCKING DEVICE FOR A MICROMETER SCREW

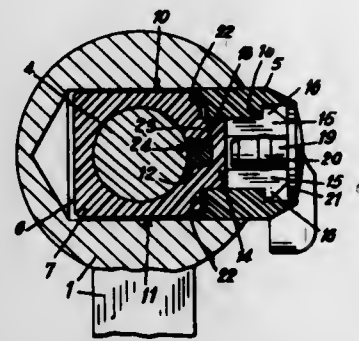
Charles Roch, Rolle, Vaud, Switzerland, assignor to
Pierre Roch S.A., Rolle, Vaud, Switzerland, a corporation of Switzerland

Filed July 22, 1965, Ser. No. 473,951
Claims priority, application Switzerland, July 24, 1964,
9,728/64

5 Claims. (Cl. 33-164)

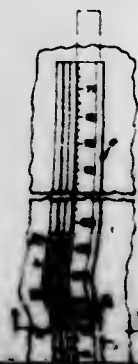
1. A locking device for a micrometer screw, comprising a gripping body of deformable plastic material, disposed in an opening of the micrometer body which is traversed by a cylindrical part integral with said screw, with a side clearance just sufficient for its easy insertion in and withdrawal from this opening, said gripping body having a housing in which is disposed a metallic packing strip adapted to press against a portion of the periphery of said cylindrical part, the remainder of this periphery being surrounded by the gripping body, free from the

latter with a clearance just sufficient to ensure the movement of said cylindrical part without any substantial friction in the gripping body, and comprising further a deformable rotatable control member, actuated by hand, between a loosened position and a locked position of the screw, said member having a part forming a cam, to come into the locking position, on the one hand, to press the packing strip against the above mentioned cylindrical part and, on the other hand, to press the diametrically

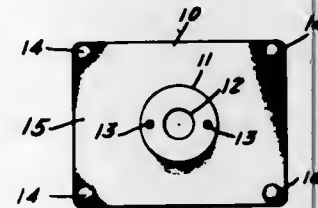


opposed part of the gripping body against the cylindrical part in question, which is immobilized under the influence of an action exerting itself symmetrically thereon, whereas the control member, which, in the free state, is disposed with a small clearance in the above mentioned opening, is subjected to a compression stress which deforms it by causing said clearance to disappear completely, thus immobilizing said member and with it the gripping body relative to the micrometer body.

3,313,030
HEIGHT MEASURING DEVICE
George Heys, 120 N. Main St., Sidney, Ohio 45365
Filed Nov. 16, 1964, Ser. No. 411,229
5 Claims. (Cl. 33-169)



3,313,031
OPHTHALMIC LENS FORMER
George L. Lowe, 7920 Monmouth Ave.,
Panorama City, Calif. 91402
Filed Nov. 16, 1964, Ser. No. 411,326
4 Claims. (Cl. 33-174)



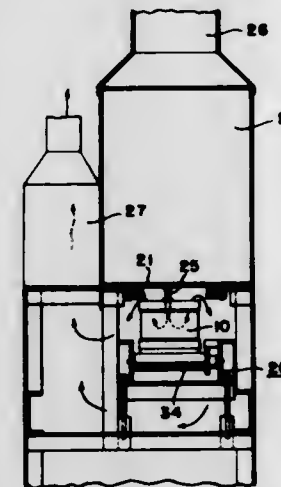
1. A plastic ophthalmic lens former blank for optical lenses used in eyeglasses of the kind on which the outline of the lens is scribed on the former blank from the eyeglass frame comprising:

- a thin rectangular flat body portion having a back face and a front face, said front face being adapted for inscribing said lens outline, said flat body portion adapted to being cut with ordinary household scissors to said lens outline;
- a thickened hub portion extending laterally from said back face; and protrusions extending laterally from said back face the same amount as said hub portion, said protrusions being positioned outside the area of said lens outline.

3,313,032
FREEZE-DRYING PROCESS AND APPARATUS
George J. Malecki, Chicago, Ill., assignor to the United States of America as represented by the Secretary of Agriculture
Filed July 28, 1966, Ser. No. 568,568
8 Claims. (Cl. 34-5)



3,313,033
STORAGE BATTERY
William D. Carson and Leon F. Paul, Muncie, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 19, 1965, Ser. No. 508,757
10 Claims. (Cl. 34-21)

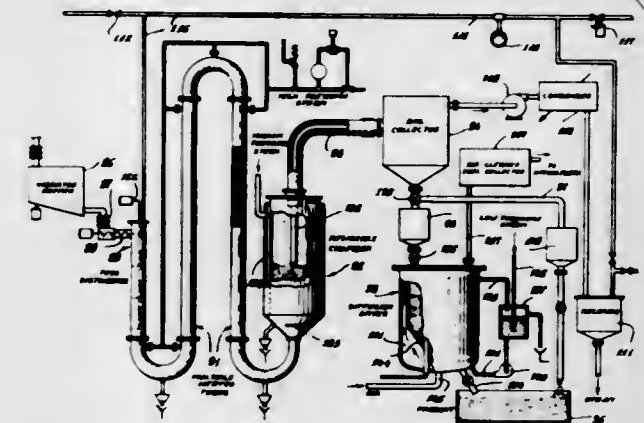


1. In a method for drying a plurality of unsealed battery assemblies, each consisting of a battery case having a plurality of contiguous unsealed compartments wherein each compartment includes a wet, fully charged battery plate assembly consisting of positive and negative battery plates spaced from one another by permeable separators and connected electrically to the battery plate assembly in the next adjacent compartment, and wherein the individual unsealed cell covers each having a filler opening therethrough are in place on each compartment, the steps comprising; providing a plurality of said battery assemblies along a conveyor, inserting a nozzle through each filler opening, blowing hot, dry, non-oxidizing gas at high velocity through said nozzles into said plate assemblies whereby the battery plate assemblies are progressively dried by said gas and continuously forcing cooled, less dry gas from said assemblies around said unsealed covers, and continuing the procedure until said battery plates are dried.

3,313,034
NUT MEAT DE-WATERING MACHINE
Leo J. Mayer, P.O. Box 8096, San Antonio, Tex. 78201
Filed Aug. 2, 1966, Ser. No. 476,671
8 Claims. (Cl. 34-63)

smaller than the particles to be treated so as to retain such particles within the cylinder, a bearing cradle supporting the cylinder for rotation about its longitudinal axis, means mounting said bearing cradle for reciprocation of the cylinder in the general direction of said longitudinal axis, drive means continuously imparting reciprocatory movement to the bearing cradle, and cycling mechanism having rotation-imparting drive connection with the cylinder and including a stop and go controller of rotation-imparting drive to the cylinder for cycling successive spin and non-spin phases of cylinder rotation throughout continuing cylinder reciprocation, whereby cylinder reciprocation in the non-spin phase impells the particles toward said outlet and in the spin phase, such impelling action is overcome by particle contact against the perforated wall.

3,313,035
APPARATUS FOR DRYING PARTICULATE MATERIAL
James R. Crawford, New Canaan, Conn., and Richard Hooker, Jr., Mount Kisco, N.Y., assignors to Crawford & Russell Incorporated, Stamford, Conn.
Filed Mar. 14, 1966, Ser. No. 534,171
4 Claims. (Cl. 34-57)



1. Drying apparatus for removing moisture from particulate material comprising in combination
(A) particulate material feed means,
(B) elongated, open-ended drying tube means surrounded by a heating jacket, having
(1) an effective cross-sectional area A,
(2) an input end, and
(3) a delivery end,
(C) a residence chamber surrounded by a heating jacket, having
(1) an entrance port controlled by a valve to the

actuating the valves to supply air and water to the handpiece when the handpiece is lifted from said hanger, and foot operable control means for controlling supply of air and water to the handpiece.

3,313,026
SELECTIVELY VARIABLE TELESCOPIC
SIGHT RETICULE

Alfred A. Akin, Jr., West Covina, Calif., assignor to
David P. Bushnell, Pasadena, Calif.
Filed July 13, 1965, Ser. No. 471,661
2 Claims. (Cl. 33-50)



1. In combination with a telescopic gun sight having a tubular casing, a reticule mounted internally therein by a support substantially in a plane perpendicular to the longitudinal axis of the casing and a retractible element for accentuating the reticule center, wherein the improvement comprises, means pivotally mounting the retractible element on the support for displacement in a plane parallel to the plane of said reticule, magnetic actuating means mounted for movement between limits internally of the casing displacing said retractible element between operative and retracted positions corresponding to said limits, a selectively movable magnet, and guide means mounting the magnet exteriorly on the casing in operative relation to the magnetic actuating means for magnetically transferring movement to the actuating means between said limits thereof.

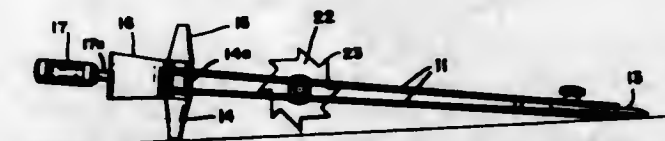
3,313,027
FOLDABLE SURVEYING INSTRUMENT
Henson U. Blackwood, 830 S. Fairfax Road,
Bakersfield, Calif. 93307
Filed May 11, 1965, Ser. No. 454,916
5 Claims. (Cl. 33-105)



1. A foldable surveying instrument comprised of complementary elements and including, an elongated body element having an edge, a sectional arm having an inner

section element pivotally joined to one end portion of the body element on an axis space inwardly from the edge thereof and having an outer section element hinged to lie alongside the inner section, and calibrated protracting arcs scribed in the two sections on identical radii concentric with the axis of pivotal joinder when the inner arm section and outer arm section lie alongside each other, whereby the edge of the body element intersects the combined arc when the said sections are angularly disposed to the body.

3,313,028
DRAWING COMPASS
Robert W. Selbeck, 2952 Senter Road,
San Jose, Calif. 95111
Filed May 4, 1965, Ser. No. 453,073
2 Claims. (Cl. 33-156)



1. In a drafting device such as a drawing compass, divider or the like, the combination comprising a pair of arms, threaded members attached to said mid portions of each of said arms together so that the other end parts of said arms may be moved toward or away from each other, a threaded rod extending between the mid portions of said arms, threaded members attached to said mid portions of said arms engaging the threads of said rod, a finger engaging member attached to said rod for rotating said rod, said finger engaging member is substantially circular and the surface thereof is provided with tooth-like projections directionally related to the direction of rotation of said finger engaging member shaped to facilitate determining the direction of rotation of said finger engaging member from the feel of said projections to the touch, the threads on said threaded rod and said threaded members being such that rotation of said rod in one direction spreads said other end parts of said arms, and rotating it in the other direction brings said other end parts together, said pivoting means having an axis about which said arms are adapted to be rotated, and prop means attached to the opposite sides of said pivoting means extending away from said pivoting means substantially in the direction of said axis thereof, said prop means holding the pivoted end parts of said arms for holding these end parts of said arms in elevated position when the compass is reclined on a supporting surface, said prop means being long enough so that it supports said finger engaging member away from said supporting surface.

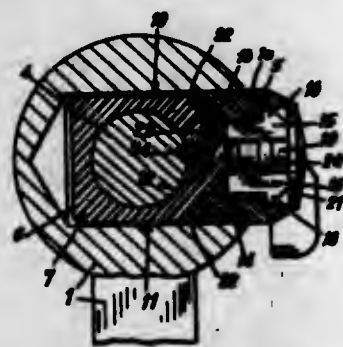
3,313,029
LOCKING DEVICE FOR A MICROMETER
SCREW

Charles Roch, Rolle, Vaud, Switzerland, assignor to
Pierre Roch S.A., Rolle, Vaud, Switzerland, a corporation of Switzerland
Filed July 22, 1965, Ser. No. 473,951
Claims priority, application Switzerland, July 24, 1964,
9,728/64

5 Claims. (Cl. 33-164)

1. A locking device for a micrometer screw, comprising a gripping body of deformable plastic material, disposed in an opening of the micrometer body which is traversed by a cylindrical part integral with said screw, with a side clearance just sufficient for its easy insertion in and withdrawal from this opening, said gripping body having a housing in which is disposed a metallic packing strip adapted to press against a portion of the periphery of said cylindrical part, the remainder of this periphery being surrounded by the gripping body, free from the

latter with a clearance just sufficient to ensure the movement of said cylindrical part without any substantial friction in the gripping body, and comprising further a deformable rotatable control member, actuated by hand, between a loosened position and a locked position of the screw, said member having a part forming a cam, to come into the locking position, on the one hand, to press the packing strip against the above mentioned cylindrical part and, on the other hand, to press the diametrically



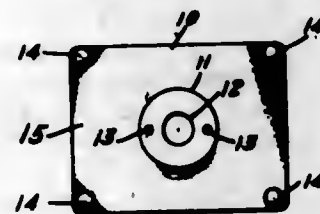
opposed part of the gripping body against the cylindrical part in question, which is immobilized under the influence of an action exerting itself symmetrically thereon, whereas the control member, which, in the free state, is disposed with a small clearance in the above mentioned opening, is subjected to a compression stress which deforms it by causing said clearance to disappear completely, thus immobilizing said member and with it the gripping body relative to the micrometer body.

3,313,030
HEIGHT MEASURING DEVICE
George Heyn, 120 N. Main St., Sidney, Ohio 45345
Filed Nov. 16, 1964, Ser. No. 411,229
5 Claims. (Cl. 33-169)



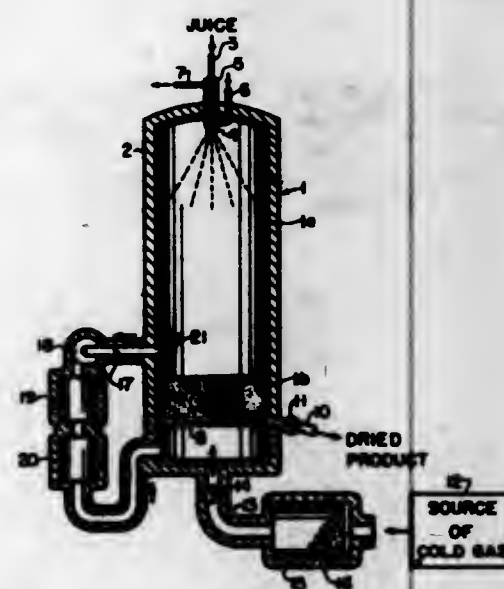
1. A height measuring apparatus repeatedly capable of readily being assembled and disassembled comprising, in combination:
a flexible scale means capable of being rolled up for storage having height indicia thereon;
a height indicator means having a portion thereof co-operating with said scale means for indicating a specific height measurement;
and a resiliently flexible base member capable of being rolled up and removed from a fixed extended position, said base member being provided with a pair of tracks so proportioned as to releasably retain said scale means in one of said tracks and releasably retain said height indicator means in the other of said tracks.

3,313,031
OPHTHALMIC LENS FORMER
George L. Lowe, 7920 Monmouth Ave.,
Pamorama City, Calif. 91463
Filed Nov. 16, 1964, Ser. No. 411,326
4 Claims. (Cl. 33-174)



1. A plastic ophthalmic lens former blank for optical lenses used in eyeglasses of the kind on which the outline of the lens is scribed on the former blank from the eye-glass frame comprising:
a thin rectangular flat body portion having a back face and a front face, said front face being adapted for inscribing said lens outline, said flat body portion adapted to being cut with ordinary household scissors to said lens outline;
a thickened hub portion extending laterally from said back face; and protrusions extending laterally from said back face the same amount as said hub portion, said protrusions being positioned outside the area of said lens outline.

3,313,032
FREEZE-DRYING PROCESS AND APPARATUS
George J. Malochi, Chicago, Ill., assignor to the United States of America as represented by the Secretary of Agriculture
Filed July 28, 1966, Ser. No. 568,568
8 Claims. (Cl. 34-5)



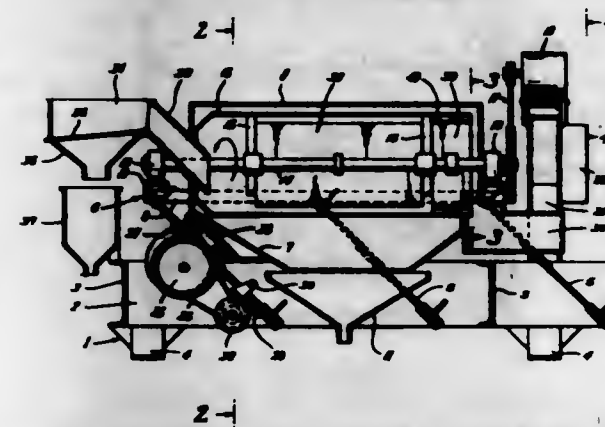
1. A method for freeze-drying a material at essentially atmospheric pressure which comprises:
(a) freezing particles of the material,
(b) forming a bed of the frozen particles, and
(c) injecting a pre-dried gas upwardly through the bed of frozen particles at essentially atmospheric pressure to maintain the bed in a fluidized condition and to dehydrate the particles, the temperature of the injected gas being high enough to be effective to cause sublimation of ice but not so high as to thaw the frozen particles.

3,313,033
STORAGE BATTERY
William D. Carson and Leon F. Paul, Muskegon, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 19, 1965, Ser. No. 598,757
10 Claims. (Cl. 34-21)



1. In a method for drying a plurality of unsealed battery assemblies, each consisting of a battery case having a plurality of contiguous unsealed compartments wherein each compartment includes a wet, fully charged battery plate assembly consisting of positive and negative battery plates spaced from one another by permeable separators and connected electrically to the battery plate assembly in the next adjacent compartment, and wherein the individual unsealed cell covers each having a filler opening therethrough are in place on each compartment, the steps comprising: providing a plurality of said battery assemblies along a conveyor, inserting a nozzle through each filler opening, blowing hot, dry, non-oxidizing gas at high velocity through said nozzles into said plate assemblies whereby the battery plate assemblies are progressively dried by said gas and continuously forcing cooled, less dry gas from said assemblies around said unsealed covers, and continuing the procedure until said battery plates are dried.

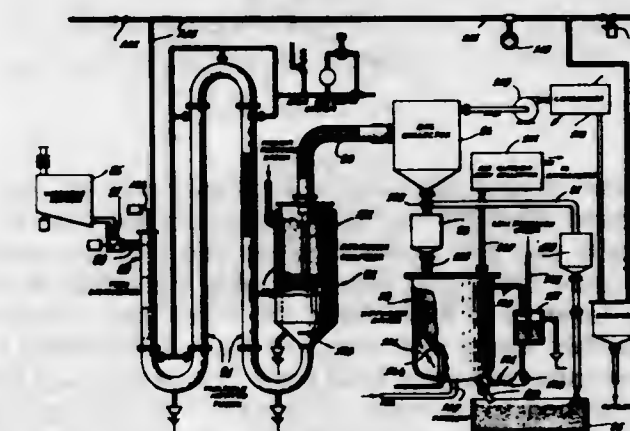
3,313,034
NUT MEAT DE-WATERING MACHINE
Leo J. Meyer, P.O. Box 5096, San Antonio, Tex. 78201
Filed Aug. 2, 1965, Ser. No. 476,571
8 Claims. (Cl. 34-53)



1. In a continuous particle treatment processing system wherein particles to be cleaned by a liquid wash and then dried travel in a continuous path through a succession of treatment stations, mechanism constituting one such station for operation on washed particles to de-water the same and comprising a substantially horizontally disposed cylinder having a perforated wall and being open at opposite ends to provide an inlet at one end and an outlet at the other end, the perforations of said wall being

smaller than the particles to be treated so as to retain such particles within the cylinder, a bearing cradle supporting the cylinder for rotation about its longitudinal axis, means mounting said bearing cradle for reciprocation of the cylinder in the general direction of said longitudinal axis, drive means continuously imparting reciprocatory movement to the bearing cradle, and cycling mechanism having rotation-imparting drive connection with the cylinder and including a stop and go controller of rotation-imparting drive to the cylinder for cycling successive spin and non-spin phases of cylinder rotation throughout continuing cylinder reciprocation, whereby cylinder reciprocation in the non-spin phase impells the particles toward said outlet and in the spin phase, such impelling action is overcome by particle contact against the perforated wall.

3,313,035
APPARATUS FOR DRYING PARTICULATE MATERIAL
James R. Crawford, New Canaan, Conn., and Richard Hooker, Jr., Mount Kisco, N.Y., assignors to Crawford & Russell Incorporated, Stamford, Conn.
Filed Mar. 14, 1966, Ser. No. 534,171
4 Claims. (Cl. 34-57)



1. Drying apparatus for removing moisture from particulate material comprising in combination
(A) particulate material feed means,
(B) elongated, open-ended drying tube means surrounded by a heating jacket, having
(1) an effective cross-sectional area A,
(2) an input end, and
(3) a delivery end,
(C) a residence chamber surrounded by a heating jacket, having
(1) an entrance port centrally positioned in the lower portion thereof and connected to the tube delivery end, and
(2) an exit portal,
(D) a blower operatively connected to draw gas through the heated tube means and the residence chamber,
(E) and a separator operatively connected to separate particulate material from the gas drawn through the tube means and the residence chamber by the blower,
(F) with the residence chamber having an effective cross-sectional area substantially greater than A, producing abrupt deceleration of the gas delivered thereto through the entrance port and turbulent fluidizing agitation of the particulate material throughout its residence in the residence chamber by the gas drawn therethrough by the blower,
(G) with the feed means including a feed distributor incorporating
(1) a vertical-elongated housing,
(2) a spaced plurality of perforated, horizontal transverse screens spanning the housing, all having aligned central apertures, and all arrayed

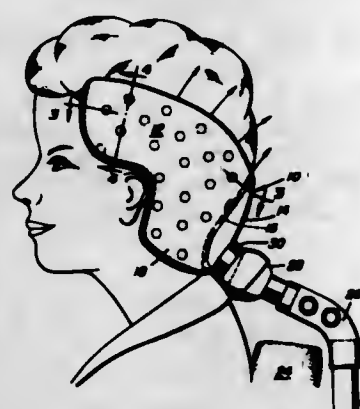
from near the top to near the bottom of the housing, with successively diminishing mesh sizes,

- (3) a rotatable power-driven drive shaft extending vertically through the aligned central apertures in the screens, and
- (4) at least one transverse sifter blade anchored to the shaft above each screen to agitate material entrapped thereon.

3,313,036

HAIR DRYER

Ruth N. Fortune, 6102 Bertram Ave.,
Baltimore, Md. 21214
Filed Aug. 20, 1964, Ser. No. 390,972
1 Claim. (Cl. 34-99)



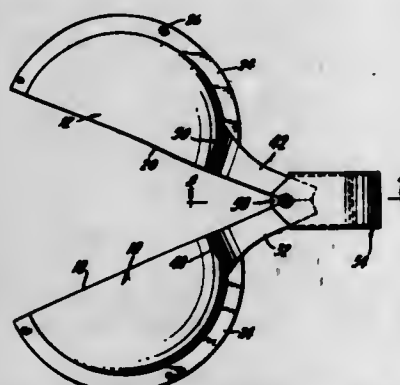
A hair drying cap, comprising, an open top, partial head band assembly for encircling about the base of the head of a user and leaving the top and forward portions of the head open, said band assembly consisting of flexible air-impervious inner layer and outer layer secured to one another along their edges to form a fractional head encompassing inflatable head encircling cavity, said layers being formed to be wider at the back of the head of a user to extend down only to the ears and then down around the back of the neck of said user, said inner layer having substantially even spaced cup-like truncated cones outwardly embossed in its exterior surface, with spaced apertures positioned in the lateral sides of said spaced truncated cones, and a conduit connected to said cavity for supplying drying air to said cavity to inflate it, with said drying air passing through said apertures from said cavity over that portion of the head encircled by said band assembly.

3,313,037

HAIR DRYER HOOD

Robert Ullman, 43 Chestnut Hill Road,
Wilton, Conn. 06897

Continuation of application Ser. No. 168,317, Jan. 19, 1962. This application Sept. 16, 1965, Ser. No. 490,159
14 Claims. (Cl. 34-99)



1. In a hair dryer, a head-receiving hood comprising a dome-shaped body formed of a pair of approximately equal sections, each said section comprising a perforated

inner wall and an outer wall spaced from said inner wall, the outer wall of each of said hood sections formed with an air-admitting opening therethrough, a conduit for air connectable to a source of air under pressure, means pivotally supporting each said hood section on said conduit for movement laterally into edge-to-edge relation with the other and divergently away from the other comprising a conduit section secured by one end to each one of said hood sections around the air-admitting opening therein and pivotally connected by its other end to said conduit.

3,313,038

PELT DRYING FRAME

Robert E. Bolz, Edmonds, Wash., assignor to Bolz Pelting Service, Inc., Edmonds, Wash.
Filed Jan. 9, 1964, Ser. No. 336,723
7 Claims. (Cl. 34-103)



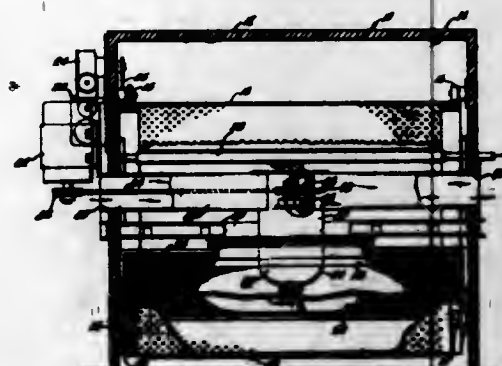
1. A pelt drying means of the character described comprising a flat, elongated, frame of relatively narrow width, defined by laterally spaced, longitudinally extending opposite nonabsorbent side rods that are joined in a rounded tapering nose at one end and in fixed spacing by cross-rods and over which frame an animal pelt may be drawn and held taut thereby and thereby providing a passage lengthwise of and within the pelt for flow of pelt drying air therethrough, and a flat pelt stretching bar that extends substantially to the full length of the rack and is pivotally mounted on the frame for turning on its pivot axis from a position lying parallel with the plane of the frame to an edgewise position relative thereto, thus to spread the opposite walls of the pelt apart as stretched over the frame and open the air passage therein to greater extent.

3,313,039

COOLING ARRANGEMENT FOR DRUM DRYER FAN BEARINGS

George Donald Flaith, Wyndmoor, and George Robert Howard, Philadelphia, Pa., assignors to Proctor & Schwartz, Inc., Philadelphia, Pa., a corporation of Pennsylvania

Filed Apr. 26, 1965, Ser. No. 450,719
16 Claims. (Cl. 34-115)



1. In a drum type dryer including a housing enclosing a drying chamber, a perforated drum rotatably disposed within the drying chamber, an axial fan mounted within the drum for circulation of air therethrough, said fan including a drive shaft, bearings supporting said drive shaft, and a hub secured to an end of said drive shaft having fan blades extending radially therefrom, means for driving said fan in rotation, and means for heating the air circulated within the drying chamber, the improvement for cooling the bearings of the fan comprising

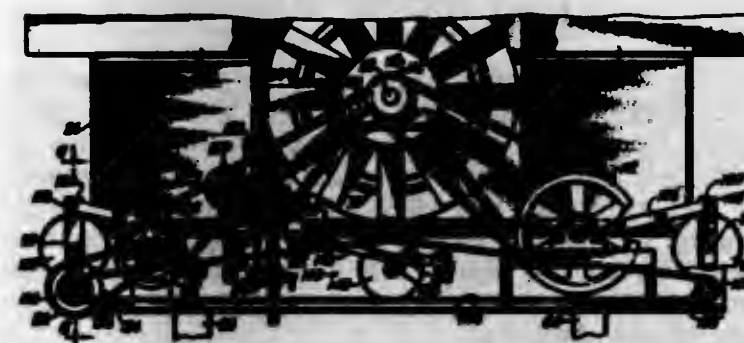
means within the drying chamber enclosing the fan bearings, said latter means including an inner housing, and duct means opening outside the dryer housing connected with said inner housing, an impeller on the drive shaft between said inner housing and the hub, said hub extending in spaced relation around part of said inner housing to form a passage therebetween, and means for venting said passage, said impeller being adapted during rotation of the fan to draw cool air through said duct means and inner housing from outside the dryer housing, and to propel said air into said passage thereby providing a flow of cooling air over the fan bearings.

3,313,040

DRYER

Bernard C. Matthews, Box 414,
Crystal Lake, Ill. 60014

Original application July 25, 1961, Ser. No. 128,627, now Patent No. 3,129,973, dated Apr. 14, 1964. Divided and this application Jan. 16, 1964, Ser. No. 338,107
5 Claims. (Cl. 34-174)



1. A grain dryer comprising means defining a pair of grain columns, each terminating in a lower discharge opening, heating means for heating air, means directing heated air through one portion of said columns, metering chambers communicating with respective ones of said discharge openings, metering means including a vaned metering shaft in each of said chambers for controlling discharge of grain from said grain columns, a ratchet wheel on each of said metering shafts, a reciprocable cross bar assembly comprising a cross bar extending between said meter shafts and a pair of levers pivotally mounting the ends of said cross bar for transverse movement, means pivotally mounting the other ends of said levers for rotation about the axis of said metering shafts, a pair of pawls pivotally mounted on opposite ends of said cross bar assembly and adapted to engage said ratchet wheels, a rotatable member, means interconnecting said rotatable member and said cross bar for converting rotary motion of said member into reciprocating movement of said cross bar, means for rotating said rotatable member so that said cross bar is reciprocated and said pawls alternately and intermittently rotate said metering shafts in opposite directions, and means for adjusting the excursion of said interconnecting means, thereby to adjust the amount of rotation of said metering shafts for each reciprocation of said cross bar.

3,313,041

OPTICAL TEACHING DEVICE

Carl Wolfgang, Hauptstrasse 10, Neuburg,
near Munich, Germany

Filed Apr. 6, 1964, Ser. No. 357,309
11 Claims. (Cl. 35-13)

1. An optical teaching device for producing an optical effect of movement comprising, in combination, a display plate of transparent material having a transparent picture reproduced thereon having portions in which an optical effect of movement is to be produced, said portions having a greater transparency than the remainder of said picture; a light source rearwardly of said display plate

spaced therefrom; and movable shutter means between said light source and said display plate arranged spaced from the latter and having adjacent narrow strip-shaped alternating transparent and opaque portions extending inclined to the direction of movement of said shutter means so as to directly illuminate with relatively great intensity strips of said picture portions of greater transparency, such strips corresponding to said narrow strip-shaped portions of said movable shutter means, and to



illuminate strips of said picture portions of greater transparency located between said first-mentioned strips and corresponding to said narrow strip-shaped opaque portions of said shutter means with smaller intensity by scattered light created by said direct light after passage thereof through said narrow strip-shaped transparent portions of said shutter means, whereby during movement of said shutter means an optical effect of movement in said portions of greater transparency is obtained.

3,313,042

MOLECULAR MODELS

Gustav O. Larsen, 2504 Filmore St.,
Salt Lake City, Utah 84106
Filed Jan. 26, 1965, Ser. No. 423,040
13 Claims. (Cl. 35-18)



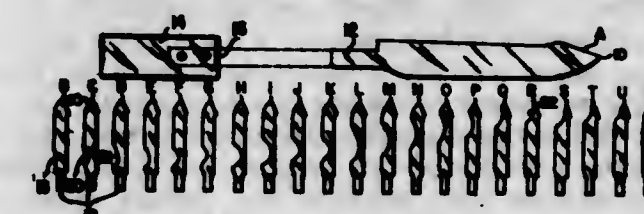
1. A model assembly set for representing atomic and molecular configurations of chemical structures comprising flexible fold-retaining materials having the molecular and atomic symbols and connecting bonds drawn or printed thereon, said flexible material having cuts, creases and folds made therein so that the flexible material will depict the spatial configuration and conformation of the molecule drawn or printed thereon.

3,313,043

DEMONSTRATION SYSTEM

Jimmy F. Nielsen, 1227A E. Harvard Ave.,
Glendale, Calif. 91205

Filed July 28, 1964, Ser. No. 385,611
7 Claims. (Cl. 35-28)



1. A demonstration apparatus to demonstrate the passage of a cutting instrument into an integral object,

without said cutting instrument penetrating said integral object, comprising:

- a plurality of individual tools, each comprising a portion of said cutting instrument and defining a void to mate with a progressively increased section of said integral object; and
- a holder for receiving each of said individual tools in sequence, to establish a reference position therefor.

3,313,044 DESIGN KIT

Marvin I. Glass and Burton C. Meyer, Chicago, and Norman T. McFarland, Mayview, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Nov. 5, 1964, Ser. No. 469,634
8 Claims. (Cl. 35-56)



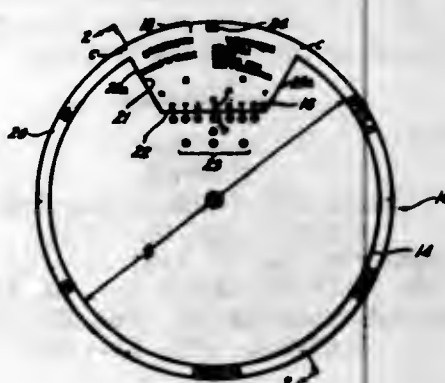
1. A dress designer device comprising a backing panel including means defining an opening generally in the shape of a human torso and limbs, a body portion in the form of a human torso and limbs and generally complementary to the opening and positioned on one side of said panel, yielding means connected to said panel and to said body portion and positioned to urge said body portion toward said panel, and spacer means engaged with said panel and with said body portion, positioned to maintain said body portion spaced in front of said panel when desired, said spacer means being shiftable into another position wherein said body portion is free to engage said panel.

3,313,045 FOOTBALL DIAL CHART

Walter P. Cummings, Monroeville, Pa., assignor of fifty percent to Frank W. Kuley, Pittsburgh, Pa.
Filed June 4, 1964, Ser. No. 372,450
2 Claims. (Cl. 35-74)

1. A football dial card selector which comprises, a disc-shaped main dial having at least one face divided into a series of equal sectors thereon; the face of each said sector being provided with an indicia representing a different football play, having a team formation indicia defining a transverse connecting base of the sector, and having information indicia thereon radially-outwardly of said team formation indicia; a disc-shaped cover dial having means centrally-pivotally mounting it for relative rotative movement on the one face of said main dial, said cover dial having a smaller diameter than said main dial to expose a peripheral face portion of the latter, different title indicia on said peripheral face portion within each said sector, said cover dial having a window portion extending radially-inwardly from its outer peripheral edge and having inwardly-converging side edges and a connecting transverse base edge portion defining an exposed

area that is complementary with respect to each said sector of said main dial, an opposing football team formation indicia on the outer face of said cover dial along said transverse base edge portion thereof, and cooperating alignment-centering means on the transverse base of each said sector of said main dial and on the transverse base edge portion of said cover dial for aligning said window portion with each said sector to fully expose the indicia



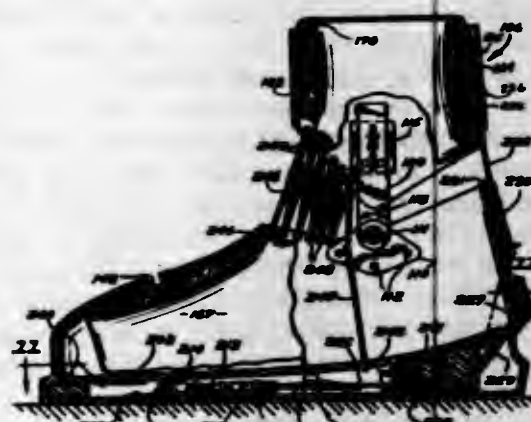
thereon and accurately align individual members of the team formation indicia of each said sector with individual members of the opposed team member indicia of said cover dial when said cover dial is rotated with respect to said main dial; said alignment-centering means comprising, a radial line located midway along the transverse base of each said sector, and a cooperating radial line located midway along the transverse base line edge portion of said cover dial.

3,313,046

SKI BOOT IMPROVEMENTS

Frank D. Werner, Minneapolis, Ralph M. Darr, Excelsior, Richard A. Edberg, Minneapolis, and Paul S. Petersen, Minnetonka, Minn., assignors to Resonant Engineering Company, Minneapolis, Minn., a corporation of Minnesota

Filed Mar. 31, 1965, Ser. No. 444,220
22 Claims. (Cl. 36-25)

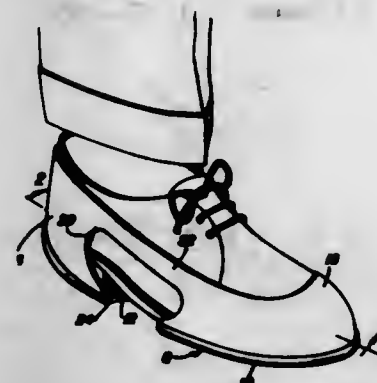


1. In a boot having a base portion and an ankle cuff portion pivotally attached to said base portion for limited pivotal movement about a transverse axis substantially coinciding with the axis of pivot of an ankle bone of a foot within said boot, and means for permitting foot access into said boot, the improvement comprising bias means for biasing said ankle cuff portion to resist forward movement about its pivot relative to the base portion, and stop means which positively limits the rearward pivotal movement of the said ankle cuff portion about the transverse axis to a predetermined angular position and permits forward pivotal movement thereof.

3,313,047

SPIKED SHOE COVER

Jean A. Svisen, 424 S. 47th St., Belleville, Ill. 62223
Filed Nov. 17, 1965, Ser. No. 500,261
4 Claims. (Cl. 36-7.3)



1. For use on and in conjunction with a golf or similar shoe wherein the sole and heel components are provided with protruding anti-slipping spikes, calks or cleats; a readily applicable and removable spike covering, shielding and protecting means comprising: an overshoe made of highly elastic material and embodying a sole portion, shank portion and heel portion and integrally attached companion interconnected counter and toe portions capable of yielding and stretching in a manner to conforming-ly and fittingly accommodate shoes of varying sizes, shapes and types of construction, and inner sole means built into the bottom of said overshoe atop the interior surfaces of the heel and sole portions, respectively, said sole portion, shank portion and heel portion are imperforate to prevent contact between the spikes and a walking surface, and said interconnected counter and toe portions including relatively narrow connecting bands adjacent the upper edge thereof for enabling yielding and stretching of the counter and toe portions.

3,313,048

CUSHION SHOE

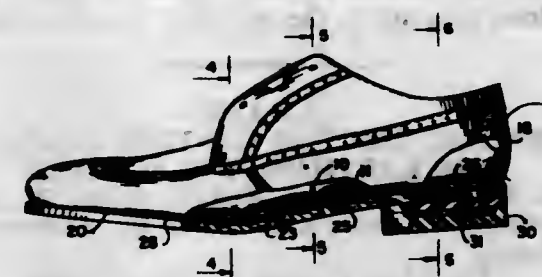
William A. Belmer, Wausau, Wis., assignor to Mid-States Shoe Co., Milwaukee, Wis.
Filed Apr. 14, 1964, Ser. No. 359,714
1 Claim. (Cl. 36-17)

A shoe having an upper including sole, arch, heel and counter portions and comprising in combination:

- a pliable relatively thick insole of uniform thickness throughout its entirety extending the full length of the shoe and disposed in intimate peripheral contact with the lower extremity of said shoe upper,
- said insole having an integral arch portion of outwardly graduated thickness extending therefrom intermediate its length and extending upwardly in contact engagement with the arch side wall portion of the shoe upper,
- a relatively thin flexible rib member of angular section having one side portion which is of appreciably greater width than the other side portion thereof, the relatively wide side portion of said angular rib being cemented to the bottom of said insole adjacent to and extending about the periphery of said insole with the relatively narrow side portion extending downwardly and away therefrom to form an enclosure of substantially uniform depth,
- a welt intimately surrounding the entire lower boundary of said shoe upper and abreast of said narrow rib side portion and stitched thereto with the lower peripheral portion of upper positioned between said welt and rib portion in stitched relation therewith,

a resilient air-foam cushion cemented to said insole and of a size and thickness to substantially fill said enclosure,

- an elongated rigidifying metallic shank member of an outwardly flared shallow channel section medially positioned in the underside surface of said resilient cushion along the arch portion of the shoe upper and with the outwardly flared portions of shank substantially embedded in said resilient cushion member,
- a relatively thin layer of cork disposed in underlying relation to said heel portion of said shoe and in contact with said cushion member,
- a relatively thin impervious and hard barrier member underlying said layer of cork,
- an outer sole underlying said welt and the entire shoe upper including the heel portion thereof and connected by stitching and cement solely to said welt and the downwardly extending portion of said rib member,



a heel structure underlying the heel portion of the shoe upper and attached in seating relation to the heel portion of said outsole by driven headed fasteners, said heel structure comprising a lower portion of rubber material having a relatively large recess in its upper surface and having a relatively rigid flat core member embedded therein and lying flush with the upper surface thereof,

- said headed fasteners extending through said lower resilient portion and disposed with the heads thereof in contact with said core member,
- an upper portion of said heel structure of similar rubber material being contactingly interposed between said shoe outsole and said lower heel portion and having a relatively large central aperture extending there-through, and
- said core member and said relatively thin and hard barrier member defining movement limiting means for said attaching headed fasteners in said heel structure and outsole, respectively.

3,313,049

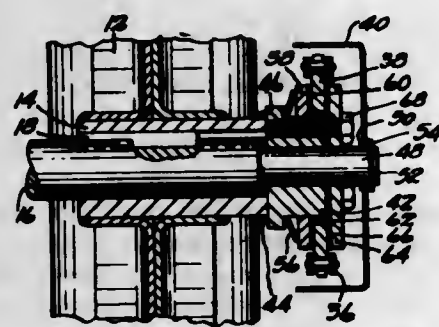
OVERLOAD LIMITER FOR SNOW BLOWERS

Peter F. Blunk, Michigan City, Ind., assignor, by means assignments, to Hahn, Inc., a corporation of Indiana
Filed Mar. 5, 1964, Ser. No. 349,548
5 Claims. (Cl. 37-43)

1. In a snow blower,

- a chassis,
- a drive axle,
- a wheel having a hub keyed on said axle,
- an auger mounting axle spaced from and substantially parallel to said axle,
- a sprocket on said auger axle,
- a sprocket journaled on said wheel hub,
- a chain trained around said sprockets,
- an annular pressure plate encircling said axle and secured to the end of said wheel hub,
- said hub having an abutment spaced from said pressure plate,

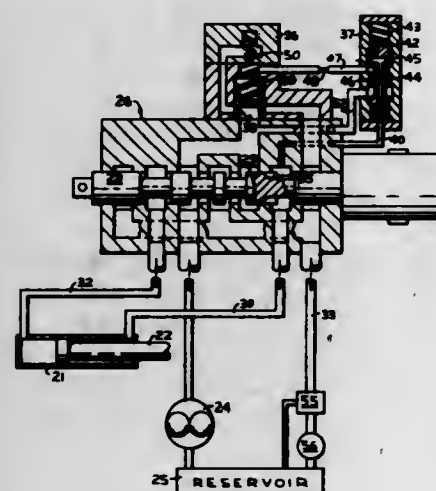
a second annular pressure plate encircling and slidable on said wheel hub, friction disks on said pressure plates engaging opposite surfaces of said sprocket, and



a spring encircling said hub and engaging said abutment and said second pressure plate to apply predetermined pressure to the sprocket at said friction disks.

3,313,050
HYDRAULIC EJECTOR CONTROL MECHANISM FOR EARTHMOVING SCRAPER
John A. Jurek and Joseph Kokaly, Joliet, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

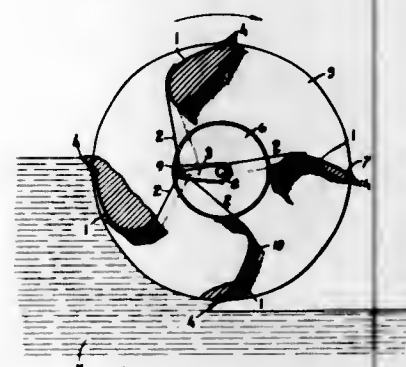
Filed July 2, 1964, Ser. No. 379,838
2 Claims. (Cl. 37-129)



1. In an earthmoving scraper having an earth receiving bowl, an ejector movable through the bowl to eject its contents, hydraulic power means including a cylinder with a piston and rod for actuating said ejector, a source of fluid under pressure, and valve means for directing fluid from said source to the head end of the cylinder to advance the ejector and to the rod end of the cylinder to retract the ejector, the improvement which comprises flow control means limiting the volume of fluid directed to the rod end of the cylinder to reduce the rate of return flow of fluid from the head end thereof, a bypass valve controlling communication between a pressure inlet port in the valve means and a return line to the source with pressure in the inlet acting on one end of the bypass valve, other valve means responsive to pressure in the rod end of the cylinder to communicate the cylinder pressure to a chamber at the opposite end of the bypass valve, and a spring in said chamber biasing the bypass valve toward a closed position, said other valve means having a second position communicating the pressure inlet port with said chamber when communication between the inlet port and the rod end of the cylinder is blocked.

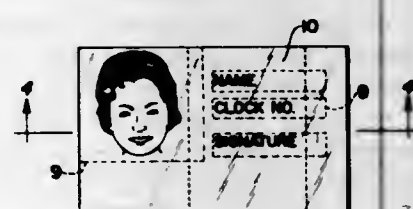
3,313,051
EXCAVATING WHEEL
Ladislav Sová, Unicev, Czechoslovakia, assignor to Unicevské Strojírny, národní podnik, Unicev, Czechoslovakia

Filed Oct. 12, 1964, Ser. No. 403,003
Claims priority, application Czechoslovakia,
Jan. 6, 1964, 58/64
7 Claims. (Cl. 37-189)



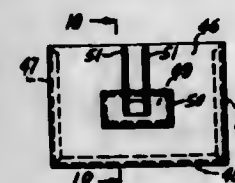
1. In an excavating machine, in combination:
 - (a) a support;
 - (b) a wheel arranged for rotation relative to said support about an axis, said wheel having a rim portion spaced from said axis;
 - (c) a plurality of blades mounted on said rim portion in circumferentially spaced relationship, said blades radially and axially projecting from said wheel;
 - (d) pivot means on said rim portion adjacent each of said blades;
 - (e) a bucket mounted on each pivot means for pivoting movement in a plane transverse of said axis; and
 - (f) a plurality of tension members, each of said tension members having two end portions respectively secured to a portion of said support intermediate said axis and said rim portion and to a portion of a respective bucket spaced from the associated pivot means.

3,313,052
LAMINATIONS
Robert L. Malster, Acton Center, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Apr. 29, 1965, Ser. No. 481,895
8 Claims. (Cl. 40-2.2)



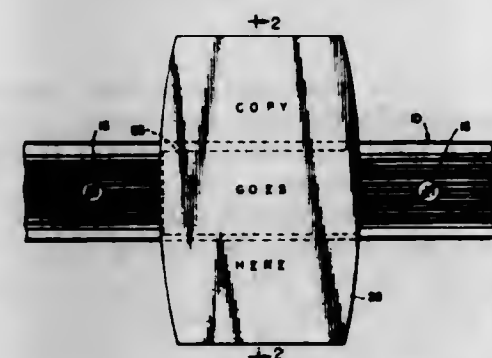
1. A polarized-protected laminar structure comprising an information-bearing layer, to the information-bearing surface of which is laminated a substantially transparent light-polarizing sheet-like element, and a transparent sheet-like overlay suitably affixed to said substantially transparent polarizing sheet-like element, which overlay is characterized in that a portion of it is a light polarized, and further characterized in that its polarizing axis is oriented with respect to said light-polarizing sheet-like element in such a way as to at least partially extinguish the light passing therethrough.

3,313,053
REGISTRATION CARD HOLDER
James C. Vogel, Sr., 6413 Clara Way, North Highlands, Calif. 95660
Filed Dec. 2, 1964, Ser. No. 415,282
2 Claims. (Cl. 40-10)



1. A registration card holder for a vehicle, adapted to be visible through the windshield thereof, comprising a generally rectangular flat plate having its side and bottom edges reverted to form a card receiving pocket and means on the side of the plate opposite said pocket for detachably securing the same to the interior of a vehicle in a position to be visible through the windshield, said plate being metallic and said means for securing the holder to the vehicle comprising a magnet engageable with the rear of the plate and supporting means for said magnet, said magnet supporting means comprising a receptacle surrounding said magnet and a pair of flat apertured arms extending therefrom, the apertures being adapted to be engaged by a screw carried by a vehicle mirror support.

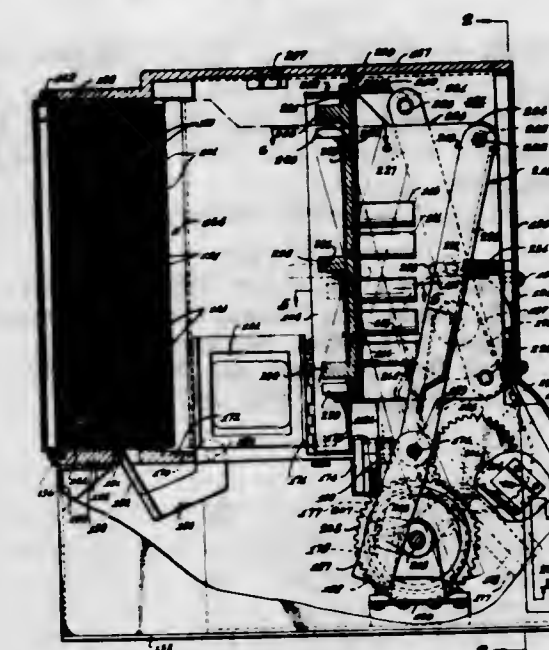
3,313,054
DISPLAY DEVICES
Marion J. Maday, Park Ridge, Ill., assignor, by mesne assignments, to Poster Products, Inc., a corporation of Illinois
Filed June 9, 1965, Ser. No. 462,701
3 Claims. (Cl. 40-10)



1. A display device comprising an elongated mounting strip having an elongated, longitudinal, horizontal, web portion, first and second, elongated, longitudinal strip portions supported along their inner, longitudinal edges on the forward portion of said web portion and flaring relative to each other in transverse directions outwardly and forwardly from respective upper and lower edges of said web portion, thereby providing forwardly sloping, elongated, upper and lower strip members, elongated flange means forming opposing, facing, elongated grooves along the respective outer edges of said strip portions for removably receiving therein at any place therealong the upper and lower edges of a strip of a display member, third and fourth, elongated, longitudinal strip portions supported along their inner, longitudinal edges on the rearward portion of said web and flaring relative to each other in transverse directions outwardly and rearwardly from respective upper and lower edges of said web portion, the rear faces of the respective outer edges of said third and fourth strip portions substantially lying in a vertical plane, said first and second strip portions being considerably wider than said third and fourth strip portions, thereby providing rearwardly sloping, elongated,

upper and lower strip members, and said web portion having at least one aperture extending therethrough from front to rear adapted to receive a screw to attach said mounting strip to a support member with said rear faces pressed against said support member, whereby an upwardly opening, elongated compartment is formed by the rear face of said forwardly sloping, upper strip member, the front face of said rearwardly sloping, upper strip member, the top edge of said web and the front face of the support member.

3,313,055
RANDOM ACCESS STORAGE AND RETRIEVAL DEVICE
Eugene H. Irsack, Garden Grove, Calif., assignor to Houston Fearless Corporation, Los Angeles, Calif., a corporation of California
Filed June 29, 1964, Ser. No. 378,681
40 Claims. (Cl. 40-36)



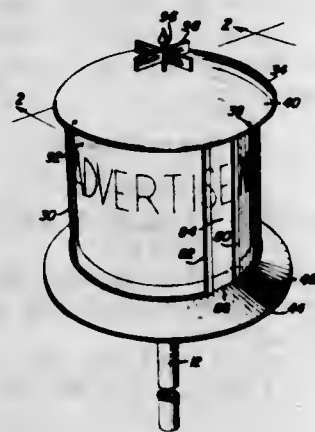
8. A stack mounting for a plurality of superimposed information storage holders of the card type comprising: a pair of spaced side magnet structures extending throughout the height of the stack and providing magnetic air gaps adjacent the sides of the stack; and a vertical stack of holders disposed between said magnet structures are held thereby against sidewise movement, said holders having magnetic portions mounted adjacent the opposite sides thereof bridging the air gaps in said magnet structures to position and restrain said holders between said magnet structures in fore and aft directions, said magnetic portions having induced therein adjacent like poles effecting vertical magnetic repulsion between adjacent holders to lessen the frictional resistance to relative sliding movement therebetween.

ERRATUM
For Class 40-76 see:
Patent No. 3,313,131

3,313,056
ILLUMINATED SIGN
Britt W. Williams, 1450 Oakhurst Ave. 32208, and Lemuel W. Williams, 4037 Nolan St. 32205, both of Jacksonville, Fla.
Filed Nov. 13, 1964, Ser. No. 410,884
13 Claims. (Cl. 40-77)

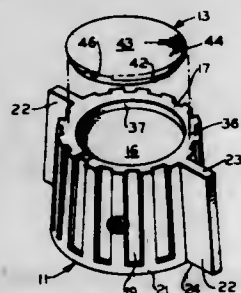
1. An illuminated sign comprising an upright transparent tubular member, a rotor in said tubular member journaled for rotation about an upright axis generally

coinciding with the upright center axis of said tubular member, said tubular member including means defining an upstanding slot in one wall portion thereof horizontally aligned with said rotor, and means carried by said rotor for drawing a horizontally elongated flexible sheet



through said slot, said means further adapted to secure one end of said horizontally elongated flexible sheet on said rotor for winding said sheet on said rotor and also means adapted to secure the other end of said sheet to said rotor.

3,313,057
COLOR CODE CAPS FOR KNOBS
John B. Luddy, San Mateo, Calif., assignor to
Lloyd A. Griffith, Burlingame, Calif.
Filed Oct. 26, 1964, Ser. No. 406,497
5 Claims. (Cl. 40-331)

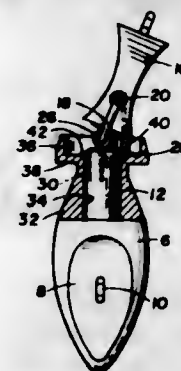


1. In combination, a knob for electronic equipment formed with a substantially planar top and an upstanding peripheral rim having an inner, substantially cylindrical wall, and a coding cap having a disc of lesser diameter than said rim, the underside of the periphery of said cap disc resting upon the top of said rim, a depending annular, flexible, cylindrical skirt, and a plurality of detents on the exterior of said skirt, said detents of short arcuate length and bearing tightly against the inside of said rim, the underside of said cap disc formed with cut-away portions outside said skirt to facilitate prying said cap off said knob.

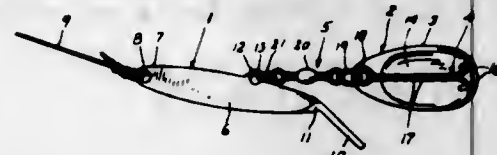
3,313,058
FISHING LURE
Carl C. Fuerst, 29 Avalon Drive,
Rochester, N.Y. 14618
Filed Nov. 18, 1964, Ser. No. 412,011
7 Claims. (Cl. 43-42.02)

1. In a fishing lure, the combination comprising:
(a) a body portion having attachment means to which a fishing line may be secured;
(b) a tail portion pivotally secured to said body portion and movable between a normal first position for directing said lure in one direction, and a second position for directing said lure in a different direction;
(c) resilient means interposed between said body and tail portions for urging said tail portion into its normal first position; and

(d) an actuating element slidably mounted on said body portion and interposed between said body and tail portions with a first surface portion of said element in engagement with said tail portion, said element further having a second surface portion responsive to water pressure acting thereon when said lure is suddenly pulled by said fishing line for pivotally moving said tail portion to said second position against the bias of said resilient means.

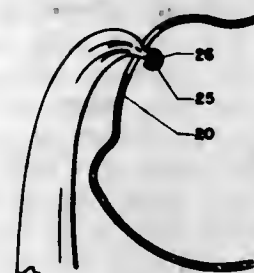


3,313,059
FISH LURE
Steve A. Jurek, 18766 Williams St.,
Lansing, Ill. 60438
Filed Nov. 19, 1964, Ser. No. 412,484
9 Claims. (Cl. 43-42.16)



1. A lure of the character described comprising an elongate substantially flat body simulating a minnow, said body having a head provided with means facilitating attachment of a line thereto and also having a planar tail portion, an assembly comprising a spinner and a hook structure, and means flexibly connecting said assembly to an upper portion of said body at a location forwardly of said tail portion whereby said assembly may be caused to trail above said tail portion when the lure is pulled through water.

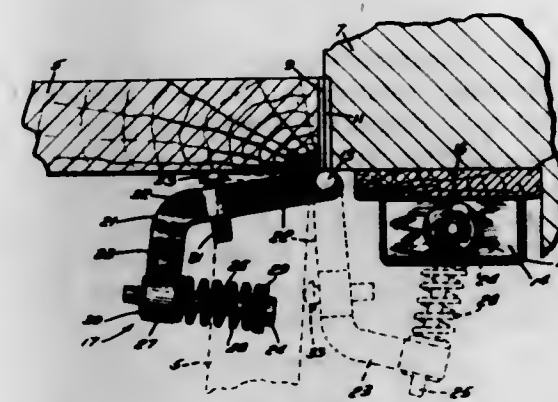
3,313,060
TOY WITH ATTACHABLE EARS
Edward L. Mobley, Jr., 374 Woodland Ave.,
Wadsworth, Ohio 44281
Continuation of application Ser. No. 209,958, July 16, 1962. This application July 30, 1965, Ser. No. 478,026
1 Claim. (Cl. 46-164)



A toy of the character described, comprising:
(A) a hollow head of resilient elastomeric material devoid of interior filling having opposed access openings in the ear region thereof that communicate between the interior and exterior surfaces of said head;

(B) a pair of elongate ears of flexible fabric sheet material each having one end inserted through said opening and being received interiorly of said head;
(C) attachment means
(1) connected to the inserted end of each said ear;
(D) said interior wall surface of said head contacting at least one portion of said inserted ear and attachment means, whereby withdrawal thereof through said opening is restricted;
(E) said ear material being gathered at the area of passage through said openings and being enlarged exteriorly of said openings, whereby movement of said ears relatively of said openings is restricted;
(F) the stretchable walls of said openings reacting against said inserted ears and assisting in restricting movement thereof relatively of said openings.

3,313,061
DOOR ACTUATED DEODORIZER
Raymond E. Delec, Chicago, Ill.
(6100 Groves Point Road, Niles, Ill. 60448)
Filed Nov. 28, 1964, Ser. No. 412,716
4 Claims. (Cl. 49-70)

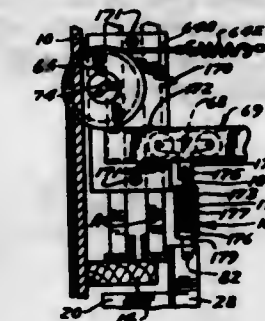


1. In an automatic door-actuated deodorant dispensing assembly:
a deodorant squeeze bottle supporting bracket mounted on an area at one side of a door hinge;
and a bottle squeezing device comprising a bracket having an arm mounted on the door hinge and backed against an area at the opposite side of the hinge, and a second arm projecting from the first arm; said second arm carrying a thrust member which thrusts toward said first-mentioned area and is engageable with the squeeze bottle carried by the bracket when the door is opened to operate the bottle and dispense deodorant.

3,313,062
OVERHEAD DOOR AND RIGGING
Ralph L. Dugger, Rte. 1, Box 121,
Hopkins, Minn. 55343
Original application Dec. 21, 1960, Ser. No. 77,331, now Patent No. 3,184,804, dated May 25, 1965. Divided and this application Apr. 21, 1964, Ser. No. 361,519
4 Claims. (Cl. 49-300)

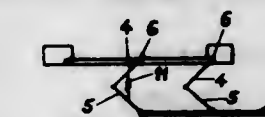
1. The combination with a building framing forming the span over a large door opening, a flat panel door closing said door opening, rigging for supporting and operating the door for moving the door by a combined transitory and rotary motion to and from a closed position wherein the door is substantially vertical in the door opening and an open position wherein the door is generally horizontal at the top of the door opening and partially protrudes therefrom including more than two spaced parallel tracks above the upper edge of the door, and extending into the building, said tracks

being fixedly attached to the building framing over the door opening, roller hangers in the tracks and spring connections between each of the roller hangers and the



upper edge of the door for supporting the door for equalizing the load on said tracks when the door is in its closed position.

3,313,063
VEHICLE COMPRISING A DOOR CONNECTED TO THE BODY BY LEVERS
Pierre Pafin, Boulogne, France, assignor to Compagnie d'Ingenieurs et Techniciens d'Etudes, Paris, France, a French company
Filed Aug. 17, 1964, Ser. No. 389,884
Claims priority, application France, Aug. 28, 1963, 945,077
3 Claims. (Cl. 49-249)

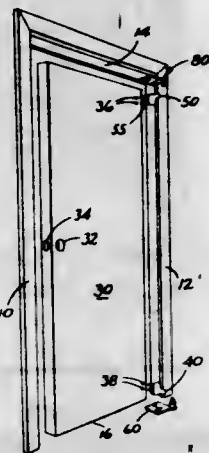


1. A vehicle having a body, a door opening and a door, hinge means for connecting said door to said body for movement of said door from closed to open position substantially parallel to the plane of the door comprising two parallel levers horizontally spaced in the door opening articulated about two substantially vertical axes on the body and on the door, respectively, each of said levers comprising two parts articulated together at adjacent ends about a third movable substantially vertical axis located between said two substantially vertical axes.

3,313,064
ADJUSTABLE SWINGING DOOR ASSEMBLY
Charles A. Kirby, Gig Harbor, Wash., assignor to Allied Building Components, Inc., Tacoma, Wash., a corporation of Washington
Filed Aug. 16, 1965, Ser. No. 479,782
2 Claims. (Cl. 49-300)

1. An adjustable swinging door assembly for mounting in a doorway including a header, two side jambs and a sill, the assembly comprising:
(a) a door,
(b) first pivot pin socket means and mounting means for mounting the same on the inner lower corner of the door face,
(c) second pivot pin socket means and mounting means for mounting the same on the inner, upper corner of the door face,
(d) first pivot pin means and means for mounting it on the sill adjacent the door jamb, the pivot pin means being dimensioned for insertion in the first pivot pin socket means,
(e) second pivot pin means and mounting means for mounting the same on the header adjacent the door jamb, the pivot pin means being dimensioned for insertion in the second pivot pin socket means,
(f) the first and second pivot pin means comprising identical mounting plates,

- (g) securing means for securing the plates to the adjacent structural members in reverse relationship to each other and axially aligned pins extending toward each other, one from each of the plates,
 (h) the plates being provided with outwardly projecting pin-mounting extensions, each formed with a transverse threaded opening.



- (i) the lower pivot pin means including a set member having an inner section threaded into the opening of its mounting plate and an outer section having an internally threaded bore, and a pivot pin having a threaded inner end received adjustably in said bore,
 (j) the pivot pin having secured thereto intermediate its ends an adjustment nut located for bearing against the associated socket, thereby vertically locating the door.

3,313,065 CABINET DOOR

Raymond C. Sandin, Wisnetka, Ill., assignor to General Electric Company, a corporation of New York
 Filed June 14, 1965, Ser. No. 463,830
 2 Claims. (Cl. 49-460)



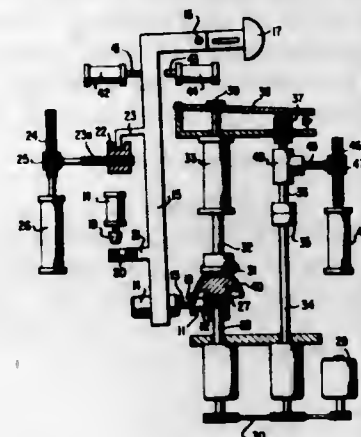
1. A cabinet door comprising:
 (a) inner and outer walls secured together in spaced relation;
 (b) a handle secured to said outer wall substantially adjacent a first side edge thereof;
 (c) a first combination decorative and retaining strip secured to said outer wall and extending slightly above the top and below the bottom edges of said door adjacent said handle on the side thereof removed from said first side edge;
 (d) said first strip being configured to retain one edge of a panel against said outer wall;
 (e) a second combination decorative and retaining strip removably secured to said door adjacent the second side edge thereof;
 (f) third and fourth decorative retaining strips removably secured to said door adjacent the top and bottom edges of said door; said third and fourth strips, respectively, being formed to provide a smooth junction with said first strip at the top and bottom of said door;

- (g) said strips being cooperatively effective to frame and retain a rectangular panel secured against said outer wall, removal of said second strip permitting removal and insertion of a panel.

3,313,066

EDGE FORM GRINDING

Bela O. Kalocsi and Robert F. Wrench, Belle Vernon, Pa., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
 Filed May 11, 1964, Ser. No. 366,261
 3 Claims. (Cl. 51-283)



1. A process for removing the parting lines from a workpiece comprising: rotating an abrasive element about a longitudinal axis, rotating a workpiece about an axis of revolution, engaging an annular surface of said rotating workpiece with a peripheral face of said abrasive element to form a planar annular surface, producing relative movement between a radial face of said rotating abrasive element and said rotating workpiece to engage and form a filleted surface on said workpiece.

3,313,067

PROCESS FOR DEFLASHING ARTICLES

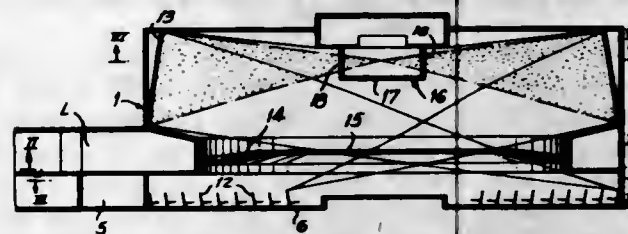
Donald T. Smith, Newtown, Conn., and Francisco A. Cuatara, La Riviera, Puerto Rico, assignors to General Electric Company, a corporation of New York
 No Drawing. Filed Oct. 20, 1964, Ser. No. 495,235
 4 Claims. (Cl. 51-320)

1. A process for deflashing solid formed parts which comprises propelling discrete particles of a polycarbonate resin having mean diameters ranging from about 25 mils to about 200 mils at the parts at a velocity of at least 50 feet per second for a period of time sufficient to remove the flash from the surfaces of the parts.

3,313,068

AUDITORIUM WITH A RING OF SEATS AND A PLURALITY OF SCREENS

Emilio Guedes Pinto, Rua Greenhalg, 288, Santos, Sao Paulo, Brazil
 Filed Apr. 23, 1965, Ser. No. 450,464
 7 Claims. (Cl. 52-9)



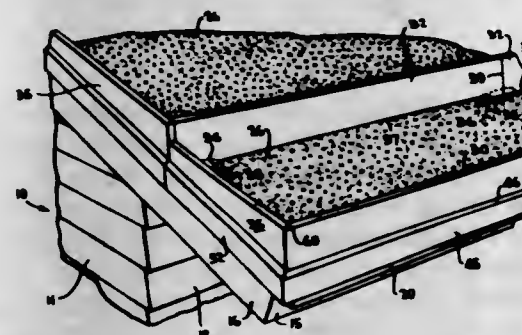
1. An auditorium comprising a ring of seats facing inwardly, a plurality of spaced screens annularly arranged around the outside of the ring, the ring being divided into a plurality of sectors, one for each screen, each of the

seats in each sector being individually angularly oriented along a line perpendicular to an arc drawn from the center of the associated screen through such seat, said screens being positioned at a level above the seats, a circular baffle above said seats and extending parallel thereto at a level between the screens and the seats, said baffle having a central opening, said opening having a diameter in relation to the size of the screen and the relative position of the ring of seats such that the baffle constitutes a mask which substantially obscures for all spectators in any sector all screens other than the one associated with such sector, said opening when viewed from said seats defining an ellipse with a minor axis corresponding to the viewed height of the screen and a major axis corresponding to the viewed width of the screen, and means centrally located with respect to said screens to project images on said screens which will be visible to spectators in the seats in the respective associated sectors.

3,313,069

ROOF CONSTRUCTION WITH TILE DRAINAGE MEANS THEREFOR

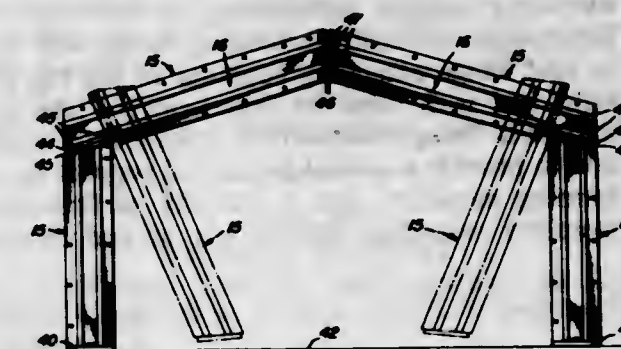
Norman G. Jackson, 2657 NW. 19th St., Fort Lauderdale, Fla. 33311
 Filed Sept. 3, 1964, Ser. No. 394,292
 6 Claims. (Cl. 52-24)



1. A building roof construction sloping downwardly and forwardly toward the eaves and comprising a basic water-resistant covering layer which in itself is of a character affording normal protection against the elements but which may be of unsatisfactory appearance esthetically; and, positioned thereon, additional roof covering structure comprising a plurality of substantially horizontally disposed panels extending in transverse directions intersecting the direction of slope of the roof, each panel comprising a wall of substantial vertical dimensions and said panels being spaced apart along the slope of the roof leaving uncovered intervening areas of said basic covering layer; the spacing between successive panels being such that, taking into consideration the angle of slope of the roof and the height of the panels, the front faces of said panels will conceal the intervening areas of the uncovered basic layer from view at normal eye level from in front of the building; each of said panels comprising a plurality of block units disposed end-to-end and each provided with short narrow supporting feet at each end providing a slightly raised intermediate span, providing a narrow slit between the bottom surface of the block unit and the basic roof covering layer and extending horizontally for the major portion of the lateral extent of the span for water drainage, said end supporting feet resting directly upon said basic layer, and beds of mortar applied within portions of said narrow slit to secure the block to the basic layer, said slit thus serving the dual purpose of providing for drainage and for the anchoring of the block with the feet making direct contact with the basic layer.

3,313,070 COMPOSITE STRUCTURAL PILLAR AND RAFTER BEAMS WITH NAILING STRIPS

Harry Klefson, 1290 Douglas Drive, Minneapolis, Minn. 55422
 Filed Sept. 30, 1964, Ser. No. 400,348
 7 Claims. (Cl. 52-93)



4. In a wall and roof span for a building structure, the combination of
 (A) two laterally-opposed upright wall pillars connected by
 (B) two angularly related rafters forming the roof span,
 (C) each of said pillars and rafters being a beam-like construction element comprising,
 (a) two opposed heavy gauge metal members of C shape in cross section and each having a flat web portion with right angular edge flanges to provide a channel with a restricted opening on the side of the member opposite the web portion, the channels being adapted to receive fasteners for the connection of braces,
 (b) two opposed light gauge sheet metal channel members of U shape in cross section and each having a flat web portion and parallel edge flanges,
 (c) the U-shaped members being substantially co-extensive in length with said C-shaped members and being welded to said C-shaped members along the edge flanges of the latter to fix them with their web portions in spaced relation and provide an axial passageway through said beam-like element, and
 (d) nailing strips substantially filling each of said U-shaped members for the attachment thereto of interior and exterior wall and roof coverings,
 (D) apertured contacting metal plates welded to the adjoining ends of said elements forming the two rafters and bolts in the apertures of said plates to fix the rafters in their angularly related positions, and
 (E) means fastening the outer ends of said two rafters to the upper ends of said two pillars, each of said means comprising a pair of apertured contacting metal plates and bolts in the apertures of the latter, one plate of each pair being welded to the top of the element forming one of said pillars and the other plate being welded to the outer end of the element forming the associated rafter.

3,313,071

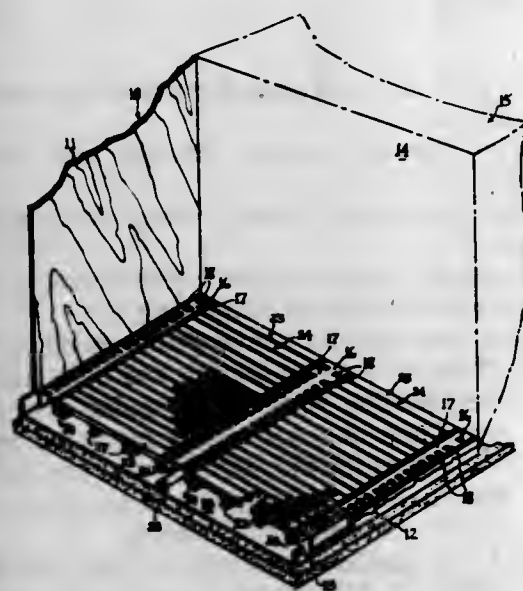
FLOOR RACKS

Charles R. Johnston, Chicago, and Harry G. Robertson, Blue Island, Ill., assignors, by mesne assignments, to Charles Richard Johnston, Palatine, Ill.
 Filed Apr. 20, 1964, Ser. No. 361,047
 2 Claims. (Cl. 52-177)

1. In floor racks for refrigerated storage compartments, the combination of
 (a) a plurality of elongated spacer rails carried by the floor of the compartment so positioned that there

is a rail adjacent each of the side walls of the compartment and a center rail substantially dividing the floor into equal sections,

- (b) floor racks for each section comprising a plurality of elongated stringers spaced between and extending parallel to said rails with certain of said stringers adjacent said rails formed to provide a horizontally extending support terminating at one edge into a longitudinal vertically extending flange with the top of said flange extending coplanar to the top of said rails, and with other of said stringers intermediate said rails being substantially I-shaped in cross section to provide a medial horizontal support for floor-forming members, and a plurality of floor-forming members extending transversely of and throughout



the length of said stringers in a spaced relation with respect to each other, said members mounted upon said support provided by said other of said stringers, and with their opposite ends mounted upon and in abutting and in horizontal alignment with the vertical flanges of said certain of said stringers,

- (c) means beneath said racks and said rails for insulating said racks from the floor and walls of the storage compartment,
(d) and hinge means connected to one of said certain of said stringers in the plane of the floor forming members, connecting one of said floor racks to said center rail whereby said floor rack may be pivoted into a position where it will lie in facial abutment upon said center rail.

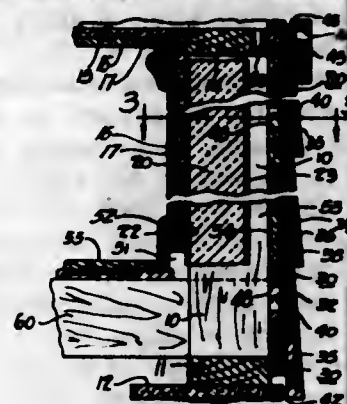
3,313,072

VENTILATED WALL CONSTRUCTION

Dewin E. Coo, Lakewood, Ohio, assignor to Coo-Thompson & Company, Cleveland, Ohio, a partnership composed of Dewin E. Coo and Joseph H. Thompson
Filed Apr. 5, 1956, Ser. No. 576,342
9 Claims. (Cl. 52-303)

6. A wall construction comprising spaced studs having interior surfacing material secured to the inner sides thereof,
a relatively rigid sheathing having plain flat backing surfaces attached to the outer aligned surfaces of said studs to define a hollow wall structure,
the outer face of said sheathing having a plurality of continuous ribs,
exterior siding in direct contact with said ribs and secured to said studs,
said ribs forming continuous ventilating paths which are vented to outer atmosphere,

and said sheathing being provided with spaced apertures communicating with said hollow wall's interior

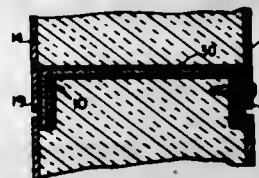


defined between said interior surfacing materials and said relatively rigid sheathing.

3,313,073

JOINT ASSEMBLIES FOR INSULATION PANELS

Howard G. Mathews, Levittown, N.J., assignor to Foam Products Corporation, Thomasville, Ga.
Filed Sept. 24, 1962, Ser. No. 225,554
6 Claims. (Cl. 52-309)

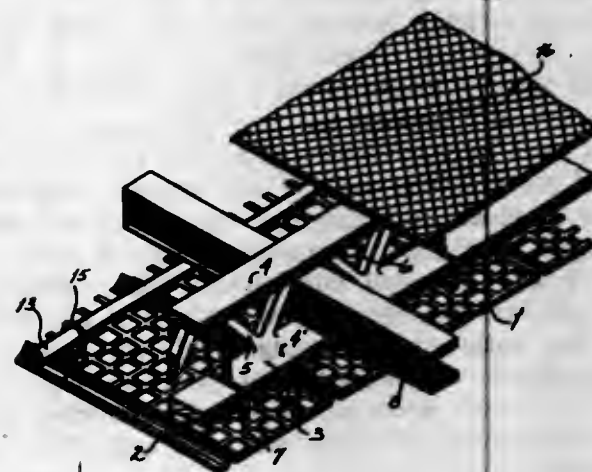


2. An insulation panel comprising a rigid polyurethane foam core, a pair of covers substantially enclosing said core, said core having an edge extending outwardly slightly beyond said covers, a reinforcing channel member having a web portion positioned against said edge of said core and having flange portions extending inwardly from said edge, said reinforcing channel member including an essentially U-shaped fibre-glass member and steel reinforcing strips positioned at the facing surfaces of said flange portions of said channel member, and said covers at the opposite edge of said panel projecting outwardly beyond said core by a distance essentially corresponding to the projection of said edge of said core plus the thickness of said web portion.

3,313,074

ROOF AND UPPER FLOOR CONSTRUCTION

Joseph D. Hambley, Rio Piedras, Puerto Rico, assignor of thirty percent to David M. Wilson, Harrington, Tex.
Filed July 22, 1964, Ser. No. 364,350
3 Claims. (Cl. 52-410)



3. A roof and upper floors construction adapted for spanning the distance between adjacent wall members comprising a rib bath, a plurality of reinforcing studs

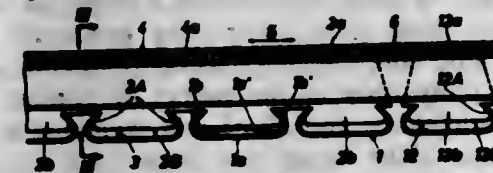
disposed on said lath and extending longitudinally thereof, said studs having spaced apart openings, a plurality of transverse reinforcing members spaced apart longitudinally of said lath and presented in axial normal relationship to said studs, said transverse reinforcing members extending through the openings in said studs for providing lateral stability for said studs, reinforcing rods secured upon said lath in axial parallel relationship to said studs, said reinforcing rods being in underlying relationship to said transverse reinforcing members, and concrete embedding said lath, said studs and said transverse reinforcing members to provide a monolithic slab.

3,313,075

COVERING FOR SOUNDPROOFED WALLS AND THE LIKE

Edward Buchenauer, Edingen, Baden, Germany, assignor to Grunow & Hartman AG, Ludwigshafen (Rhine), Germany
Filed Feb. 14, 1964, Ser. No. 345,031
Claims priority, application Germany, Mar. 12, 1963, G 27,562

9 Claims. (Cl. 52-489)

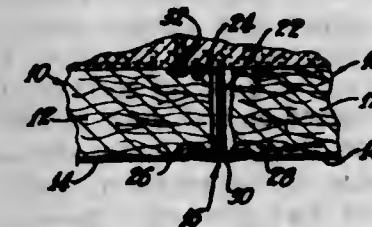


1. A covering for side walls, ceilings and similar wall structures, comprising guide means including at least one pair of rails arranged to be secured to a wall structure and defining between themselves an elongated channel; a flat strip-shaped carrier having a portion slidably received in said channel and at least one projection rigid with said portion and located externally of said channel, said projection having two undercut side faces and a front face facing away from said channel; and an elongated panel of substantially C-shaped cross section, said panel receiving said projection and having a pair of marginal sections and a normally flat elastically deformable central section which is at least slightly spaced from said front face, said marginal sections clampingly engaging said side faces and being movable away from the respective side faces in response to deformation of said central section in a direction toward said front face.

3,313,076

SUSPENSION SYSTEM FOR CEILINGS

Donald MacDonald, San Jose, Calif., assignor to Owens-Corning Fiberglass Corporation, a corporation of Delaware
Filed Dec. 19, 1963, Ser. No. 331,699
2 Claims. (Cl. 52-496)



1. In a supporting system for ceilings comprised of a plurality of compressible fibrous sections, a grid-like network of plastic material strips, said strips having a flexible central elongate vertically extending web portion having

an upper and lower marginal edge; an upper planar portion for engagement with a supporting surface and extending horizontally in one direction from the upper marginal edge of said web portion; and a lower shelf-like portion extending in opposite directions from the lower marginal edge of said web portion in a plane substantially parallel to the plane of said flange portion, said compressible fiber sections supported by said lower shelf-like portions, the spacing between said upper planar flange and respective portion of said shelf-like member is less than the thickness of the fibrous sections whereby a marginal edge of the fibrous sections is compressed and tightly retained.

3,313,077

MIRROR SUPPORT

Lloyd T. Fuqua, Fortville, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 16, 1963, Ser. No. 273,519
4 Claims. (Cl. 52-619)



1. A support for supporting a mirror element on a base, comprising a body portion having a flat bearing surface formed on one side thereof, the opposite side of said body portion having connecting means formed therewith that are adapted to be mounted to said base for universally supporting said body portion, a rim conforming in configuration to said mirror element and having a first edge and a second edge respectively disposed in planes substantially parallel to said flat bearing surface, a pair of flexible arms radially extending from said body portion and being connected to said rim adjacent said first edge, a radially inwardly extending annular flange formed on said rim adjacent said second edge and serving as a stop means, said flexible arms being so located on the rim whereby the latter can be tilted with respect to said body portion about an axis substantially parallel to said planes to permit said mirror element to be inserted between the bearing surface and the flange.

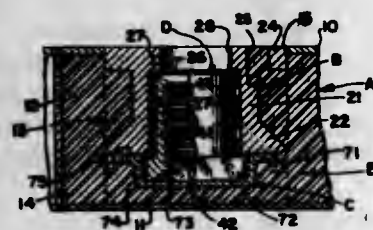
3,313,078

MOLDED-IN INSERT WITH FLOATING NUT

Frederick W. Bahr, 5191 S. Bradford,
Piscataway, N.J. 08854
Filed Mar. 30, 1964, Ser. No. 353,009
5 Claims. (Cl. 52-617)

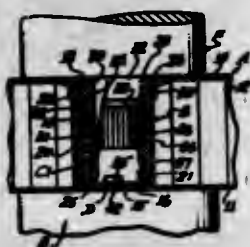
1. For installation in a lightweight sandwich panel having spaced skin sheets joined to opposite sides of a lightweight core in which there is provided a hole extending into said core from an opening in one of said skin sheets, a fastener insert comprising: a shell including a head proportioned to be fitted in said skin sheet opening and having a central aperture to receive a bolt, a tubular body projecting axially from said head, and a head defining an open inner end of said tubular body, said head having an axially-projecting skirt defining a receptacle, a cap of sheet

material closing said open inner end of said tubular body, said cap having a peripheral flange mounted within said receptacle and having a lateral wall defining a non-circular socket; and a nut having an internally threaded



tubular body received within said shell and a non-circular head loosely received in and mating with said socket to limit rotation of said nut relative to said shell while permitting limited self-aligning movements thereof during installation of a bolt.

3,313,079
SANDWICH PANEL SPACER WITH TORQUE RESISTANT MECHANICAL ANCHORAGE
Charles S. Phelan, Tustin, Calif., assignor to Frederick W. Robe, Placentia, Calif.
Filed Mar. 29, 1965, Ser. No. 443,287
18 Claims. (Cl. 52-617)



1. A spacer type insert fastener for installation in a lightweight sandwich panel embodying spaced skins attached to opposite sides of a low-density core, having a hole extending through one of said skins and through said core, and having in the other skin an opening coaxial with and of smaller diameter than said hole, defined by an annular portion of said other skin constituting a bottom for said hole, said fastener comprising, in combination: a shell including at one end a tubular body having an end provided with inwardly projecting means defining an abutment seat, and including at its other end a thin compression-deformable sleeve having an open end provided with an outwardly projecting annular flange head for seating against said one skin; a plug received in said shell, said plug including a skirt defining a nut receptacle and having an open end abutting said seat and provided with a key notch, and an opposite end initially located below said head within said open end of the shell; and a nut disposed within said skirt and having a radially projecting key loosely retained in said notch between said seat and the abutting end of said plug, thereby mounting said nut in a floating captive condition; said shell being receivable in said hole with said end of the tubular body abutted against said hole bottom and with the sleeve projecting beyond said one skin so as to provide for the formation of an annular bulbed secondary head in said sleeve beneath said one skin and operable to secure the same against said flange head by compression of said shell axially until it is reduced to a length substantially equal to the thickness of said panel, support being transmitted from a supporting surface directly through said other skin to the abutting end of said shell during such compression.

3,313,080
SANDWICH STRUCTURE WITH NOVEL CORE ELEMENT

Lucien-Victor Gwinn, Ville-d'Avray, France, assignor to Marc Wood Societe Anonyme Pour la Promotion, des Echanges Techniques Internationaux, a company of France

Filed Feb. 6, 1963, Ser. No. 254,456
Claims priority, application France, Feb. 7, 1962, 887,272, Patent 1,349,879
18 Claims. (Cl. 52-618)

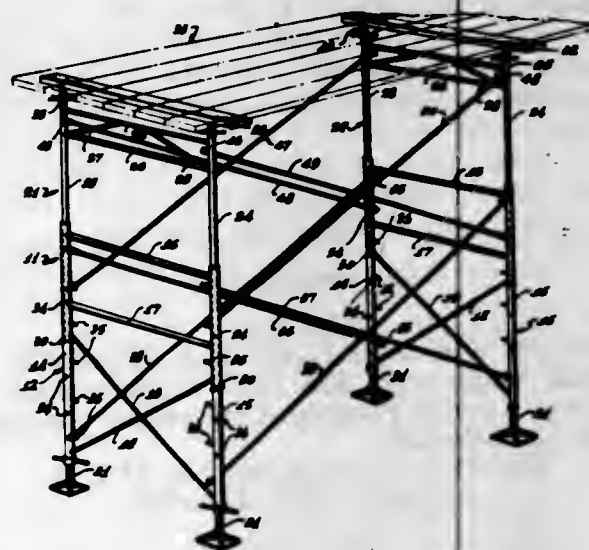


1. A sandwich structure comprising a core element and two outer skins sandwiched about and bonded to said core element; the surface of said core element being non-developable onto a plane and being constituted by a series of ruled surface segments which are angularly attached to one another to form undulations with each undulation being formed of two ruled surface segments in substantially V-shaped relation to one another; the vertex of each of said V's forming a ridge on said core element; said outer skins comprising geometric limiting surfaces for said core element and being in contact therewith substantially only at the points of contact of said ridges with said skins; and all of said segments in contact with said outer skins along two ridges being capable of being generated by a straight line intersecting said two ridges.

3,313,081
MULTIPLE BRACE POINT EXTENDABLE SHORE

Robert K. Squire, Los Angeles, Calif., assignor to Superior Scaffold Co., Torrance, Calif., a corporation of California

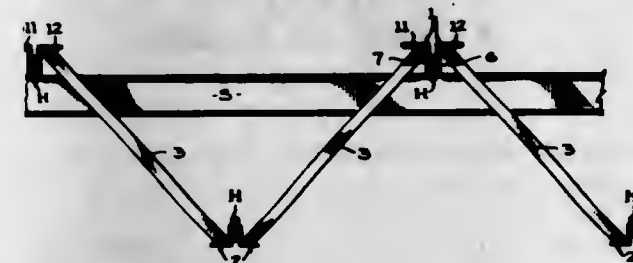
Filed Apr. 29, 1964, Ser. No. 349,987
8 Claims. (Cl. 52-645)



1. An extendable shoring scaffold comprising: a pair of horizontally spaced base frames; cross bracing elements interconnecting said base frames to form a rigid, self-supporting structure; a pair of horizontally spaced extension frames mounted on and above said base frames in telescoping relation therewith; means for adjusting the amount of extension of said extension frames above said base frames in fixed steps; brace attachment pins integrally secured to said extension frames adjacent the tops thereof; a plurality of brace attachment pins integrally mounted in vertically spaced relation corresponding to said fixed steps along the height of said base frames; and vertically diagonal cross braces of standard effective length interconnecting the brace attachment pins adjacent the top of

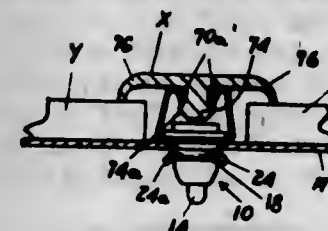
said extension frames with the appropriate brace attachment pins on the horizontally opposite base frames, whereby said extension frames may be rigidified by the same standard length cross braces attached adjacent their tops regardless of varied amounts of extension of said extension frames.

3,313,082
TRUSS SYSTEM AND METHOD OF ERECTING
Carl H. Seaberg, Youngstown, Ohio, and Robert M. Dodds, Pittsburgh, Pa., assignors to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey
Filed May 4, 1964, Ser. No. 364,733
11 Claims. (Cl. 52-646)



1. A metallic structural assembly for suspension between a plurality of horizontal transversely disposed beams comprising: a plurality of rigid truss sub-assemblies, each of said sub-assemblies including, a parallel upper and lower chord disposed in offset vertical planes, said upper chord having an uppermost horizontal surface, a web rigidly connecting said upper and lower chords; means connecting together in juxtaposed relationship a pair of upper chords of two of said sub-assemblies to provide an inverted V-shaped assembly, whereby said upper chords are supported at their extremities upon a pair of said horizontal beams and said horizontal surfaces of said pair of upper chords are retained in one horizontal plane.

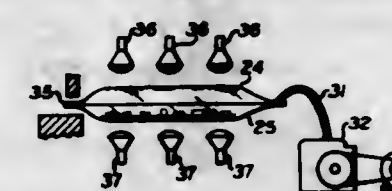
3,313,083
DEFORMABLE PLASTIC FASTENER
Lawrence H. Flora, North Olmsted, Ohio, assignor to Timmerman Products, Inc., Cleveland, Ohio, a corporation of Ohio
Filed May 29, 1963, Ser. No. 284,223
10 Claims. (Cl. 52-717)



1. A deformable plastic fastener device adapted for insertion through a polygonal opening in a supporting member, said device comprising, a head portion adapted to be disposed adjacent one side of said supporting member, said head portion having a bore adapted to receive a threaded member therethrough, a body portion disposed outwardly of said head portion having a bore disposed in axial alignment with the bore in said head portion and adapted for self-threading coaction with a threaded member inserted through the bore therein, said body portion having a polygonal transverse cross-section, a pair of laterally spaced, oppositely disposed leg portions connected at one end adjacent said head portion and at the other end adjacent said body portion, said body portion having a pair of oppositely disposed tapered cam surfaces, a pair of laterally spaced, resilient tabs extending downwardly from said head portion intermediate said leg portions, said tabs being disposed on opposite sides

of the said body portion and being disposed generally at right angles to the general plane of the respective legs, said tabs being connected at one end adjacent said head portion and adapted for coacting engagement on said cam surfaces, whereby said body portion is adapted to be progressively drawn toward said head portion to cause axial collapsing deformation of said leg portions and outward movement of said tabs into engagement with the other side of supporting member upon turning movement of said threaded member through the bore in said body portion.

3,313,084
METHOD FOR ENCAPSULATION
Benjamin G. Forman, Monroeville, N.Y., assignor to Columbia Technical Corporation, Woodside, N.Y.
Filed Mar. 9, 1964, Ser. No. 350,333
1 Claim. (Cl. 53-22)



The method of encapsulating electric circuit boards, electronic assemblies, and similar articles of generally planar or non-planar configuration, said boards having a plurality of electronic devices mounted upon at least one planar surface thereof, comprising the steps of:

- providing a thermoplastic bag of material compatible with said first-mentioned plastic material, said bag having a configuration corresponding generally to that of said board, and having at least one free edge defining an opening, said bag having tubing means extending through said bag;
- coating the exposed surfaces of said board and devices with a thermoplastic material, said coating material being compatible and heat-sealable with the thermoplastic material comprising said bag;
- inserting said circuit board through the opening defined by said free edge to be completely disposed within said bag;
- heating the remaining material comprising said bag to a plastic state;
- exhausting the atmosphere within said bag, whereby atmospheric pressure will cause the material of said bag to flow about said electronic elements and contact the coated surfaces of said boards to form and heat-seal a vacuum enclosure; and
- severing those portions of said bag extending outwardly of said board.

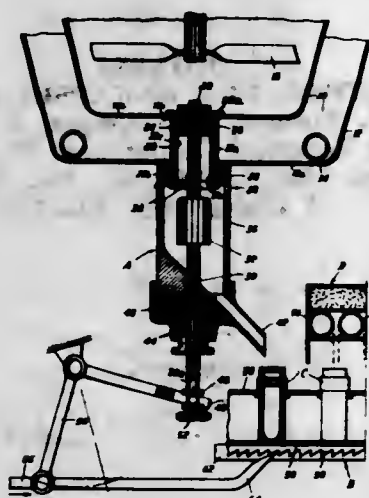
3,313,085
APPARATUS FOR FILLING COSMETIC ARTICLES

Giulio Giuseppe Niclas, Milan, Italy, assignor to Ejectoret S.A., Geneva, Switzerland
Filed June 3, 1963, Ser. No. 284,894
Claims priority, application Italy, June 12, 1962, 24,354/62

10 Claims. (Cl. 53-127)

1. Apparatus for the handling of molds for receiving a molten mass, particularly for the production of cosmetic articles and the like, comprising support means for carrying the molds to be filled with the molten mass, guide means for displaceably guiding said support means past individual treating stations in a predetermined path of travel, a dosing device for filling each of the molds with a dosed quantity of molten mass, a cooling device for solidifying the molten mass contained in the molds, said pouring device and cooling device being successively

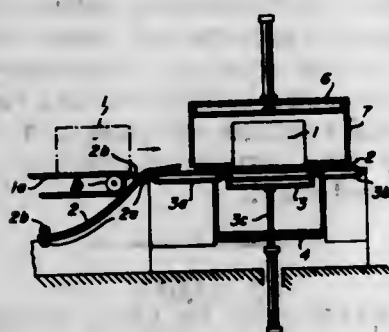
arranged along said predetermined path of travel for the molds, said dosing device including a hollow, open-ended dosing cylinder provided with a first opening at one end thereof for the infed of molten mass and a second opening at the other end thereof for the outfeed of the molten mass, a respective sealing member cooperating with each first and second opening mounted to enter its associated opening and operating in opposed sealing relation whereby when one of the aforementioned openings is closed



the other is rendered unobstructed, means for mounting both of said sealing members for relative displacement to selectively vary the distance between said sealing members in order to control the degree of penetration of the associated sealing member into said second opening for the outfeed of the molten mass, to thereby control the amount of molten mass which can fill said dosing cylinder through selective regulation of its volume, and common actuating means for actuating both of said sealing members.

3,313,086

WRAPPING PILES OF SHEET MATERIAL
 Bror Gustav Erland Johansson, Sandbyberg, Sweden, assignor to Ab Nordstroms Limbor, Stockholm, Sweden
 Filed Feb. 14, 1964, Ser. No. 344,962
 5 Claims. (Cl. 53-228)

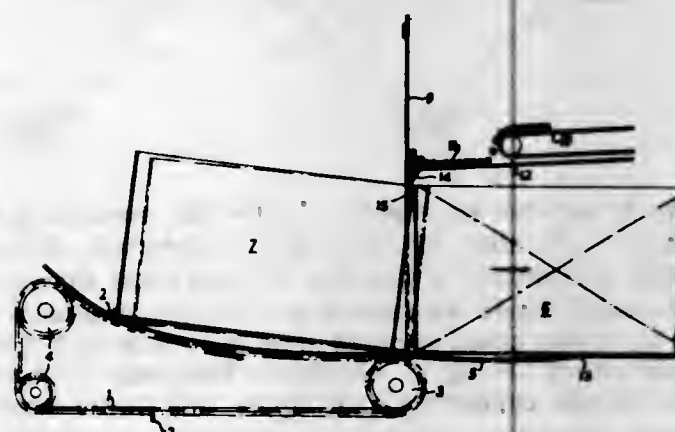


1. Apparatus for folding wrapping-sheets about piled sheet-material comprising support means for supporting a pile of sheet-material, means for positioning a first wrapping-sheet in contact with a horizontal face of said pile with at least two opposed edge regions of said first wrapping-sheet extending beyond said pile, first folding means in vertical alignment with said supporting means, and means for effecting vertical movement of said support means relatively to said first folding means to fold said regions about the adjacent vertical sides of the pile, means for positioning a second wrapping-sheet in contact with the other horizontal base of said pile with at least two opposed edge regions of said second wrapping-sheet extending beyond said pile, second folding means in vertical

alignment with said support means, and means for effecting vertical movement to said support means relatively to said second folding means to fold said regions against the adjacent vertical surfaces of the pile into overlapping relationship with the corresponding edge regions of said first wrapping-sheet.

3,313,087 APPARATUS FOR FILLING BOXES, TRAYS OR THE LIKE

Roydon Henry Gurney Reine, London, England, assignor to The Molins Organisation Limited
 Filed Jan. 23, 1964, Ser. No. 339,640
 Claims priority, application Great Britain, Jan. 30, 1963, 3,838/63
 3 Claims. (Cl. 53-236)



1. An apparatus for filling a container with articles so as to prevent bunching of the articles, comprising: an endless container conveyor for moving a container, a point along said container conveyor constituting a loading station, said container conveyor including guide means for varying the attitude of a container moving thereon in the vicinity of said loading station, said guide means having a concave conveying surface, an article conveyor for delivering articles to a container on said container conveyor, the discharge of said article conveyor being located above said container conveyor at said loading station, a support member adjacent the discharge of said article conveyor and spaced therefrom for controlling the loading of articles into a container, said support member being movable along a path from an upper position clear of a container on said container conveyor and a lower position inside of a container on said container conveyor, and means cooperating with said article conveyor for controlling the flow of articles therefrom through said space to a container on said container conveyor.

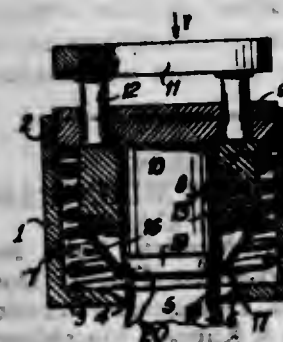
3,313,088

DEVICES FOR CRIMPING METAL CAPSULES ON GROOVED NECKS OF FLEXIBLE OR RIGID CONTAINERS

Pierre Jean Louis Chelle, Crestell, France, assignor to Etablissements Chelle, Alfortville, France
 Filed Dec. 23, 1964, Ser. No. 420,701
 Claims priority, application France, Jan. 8, 1964, 959,622, Patent 1,389,585
 5 Claims. (Cl. 53-354)

1. A device for crimping metal capsules on grooved container necks comprising, in combination, a cylindrical body the lower end of which has a circular opening therein of diameter greater than that of the container neck and the rim of which has a conical surface tapering outwardly from said body, a central cylindrical guide adjustably mounted within said body and having a flange opposite the lower end of said body, a hollow piston slidably mounted on said guide within said body, means for displacing said piston, a spring interposed between the

lower end of said body and said hollow piston for pressing the latter beneath the flange of said guide, a frusto-conical ring of flexible material the larger annular base of which is uninterrupted and is fixed on the lower part of said hollow piston while the remainder of said ring is divided by radial slits into several flexible tongues defining

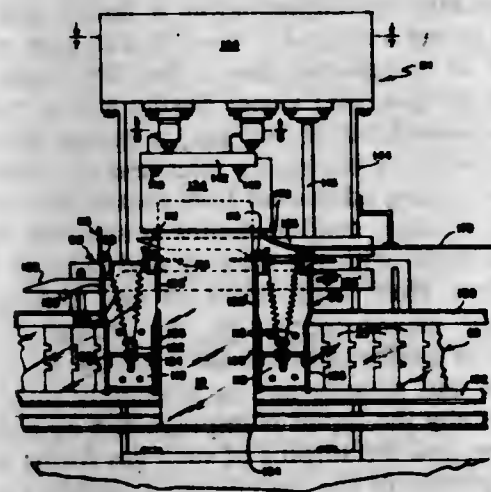


gaps between each other and which in their relaxed condition are spread apart and bear against said guide and which can be rendered mutually contiguous by the combined effect of the descending piston and of said conical surface, whereby to be level with and match the diameter of the crimping groove of said neck, which neck bears without force beneath said guide.

3,313,089

BAG CLOSING MACHINE

Stanley C. Rustad, Minneapolis, Henry E. Wiseman, St. Paul, and Robert D. Siverson and Mark Hasten, Minneapolis, Minn., assignors to General Mills, Inc., a corporation of Delaware
 Filed Oct. 7, 1964, Ser. No. 402,223
 25 Claims. (Cl. 53-371)



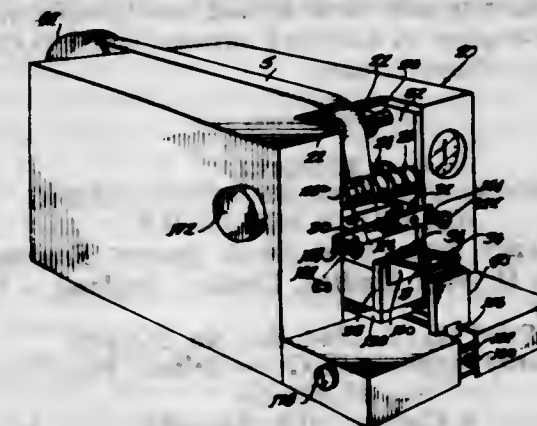
1. A machine to close filled bags, each of which has two side panels and two end panels, each of the upper portions of said side and end panels being a respective closure portion thereof, said machine being arranged to close each bag in a manner that each end panel closure portion has a lower triangular part thereof tucked in and down so that an upper part thereof is formed with a vertical reentrant fold, and the side panel closure portions are moved inwardly so that lower parts thereof are folded in and down, and upper parts thereof are moved against one another so as to enclose therebetween said upper end panel closure parts, said machine comprising:

- (a) chain conveyor means which travel in a continuous manner a predetermined course from an infed station forwardly through a folding station to a discharge station;
- (b) a plurality of pocket forming members secured to said chain conveyor means, proximate pairs of said pocket forming members defining therebetween respective bag engaging pockets;

- (c) sprocket means at said infed station to direct said chain conveyor means in a curved path, whereby proximate pairs of pocket forming members are spread angularly with respect to one another as they travel said curved path to define spread pockets;
- (d) infed means to move filled bags into said spread pockets at said infed station;
- (e) folding means to engage each bag at said folding station, said folding means comprising side closure members to engage the side panel closure portions, and end closure members to engage said end panel closure portions at the lower triangular parts thereof to fold said lower triangular parts inwardly and down;
- (f) said side closure members being movable inwardly and forwardly to engage and move with said side panels at said folding station, and
- (g) said end closure members being movable with said chain conveyor means so as to move with said bags while performing their folding function.

3,313,090 MACHINE FOR FORMING AND APPLYING BANDS

James E. Kerrigan, Arlington Heights, Ill., assignor to CPS Industries, Inc., a corporation of Delaware
 Filed Aug. 9, 1963, Ser. No. 301,068
 2 Claims. (Cl. 53-396)



1. A machine for cutting elastic bands from flexible, elongated, tubular stock and opening such bands comprising means for severing successive end portion of such tubular stock to form endless bands therefrom, means associated with said severing means for releasably gripping opposite side portions of each such band as it is severed from such stock and for moving such side portions apart, first and second sets of band receiving fingers mounted for movement together adjacent said gripping means to receive a band therearound from said gripping means, said first set of said fingers being supported on a reciprocable member, a pinion movable with said reciprocable member, a rack fixed in position to be engaged by said pinion during reciprocation of said reciprocable member, and a movable rack engaging said pinion and drive connected to said second set of fingers whereby said second set of fingers is reciprocated relative to said first set as said first set is reciprocated for spreading opposite sides of such bands from one another.

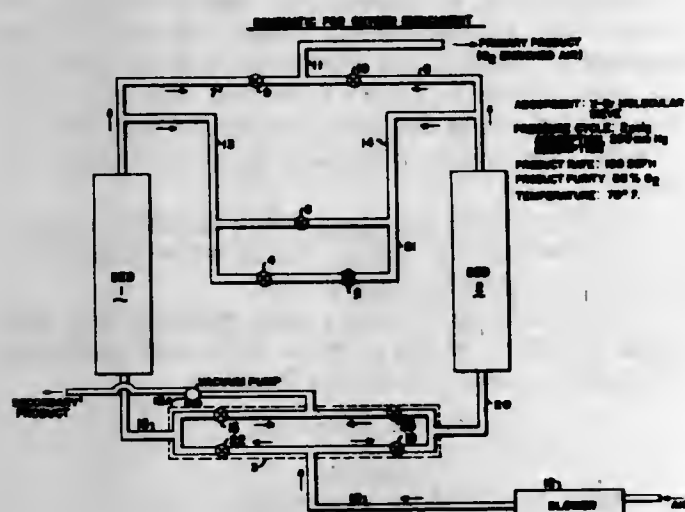
3,313,091

VACUUM CYCLE ADSORPTION

Norton H. Berlin, Matawan, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
 Filed Nov. 4, 1963, Ser. No. 321,272
 6 Claims. (Cl. 53-58)

1. A method of obtaining oxygen-enriched air which comprises introducing air into a zone filled with a type X molecular sieve having 30 to 100% of its normal sodium cation replaced by Sr⁺⁺ cation at a temperature of

-10° F. to 110° F. and a pressure which is at least atmospheric, thereby preferentially adsorbing nitrogen, removing from said zone as a primary effluent stream oxygen-enriched air containing 25 to 93% oxygen, therefore desorbing adsorbed nitrogen from said molecular sieve



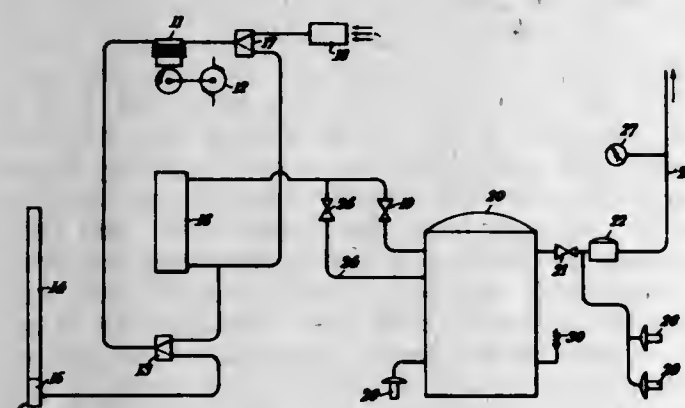
in said zone by depressuring the zone to a subatmospheric pressure in the range of 0.1 to 750 mm. of mercury absolute, and purging said sieve at said subatmospheric pressure for desorption of adsorbed nitrogen with a portion of said primary effluent stream.

3,313,092 APPARATUS FOR FRACTIONATING GASEOUS MIXTURES

Charles Henry Potts, West Ewell, Surrey, England, assignor to Dryvint Limited, London, England, a British company

Filed May 5, 1964, Ser. No. 365,060
Claims priority, application Great Britain, May 17, 1963,
19,806/63

4 Claims. (Cl. 55-163)



1. Apparatus for fractionating a gaseous mixture comprising an adsorbent element, means for supplying said gaseous mixture under pressure to said element to produce therefrom a primary product, means for storing a portion of the primary product so that the same is available for withdrawal through said element as a feedback portion, means for feeding back to said element a feedback portion of the primary product at a time when the supply of gaseous mixture to the element is cut off, and means for withdrawing said feedback portion of the primary product from the element under pressure less than atmospheric pressure, said means for supplying the said gaseous mixture under pressure to said element and the means for withdrawing the feedback portion of the

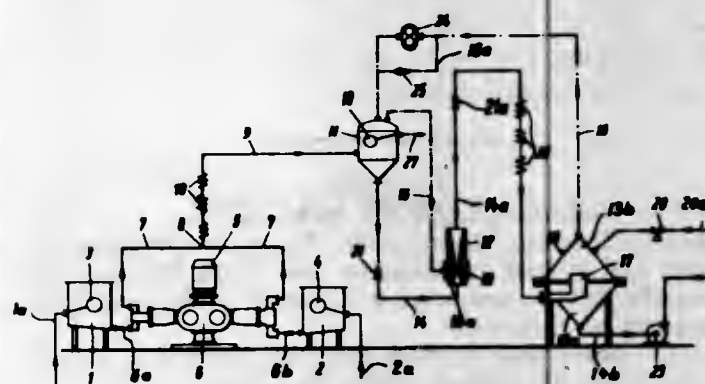
primary product from the element comprises a compressor having a pressure port for supplying said gaseous mixture under pressure and a suction port for producing a pressure less than atmospheric pressure, and a valve arrangement which in one condition connects the pressure port of the compressor to an inlet to the adsorbent element and the suction port of the compressor to atmosphere and in another condition connects the pressure port of the compressor to atmosphere and the suction port of the compressor to the inlet to the adsorbent element.

3,313,093 APPARATUS FOR MIXING LIQUIDS WITH GASES

Johann Guggenberger, Munich, Lotte Bankamp, Dortmund-Brackel, Karl-Helmut Finger, Dortmund-Oespel, and Reinhold Müller, Dortmund-Wickede, Germany, assignors to Holstein & Koppert Maschinenfabrik Phoenix, G.m.b.H., Dortmund, Germany

Filed June 30, 1964, Ser. No. 379,166

9 Claims. (Cl. 55-170)



1. An apparatus for impregnating a liquid with a gas, comprising a vessel arranged to receive a stream of liquid and a stream of compressed gas so that the liquid mixes with some of the gas, said vessel having a first outlet for liquid and a second outlet for gas; a nozzle defining a passage for the liquid having an inlet and an outlet, said nozzle further having additional inlet means communicating with said passage; conduit means connecting the first outlet of said vessel with the inlet of said passage so that the liquid flows from said vessel to and through said nozzle; conduit means connecting the second outlet of said vessel with said additional inlet means so that the gas flows into said passage and is intimately mixed with the liquid whereby the liquid is impregnated by absorbing some of the gas and the surplus of such gas forms bubbles which are dispersed in the impregnated liquid; a separator for removing surplus gas from the thus impregnated liquid; conduit means connecting the outlet of said passage with said separator; and return conduit means for conveying surplus gas from said separator to said vessel.

3,313,094 MOWER MOUNTING MECHANISM

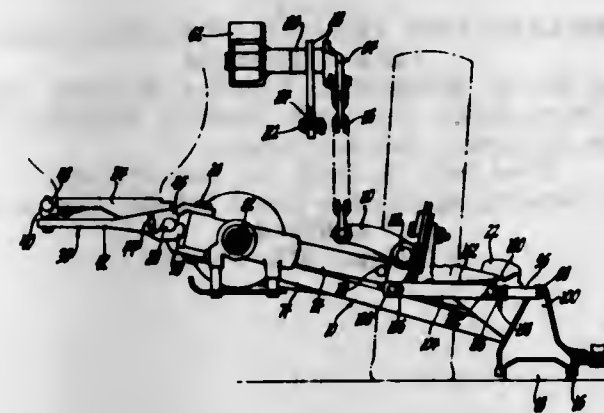
William A. Wathan, Detroit, Mich., assignor to Massey-Ferguson Inc., Detroit, Mich., a corporation of Maryland

Original application Nov. 28, 1962, Ser. No. 240,541, now Patent No. 3,234,718, dated Feb. 15, 1966. Divided and this application July 22, 1965, Ser. No. 474,002

3 Claims. (Cl. 56-25)

1. Mounting means adapted for detachably pivotally mounting a mower drag bar to a vehicle for substantially vertical swinging movement relative thereto, said mounting means comprising a support adapted to be secured to a vehicle and including saddle means adapted to removably pivotally support bearing means secured to the drag bar, a latch member pivotally mounted on said support

and including retaining means cooperable with said saddle means to retain the bearing means in the latter, and means



for releasably locking said latch member to said support with the bearing means retained between said retaining and saddle means.

3,313,095 GROUND SENSING CROP HARVESTING APPARATUS

William C. Guterma, Memorial Drive, Manitowoc, Wis. 54220

Filed Jan. 22, 1964, Ser. No. 339,419

18 Claims. (Cl. 56-312)



1. In combination with crop harvesting machinery comprising:
sickle bar foundation assembly, said assembly comprising:
a tapered sickle guard having:
a pointed forwardly disposed end, and
a channel extending generally longitudinally thereof;
a sickle bar disposed within said channel for longitudinal reciprocal movements therein;
sensing means for properly separating, disposing and distributing crops lying close to a ground surface while simultaneously automatically sensing generally abrupt substantially vertical variations or irregularities therein, said sensing means comprising,
a plurality of fingers extending generally forwardly of said sickle guard and operable independently and distinct of one another, said fingers having
an upper leg and a curvilinear lower leg convexly disposed relative to said upper leg;
said legs being of greater longitudinal dimensional extent than the transverse dimensional extent thereof and being disposed in acute angular relationship with respect to one another;
said legs defining a generally irregularly configured triangle having
a shoe disposed at the apex thereof, said shoe being so constituted and arranged as to define a relatively narrow blade;

said blade being particularly adapted to the proper separation, distribution and positioning of crops lying close to the ground surface for the efficient severance therefrom;
said shoe being particularly adapted to preclude said sensing means from digging into the ground;
a bridging leg disposed generally at right angles relative to said upper leg and extending therefrom to said lower leg;
said bridging leg defining a rearwardly disposed portion on each of said upper and lower legs;
the rearwardly disposed portion of each of said upper and lower legs and said bridging leg defining a channel housing opening and extending generally rearwardly of said fingers;
pivotal means fixedly structurally associated with said sickle bar foundation assembly for pivotally structurally associating said sensing means therewith, said pivotal means comprising,
a plurality of curvilinearly configured bracket arms fixedly structurally associated with said sickle guard and extending generally forwardly thereof into the channel housing of said sensing means;
biasing means disposed within said channel housing and structurally operatively associated with each of said bracket arms and a corresponding one of the fingers of said sensing means for biasing said fingers in one of a plurality of rotational directions relative to said bracket arms, said biasing means comprising,
a coil spring having
a plurality of ends;
a stop positioned upon the upper leg of said fingers and extending into the channel housing thereof;
one end of said spring being particularly adapted to abuttingly mutually cooperatively engage said stop;
a stop surface positioned upon said bracket arms;
another end of said spring being particularly adapted to abuttingly mutually cooperatively engage said stop surface;
first positioning means for generally axially vertically variably positioning said sensing means relative to said sickle guard, and, accordingly, relative to the ground surface, said first positioning means having a plurality of apertures extending through said channel housing, and
an abutment selectively adjustably positioned within one of said plurality of apertures;
the forwardly disposed pointed end of said sickle guard being particularly adapted to be disposed within said channel housing with an upper surface thereof in abutting mutual cooperative engagement with the abutment of said first positioning means;
said biasing means being particularly adapted to maintain said sickle guard in said abutting relationship with respect to the abutment of said first positioning means for, enabling the vertical relationship between said sensing means and said sickle guard to be varied by the selective adjustment of said abutment within a desired one of said plurality of apertures and the abutting mutual cooperative engagement between said sickle guard and said abutment;
second positioning means for generally linearly vertically variably positioning and controlling the vertical position of said sickle bar foundation assembly relative to the ground surface to compensate for and conform with generally abrupt substantially vertical irregularities therein, said second positioning means comprising,
a power control shaft disposed in underlying relationship with respect to said foundation assembly, and an actuating lever structurally associated with said shaft; said actuating lever having an aperture extending through an upper end portion thereof;

said shaft being particularly adapted to be rotatably actuated by said actuating lever for the actuation of a power control system particularly adapted to vertically variably position said foundation assembly relative to the ground surface; and

adjustable lost-motion means for rotatably actuating said actuating lever when said sensing means responds to generally abrupt substantially vertical variations in the ground surface, said lost-motion means having a plurality of spaced generally horizontally aligned apertures extending through the rearwardly disposed portion of said lower leg,

a securing bolt selectively adjustably positioned within and extending through one of said plurality of apertures,

biasing means adjustably fixedly and rotatably positioned upon and with respect to said securing bolt, said biasing means comprising,

a helical coil spring,

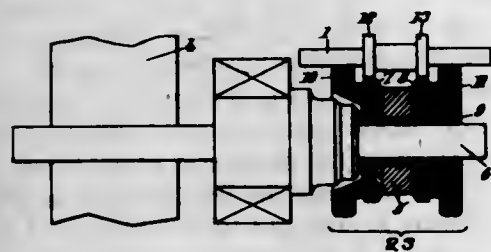
a longitudinally dimensionally extensive loop having:

a lower rod particularly adapted to extend through said aperture, and

a bight end disposed in a predetermined spaced rearwardly disposed relationship with respect to the apertured end of said actuating lever, enabling the presentation of a sufficient lost-motion relationship therebetween to maintain the actuating lever and the power control system immediately actuatable thereby in an inoperative position when the sensing means responds to gentle substantially vertical irregularities in the ground surface, and enabling the actuation of said actuating lever by the mutual cooperative engagement between the bight end and the apertured end of said lever when said sensing means responds to generally abrupt substantially vertical irregularities in the ground surface.

3,313,096
DEVICES FOR DRIVING BODIES REVOLVING AT HIGH SPEEDS, AND IN PARTICULAR FALSE TWIST SPINDLES IN CHIMING MACHINES
 Edmund Marchal, Vals-les-Bains, France, assignor to Societe, Lyons, Rhone, France, a society of the Republic of France

Filed Apr. 16, 1964, Ser. No. 360,377
 Claims priority, application France, Apr. 19, 1963, 932,144
 6 Claims. (Cl. 57-77.45)



1. A device for driving at high speed a spindle of a ferro-magnetic material, which comprises, in combination, two parallel circular members having their respective axes parallel to the axis of revolution of said spindle and forming bearings for said spindle, means including one of said members, for driving said spindle in rotation about its axis, at least one tubular permanent magnet coaxial with one of said members and fixed with respect thereto, and two rings of a ferromagnetic material fixed at the respective ends of said tubular magnet coaxially therewith, said rings having an outer diameter greater than that of said tubular magnet and constituting magnetic pole pieces for it, said rings extending toward said spindle

to close, together therewith, a magnetic circuit for urging said spindle against said circular members.

3,313,097
BRAKES FOR TEXTILE SPINNING AND LIKE SPINDLES
 Walter Barrett, Riddleston, Kelghley, England, assignor to Prince-Smith and Stalls Limited, Kelghley, Yorkshire, England, a British company
 Filed July 28, 1965, Ser. No. 475,543
 Claims priority, application Great Britain, Aug. 6, 1964, 32,874/64
 5 Claims. (Cl. 57-88)

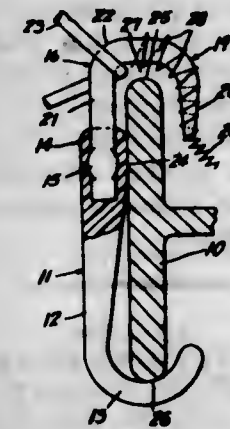


1. A braking arrangement for a textile spinning or like spindle, comprising a rotary spindle, a stationary spindle mounting assembly, an annulus mounted for relative rotary and axial movement on said stationary mounting assembly, first cam means on said annulus, a non-rotating plate member mounted for axial movement on said stationary mounting assembly, compression springs acting between said plate member and said stationary mounting assembly, second cam means on said plate member on its side remote from said compression springs, said first and second cam means co-acting so that rotary movement of the annulus imparts axial movement in opposite directions to said annulus and to said plate member and compresses said springs, means for rotating said annulus, an annular braking surface formed on said stationary mounting assembly and spaced axially from the annulus, and an annular member rotating with the spindle and located between said annulus and said braking surface, so that rotary movement of the annulus in the direction of the spindle rotation and consequent axial movement of the annulus and plate member operates to press said annular member against said braking surface with a variable frictional resistance.

3,313,098
TRAVELER WITH INSERT HAVING TAPERED END FOR DISPENSING ACCUMULATED FIBERS OR LINT
 Louis H. Morin, Bronx, N.Y., assignor to Cents & Clark Inc., New York, N.Y., a corporation of Delaware
 Filed Sept. 5, 1963, Ser. No. 306,850
 4 Claims. (Cl. 57-125)

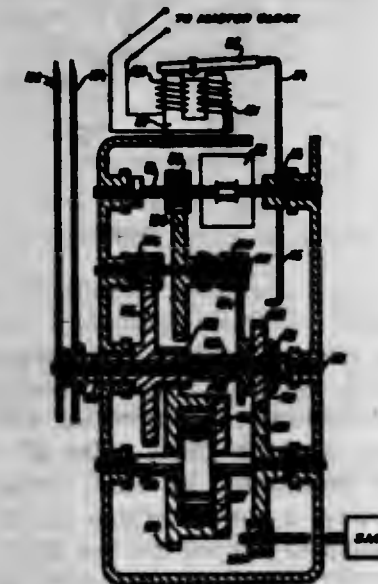
1. A traveler for use in connection with a traveler ring, the traveler having a plastic curved ring engaging end, the other end of the traveler having a substantially U-shaped continuously tapered hook end of circular cross section adapted to be spaced with respect to the traveler ring to form a gap, the continuously tapered portion of the hook end of the traveler joining a shank portion of the traveler

in a rounded thread engaging portion, and said continuously tapered portion of the hook end facilitating dis-



pensing of thread fibers or lint from the traveler in the use thereof.

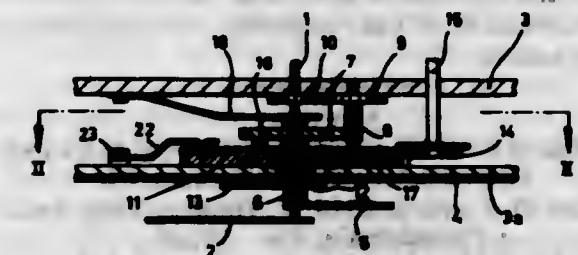
3,313,099
APPARATUS FOR CONTROL OF SUBSIDIARY CLOCKS
 Václav Pfeiffer, Prague, Czechoslovakia, assignor to Laboratorní přístroje, národní podnik, Prague, Czechoslovakia
 Filed Mar. 29, 1965, Ser. No. 443,382
 Claims priority, application Czechoslovakia, Apr. 11, 1964, 2,104/64, 2,105/64
 12 Claims. (Cl. 58-24)



1. A master-controlled subsidiary clock comprising, in combination:

- (a) a drive motor;
- (b) first time indicating means;
- (c) first motion-transmitting means interposed between said motor and said time indicating means for actuating the same;
- (d) energy storing means;
- (e) second motion transmitting means interposed between said motor and said storing means for transmitting energy of said motor to said storing means;
- (f) second time indicating means;
- (g) third motion transmitting means interposed between said energy storing means and said second time indicating means for actuating said second time indicating means by energy stored in said storing means; and
- (h) control means connected to said first and third motion transmitting means and responsive to electrical synchronizing pulses for controlling the synchronized actuation of said first and second time indicating means by said drive motor and by said energy storing means respectively.

3,313,100
RELEASE MECHANISM FOR THE ELECTRIC WINDING SYSTEM OF AN ALARM
 Samuel Schwab, Montier, Switzerland, assignor to Louis Schwab S.A., Montier, Switzerland
 Filed Oct. 28, 1965, Ser. No. 505,823
 4 Claims. (Cl. 58-41)



1. In a release system for the electric rewinding system of an alarm clock having a source of current in the rewinding circuit

- (A) an angularly movable insulated alarm wheel having a groove therein;
- (B) a conductive hour wheel having a projection adapted to fit in said groove, and electrically connected to said circuit;
- (C) resilient means urging said projection in said groove;
- (D) electrically connected inner and outer concentric rings secured on said alarm wheel, said inner ring having a cut away section permitting access of said projection into said groove;
- (E) said resilient means urging said projection against said inner ring whereby said electric rewinding circuit is open when said projection engages in said slot and closed when said projection contacts said ring.

3,313,101
INSTRUMENT CASE
 Shirley B. Carroll, Box 572, Narrows, Va. 24124
 Filed Oct. 18, 1965, Ser. No. 497,109
 10 Claims. (Cl. 58-105)

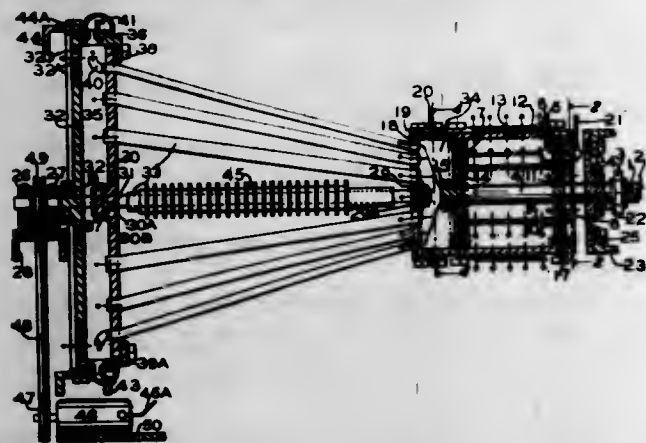


10. An improved instrument case for mounting a small pocket-sized instrument comprising casing base means, casing cover means connected to said casing base means and adapted to engage said casing base means to form an enclosed inner chamber, said casing cover means including fixed latch receiving means, and combined latch and instrument mounting means movably mounted on opposite sides of said casing base for limited movement along the periphery thereof, each said latch and instrument mounting means including a latch unit for engagement with said latch receiving means, said latch unit being movable with the latch and instrument mounting means along the periphery of said casing base to permit disengagement

thereof with said latch receiving means, and an instrument mounting unit connected to said instrument and mounting said instrument within said inner chamber in spaced relationship to said casing base, said instrument mounting unit being movable with said latch unit and operative with said instrument upon movement of one of said latch and instrument mounting means to cause simultaneous movement of the remaining latch and instrument mounting means.

3,313,102 QUICK HEAT-TRANSFER DEVICE HAVING LIQUID RECOVERY MEANS

Alfred M. Caddell, 1318 W. Hunting Park Ave.,
Philadelphia, Pa. 19140
Filed May 20, 1965, Ser. No. 457,403
16 Claims. (Cl. 60—31)

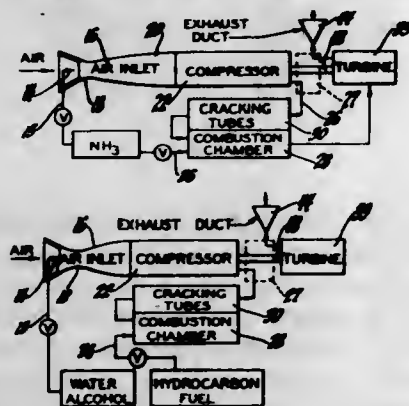


1. In association with an internal combustion engine having an exhaust manifold, said engine emitting exhaust gas at engine discharge speed into said manifold, a device comprised of stationary forward and stationary rear parts and a rotor having progressively radial, gas-conveying, tubes having discs exposed to atmosphere and mounted anti-frictionally between said parts, said rotor having an inlet end establishing a removable connection with said manifold and an opposite end incorporating means for extracting said gas from the manifold via said gas-conveying means and discharging it to atmosphere at a speed greater than that of said engine discharge speed, said rotor being adapted to be rotated by power derived from a source external thereto.

3,313,103 GAS TURBINE COMBUSTION PROCESS

Douglas Johnson, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 25, 1965, Ser. No. 482,521
8 Claims. (Cl. 60—39.06)



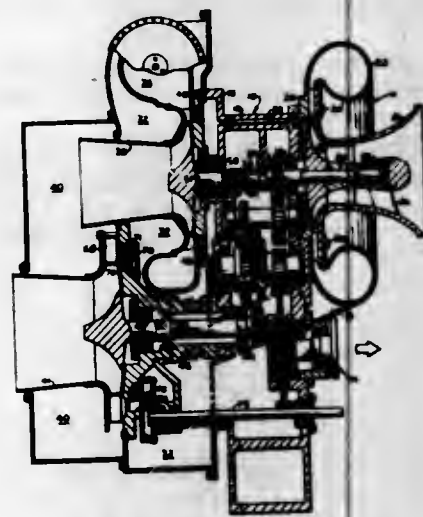
1. In the operation of a gas turbine engine comprising in serial relationship an inlet zone, a compression zone, a cracking zone, a combustion zone, a turbine zone, and an exhaust zone, the steps of:

introducing ammonia into the inlet zone,

mixing the ammonia in the inlet zone with air to form a combustible mixture, compressing the combustible mixture, cracking a portion of the ammonia in the combustible mixture into the dissociation products of ammonia, burning the combustible mixture and cracked portion of ammonia in the combustion zone, and expanding the combustion products of the combustible mixture, and the cracked ammonia through the turbine and exhaust zones to extract energy from the combustion products.

3,313,104 GAS TURBINE ENGINE

Duane E. Evans, Peoria, Ill., Thomas W. Head, Columbus, Ind., and Lloyd E. Johnson, East Peoria, and Peter W. Schutz, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Feb. 25, 1965, Ser. No. 435,311
1 Claim. (Cl. 60—39.16)



A gas turbine engine having a main supporting frame in the form of a housing, a gear transmission means enclosed in said housing, a compressor and compressor drive turbine on opposite outer sides of said housing and operatively connected by shaft means extending through the housing, a power turbine on the same outer side of said housing as the compressor drive turbine and being offset laterally therefrom, an output connection on the same outer side of said housing as the compressor and being laterally offset in the same direction as the offset of said power turbine, said compressor, compressor drive turbine, power turbine and output connection each having individual shaft means and gear means, said individual gear means meshing with the gear transmission means when assembled and each being in the form of separable units detachably connected to the housing to facilitate removal therefrom, service and repair.

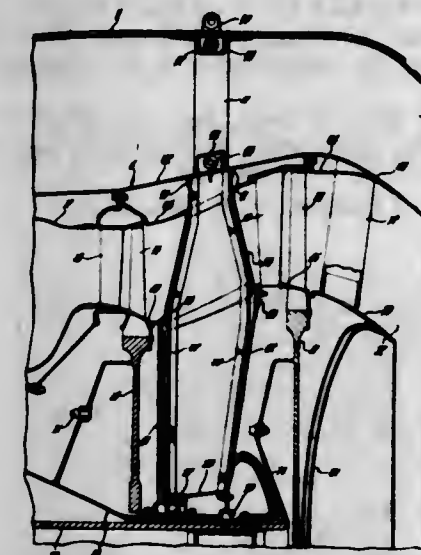
3,313,105 GAS TURBINE ENGINE HAVING TURBO-COM- PRESSOR THRUST BEARING MEANS RESPON- SIVE TO DIFFERENTIAL PRESSURES

Douglas Johnson, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 30, 1965, Ser. No. 483,569
4 Claims. (Cl. 60—39.16)

1. A turbojet engine of a ducted-fan type comprising, in combination,
an engine case
a gas turbine case within the engine case, the engine and gas turbine cases defining a fan duct

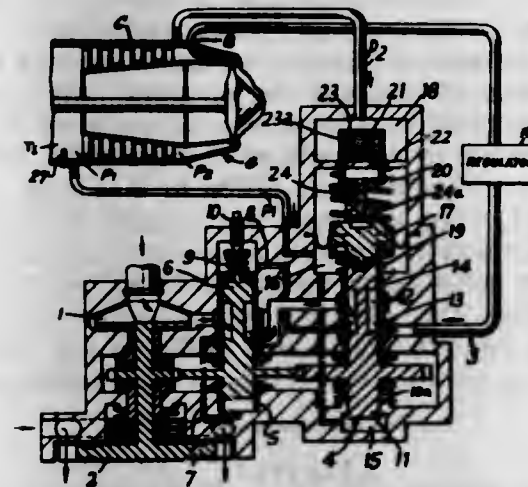
a compressor, a combustion apparatus, a high pressure turbine, and a low pressure turbine within the gas turbine case; the high pressure turbine and the compressor being coupled to form a single rotor an inner wall defining with the turbine case the motive fluid path between the turbines
a bearing for the said rotor at the compressor
a thrust bearing for the said rotor between the turbines within the inner wall



a mount for the bearing between the turbines
a diaphragm extending from the mount to the inner wall having a substantial portion thereof subjected to a pressure drop in the low pressure turbine biasing the diaphragm and mount rearwardly, and flexible inner struts connecting the mount to the gas turbine case.

3,313,106 CONTROL OF THE FUEL SUPPLY TO A GAS TURBINE

Robert Barry Matthews, Eastleigh, England, assignor to The Plessey Company Limited, Ilford, England, a British company
Filed June 14, 1965, Ser. No. 463,791
Claims priority, application Great Britain, June 26, 1964, 26,624/64
3 Claims. (Cl. 60—39.28)

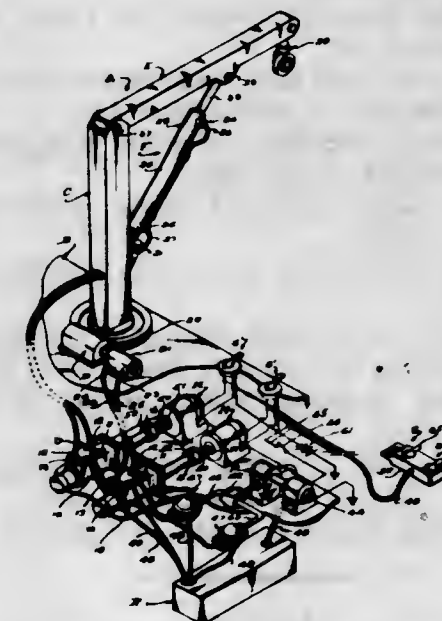


1. In a liquid-fuel supply system for a gas turbine having a combustion chamber and a dynamic compressor driven by the turbine to supply combustion air to said chamber, and wherein the system includes a source of fuel under pressure, a control throttle forming a variable aperture through which fuel passes from said source to the combustion chamber, an automatic pressure-drop adjustment valve associated with said control throttle to maintain the fuel-pressure drop produced by said aperture at a predetermined function of an operation datum

of the gas turbine and compressor combination, and actuating means for said control throttle, operated by the intake and delivery pressures P_1 and P_2 of said compressor to increase the size of said aperture in accordance with the force exerted by the pressure difference $P_2 - P_1$ acting upon a predetermined area against spring means: the combination, with said actuating means (17), of a supplementary actuating means (24) for said control throttle (4) operated by the compressor-intake pressure P_1 , acting upon a second area in the same direction in which the pressure difference $P_2 - P_1$ acts upon said first-mentioned means, against a resilient element (21), and connected to said actuating means (17) by a low-motion coupling (24a), said second area and said resilient element (21) being so related to said predetermined area and said spring means (19) as to cause the lost motion of said coupling (24a) to be taken up when the value P_2/P_1 increases from unity to a predetermined higher value.

3,313,107 CONTROL MEANS

Morris Uriah, Buena Park, Calif., assignor to Formacori Company, Los Angeles, Calif., a partnership of California
Filed May 23, 1966, Ser. No. 552,134
10 Claims. (Cl. 60—52)



1. In combination, a work performing apparatus including, a hydraulically operated power exerting means with a pair of spaced inlet and outlet flow ports, and control means to selectively direct fluid into and out of the inlet and outlet flow ports to change the direction of operation and to vary the rate of flow to vary the speed of operation of said power exerting means and including a fluid reservoir, a motor-driven fluid pump with a suction port and a discharge port, a suction line between the reservoir and said suction port, a remote rotary servo-hydraulic control unit having a pair of spaced flow ports, an inlet port and an exhaust port, a delivery line between the discharge and inlet ports, a pair of flow lines, each connected with one flow port and with one of said inlet and outlet ports, and an exhaust line between the exhaust port and the reservoir, said unit having a rotatable control shaft, the direction of rotation of which controls the direction of flow into and out of said flow ports and the speed of rotation of which controls the rate of said flow, a reversible drive motor driving said shaft, a manually operable control switch with variable resistances connected with a motor and a power source and operable to control the direction of rotation and the speed of rotation of said motor.

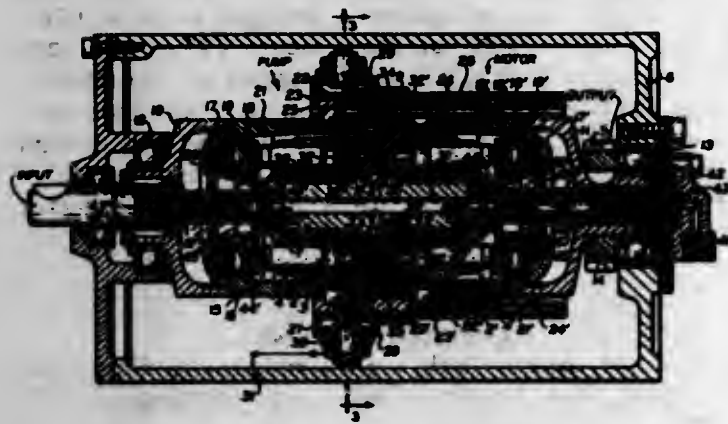
3,313,108

HYDROSTATIC TORQUE CONVERTER

Erwin Allgauer, Boll, Kreis Goppingen, and Karper Ritter, Krehbels, Germany, assignors to Kopet Gesellschaft für Konstruktion Entwicklung und Patentverwertung m.b.H. & Co. KG, Boll, Kreis Goppingen, Germany, a corporation of Germany

Filed Oct. 20, 1966, Ser. No. 596,368
Claims priority, application Germany, Nov. 28, 1964, K 54,652

9 Claims. (Cl. 60-53)



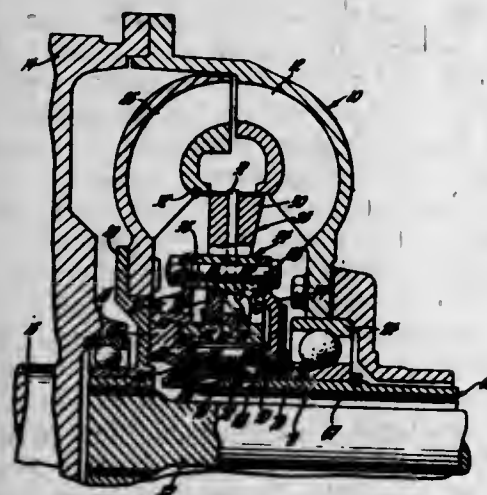
1. A hydrostatic torque converter, comprising an axial piston pump, an axial piston motor, a control disc disposed between said piston pump and said piston motor, said piston pump and said piston motor being disposed on opposite sides of said control disc, a rotary housing receiving said piston pump, said piston motor and said control disc, said piston pump and said piston motor including swinging bodies, a control pot guided by said rotary housing for axial movement, said swinging bodies being swingably mounted in said rotary housing by means of said control pot, each of said swinging bodies having further two swinging arms, said swinging arms including connecting means, said control pot having control slots, and said connecting means engaging said control slots.

3,313,109

HYDRODYNAMIC TORQUE CONVERTER

Robert M. Tuck, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Mar. 7, 1966, Ser. No. 532,351
13 Claims. (Cl. 60-54)



1. In a hydrodynamic unit, a vaned rotor, a support, said rotor being rotatably mounted on said support, one-way coupling means for mechanically coupling said rotor

and said support to retard rotation of said rotor in one direction and for permitting said rotor to rotate relative to said support in an opposite direction, motor means for varying the pitch of the vanes of said rotor, said motor means and said one-way coupling means being concentric and radially aligned with each other and said vaned rotor.

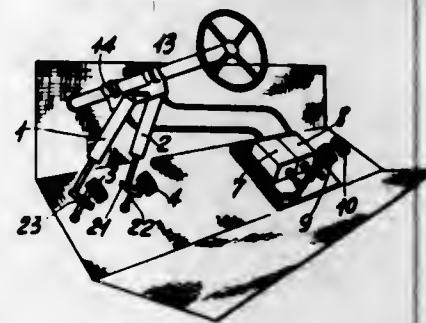
3,313,110

INSTALLATION FOR THE DOUBLE CONTROL OF THE PEDALS IN MOTOR VEHICLES

Guido von Rohr, Castione, Bellinzona, Ticino, Switzerland, assignor to Indotecnica S.A., Castione, Ticino, Switzerland

Filed Sept. 3, 1964, Ser. No. 394,144
Claims priority, application Switzerland, Sept. 6, 1963, 11,063/63

4 Claims. (Cl. 60-54.5)



1. In a motor vehicle, main pedal means having a normal position of rest and auxiliary pedal means also having a normal position of rest, a driving piston operatively connected to said auxiliary pedal means to be actuated thereby, a driven piston, a pair of cylinders in which said pistons are respectively slidable, and conduit means extending between and communicating with said cylinders and forming therewith a closed hydraulic circuit between said pistons, a hydraulic liquid filling said circuit, so that said driven piston moves in response to movement of said driving piston, spring means acting on said driven piston for urging the latter to an initial position where said driven piston through said liquid situates said driving piston at a location which situates said auxiliary pedal means at said normal position of rest thereof, so that said auxiliary pedal means is actuated in opposition to said spring means to displace said pistons while said spring means will act through said driven piston during return of the latter to said initial position to displace the liquid in said closed circuit and said driving piston back to said location where said auxiliary pedal means is again in its normal position of rest, and motion transmitting means having only an abutting engagement with said driven piston and connected to said main pedal means for transmitting movement of said driven piston to said main pedal means so that, when said main pedal means is actuated, it will displace only said motion transmitting means while said auxiliary pedal means remains in its normal position of rest whereas, when said auxiliary pedal means is actuated, it will displace said driven piston to act through said motion transmitting means on said main pedal means.

3,313,111

STARTUP SYSTEM FOR A ONCE THROUGH STREAM GENERATOR INCLUDING A START-UP BALANCING HEAT EXCHANGER

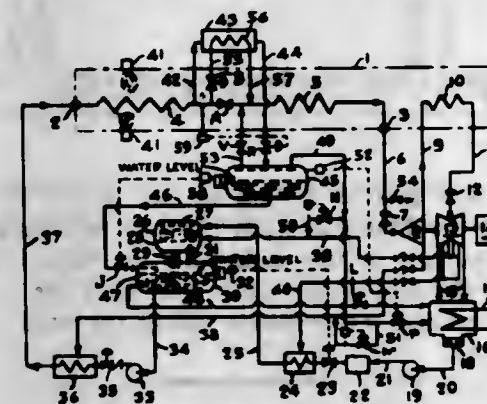
Charles Strohmeyer, Jr., Reading, Pa., assignor to Electrodyne Research Corporation, Reading, Pa.

Filed Apr. 30, 1965, Ser. No. 452,143

1 Claim. (Cl. 60-105)

A startup heat exchanger for a steam-electric generating plant, said plant comprising a steam generator and turbine generator, said turbine generator having a high pressure turbine, said steam generator having a feedwater inlet, steam generating and superheating heat absorption

conduits in series, a superheater steam outlet, fluid conduit means inter-connecting said feedwater inlet, heat absorption conduits, superheater steam outlet and high pressure turbine, throttling means for reducing fluid pressure intermediately between portions of said heat absorption conduits between said feedwater inlet and said superheater steam outlet, the portion of said heat absorption conduits downstream of said throttling means being operated during startup of said plant at a lower pressure than is in the portion of said heat absorption conduits upstream of said throttling means, a startup bypass conduit connected to said upstream portion and downstream of at least a portion of said heat absorption conduits which are connected directly to said feedwater inlet, said bypass conduit including means to flow fluid away from said upstream portion and for establishing circulation



through at least a portion of said upstream portion independently of flow through said downstream portion during startup of said plant, thereby providing an independent circulation circuit including said bypass conduit and at least a portion of said upstream portion of said heat absorption conduits, said startup heat exchanger being located in the high temperature portion of said circulation circuit, said throttling means including conduit means for passing fluid from said upstream portion through a separate circuit in said startup heat exchanger after throttling and pressure reduction and for discharging the effluent from said separate circuit to said downstream portion, said startup heat exchanger being adapted to transfer heat in the fluid from said circulation circuit to said fluid passing through said separate circuit after pressure reduction.

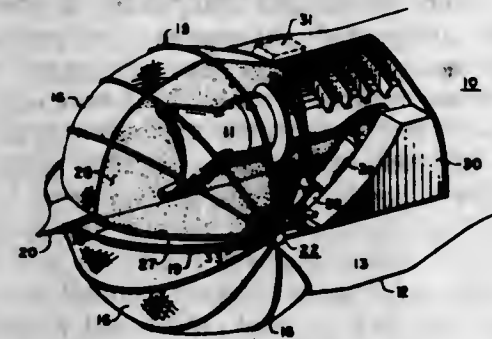
3,313,112

ROCKET RECOVERY APPARATUS

Arlen I. Reichert, Lutherville, and Edward Priestas, Baltimore, Md., assignors to Martin Marietta Corporation, New York, N.Y., a corporation of Maryland

Filed Apr. 30, 1964, Ser. No. 363,923

17 Claims. (Cl. 60-200)



1. A device for protecting the engine portion of a rocket booster body comprising:
(a) a collapsible canopy in connection with said booster body and disposed in surrounding relationship about said engine portion;
(b) actuating means in connection with said canopy and adapted to extend said canopy about said engine portion in a manner defining a chamber encapsulating said engine;

(c) an appendage of decreasing cross-sectional dimension in connection with and extending outwardly from said canopy, for absorbing and distributing impact loads; and
(d) means for substantially filling said encapsulating chamber with a quick-curing mixture whereby said engine portion is encapsulated within a shock absorbing media.

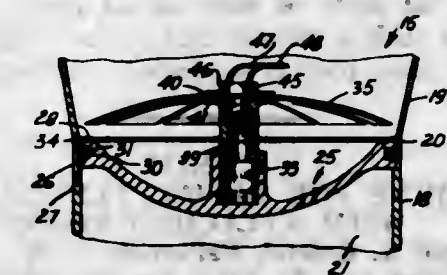
3,313,113

CONTROL FOR OPENING NOZZLES OF ROCKET ENGINES

Donald D. Maxson, Yardley, and Anthony W. Dattilo, Philadelphia, Pa., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force

Filed May 18, 1960, Ser. No. 29,928

10 Claims. (Cl. 60-254)



1. In a rocket engine of the type having a casing containing a fluid under pressure with a nozzle at one end, a controlling mechanism comprising at least one auxiliary nozzle on the casing and communicating with the fluid under pressure therein, said auxiliary nozzle having a peripheral wall with recesses therein at opposite sides, a piston plug for closing the auxiliary nozzle and of a size to closely fit its peripheral wall, a locking member overlying the piston plug and of a length greater than the diameter of the plug with its ends projecting into the recesses in the opposite sides of the wall, the edges of the piston plug engaging the locking member adjacent the wall to produce only a small component of force tending to deform the member, releasing means between the piston plug and locking member for producing a maximum force on the member axially of the nozzle to physically deform the member to reduce its radial dimension and thereby withdraw its ends from the recesses in the wall of the nozzle to release the piston plug whereby to adapt the plug and locking member to be blown from the auxiliary nozzle by the fluid under pressure in the rocket engine without fracturing any parts.

3,313,114

MINE ROOF SUPPORTING METHOD

Karl Theodor Jasper, deceased, late of Hagen, Germany, by Gert Haarmann, administrator, Hagen, Germany, Hans Werner vom Felde, and Hans Buttner, Hagen, Germany, assignors to Bergbaustahl G.m.b.H., Hagen, Germany, a corporation of Germany

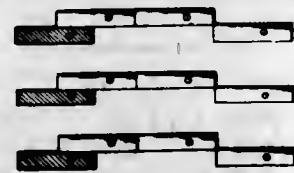
Filed Feb. 4, 1964, Ser. No. 342,870

Claims priority, application Germany, Feb. 9, 1963, B 70,667

3 Claims. (Cl. 61-45)

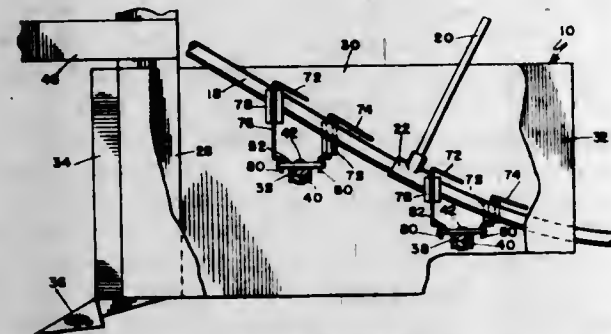
1. A walking support method for mine roofs, first and second roof support groups being laterally disposed and guided on one another and advanced alternately, characterized in that said first and second roof groups are each formed of at least two units disposed successively along the mine roof, each of said units comprising an elongated roof bar and prop means therefor, said successive units being capable of abutting one another and also capable of being spaced in relation to one another by the length of two units at the maximum, wherein the forward units of said first group is intermittently guided along said second group of units which remain in an unchanged position following the same along the mine

roof so as to be brought into a position projecting as far as possible from the forward units of said second group so as to directly follow the advance of the coal face until its rear end reaches the zone of the forward end of the front unit of said second group, whereupon the rear unit of said first group is then guided along the units of



said second group until the rear unit of said first group is advanced up to the forward unit of said first group, and thereafter the two units of said first group remain in an unchanged position and form the guide for the advance of the units of said second group in the same rhythm, in such a manner that in each stage of the advance the mine roof is supported continuously.

3,313,115
MACHINE FOR LAYING FLEXIBLE PIPE WITH ATTACHED RISERS
Joseph A. Kniefel, Fallbrook, Calif. 92028
Filed Apr. 23, 1965, Ser. No. 450,394
7 Claims. (Cl. 61-72.6)



1. A machine for laying flexible pipe with attached risers, comprising:
 - a trenching unit having means for attachment to a towing vehicle;
 - said trenching unit having a front ground penetrating cutter with side plates fixed to and extending rearwardly therefrom, said side plates being interconnected in spaced parallel relation;
 - pipe guiding means in said trenching unit, including fingers pivotally mounted on said side plates to swing across the space between the side plates above a pipe passing therethrough;
 - said fingers being interconnected in pairs to swing in opposite directions, whereby one finger of each pair is extended between the side plates when the other finger of that pair is swung back by passage of a riser on the pipe.

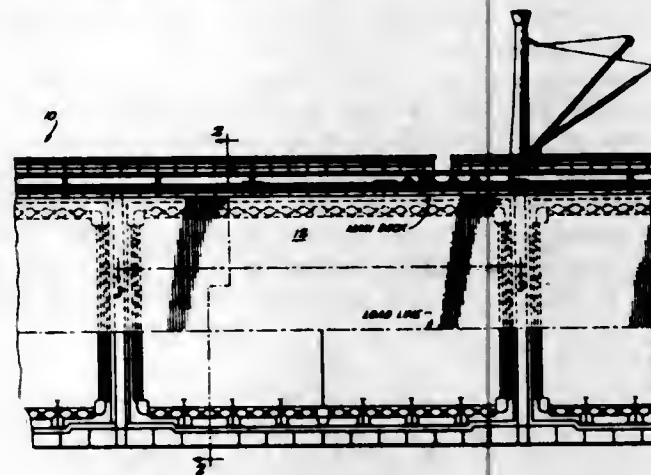
3,313,116
METHOD FOR COOLING AND FILLING LIQUEFIED GAS TRANSPORT AND STORAGE TANKS

Ernst A. Nönncke, Hamburg, and Ernst H. W. Gottsch, Vossberg, Germany, assignors to John J. McMullen Associates, Incorporated, New York, N.Y., a corporation of New York
Original application Mar. 16, 1965, Ser. No. 440,081, Divided and this application Sept. 24, 1965, Ser. No. 489,813

8 Claims. (Cl. 62-45)

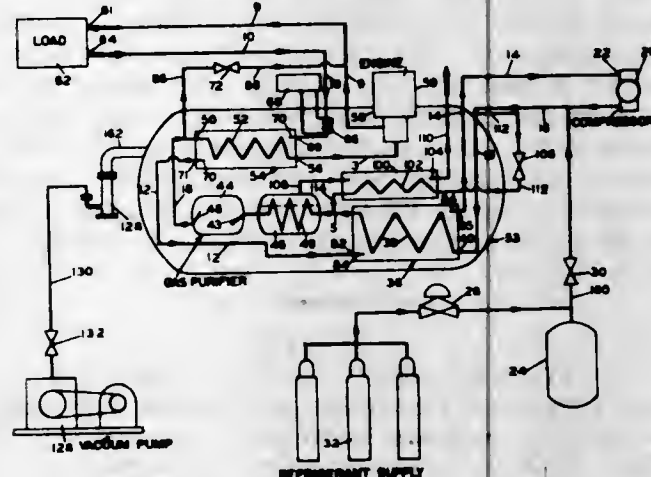
1. A method of cooling from ambient temperature and filling a double wall tank with a liquefied first gas, said tank having a confined insulation space between the outer wall and the ambient, said method comprising purging the

insulation space and wall space with an inert second gas and inerting the interior of the tank, subsequently circulating the inert second gas within the wall and insulation space through a heat exchanger and back to said wall and insulation spaces to cool the tank walls, feeding



liquefied first gas as a sink to the heat exchanger and delivering the first gas from the heat exchanger directly into the interior of the tank where it vaporizes and further cools the tank inner walls, and after the tank reaches a predetermined temperature filling the tank with liquefied first gas.

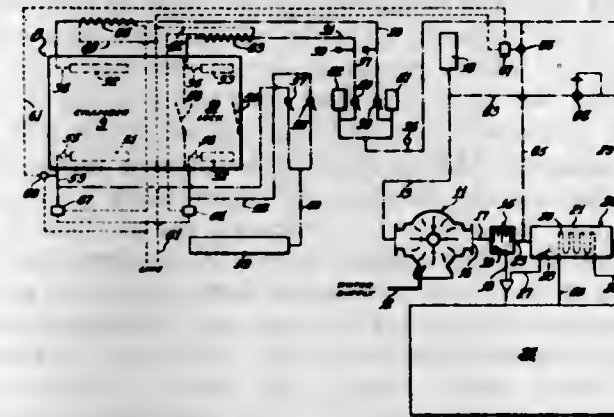
3,313,117
DENSE GAS HELIUM REFRIGERATOR
Charles B. Hood, Jr., and William W. Vogelhuber, Columbus, Ohio, assignors to Cryo-Vac, Inc., Columbus, Ohio, a corporation of Ohio
Filed Dec. 18, 1964, Ser. No. 419,472
3 Claims. (Cl. 62-125)



1. A helium refrigerator comprising, in combination, a load to be refrigerated; a compressor; an evacuated sealed container means; a warmer heat exchanger mounted in said container means; a cooler heat exchanger mounted in said container means; an expansion engine at least partially mounted within said container means; a refrigerant delivery conduit means leading from an outlet of said compressor through said warmer and cooler heat exchangers and said expansion engine to said load to be refrigerated; a refrigerant return conduit means leading from said load through said cooler and warmer heat exchangers to the inlet of said compressor; a graphic control panel including a flow diagram of said refrigeration cycle including component symbols, the flow path there-through, and marked diagram stations along said flow path; a plurality of sensing means located along the flow through the above mentioned components at apparatus stations corresponding to said diagram stations; a plurality of gauges respectively connected to said sensing means; and indicia on said panel relating said diagram stations to gauges for corresponding apparatus stations.

3,313,118
HUMIDITY AND TEMPERATURE CONTROL SYSTEM FOR PRESSURE CHAMBERS
Andrew P. Boehmer, Barrington, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed June 11, 1965, Ser. No. 463,192
8 Claims. (Cl. 62-176)



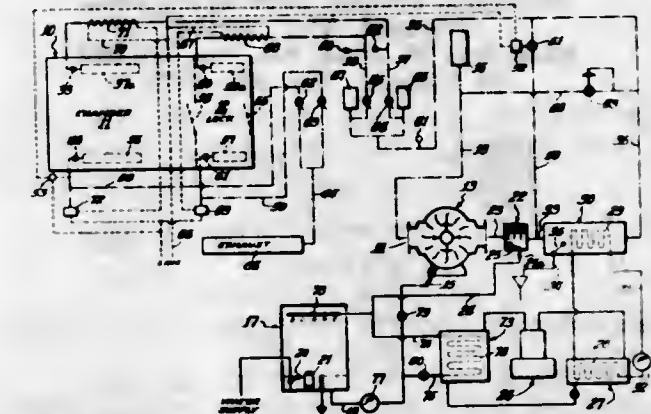
1. In a humidity and temperature control system for improving environmental conditions in an inclosure having exhaust means comprising:
 - (a) an air conditioning means for said inclosure;
 - (b) a water sealed compressor connected to a source of water supply and to ambient air;
 - (c) a separator connected to said water sealed compressor by a first conduit for conveying water and air discharged from said compressor to said separator which separates said water from said air;
 - (d) a second conduit interconnecting said separator and a dehumidifier comprising a shell which houses a fluid coil connected with respect to said air conditioning means whereby said air transmitted to said dehumidifier is cooled and subjected to dehumidification;
 - (e) conduit means interconnecting said dehumidifier with said inclosure;
 - (f) a third conduit, provided with a control valve, interconnecting said second conduit and said conduit means;
 - (g) a humidistat sensitive to the humidity in said inclosure and connected with respect thereto;
 - (h) a solenoid for operating said control valve;
 - (i) an electric circuit interconnecting said humidistat and said solenoid whereby the flow of highly moisture saturated air in said third conduit to said conduit means is controlled as determined by the said humidistat thereby controlling the humidity of the air in said inclosure as predetermined by the said humidistat.

3,313,119
AIR TREATING SYSTEM FOR ENCLOSURES TO IMPROVE ENVIRONMENTAL CONDITIONS
Andrew P. Boehmer, Barrington, and Richard L. Kuehner, Mount Prospect, Ill., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Continuation of application Ser. No. 463,212, June 11, 1965. This application May 27, 1966, Ser. No. 554,289
11 Claims. (Cl. 62-186)

1. In an air treating system for an enclosure to improve environmental conditions therein comprising:
 - (a) air conditioning means,
 - (b) an apparatus comprising: a reservoir connected to a source of water supply and a chemical dispenser for providing chemically treated water in said reservoir,
 - (c) a water sealed compressor having an air intake port and a water intake port connected to said reservoir below the water level therein by a first pipe and to ambient air respectively, whereby air and chemically

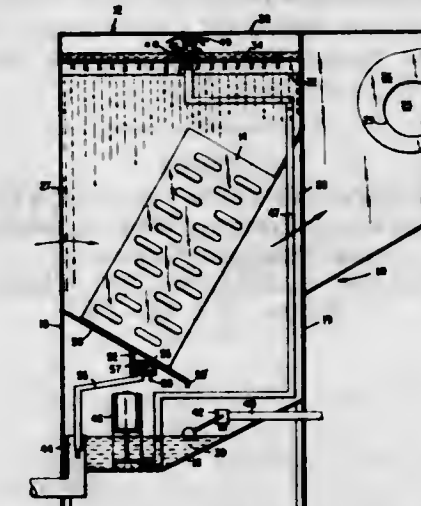
treated water are exhausted therefrom, the said air thereby having been subjected to purification treatment through its contact with said chemically treated water,

- (d) a first conduit connecting the said water sealed compressor to a separator which receives and separates the said exhausted chemically treated water from the said treated air,



- (e) a second conduit connecting said separator to a dehumidifying chamber provided with a fluid coil connected with respect to said air conditioning means whereby the said treated air is subjected to dehumidification, and
- (f) conduit means for passing said treated air which has been exposed to dehumidification to said enclosure.

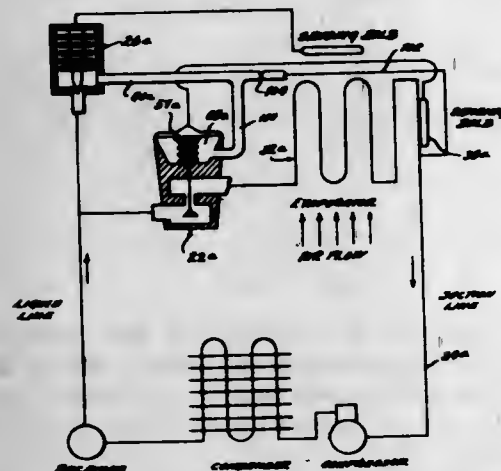
3,313,120
EVAPORATIVE CONDENSER
Richard J. Kueh, Syracuse, and Richmond S. Hayes, Fayetteville, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed May 2, 1966, Ser. No. 546,847
5 Claims. (Cl. 62-188)



1. In an evaporative condensing unit, the combination of: a housing, the lower part of said housing forming a liquid accumulating sump; at least one heat exchanger coil arranged within said housing; means for bringing air into heat exchange relation with said coil, said air circulating means including a fan; means for distributing liquid from said sump over said heat exchanger coil to wet said coil and promote the interchange of heat between said coil and said air, said liquid distributing means including a pump; liquid supply means responsive to liquid level conditions in said sump for adding make-up liquid to said sump; means to prevent overfilling of said sump including a drain; a liquid collecting pan arranged between said coil and said sump, said collecting pan being sized to intercept substantially all of the liquid draining from said coil, said pan being arranged so that liquid striking said pan flows along said pan over one end thereof into said sump; and liquid bleed-off means disposed athwart

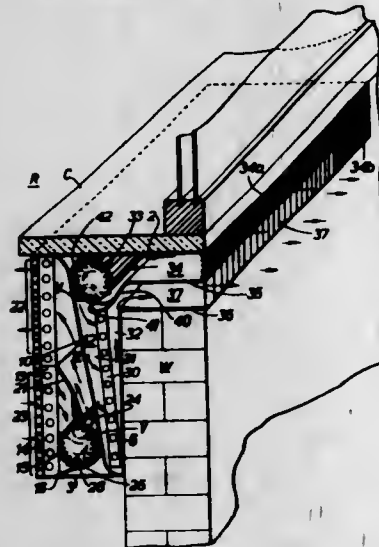
the path of flow of liquid over said pan adapted to remove a predetermined portion of said liquid from said apparatus, said liquid bleed-off means including a conduit communicating with said drain.

3,313,121
**TEMPERATURE CONTROL MEANS AND REFRIG-
ERATION SYSTEMS THEREFOR**
William J. Barbier, 2900 Krom Ave.,
Overland, Mo. 63114
Filed July 29, 1964, Ser. No. 386,002
10 Claims. (Cl. 62-197)



1. A temperature controlled system comprising serially connected compressor, condenser, and evaporator means, said evaporator means being positioned to cool a predetermined enclosure, by-pass means connected across the compressor and one of the other associated serially connected means, valve means controlling flow through the by-pass means, a temperature responsive bulb operatively connected to the valve means including means to control the flow capacity thereof, said temperature responsive bulb being positioned to respond to the temperature of the enclosure and expansion means connected in series circuit with the evaporator means on the upstream side thereof, said expansion means and said by-pass means having inlets connected in common.

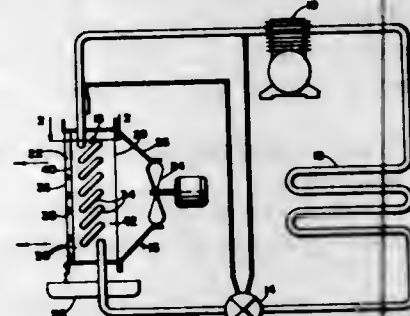
3,313,122
AIR CONDITIONING APPARATUS
Nikolaus Lasing, Hofener Weg 35, Aldingen,
near Stuttgart, Germany
Filed Dec. 8, 1965, Ser. No. 512,386
6 Claims. (Cl. 62-263)



1. A room air conditioner unit comprising a casing of generally block-like form, partition walling extending lengthwise and slantwise in the casing to separate a front air circulation space from a rear air circulation space each space having a wider and a narrower part with the wider part of one opposite the narrower part of the other, a

rectangular heat exchanger block in each air circulation space extending over the length and at least the major portion of the height thereof, a rotatably mounted motor driven cylindrical bladed rotor extending over the length of each air circulation space in the wider part thereof, flow guide means extending the length of each rotor and co-operating therewith on rotation thereof to induce a flow of air through the respective air circulation space from an inlet and twice through the path of the rotating blades of the rotor to an outlet the air flow taking place generally in planes perpendicular to the rotor axis and traversing the respective heat exchanger block, a compressor connected in a closed refrigerant circuit with said heat exchanger blocks whereby to form a refrigeration apparatus wherein one heat exchanger block is the evaporator and the other the condenser, the air flow in the front air circulation space being taken from and discharged to the room and the air flow in the rear air circulation space being taken from and discharged to the exterior, and the inlet and outlet of the rear circulation space having major areas in the form of narrow slots extending over the length of said space with their long edges juxtaposed; said casing being divided transversely by a vertical wall extending from front to rear into a main compartment containing said air circulation spaces and a motor compartment.

3,313,123
CONDENSATE REMOVAL APPARATUS
Chester D. Ware, La Crosse, Wis., assignor to The Trane Company, La Crosse, Wis., a corporation of Wisconsin
Filed Sept. 27, 1965, Ser. No. 499,451
11 Claims. (Cl. 62-372)

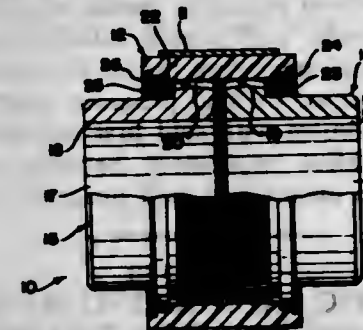


1. In combination a heat exchanger coil having an entering face and a leaving face; means for passing a stream of vapor containing gas from said entering face through said coil to said leaving face; said coil including a plurality of first and second fins arranged in face-to-face relationship; each of said fins having a leaving edge disposed adjacent and substantially parallel to said leaving face; means for cooling said fins below the dewpoint of said vapor; over at least a substantial area of said leaving face, the leaving edges of said second fins being disposed downstream of the leaving edges of said first fins whereby condensate collected at the leaving edges of said first fins is transferred to the portions of said second fins disposed downstream of the leaving edges of said first fins where said condensate imposes little resistance to the passage of said gas through said coil.

3,313,124
FLEXIBLE COUPLING
Leslie Filipp, Colts Neck, N.J., assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Nov. 27, 1964, Ser. No. 414,155
2 Claims. (Cl. 64-9)

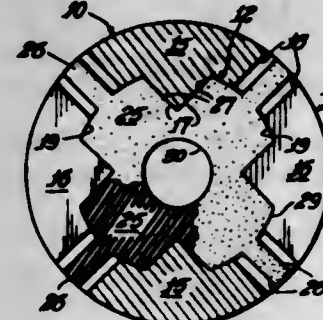
1. In a flexible gear type shaft coupling in combination, a pair of complementary metallic shaft hubs each having gear teeth at one end, a one-piece cylindrical sleeve with internal teeth extending lengthwise over and in mesh relationship with the gear teeth of both said hubs, said sleeve being either cast or molded of polyurethane, an elastomer

material, having self-lubricating qualities and resistance to abrasion, a metallic reinforcing shell positioned about and partly embedded in said sleeve, said sleeve being either cast or molded within said metallic shell extending



in length substantially beyond either end thereof, and means positionable within the ends of said sleeve and in grooves therein being adapted to maintain it against displacement from about said gear hubs during rotation.

3,313,125
FLEXIBLE COUPLING
Charles E. Hahn, Newfield, N.Y., assignor to Morse Chain Company, Minea, N.Y., a corporation of New York
Filed Apr. 22, 1965, Ser. No. 456,065
4 Claims. (Cl. 64-14)



1. A flexible coupling comprising a drive member having two axially extending drive lugs, a driven member having two axially extending driven lugs alternately positioned between the drive lugs in angular spaced relation therewith, said driving and driven lugs having one set of chordal surfaces defining one radial portion thereof and having other chordal surfaces defining another radial portion thereof, and a resilient cushion spider member positioned radially within said drive and driven lugs and having projecting portions extending radially between said lugs, said radially extended cushion portions being in engagement with said one set of surfaces of said lugs between and along said one portion of the radial length of said lugs and said other portions in parallel spaced relation with respect to said lugs adjacent said other chordal surfaces of said lugs for the remaining length of said extended cushion portions.

3,313,126
COUPLINGS
Roland William Gordon Somerville, Beaconsfield, England, assignor to S. Davall & Sons Limited, Greenford, Middlesex, England, a British company
Filed June 3, 1965, Ser. No. 461,137
7 Claims. (Cl. 64-15)

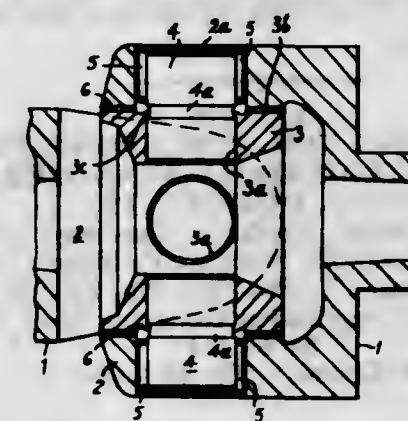
3. A coupling for coupling together a driving shaft and a driven shaft which coupling comprises coupling members provided respectively on each of the shafts, one coupling member comprising a spring clip which is formed from sprung metal strip bent so that two parts of the strip are biased together and are in the form of jaws, the sprung metal strip being fixed to a sleeve secured to the shaft, the other coupling member comprising a loop of wire mounted on the other shaft, the loop of wire being twisted slightly so that it turns as the coupling members

are pushed into engagement with one another, the wire loop being nipped between the jaws of the spring clip,



the said twist reducing the chance of the jaws of the spring clip engaging the wire loop edge on to make line contact parallel with the axes of the shafts.

3,313,127
UNIVERSAL JOINTS
Senzio Pio Vincenzo Piatelli, 14 Corso Porta Nuova,
Milan, Italy
Filed Jan. 15, 1965, Ser. No. 425,877
Claims priority, application Italy, Jan. 20, 1964,
1,300/64
7 Claims. (Cl. 64-17)

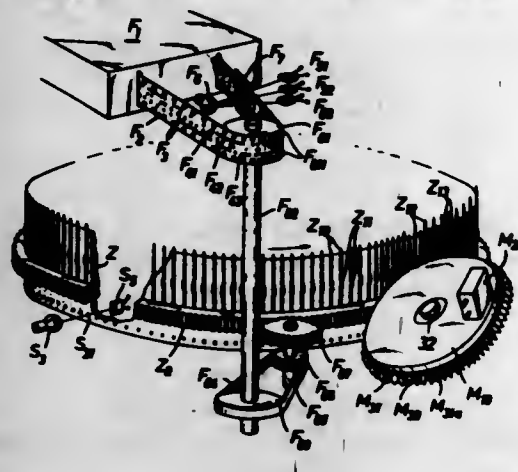


1. A universal joint in which a pair of forked members are coupled together by a coupling element in the form of a cross, said cross comprising a body portion having bores into which pins are inserted with a frictional fit, wherein axial movement of a pin in its bore is restricted by deformation of the material of said body portion at the outer end of said bore into engagement with a reduced diameter, circumferentially extending portion of said pin positioned to be located adjacent the outer end of said bore when said pin is inserted therein.

3,313,128
**KNITTING MACHINE WITH SYNCHRONIZED
PATTERN CONTROL**
Richard Schmitt, Stuttgart-Vaihingen, and Hans Joachim Stock, Froberg, im Breisgau, Germany, assignors to Franz Morat G.m.b.H., Stuttgart-Vaihingen, Germany
Continuation of application Ser. No. 404,118, Oct. 15, 1964. This application June 29, 1966, Ser. No. 562,938
Claims priority, application Germany, Oct. 21, 1963,
M 52,620
20 Claims. (Cl. 66-50)

1. In a knitting machine, in combination, a movable machine element driven to cause knitting operations; a pattern controlling element including a plurality of individually operable pattern influencing members, and electric operating means operable for individually actuating said pattern influencing members, said pattern controlling element being connected with said machine element for synchronous movement; program controlled means operatively connected with one of said elements for synchronous movement and being operatively connected with said electric operating means, said program controlled means being selectively placed for program determined time periods in an operative condition in accordance with a program; impulse generator means controlled by one of

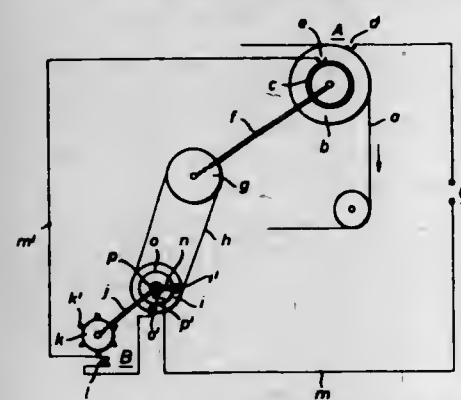
said elements to produce electrical synchronizing impulses at a frequency proportionate to the speed of said elements; and electric synchronizing means controlled by said impulses of said impulse generator means and connected with said program controlled means to cause actuation



of said electric operating means for predetermined short time periods in rigid synchronism with said synchronizing impulses and with the speed of said pattern controlling element for causing selective actuation of said pattern influencing members.

3,313,129
ARRANGEMENT FOR SYNCHRONIZING PROGRAM CONTROLLED MACHINE OPERATIONS WITH MACHINE MOVEMENTS

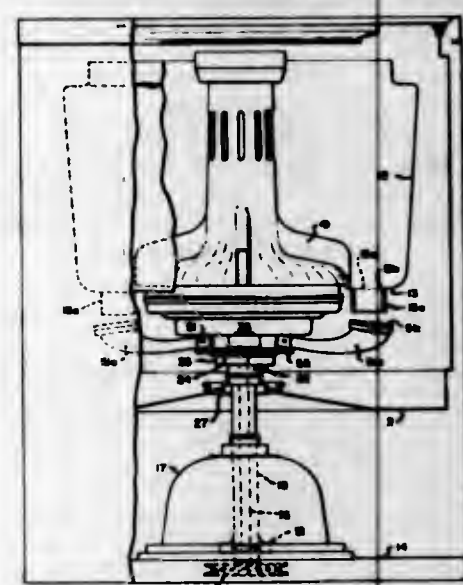
Hans Joachim Stock, Freilburg, Germany, assignor to Franz Morat G.m.b.H., Stuttgart-Vaihingen, Germany
Filed Jan. 17, 1966, Ser. No. 528,938
Claims priority, application Germany, Mar. 6, 1965, M 64,421
14 Claims. (Cl. 66-154)



1. In a knitting machine, in combination, an arrangement for synchronizing program needle selecting operations with machine movements, comprising first continuously movable means; control means moving in rigid synchronism with said first movable means; first switching means having inoperative and operative conditions and controlled by said control means to cyclically assure said operative condition for predetermined first time periods at exactly spaced time intervals; second continuously movable means; means connecting said first and second movable means for movement; program control means for determining the selection of needles in accordance with a desired knitting pattern and being continuously driven by said second movable means in such a manner that exact synchronism of said program control means with said first movable means can not be maintained; second switching means having inoperative and operative conditions, and being controlled by said program control means in accordance with a program to assume said operative condition for second time periods longer than said first time periods and timed so that during relative movement between said first and second movable means and said program control means, said first time periods fall within said second time periods; and at least one operating

means for controlling needle selecting operations, and having electric actuating means connected into the circuit of said first and second switching means and being energized to actuate said operating means only when both said first and second switching means are in said operative conditions whereby said needle selecting operations are controlled by said operating means in accordance with a program determined by said program control means and in exact synchronism with said first movable means irrespective of relative movement between said first and second movable means and said program control means.

3,313,130
DOMESTIC LAUNDERING MACHINES
Peyton W. Douglas, Bessie Point, N.Y., assignor to Blackstone Corporation, a corporation of New York
Filed Oct. 23, 1965, Ser. No. 583,548
2 Claims. (Cl. 68-23)

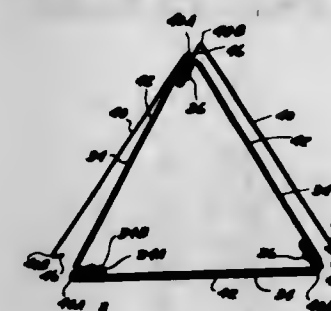


1. In a washing machine having a receptacle rotatable about a vertical axis, a housing on the bottom thereof, a fixed stationary member adapted to receive and support said receptacle, said housing having an at-rest position on said fixed stationary member, a depending drain member on the bottom of said receptacle, stopper means on the housing adapted to move into engagement with said drain when the housing is in the at-rest position and out of engagement when the receptacle is not in at-rest position, a drive shaft on the axis of the receptacle, means for lifting said housing from its at-rest position and rotating it, comprising a shaft member entering said housing, a lift member mounted on said shaft and rotatable therewith, a clutch means on the lift member engageable with said housing and means operatively connecting said lift member and clutch means in a manner to axially raise said clutch means into engagement with the housing whereby the housing is raised from its at-rest position moving the stopper means from the drain member and rotated when said shaft is rotated in one direction and to lower the clutch means out of engagement with the housing and the housing onto the stationary member moving the stopper means into closing position in the drain means when the shaft is moved in the opposite direction.

3,313,131
LOUVERED SIGN CONSTRUCTION
Willy T. Werner, 12326 E. McNichols, Detroit, Mich. 48205
Filed Dec. 7, 1964, Ser. No. 416,346
12 Claims. (Cl. 40-76)

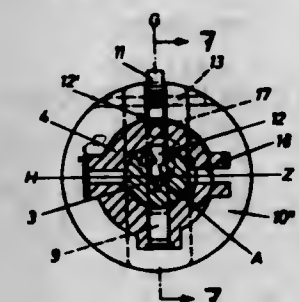
1. In a signboard structure, the combination comprising:
(a) a face panel having parallel side edges,
(b) means supporting said face panel and secured to one face thereof spaced from said side edges,

(c) a cover for said face panel and having side edges substantially coinciding with the panel side edges,
(d) each cover side edge having a flange extending therefrom and extending around said face panel edges, one of said flanges being return bent 180 degrees to be disposed parallel with the plane of said



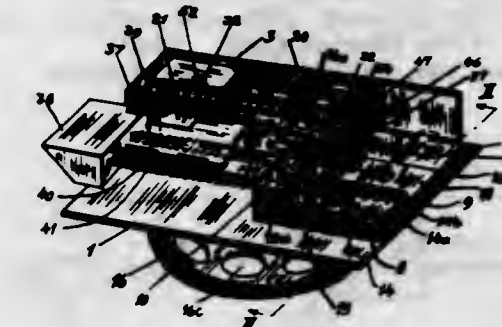
cover and engage the back of said face panel, the other of said flanges being return bent to an acute angle of approximately 60 degrees with respect to the plane of said cover, and
(e) said second flange being resiliently joined to the cover whereby it may be snapped over its corresponding edge.

3,313,132
STEERING-WHEEL LOCK PROVIDED WITH AN IGNITION SWITCH
Heinz Welter, Cologne-Lindenthal, Germany, assignor to Josef Voss KG, Brühl, Germany, a corporation of Germany
Filed July 2, 1965, Ser. No. 469,147
Claims priority, application Germany, July 30, 1964, V 26,480
8 Claims. (Cl. 70-252)



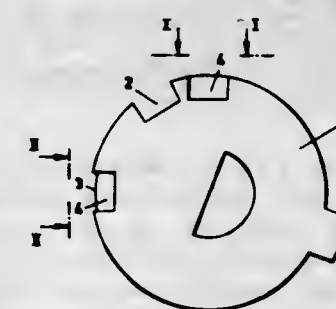
1. A key-operated steering-wheel lock comprising:
a housing body adapted to be attached to the steering mechanism of a vehicle,
a housing disposed in said housing body,
a rotary cylinder, rotatably disposed in said housing body and settable to any one of at least three operating positions,
locking means operated by said rotary cylinder for projection from said housing body and adapted for locking the steering mechanism in one of said operating positions,
a handle connected with said rotary cylinder for manually setting the latter to any one of said operating positions,
said handle defining an arcuate groove disposed in a plane substantially perpendicular to the rotary axis of said handle,
said housing defining a recess,
a locking pin guided in said recess of said housing and spring-biased toward said groove, thereby locking said rotary cylinder in a predetermined one of said operating positions, and
a knob pivotally mounted in said handle and abutting said locking pin, while protruding from said handle, and permitting in its pushed-in position the turning of said rotary cylinder from said predetermined to said one of said operating positions.

3,313,133
COMBINATION LOCK
Elgil Dybdal Norremark, Havdrupvej 6, Bronshøj, near Copenhagen, Denmark
Filed Jan. 23, 1964, Ser. No. 339,778
4 Claims. (Cl. 70-299)



1. A combination lock having a latching mechanism with locked and unlocked states, said lock comprising a plurality of movable tumbler plates, each having a notch, a dowel adapted for being moved into the notches of the tumbler plates for controlling unlocking of the latching mechanism of the lock, a release bar for acting on said dowel, an adjusting mechanism for stepwise adjusting said plates such that said notches in said tumbler plates can be aligned opposite said dowel which controls the unlocking of the lock, said adjusting mechanism including a pivotable shaft, a gear wheel on said shaft and adapted to displace each tumbler plate to a predetermined position according to a number code and an operating dial on said shaft turnable in opposite directions for adjusting said tumbler plates when turned one direction and for displacing the release bar when turned in the opposite direction to cancel any previous adjustment of the tumbler plates if at least one of the notches is not aligned with another and to withdraw the dowel from the notches when the latching mechanism is unlocked.

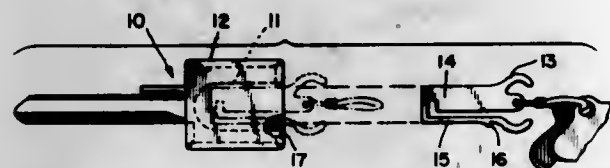
3,313,134
TUMBLER OR LOCKING DISKS FOR CYLINDER LOCKS AND A LOCK PROVIDED WITH SUCH DISKS
Gustaf A. Gahnberg, Helsinki, Finland, assignor to O/Y Wartsila A/B, Helsinki, Finland
Filed Jan. 22, 1965, Ser. No. 427,319
Claims priority, application Finland, July 9, 1964, 1,471/64
4 Claims. (Cl. 70-376)



1. A locking disc for cylinder locks, said disk being provided with an operative notch cut in the circumference thereof and adapted to seat a locking bar; at least one indentation formed in at least one side of the disk in order to make locating of said operative notch difficult for a lock-picker, said indentation having the same outline as said operative notch and being located similarly, separately, and with an arbitrary spacing along said disk; and means for misleading the lock-picker which do not detrimentally interfere with the movement of said locking bar along the circumference of said disk, said means comprising at least one additional notch formed in the

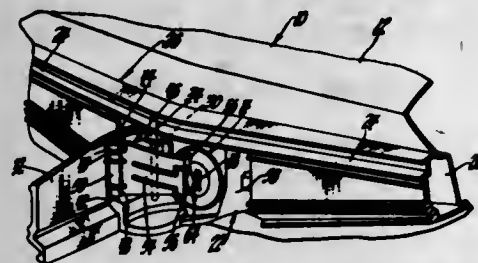
circumference of the disk, said additional notch having the same circumferential length as said operative notch and a smaller depth than said operative notch.

3,313,135
KEY COUPLING DEVICE
Sam Relamer, 2906 Colorado,
Santa Monica, Calif. 90404
Filed Nov. 19, 1964, Ser. No. 414,939
1 Claim. (Cl. 70-408)



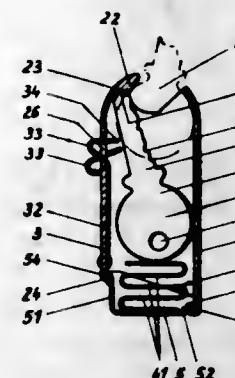
A key coupling structure comprising, in combination: a key having a flat holding portion including a recessed area formed in one surface of said holding portion and opening out of a free end of said holding portion; a cover, secured to said holding portion, having a flat top surface portion overlying said recessed area; and a separable key locking member, having retaining means to hold a plurality of keys, receivable in the end opening defined by said recessed area and cover, said cover including at least one bent edge portion eclipsing part of said end opening, said key locking member including first and second resilient leg elements having finger engaging portions, at least one of said leg elements having a lateral projection, whereby said finger engaging portions are biased together in order to fit said projection past said bent edge portion, and when said projection is within said recessed area and said finger engaging portions are released, said projection releasably engages said bent edge portion to prevent withdrawal of said key locking member.

3,313,136
LOCK CYLINDER COVER
Ronald S. Galette, Warren, and George D. Legge, Farmington, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 4, 1964, Ser. No. 387,315
2 Claims. (Cl. 70-455)



1. In combination with a vehicle body, a lock cylinder supported by said body and including abutment means, a closure member for closing the opening of said lock cylinder, means mounting said closure member on said vehicle body for movement between open and closed positions with respect to said lock cylinder, means biasing said closure member to closed position, a detent member pivotally secured to an intermediate portion of the closure member, said detent member being resilient and including a deflectable portion, means biasing said detent member toward said lock cylinder, said deflectable portion being engageable with said abutment means on said lock cylinder in the open position of said closure member to retain said closure member in said open position against the action of said closure member biasing means, and said detent member permits said deflectable portion to slide over said abutment means without damage to said detent member when a force is applied to said closure member in said open position.

3,313,137
KEY HOLDER
Elmar Maler, 139 Landstrasse, Vaduz-Muhleholz, Liechtenstein
Filed Dec. 16, 1964, Ser. No. 414,683
Claims priority, application Austria, May 19, 1964, A 4,319/64
11 Claims. (Cl. 70-456)



1. A key holder for a key having a lock engaging shank portion and a widened head portion comprising a housing having an opening large enough to permit passage of only the shank portion of the key, mean defining a latching recess in said housing adjacent to but offset from the opening for receiving an end of said shank portion of the key and holding it in a position withing said housing at which it is not aligned with and will not move through the opening, means for biasing a key positioned in the housing into said latching recess, and ejector means displaceable against said key to move the end of its shank portion out of the recess into alignment with and through the opening of the housing to an operative position in which the head portion remains within the housing.

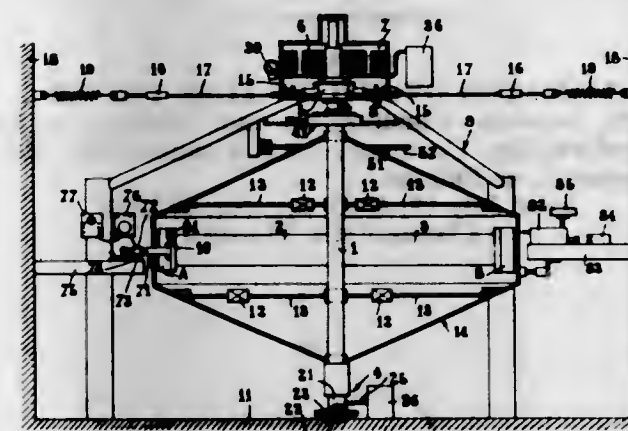
3,313,138
METHOD OF FORGING TITANIUM ALLOY BILLETS
Donald G. Spring, South Beaver Township, Beaver County, Pa., and Jack J. Niebel, Canton, Ohio, assignors to Crucible Steel Company of America, Pittsburgh, Pa., a corporation of New Jersey
No Drawing. Filed Mar. 24, 1964, Ser. No. 355,048
11 Claims. (Cl. 72-364)

1. In a method of forging an alpha-beta titanium-base alloy billet, the step which comprises forging an elongated workpiece of said alloy at a temperature below the beta transus temperature of said alloy to such an extent as to reduce the cross-sectional area of said workpiece by about 10 to 50% by simultaneously applying forces directed radially inward toward the longitudinal axis of said workpiece by means of at least three separate and distinct contacting surfaces arranged longitudinally along said workpiece and spaced substantially evenly about the periphery of said workpiece.

3,313,139
PRECISION CENTRIFUGE
Yves Cammartin and Helmut Habermann, Vernon, France, assignors to Etat Francais (French State) represented by the Minister of Armed Forces, Ministerial Delegation of Armament, Direction of Researches and Manufacture of Armament, Laboratory of Ballistic and Aerodynamic Researches, Vernon, France
Filed Oct. 27, 1964, Ser. No. 406,833
Claims priority, application France, Nov. 21, 1963, 954,564, Patent 1,391,769
3 Claims. (Cl. 73-1)

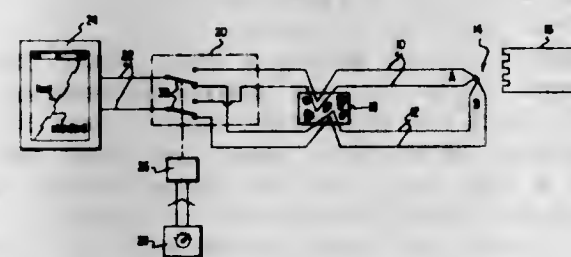
1. A precision centrifuge comprising a fixed frame structure, a vertical shaft carrying the objects subjected to the action of the centrifugal force, an electromotor rotatably driving said vertical shaft, a hydraulic, low-frictional torque footstep bearing carrying the lower end of said

vertical shaft, an air bearing of practically zero frictional torque mounted on said frame structure and receiving the upper portion of said vertical shaft, an external casing of revolution rigid with said shaft and enclosing the rotary component elements of the centrifuge, an upper base plate rigid with said frame structure, supporting said air bearing and receiving said vertical shaft therethrough, a



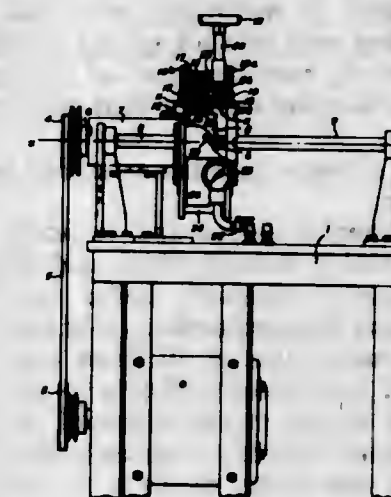
plurality of micrometric screws for adjusting the position of said air bearing on said base plate, and bracing wires, tensioning devices and springs attached together between said base plate and a plurality of fixed points surrounding the centrifuge, said tensioning devices permitting of adjusting the verticality of said vertical shaft by the elastic deformation of said frame structure.

3,313,140
AUTOMATIC CALIBRATION OF DIRECT CURRENT OPERATED MEASURING INSTRUMENTS
Frederick J. Tromontozzi, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Dec. 31, 1964, Ser. No. 422,615
1 Claim. (Cl. 73-1)



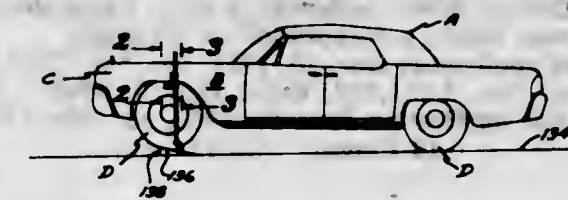
A method for automatically calibrating variable D.C. electrical current generating type measuring instruments such as thermocouples, pyrometers, strain gauges, D.C. tachometers and the like against a standard, the method comprising: (a) subjecting a test instrument and a standard instrument together to a controlled condition so that they are both subjected to the same parameter of that condition, (b) continuously varying the parameter the instruments are subjected to through a predetermined range, (c) alternately connecting the standard and test instruments to a recorder to alternately record the full output of each of the instruments so that they may be compared, (d) the recording and comparing step being performed at successive intervals within the predetermined parameter range.

3,313,141
SHAFT SEAL TESTING APPARATUS
Ernest T. Jagger, Geoffrey W. Halliday, and Victor W. English, all of Newcastle-upon-Tyne, England, assignors to George Angus & Company Limited, Newcastle-upon-Tyne, England
Filed May 4, 1964, Ser. No. 364,650
Claims priority, application Great Britain, May 15, 1963, 19,257/63
5 Claims. (Cl. 73-9)



1. In a shaft seal testing apparatus comprising a cylindrical mounting for an opposed pair of shaft seals, an annular oil chamber in said mounting and having an opening located to open between said seals, a cylindrical surface member for said seals to bear against, means for driving said surface member in simulation of shaft movement and support means for said mounting permitting axial separation of said mounting and said surface member for installation and removal of said seals; the improvement which consists in said support means comprising a pair of slide bars extending symmetrically parallel to, on opposite sides of and substantially co-planar with the axis of said mounting.

3,313,142
SHOCK ABSORBER TESTING DEVICE
Burdette C. Lockman, 215 S. Sullivan St., Santa Ana, Calif. 92704
Filed May 7, 1965, Ser. No. 454,013
8 Claims. (Cl. 73-11)

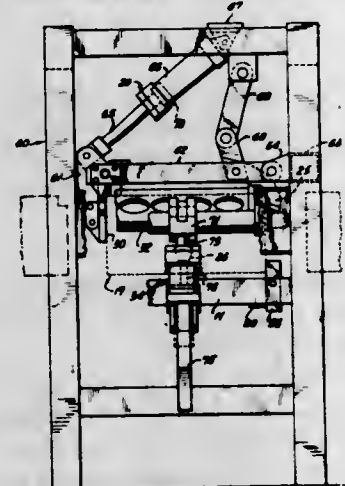


1. A device for testing shock absorbers on an automotive vehicle having a sprung portion, at least a part of which extends inwardly from substantially a vertical section thereof and wheels that support an unsprung portion of said vehicle, including:

- (a) a bracket;
- (b) first means for removably affixing said bracket to said inwardly extending part of said sprung portion of said vehicle that includes:
 - (1) two transversely spaced L-shaped members, each of which includes a substantially vertical leg and a substantially horizontal leg;
 - (2) a transverse crossbar affixed to the upper portions of said vertical legs;
 - (3) a first inverted channel that extends transversely between said vertical legs below said crossbar and is rigidly affixed to said legs;

- (4) a slide longitudinally movable on said horizontal legs, with said slide having a tapped bore formed therein above the space defined between said horizontal legs;
- (5) a threaded rod that engages said tapped bore;
- (6) a second channel transversely disposed above said horizontal legs and rotatably engaging the upper end of said rod; and
- (7) a handle for rotating said rod to move said second channel upwardly relative to said first channel to removably grip said inwardly extending part of said sprung portion when said vertically extending part of said sprung portion is in abutting contact with said crossbar
- (c) a roller;
- (d) a rigid elongate member extending upwardly from said roller;
- (e) two vertically spaced and vertically aligned eyes on said bracket through which said member extends;
- (f) a vertically adjustable collar mounted on said member and disposed between said eyes;
- (g) spring means that at all times urge said member and collar downwardly relative to said bracket;
- (h) electric switch means mounted on said bracket, which means includes a spring-loaded actuator that maintains said switch means in an open condition so long as a force is exerted on said actuator;
- (i) second means that move concurrently with said member and at all times tend to maintain said force on said actuator;
- (j) a dial for visually indicating the condition of said shock absorbers;
- (k) a geared down electric motor;
- (l) a needle rotated by said motor and so disposed as to sweep over said dial;
- (m) third means for supporting said dial and motor from said bracket; and
- (n) an electric circuit that includes said switch and motor, which motor is energized to rotate said needle to indicate the condition of said shock absorbers when said switch means closes due to separation of said second means from said actuator when one of said wheels and roller are concurrently driven off an abrupt drop-off to cause oscillation of said sprung portion relative to said unsprung portion.

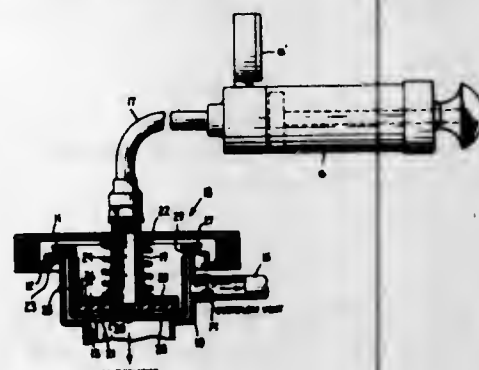
3,313,143
APPARATUS FOR LEAK TESTING CASTINGS
 Dewey M. Evans, Plymouth, and Frederick W. Koepke, Jr., Detroit, Mich., assignors to Ajem Laboratories, Inc., Livonia, Mich., a corporation of Michigan
 Original application Dec. 10, 1958, Ser. No. 779,349, now Patent No. 3,221,539, dated Dec. 7, 1965. Divided and this application June 10, 1965, Ser. No. 477,058
 10 Claims. (Cl. 73-41)



1. Apparatus for testing castings for leaks comprising rails for supporting castings, an indexing mechanism for

intermittently advancing castings along the rails, movable stop dogs for engaging the rearward end of a casting in the direction it is advanced by the indexing mechanism, a frame above the track, a clamping member mounted on the frame for movement from a position above the casting into engagement with the forward end of the casting in the direction it is advanced, and means for operating the clamping member into engagement with the forward end of the casting to move it bodily against the stop dogs at the rear of the casting and clamp it in a fixed position therebetween.

3,313,144
RADIATOR OVERFLOW TUBE TESTER
 Glen A. Johnson, Connersville, Ind., assignor to Stant Manufacturing Company, Inc., Connersville, Ind., a corporation of Indiana
 Filed July 19, 1965, Ser. No. 472,858
 4 Claims. (Cl. 73-49.7)

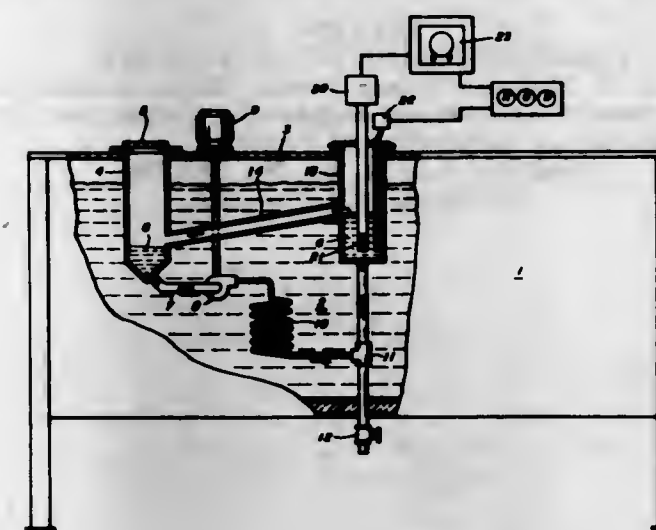


2. For use with:
 the filler neck of an automotive vehicle engine cooling system, said filler neck being formed to provide an open mouth circumscribed by an outer seat and a depending, cammed lip, and to provide an inner seat and an overflow vent between said seats, and with
 a pressure tester device including a cap-like element having means engageable with the lip of such a filler neck to secure said element to such a neck in spanning relation to the mouth thereof, a head associated with said cap-like element and resiliently and sealingly engageable with the inner seat of such a filler neck when said element is so engaged with the lip thereof, and pump means for delivering fluid under pressure through said head;
 the invention which comprises
 an open-ended cup having a body whose external diameter is less than the internal diameter of such a filler neck and whose axial length is less than the dimension between the inner and outer seats of such a filler neck, said cup having external flange means at one end proportioned and designed to overlie the outer seat of such a filler neck and having a continuous, annular flange adjacent its other end defining a sealing seat for such a head,
 and gasket means surrounding said cup body and engageable between said external flange means and the outer seat of such a filler neck to provide a seal.

3,313,145
RAPID VISCOSITY TESTING SYSTEM
 Michael R. Kraynik, Gary, and Thomas J. Reberchak, Chesterton, Ind., assignors to United States Steel Corporation, a corporation of Delaware
 Filed Sept. 22, 1964, Ser. No. 398,204
 1 Claim. (Cl. 73-54)

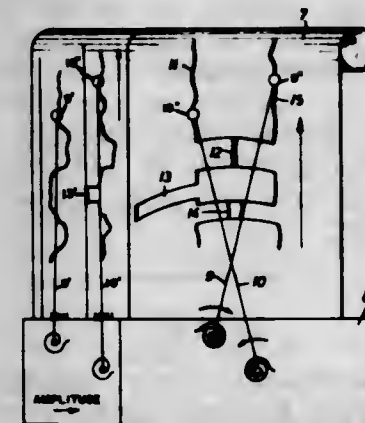
A system for rapidly testing the viscosity of road tar, blend fuel, and the like comprising a constant temperature bath, a container immersed therein for receiving test specimens, said container having an outlet at the bottom

thereof fluid-flowably connected to the inlet of a circulating pump which has its outlet fluid-flowably connected to the inlet of a heat exchanger immersed in said bath, the outlet of which is fluid-flowably connected to a specimen sump immersed in said bath, which sump has an over-



flow fluid-flowably connected with said specimen receiving container immersed in said bath, said sump having immersed therein a viscosimeter measuring element and a temperature sensing element, with means for recording and indicating specimen viscosity and temperature positioned outside of said bath.

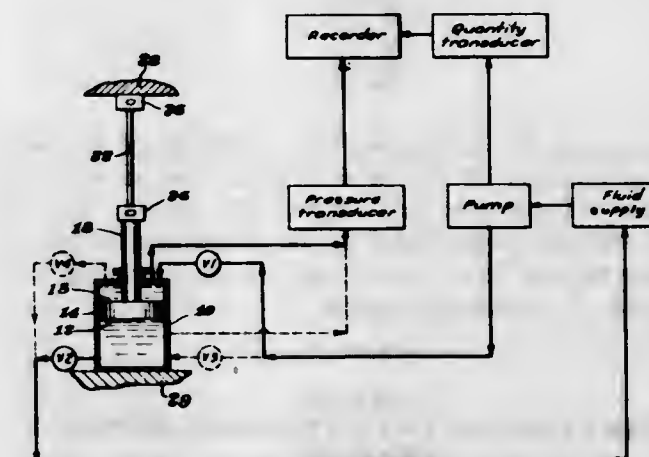
3,313,146
METHOD OF ULTRASONICALLY TESTING IRREGULARLY EXTENDING WELDS, OR WELDS HAVING IRREGULAR PORTIONS, BY THE PULSE ECHO METHOD
 Herbert Krautkramer, 449 Luxemburger Str., Cologne-Klettenberg, Germany
 Filed Feb. 10, 1964, Ser. No. 343,591
 Claims priority application Germany, Feb. 12, 1963, K 48,917
 3 Claims. (Cl. 73-67.8)



1. A method of ultrasonically testing irregularly extending weld seams or weld seams having irregular portions by the pulse echo method, comprising the steps of: placing at least two testing probes on opposite sides of a seam to be tested; disposing two recording systems, each provided with a recording stylus, adjacent a single recording surface with the styli in writing relationship with the surface; adjusting each recording system so that its associated stylus assumes a non-deflected position which corresponds to the location of a respective probe with regard to the weld to be tested; displacing the probes in unison relative to the weld in the mean direction of the weld seam, while maintaining the probes a constant distance apart, and simultaneously displacing the recording surface with respect to the styli in synchronism with the displacement of the probes; recording

the echo signals from each probe by a respective recording system by deflecting the stylus of the recording system, in response to the echo signals, in a direction which bears the same relation to the direction of displacement of the recording surface as the direction of travel of sonic pulses from the respective probe bears to the direction of displacement of the seam relative to the probes.

3,313,147
NON-DESTRUCTIVE TESTING OF STRUCTURES
 James W. Robbeck, Freeland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
 Filed Apr. 27, 1964, Ser. No. 362,659
 2 Claims. (Cl. 73-88)

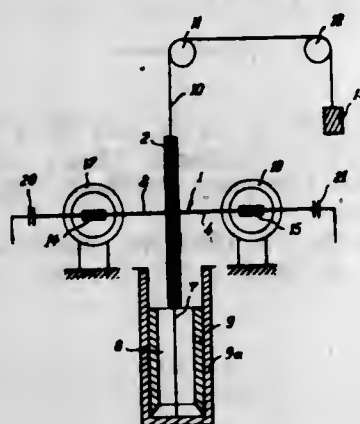


1. An apparatus for the non-destructive testing of a structural member which comprises:
 (a) a pump for delivery of fluid under pressure;
 (b) a fluid supply for said pump;
 (c) a hydraulic cylinder and piston combination, said piston slidably engaging the inner walls of said hydraulic cylinder, said cylinder and piston combination being of sufficient strength for it to take the pressure imposed on each element of said combination without reaching the elastic limit of each element of the combination and said hydraulic cylinder being in communication with said pump;
 (d) means to apply the force of the movement of the piston to the structural member, thereby subjecting the member to a stressing action;
 (e) support means to firmly hold in place said structural member to be tested;
 (f) a pressure transducer;
 (g) a quantity transducer; and
 (h) a recorder, said pressure transducer being connected to said hydraulic cylinder and to said recorder, said quantity transducer being connected to said pump and to said recorder.

3,313,148
APPARATUS FOR MEASUREMENT OF THE CHARACTERISTICS OF INTERNAL FRICTION
 Daniel Dautreppe, Grenoble, Emmanuel Friess, Meylan, and Antoine Salvi, Fontaine, France, assignors to Commissariat à l'Energie Atomique, Paris, France.
 Filed May 21, 1964, Ser. No. 377,138
 Claims priority, application France, May 29, 1963, 936,466
 4 Claims. (Cl. 73-99)

1. Device for the determination of the characteristics of internal friction of a sample comprising a torsion pendulum, the torsion wire of which is constituted by the sample, a first oscillator in which the tuned circuit comprises an element which is coupled to the pendulum so as to modulate its frequency with a swing which is

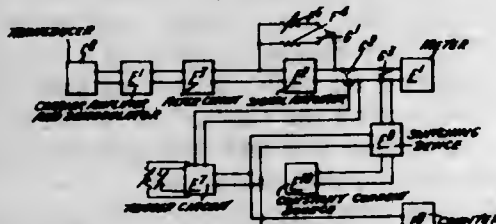
proportional to the amplitude of oscillatory movements of the pendulum, a frequency-generator designed to supply a voltage which is proportional to the frequency swing of the first oscillator, means for measuring said voltage and its difference with respect to a reference volt-



age and means for correcting the amplitude of the oscillatory movements of the torsion pendulum so as to reduce said difference to zero, a memory system for storing the voltage proportional to the frequency swing, the reference voltage being constituted by the preceding voltage stored in a memory system.

3,313,149 APPARATUS FOR INVESTIGATING SURFACE TEXTURE

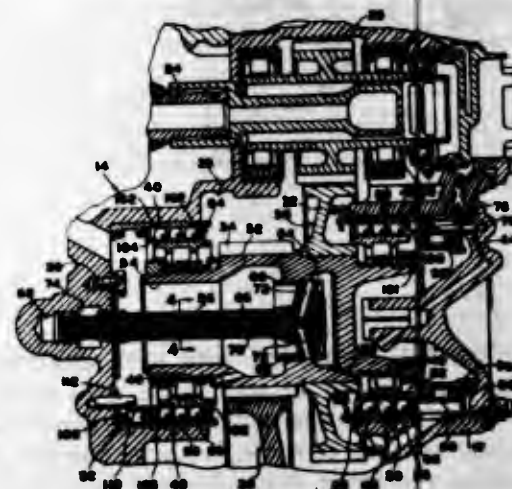
Robert Claude Spragg, Leicester, England, assignor to Rank Precision Industries Limited, trading as The Rank Organisation Rank Taylor Hobson Division, Leicester, England, a company of Great Britain
Filed June 22, 1964, Ser. No. 376,938
Claims priority, application Great Britain, June 26, 1963, 25,467/63; June 11, 1964, 24,269/64
28 Claims. (Cl. 73-105)



1. In apparatus for investigating surface texture having a stylus for engagement with the surface under test, means for traversing the stylus along the test surface and means for generating amplified electrical signals representative of the profile of the test surface in accordance with the working movements of the stylus approximately normal to the test surface during traversing, means for the investigation of surface high spots or valleys, comprising means for receiving the amplified profile-representative signals during a preliminary traversing movement of the stylus, an adjustable gain device which is operated, in preparation for a second traversing movement of the stylus along the test surface, in accordance with the value of a characteristic magnitude of the amplified profile-representative signals fed to the receiving means during the preliminary traversing movement, so that the profile-representative signals generated during such second traversing movement are amplified at a gain such that the value of the said characteristic magnitude corresponds to a pre-selected value, a trigger circuit for receiving the amplified profile-representative signals at the adjusted gain during the second traversing movement of the stylus, means for adjusting the level at which the trigger circuit is actuated, whereby only selected of the amplified profile-representative signals give rise to output pulses from the trigger

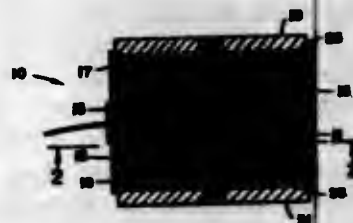
circuit, and means fed with the output pulses of the trigger circuit for providing a measurement or indication relating to surface high spots or valleys in accordance with the setting of the level-actuating adjusting means.

3,313,150
TURBINE ENGINE TORQUE METER
Edward A. Halbert, Grosse Pointe, Mich., assignor to Continental Aviation and Engineering Corporation, Detroit, Mich., a corporation of Virginia
Filed July 6, 1964, Ser. No. 384,286
17 Claims. (Cl. 73-136)



1. Means for measuring the output torque of a power transmitting means comprising
 - (a) a torque transmitting member rotatably driven by the power transmitting means and adapted to assume an axial position which is dependent upon the output torque of the power transmitting means,
 - (b) a first bearing means for rotatably supporting said torque transmitting member, and
 - (c) a second bearing means mounting said first bearing means for axial movement of said torque transmitting member, said second bearing means comprising a fixed member, an axially movable member and a plurality of balls disposed between and engaging opposed surfaces of said last mentioned members, said movable member and said torque transmitting member being operably connected by said first bearing means to move axially together whereby said balls roll along the surface of said fixed member.

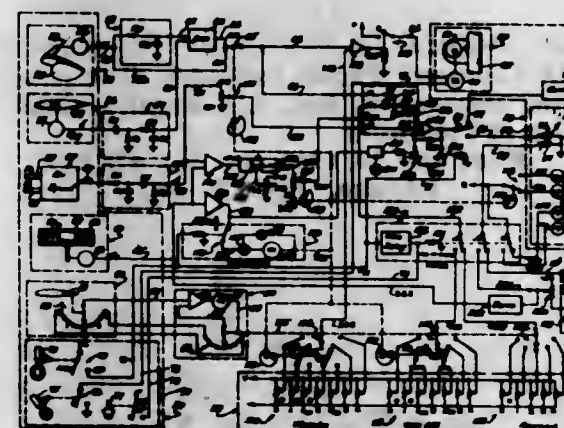
3,313,151
LOAD CELL
Michael C. Kaye, Portland, Oreg., assignor to Freightliner Corporation, Portland, Oreg., a corporation of Delaware
Filed July 26, 1965, Ser. No. 474,924
6 Claims. (Cl. 73-140)



1. A load cell for use in measuring forces applied thereto comprising a substantially cylindrical core of elastomer, a thin-walled substantially cylindrical shell of imperfectly circular cross section as manufactured surrounding said core, said core having a relaxed circumference

at its midsection greater than the inner circumference of said shell, said shell normally prestressing said core an extent forcing said shell into a configuration wherein, considered in cross section, the area within said shell is a maximum in relation to the circumferential length of the shell, with the said shell behaving as a cylindrical membrane exhibiting tangential stress and substantially no bending stress in order to provide linear tangential strain in the shell for stress occurring in said core, and means operatively connected to said shell for developing a signal responsive to strains induced therein, the prestressing of said core being sufficient to induce a strain greater than 200 micro-inches/inch.

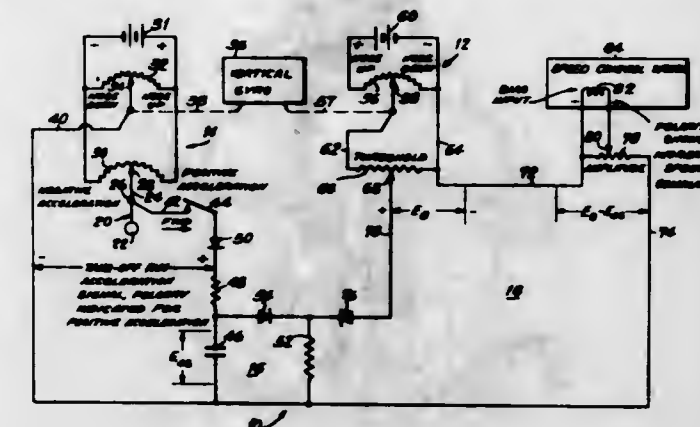
3,313,152
FLIGHT CONTROL SYSTEM
Richard J. Kula, Orange, and Rhaydas A. Kaminakas, Duarte, Calif., assignors to General Controls Corporation, Los Angeles, Calif., a corporation of New York
Filed May 6, 1963, Ser. No. 277,992
21 Claims. (Cl. 73-178)



20. A system for producing a pitch steering signal for an aircraft for use during steady state climb and descent to damp phugoid oscillation of the aircraft, comprising the combination of
 - means responsive to the angle of attack of the aircraft and acting to produce a first signal representing the value thereof,
 - means for producing a second signal representing the rate of change of the indicated airspeed of the aircraft,
 - means for combining said signals in such polarity that the second signal opposes the first signal when the rate of change of indicated airspeed and the angle of attack have the same sign,
 - and means acting to derive from the combined signal a pitch steering signal that changes in a negative direction in response to a positive rate of change of airspeed during phugoid oscillation and changes in a positive direction in response to a negative rate of change of airspeed during phugoid oscillation, so as to allow a change in the angle of attack in the direction opposite to the direction of a change of the pitch steering signal to compensate for that change in the pitch steering signal and to damp the phugoid oscillation.

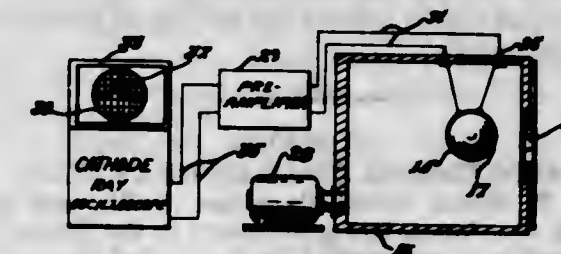
3,313,153
TAKE-OFF ATTITUDE COMPUTER
Leonard M. Greene, Chappaqua, N.Y. (% Safe Flight Instrument Corp., 4 Water St., White Plains, N.Y. 10601)
Filed Jan. 7, 1965, Ser. No. 424,849
22 Claims. (Cl. 73-178)

3. For use in an airplane instrument that controls the climb-out of an airplane, a biasing means including a



climb-out power sensing first means having an output that varies as a function of prevailing climb-out power, a take-off run acceleration second means having an output that varies as a function of take-off acceleration, a storage memory third means for storing the average maximum value of the output of the second means for a time which is long in comparison with the climb-out time, the output from the third means for a selected maximum value of acceleration being equal to the output from the first means for a selected safe climb-out pitch angle, and a comparison fourth means comparing the output from the first means with the memory output from the third means and when the output from the first means exceeds the memory output from the third means furnishing a biasing signal that is a measure of the difference.

3,313,154
APPARATUS FOR MEASURING ENERGY OUTPUT OF A LASER
Charles W. Bruce, Richfield Springs, N.Y., assignor to the United States of America as represented by the Secretary of the Air Force
Filed July 20, 1964, Ser. No. 384,006
3 Claims. (Cl. 73-190)



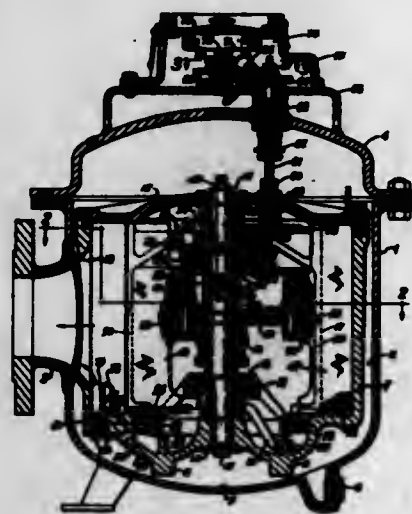
1. An energy measuring device for determining the total energy output of a laser comprising: a black-body enclosure having an opening in the front panel thereof, a hollow sphere suspended in said black-body enclosure, elongated thermal insulators attached between said black-body enclosure top and said hollow sphere for supporting said hollow sphere in a suspended state, said hollow sphere having a small opening off-center thereof in alignment with the opening in said black-body enclosure to receive the laser beam passing therethrough, the inner surface of said hollow sphere being highly polished to reflect and dissipate the laser beam which enters thereto, sensing means attached to the outer surface of said hollow sphere for determining temperature change thereof, and means for displaying the signal from said sensing means, the temperature change of said hollow sphere shown on said display means being proportional to the total energy output of the laser.

3,313,155

FLUID FLOW METER

Charles D. Erickson, Erie, Pa., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York

Filed June 17, 1964, Ser. No. 375,866
4 Claims. (Cl. 73-259)



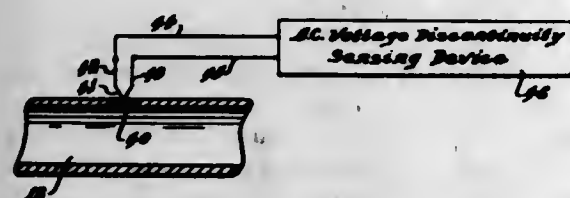
1. In a liquid measuring apparatus, a casing having a liquid inlet and a liquid outlet, a central post disposed within the casing, a cylindrical rotor journaled on the post and spaced inwardly of the casing to provide a chamber therebetween communicating with the inlet and the outlet, said rotor having a series of circumferentially spaced vertical slots therein, a blade slidably disposed within each slot of the rotor and disposed to be moved outwardly into the flow path of liquid moving within the chamber to thereby rotate the rotor with rotation of the rotor being transmitted to a counting mechanism, the lower portion of the casing beneath the blades defining a generally annular trough, first liquid diverting means extending into said chamber for diverting a portion of the liquid flowing in the chamber from the inlet to the outlet into said trough, and second flow diverting means located in said trough for diverting the liquid flowing within the trough back to said chamber, the flow of liquid within the trough serving to prevent the settling of foreign matter within said trough.

3,313,156

MONITORING OF PEAK HEAT FLUX

Bernard P. Breen, South Pasadena, Calif., and George Burnet, Jr., Ames, Iowa, assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed June 30, 1964, Ser. No. 379,413
5 Claims. (Cl. 73-343)



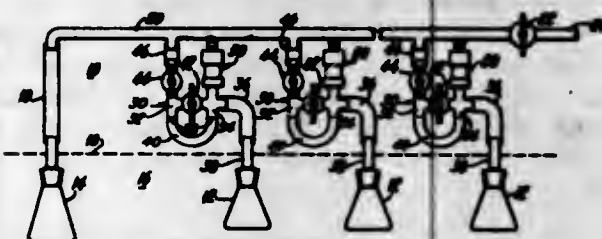
1. A boiling system apparatus comprising a heat transfer wall, a means forming a limited portion of said wall having greater thermal conductivity than the rest of the wall, said portion being responsible for an earlier termination of nucleate boiling and onset of transition boiling in a region surrounding said limited portion, and temperature sensing means within the said region on the low temperature side of said wall.

3,313,157

RESPIROMETER

Warren E. Gilson, Madison, Wis. (Gilson Medical Electronics, 3000 W. Belknap, Middleton, Wis. 53562)

Filed Mar. 27, 1964, Ser. No. 355,158
12 Claims. (Cl. 73-401)



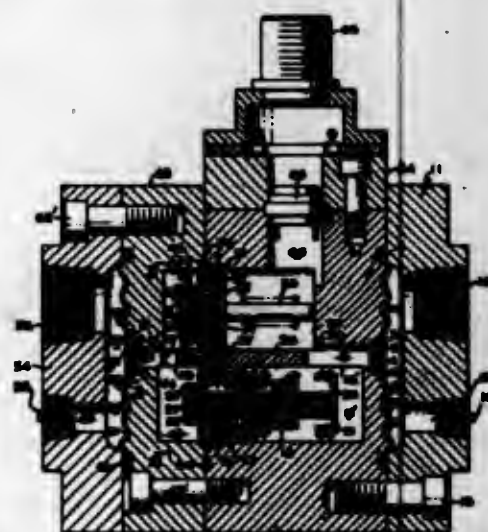
1. A differential respirometer, including in combination a plurality of active flasks, a manifold, a plurality of differential manometers each having one leg communicating with a respective one of said active flasks and a second leg communicating with said manifold, and a single reference flask communicating with said manifold and through it with the second legs of the manometers.

3,313,158

HIGH OVERLOAD PRESSURE TRANSDUCER

Mario Di Giovanni, Pacific Palisades, Calif., assignor to Statham Instruments, Inc., Los Angeles, Calif., a corporation of California

Filed July 23, 1965, Ser. No. 878,817
1 Claim. (Cl. 73-407)



A transducer comprising a case, a pair of transverse walls in said case forming a pair of opposed diaphragm chambers in said case, a force summing diaphragm closing each diaphragm chamber in said case, each diaphragm mounted adjacent to one of said walls, a fluid inlet chamber on the other side of each diaphragm, a sensing transducer chamber positioned between said diaphragm chamber walls, a sensing transducer in said transducer chamber, a sensing diaphragm in said sensing transducer chamber connected to said sensing transducer, only one relief chamber positioned in said case between said diaphragm chambers, a relief diaphragm in said relief chamber, a fluid communication passageway through one of said walls to one side of the said sensing diaphragm and one side of said relief diaphragm, fluid communication between said side of said sensing diaphragm and said side of said relief diaphragm, a fluid communication passageway through the other of said walls to the other side of said sensing diaphragm and the other side of said relief diaphragm and a fluid communication between the other side of said sensing diaphragm and the other side of said relief diaphragm, fluid in said case and filling said chambers and passageways, the size and stiffness of the force summing diaphragms being substantially the same and the volume of the diaphragm chambers being substantially the same, the stiffness opposing the deflection of the relief

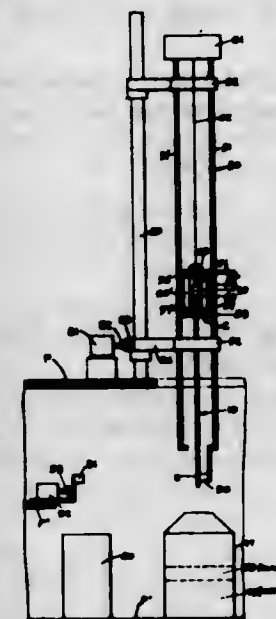
diaphragm being substantially less than the stiffness opposing the deflection of said sensing diaphragm.

3,313,159

APPARATUS FOR EXTRACTING A METAL SAMPLE DURING A STEEL MAKING OPERATION

Alfred G. Vanderbeck, 730 Laurel Lane, Colonial Village, Pa. 17109

Filed Aug. 31, 1964, Ser. No. 393,860
2 Claims. (Cl. 73-423)



1. In combination:
(a) an upright converter having an upper open end and operated in an industrial steel making process wherein a body of molten metal is accumulated,
(b) a tower structure disposed above the converter and mounting a carriage therein for vertical movement,
(c) means supported by the tower structure for effecting vertical movement of the carriage in alternate downward and upward directions,
(d) said carriage having brace structure providing a vertical socket,
(e) a sampler device formed of an elongated shaft having a probe at one end,
(f) said elongated shaft being receivable in said vertical socket to position the probe below the carriage,
(g) said probe forming a receptacle and being operable when the carriage is moved in the downward direction to extract a sample of the molten metal from the converter and to remove the sample from the converter when the carriage is moved in the upward direction and
(h) a grooved area between the elongate shaft and the probe to permit the probe to be readily separated after a sample has been extracted.

3,313,160

REMOTE METER READING SYSTEM

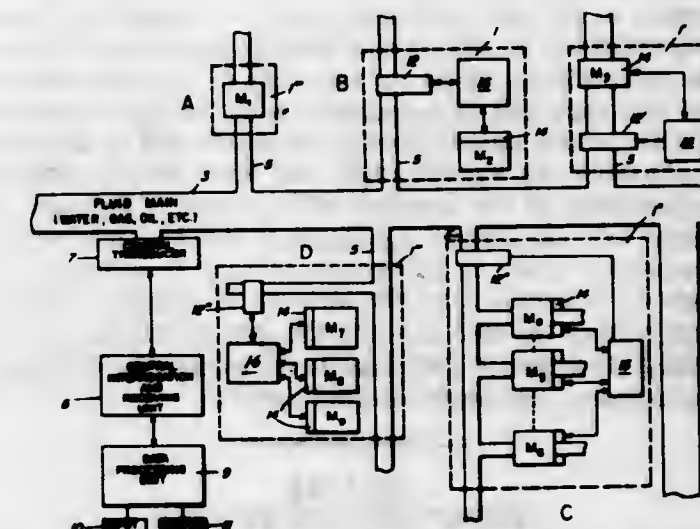
David A. Goldman, Croton Heights Road, Box 69, R.F.D. 1, Yorktown Heights, N.Y. 10598

Filed June 29, 1964, Ser. No. 378,499
3 Claims. (Cl. 73-432)

1. A system for reading a plurality of remotely located meters which meters are located at various points serviced by an enclosed fluid network and are adapted for measuring the flow of fluid from said network said system comprising:

(1) transmitting means operatively connected with said enclosed fluid network and adapted to transmit addressing sonic energy signals through the fluid in said enclosed fluid network, said addressing sonic energy signals identifying the meter to be read

(2) receiving means operatively connected with each of said meters and said enclosed fluid network for receiving addressing sonic energy signals transmitted by said transmitting means and adapted to be actuated by a predetermined addressing sonic energy signal to convert the reading of the remotely located meter identified by said predetermined addressing sonic energy signal into a meter reading sonic energy signal



(3) transmitting means operatively connected with said enclosed fluid network and each of said meters and adapted to transmit said meter reading sonic energy signal through the fluid of said enclosed fluid network
(4) receiving means operatively connected with said enclosed fluid network for receiving the meter reading sonic energy signal and
(5) means for recording the meter reading sonic energy signal received by the last named means.

3,313,161

MEANS FOR MEASURING RELATIVE ANGULAR DISPLACEMENTS OF A ROTOR

Arnold T. Nordlock, Santa Barbara, Calif., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 14, 1963, Ser. No. 287,830
7 Claims. (Cl. 74-5.6)



1. Means for measuring relative angular displacements of the spin axis of a rotor with respect to a spin reference axis and comprising a rotor support member defining a

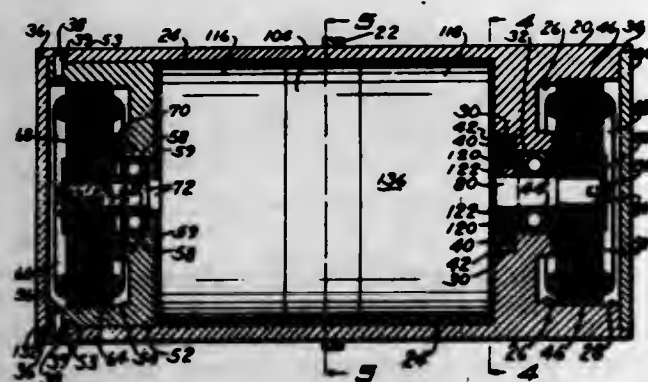
spin reference axis, a rotor supported for rotation about its spin axis by the support member, the rotor having an annular surface coaxial with its spin axis, intelligence transmitting means on the circular periphery of the rotor including a transmitting area and a non-transmitting area each being askew of the spin axis, a pair of pick-offs mounted on the support member each being responsive to intelligence transmitted from the transmitting area and operative to develop an output signal each time it receives intelligence therefrom, and the effective locations of the pick-offs being angularly displaced by a known angle with respect to the spin reference axis and located in a plane perpendicular to the spin reference axis whereby when the rotor rotates about its spin axis in a given direction and the spin axis is coincident with the spin reference axis the output signals from the pick-offs will be displaced in phase by the known angle and upon relative angular displacement of the spin axis with respect to the spin reference axis the output signals from the pick-offs will be displaced in phase by an amount different from the known angle as determined by the amount of angular displacement between the spin axis and the spin reference axis and means connected to the pickoffs for measuring the phase displacement between the output signals.

3,313,162

GYROSCOPIC APPARATUS

William A. Bundschuh, Lemay, Mo., assignor to Universal Match Corporation, St. Louis, Mo., a corporation of Delaware
Original application Sept. 4, 1962, Ser. No. 221,229.
Divided and this application June 17, 1964, Ser. No. 375,894

15 Claims. (Cl. 74-5.6)



1. A rate gyroscope that comprises:

- (a) a housing,
- (b) bearings disposed within said housing to support a rotatable member,
- (c) said bearings enabling said member to rotate about a predetermined spin axis,
- (d) an electric motor disposed within said housing and having the rotor thereof connected to said member to rotate said member about said predetermined spin axis,
- (e) a generally spherical recess within said member,
- (f) a heavy, electrically-conductive liquid disposed within said recess,
- (g) said liquid only partially filling said recess,
- (h) said liquid responding to rotation of said member about said predetermined spin axis to form an annulus within said recess,
- (i) said liquid responding to rotation of said member about said predetermined spin axis to tend to rotate about said predetermined spin axis,
- (j) said member being adapted to serve as an outer rotor for said gyroscope,
- (k) said liquid being adapted to serve as an inner rotor for said gyroscope,

- (l) said liquid being adapted to rotate about said predetermined spin axis as long as said member rotates about said predetermined spin axis and tending to continue to rotate about said predetermined spin axis when said member is shifted to rotate about a further axis which is angularly displaced from said predetermined spin axis,
- (m) a magnetic core rotatable with said member,
- (n) a winding rotatable with said magnetic core and with said member,
- (o) said magnetic core and said winding constituting the magnetic core and the secondary winding of a transformer of which said liquid is a one turn primary winding,
- (p) a rotary transformer having the primary winding thereof connected to the first said winding and having the secondary winding thereof connectible to phase sensitive detectors,
- (q) a permanent magnet rotatable with said member and having the poles thereof directing magnetic flux lines through said recess,
- (r) a reference generator disposed within said housing and having the rotor thereof connected to and rotatable with said member,
- (s) said reference generator having the output thereof connectible to said phase sensitive detectors,
- (t) said liquid being adapted, whenever said member and said liquid are rotating about said predetermined spin axis, to cut substantially no flux lines from said permanent magnet but being adapted, when said member rotates about said further axis, to sinusoidally cut flux lines from said permanent magnet,
- (u) said liquid serving the function of the rotor of a signal generator and also serving the function of a one turn primary winding of a transformer, thereby enabling said magnetic core and the first said winding to apply a sinusoidal signal to the primary winding of said rotary transformer,
- (v) said rotary transformer enabling said secondary winding thereof to supply a sinusoidal signal to said phase sensitive detectors,
- (w) said reference generator providing a two phase signal to said phase sensitive detectors, whereby the direction of shift of said member can be detected,
- (x) the rate of shift of said member determining the amplitude of the sinusoidal cutting of said flux lines from said permanent magnet by said liquid, whereby said gyroscope can sense the rate of shifting of said member,
- (y) said magnetic core having an E-shaped portion and an I-shaped cap,
- (z) the middle arm of said E-shaped portion of said magnetic core extending through said recess and through said annulus formed by said liquid,
- (aa) the first said winding having one portion thereof telescoped over said middle arm of said E-shaped portion of said magnetic core and being adjacent one side of said recess,
- (ab) the first said winding having another portion thereof telescoped over said middle arm of said E-shaped portion of said magnetic core and being adjacent the opposite side of said recess, and
- (ac) cylindrical shields that shield and enclose portions of said member.

3,313,163

GYROSCOPIC VIBRATION ABSORBER

William G. Flannely, South Windsor, Conn., assignor to Kaman Aircraft Corporation, Bloomfield, Conn., a corporation of Connecticut

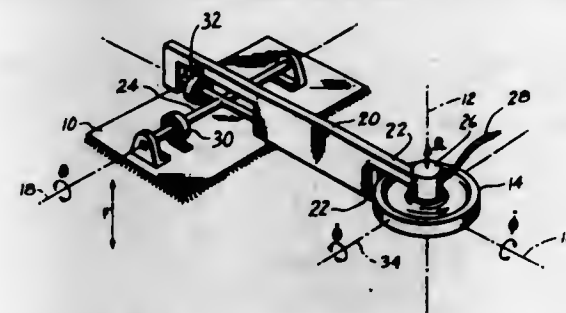
Filed July 23, 1963, Ser. No. 297,017

18 Claims. (Cl. 74-5.22)

1. A vibration absorber comprising a mass, and means supporting said mass for rotation about a spin axis which

spin axis is rotatable about a first axis generally perpendicular to said spin axis and which first axis is in turn

being of shallow frusto-conical form whereby to provide an upwardly and inwardly inclined inner face; the drive

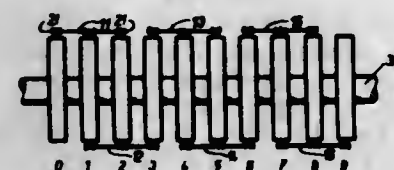


rotatable about a second axis generally perpendicular to said first axis and spaced from said spin axis.

3,313,164

DEVICE FOR SOLVING DIRECT AND INVERSE FOURIER INTEGRAL AND FOR HARMONIC ANALYSIS

Zdeněk Trnka, Prague, Czechoslovakia, assignor to Československá akademie věd, Prague, Czechoslovakia
Filed Feb. 17, 1965, Ser. No. 433,307
Claims priority, application Czechoslovakia, Feb. 27, 1964, 1,116/64
5 Claims. (Cl. 74-198)



1. A device for solving a direct and inverse Fourier integral and for harmonic analysis, wherein the amplitude and phase shift of the frequency spectrum, or the real and imaginary part of the frequency spectrum are determined from the ordinates of the given curve at p points removed from each other through a distance T/p for any continuously varying frequency, or wherein the value of a function is determined at arbitrarily distributed points from a continuous frequency spectrum defined at p points, comprising:

- (a) a plurality of hub members mounted in axial sequence for rotation about a common axis;
- (b) a plurality of substantially identical link members respectively mounted on said plurality of hub members for radial movement relative to the associated hub member; and
- (c) linkage means operatively interposed between said hub members and responsive to relative angular displacement of the axially first and last hub members for rotating the hub members sequentially interposed between said first and last members through respective angles which are integral multiples of an integral fraction of the angle of said angular displacement.

3,313,165

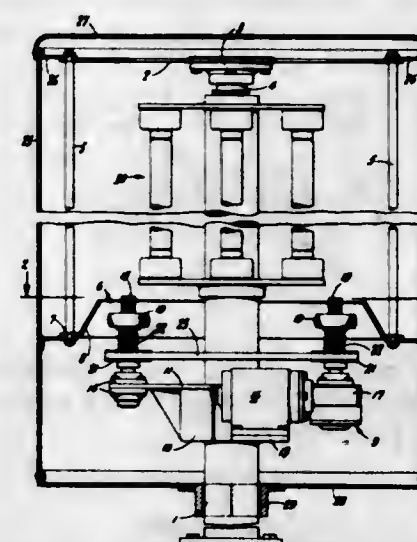
ROTARY MOUNT AND DRIVE MEANS FOR A DISPLAY SIGN

Louis J. Evans, Oakland, Calif., assignor to American Neon Displays, Inc., Oakland, Calif., a corporation of California

Filed Apr. 5, 1965, Ser. No. 445,625

9 Claims. (Cl. 74-206)

1. A power driven rotary mount comprising a post, a top member turnably secured to the post, a ring surrounding the post a distance below the top member, suspension elements between the top member and the ring, and a drive mechanism on the post engaging the ring; the ring



mechanism including friction rollers engaging such face, and one at least of the rollers being driven.

3,313,166

TOOTHED BELT DRIVE

Ulrich Elster, Langenhagen, Germany, assignor to Continental Gummi-Werke Aktiengesellschaft, Hannover, Germany

Filed Mar. 16, 1965, Ser. No. 440,169

Claims priority, application Germany, Mar. 19, 1964, C 32,450

7 Claims. (Cl. 74-229)



1. A belt gear transmission, which comprises in combination: a pair of toothed wheels having two substantially parallel axes arranged in spaced relationship to each other and being substantially aligned with regard to each other in a direction transverse to their axes, and a toothed endless belt passed around said wheels and having its teeth in mesh with said toothed wheels, the dimensional relationship of said belt teeth and said wheel teeth being such that the extension of the belt teeth at the base thereof in the longitudinal direction of the belt is considerably greater than the corresponding extension of the wheel teeth at their base while the height of said belt teeth exceeds that of the wheel teeth to such an extent that the belt teeth when engaging the spaces between the wheel teeth frictionally engage the peripheral wheel portion between the respective adjacent wheel teeth while said wheel teeth engage flanks only of said belt teeth.

3,313,167

TOOTHED BELT DRIVE

Hans-Holger Wiese, Fahrenburg, Germany

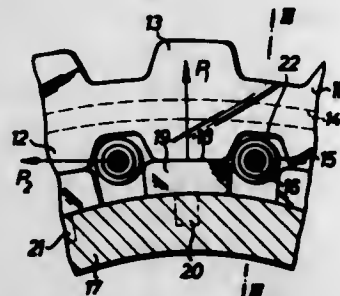
Filed Mar. 16, 1965, Ser. No. 440,201

Claims priority application Germany, Mar. 17, 1964, W 36,403

10 Claims. (Cl. 74-229)

1. A toothed belt drive, in combination, a belt consisting of elastic material having regularly spaced teeth on its inner surface, said teeth being formed integral therewith, a pulley in engagement with said belt, said pulley being a

pin-wheel gear with pins arranged at equally spaced intervals around the circumference and parallel to the axis of said pulley, a sleeve rotatably mounted on each of said



pins drivingly engaged in the spaces between said teeth, and means supporting the crests of said teeth between the sleeves of said pin-wheel gear.

3,313,168

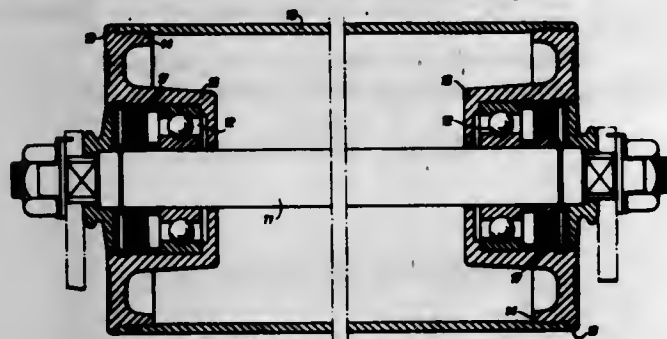
IDLER FOR BELT CONVEYORS

Edmund W. Matthews, Hallow, England, assignor to The Mining Engineering Company Limited, Worcestershire, England, a British company

Filed Feb. 1, 1965, Ser. No. 429,229

Claims priority, application Great Britain, Feb. 21, 1964, 7,259/64

1 Claim. (Cl. 74-230.3)



An idler roller for a belt conveyor comprising a radially expandable metal tube, metal end rings in opposite ends of said tube and adapted for mounting the roller on a spindle, and a plurality of radially extending preformed annular ribs and grooves on the outer surface of each end ring and the inner surface of the tube, said ribs and grooves being constructed and arranged that upon expansion of said tube each ring is engageable with said tube without substantial interference between said preformed ribs and grooves on said ring and tube, said ribs and grooves interengaging each other in overlapping relationship at normal temperatures to provide a mechanical interference fit to lock each ring to said tube when the latter is in an unexpanded condition.

3,313,169

VARIABLE SPEED DRIVE

Andrew P. Peters, 74 Bohmar Road,

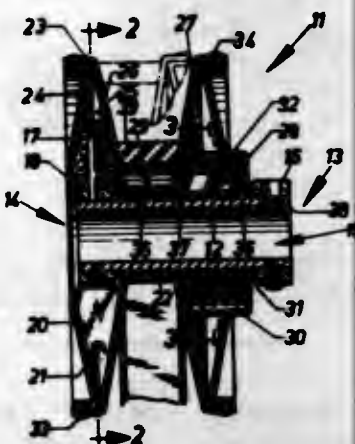
Westhill, Ontario, Canada

Filed Aug. 7, 1964, Ser. No. 388,081

4 Claims. (Cl. 74-230.17)

1. In a drive transmitting centrifugal clutch mechanism for use in operative association with a drive-shaft, a centrifugal clutch assembly fixed to said drive-shaft for rotation therewith, a clutch housing having an inner surface of annular configuration, said clutch housing enclosing said clutch assembly, and surrounding said drive-shaft, said clutch assembly embodying centrifugally movable elements and a set of radial spokes operatively fixed for rotation to said drive-shaft, said elements moving centrifugally on said spokes and being bearable progressively against the inner surface of said housing as

the speed of said drive-shaft is increased, said housing idling freely on said drive-shaft until, and to the extent that, said centrifugally movable elements exert frictionally transmitted power to said housing due to said progressive



bearing against said inner-surface, said elements having friction faces complementary to said inner clutch housing surface, said inner-surface of said housing being of progressively diminishing diametrical cross-section from axis to perimeter.

3,313,170

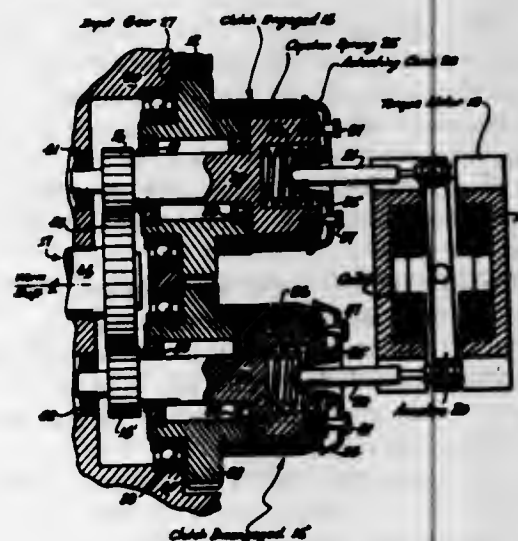
ELECTROMECHANICAL ACTUATOR

Garry T. Lacy, Claremont, and Jack L. Hoffa, Brea, Calif., assignors to General Dynamics Corporation,

Pomona, Calif., a corporation of Delaware

Filed Aug. 10, 1964, Ser. No. 388,525

12 Claims. (Cl. 74-345)



1. An actuator comprising: a gear train including an output member, a plurality of clutch means operatively connected with said gear train, input means operatively connected to each of said clutch means, means for driving said input means, and a torque motor means for selectively actuating said plurality of clutch means, whereby clutch engagement transport time delay is reduced to a minimum, each of said clutch means including an output element operatively connected to said gear train, spring means positioned around at least a portion of said output element and operatively connected to said input means, actuating cone means movably mounted with respect to said output element and said spring means, means for restraining movement of said cone means toward said output element, said cone means being constructed so as to abut at least a portion of said spring means when moved by said torque motor means, whereby said spring

means is moved into contact with said output element upon movement of said cone means by said torque motor means.

3,313,171

HYDRAULIC REVERSING GEAR DEVICES FOR MARINE INTERNAL-COMBUSTION ENGINES

Michioka Nagasaki, Toyonaka-shi, Japan, assignor to

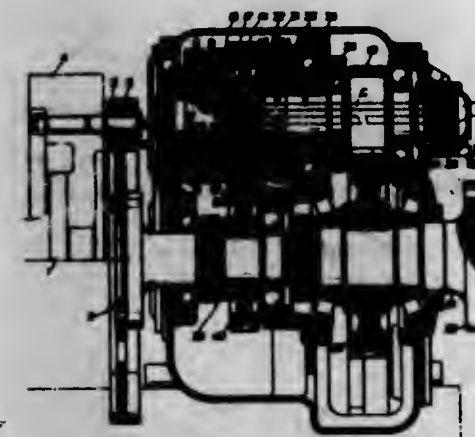
Tadano Yamaoka, Ashiya-shi, Japan

Filed June 4, 1964, Ser. No. 372,465

Claims priority, application Japan, June 7, 1963,

36/42,956; July 18, 1963, 36/38,815

2 Claims. (Cl. 74-377)



1. A hydraulic reversing gear device for an internal combustion engine, said device comprising an input shaft; a first clutch shaft parallel to said input shaft; a first clutch output pinion fixed to said first clutch shaft; a tubular second clutch shaft mounted over said first clutch shaft; a second clutch output pinion fixed to said second clutch shaft; a forward and reverse clutch assembly rotatably mounted over said first clutch shaft and adapted to selectively drive said first clutch shaft and said second clutch shaft; gearing means operatively connecting said clutch assembly and said input shaft; an output shaft coaxial with said input shaft; a common gear wheel fixed to said output shaft and operatively connected to said first clutch output pinion; and a reversing intermediate gear operatively connecting said second clutch output pinion to said common gear wheel.

3,313,172

WORMS FOR WORM AND WORM WHEEL ASSEMBLY AND METHOD OF FORMING THE SAME

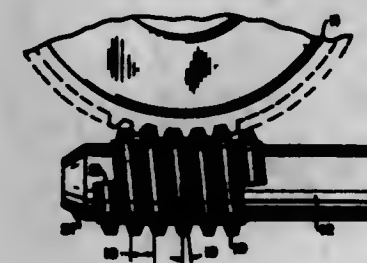
Bernard Ulrich, Jr., and Philip Ulrich, Corpus Christi, Tex., assignors to Ulrich Bros., Inc., Corpus Christi, Tex., a corporation of Texas

Original application Nov. 3, 1961, Ser. No. 190,026, now

Patent No. 3,186,082, dated June 1, 1965. Divided

and this application Jan. 4, 1965, Ser. No. 423,013

4 Claims. (Cl. 74-458)



1. A worm thread device comprising a cylindrical shaft and a helical coil mounted on the outer circumference of said shaft and forming a series of convolutions, said convolutions having a predetermined pitch

angle and pitch and continuously exerting a radially inwardly directed force on said shaft for being fixedly mounted thereon, said coil being formed from a bar having a base flange and being wound at a greater angle to the axis of said coil than the angle the tangent to a helical convolution makes to said axis for providing a reactionary axial compressive force on said convolutions to axially pretension said coil, said compressive force continuously urging the outer edge of said flange in continuous abutting relation to an adjacent convolution for maintaining said predetermined pitch angle and said pitch during operation.

3,313,173

AUTOMATIC CONTROL SYSTEM FOR CHANGE-SPEED GEARS

Emmerich Seidfridt, Ditzingen, and Herbert Radtke, Stammheim, Germany, assignors to Firma Dr.-Ing.

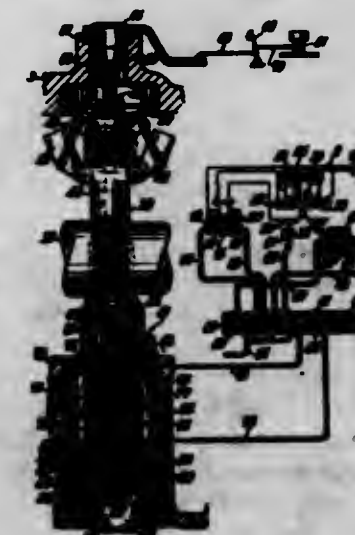
h.c.F. Porsche KG, Stuttgart-Zuffenhausen, Germany

Filed May 17, 1965, Ser. No. 456,406

Claims priority application Germany, May 23, 1964,

F 34,322

11 Claims. (Cl. 74-472)



1. In a motor vehicle having an engine with an engine output control member and a change-speed transmission having shifting means for engaging the speeds thereof, an automatic control device for automatically shifting said transmission, comprising: two relatively movable control members, first means operatively connected with one of said control members and operable in dependence on the rotary speed of the transmission for influencing said one control member, second means operatively connected with the other of said control members and operable in dependence on the output control member of the engine for influencing said other control member, line means for supplying pressure fluid to said shifting means including speed selector slide means for selecting the speed to be engaged, adjusting piston means operatively connected with said speed selector slide means, further means for supplying pressure fluid to said adjusting piston means including one of said control members, and transmitter means operatively connected with the last-mentioned control member and influenced by the rotary speed of said transmission as well as by the position of the output regulating member in such a manner that said last-mentioned control member regulates the pressure fluid supplied to said adjusting piston means against the action of said transmitter means in a step-like manner in relation to the other control member.

3,313,174

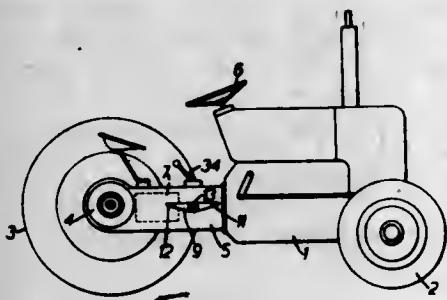
**SELF-CENTERING SPEED CONTROL FOR
HYDRAULIC TRANSMISSIONS**

Allen C. Walker, Longridge, near Stroud, Derrick T. Newman, Cheltenham, Thomas D. H. Andrews, Leckhampton Hill, Cheltenham, and Edward V. Ward, Cheltenham, England, assignors to Dowty Technical Developments Limited, Cheltenham, England, a British company

Filed Nov. 18, 1963, Ser. No. 324,493

Claims priority application Great Britain, Nov. 23, 1962, 44,504/62; Jan. 3, 1963, 336/63; July 11, 1963, 27,451/63

4 Claims. (Cl. 74-474)



1. In a vehicle having ground engaging elements interconnected with a source of power by a hydraulic power transmission, apparatus for controlling the speed ratio of the transmission including a pair of pedals in the area of the driving position, to be operated by the driver, a lever which is pivotally mounted about a central pivot thereon, and interconnected with the transmission so that pivotal movement of the lever in one direction of rotation adjusts the speed ratio of the transmission toward one limit of its adjustment, whereas pivotal movement of the lever in the opposite direction of rotation adjusts the speed ratio toward the other limit of its adjustment, yieldable biasing means tending to station the lever in a predetermined angular position about its pivot, and means operatively interconnecting the pedals with opposite end portions of the lever respectively so that alternative operation of the pedals operates to pivot the lever in one or the other direction of rotation, for adjustment of the transmission speed ratio.

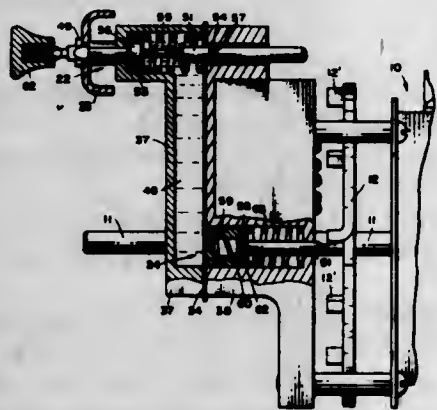
3,313,175

**SELECTIVE INDEXING MECHANISM
FOR A TIMER**

Harold T. Simmons and Stephen F. Murray, Indianapolis, Ind., assignors to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware

Filed Aug. 25, 1965, Ser. No. 482,569

13 Claims. (Cl. 74-813)



1. A hydraulic pin setting mechanism for locating a cycle starting point of a timer comprising, a reservoir filled with a fluid, a first plunger means in a first end of said reservoir and a second plunger means in a second

end of said reservoir, a means for actuating said first plunger means so as to compress said fluid, said second plunger means being responsive to compression of said fluid so as to protrude from said reservoir, said second plunger means having an end which restrains a preselected stop-lug on an indexing member of said timer when said second plunger means protrudes from said reservoir, said preselected stop-lug being located on said indexing member so as to represent said cycle starting point of said timer, and a means for rotating said indexing member so as to be restrained by said second plunger means, thereby locating said cycle starting point.

3,313,176

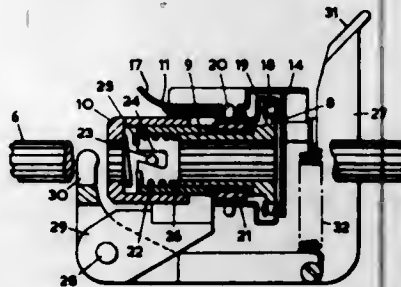
MECHANICAL LOCKING ARRANGEMENTS

Cyril John Atkinson and Eric William Jacobs, Kidsgrove, Stoke-on-Trent, England, assignors to English Electric-Leo Computers Limited, London, England, a British company.

Filed Nov. 27, 1964, Ser. No. 414,067

Claims priority application Great Britain, Nov. 29, 1963, 47,316/63

8 Claims. (Cl. 74-531)



1. A mechanism arranged to be driven from a rotatable shaft having a non-circular cross-section, including two members each defining a through hole shaped and engaged drivingly with the shaft, and torque producing means operative in use to produce a relative angular displacement between the two members about the axis of the shaft so as to reduce backlash between the shaft and the members.

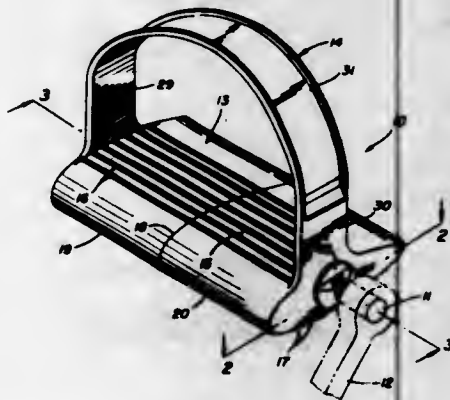
3,313,177

FOOT PEDAL

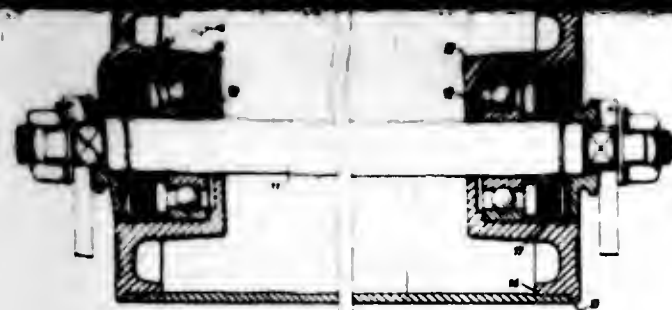
Eugene Albert Mueller, Akron, Ohio, assignor to The Hamlin Metal Products Corp., Akron, Ohio, a corporation of Ohio

Filed June 16, 1965, Ser. No. 464,508

5 Claims. (Cl. 74-594.6)



1. In combination with a mounting stud, a foot pedal, said foot pedal comprising, first and second tread segments, a continuous stirrup strap arched across said tread segments with its ends joined to the opposite ends of said

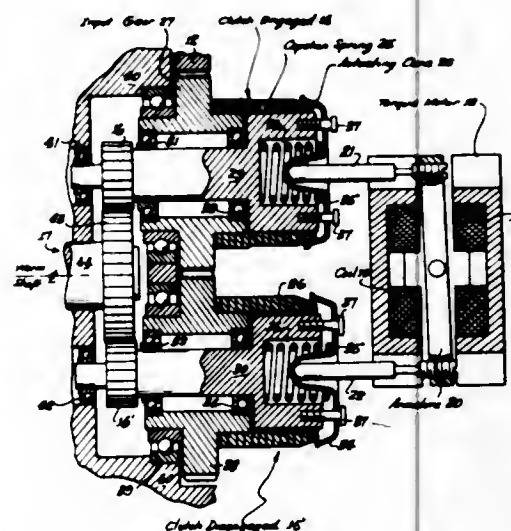


An idler roller for a belt conveyor comprising a radially expandable metal tube, metal end rings in opposite ends of said tube and adapted for mounting the roller on a spindle, and a plurality of radially extending preformed annular ribs and grooves on the outer surface of each end ring and the inner surface of the tube, said ribs and grooves being constructed and arranged that upon expansion of said tube each ring is engageable with said tube without substantial interference between said preformed ribs and grooves on said ring and tube, said ribs and grooves interengaging each other in overlapping relationship at normal temperatures to provide a mechanical interference fit to lock each ring to said tube when the latter is in an unexpanded condition.

3,313,169
VARIABLE SPEED DRIVE
 Andrew P. Peters, 74 Bobmar Road,
 Westhill, Ontario, Canada
 Filed Aug. 7, 1964, Ser. No. 388,081
 4 Claims. (Cl. 74-230.17)

1. In a drive transmitting centrifugal clutch mechanism for use in operative association with a drive-shaft, a centrifugal clutch assembly fixed to said drive-shaft for rotation therewith, a clutch housing having an inner surface of annular configuration, said clutch housing enclosing said clutch assembly, and surrounding said drive-shaft, said clutch assembly embodying centrifugally movable elements and a set of radial spokes operatively fixed for rotation to said drive-shaft, said elements moving centrifugally on said spokes and being bearable progressively against the inner surface of said housing as

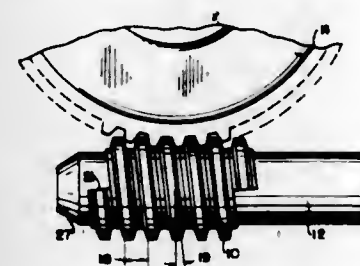
Garry T. Lacy, Clement, and Jack L. Hoffa, Bros.,
 Calif., assignors to General Dynamics Corporation,
 Pomona, Calif., a corporation of Delaware
 Filed Aug. 10, 1964, Ser. No. 308,525
 12 Claims. (Cl. 74-368)



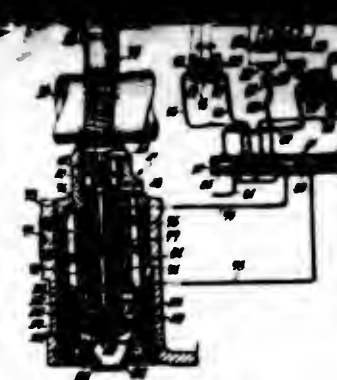
1. An actuator comprising: a gear train including an output member, a plurality of clutch means operatively connected with said gear train, input means operatively connected to each of said clutch means, means for driving said input means, and a torque motor means for selectively actuating said plurality of clutch means, whereby clutch engagement transport time delay is reduced to a minimum, each of said clutch means including an output element operatively connected to said gear train, spring means positioned around at least a portion of said output element and operatively connected to said input means, actuating cone means movably mounted with respect to said output element and said spring means, means for restraining movement of said cone means toward said output element, said cone means being constructed so as to abut at least a portion of said spring means when moved by said torque motor means, whereby said spring

1. A hydraulic reversing gear device for an internal combustion engine, said device comprising an input shaft; a first clutch shaft parallel to said input shaft; a first clutch output pinion fixed to said first clutch shaft; a tubular second clutch shaft mounted over said first clutch shaft; a second clutch output pinion fixed to said second clutch shaft; a forward and reverse clutch assembly rotatably mounted over said first clutch shaft and adapted to selectively drive said first clutch shaft and said second clutch shaft; gearing means operatively connecting said clutch assembly and said input shaft; an output shaft coaxial with said input shaft; a common gear wheel fixed to said output shaft and operatively connected to said first clutch output pinion; and a reversing intermediate gear operatively connecting said second clutch output pinion to said common gear wheel.

3,313,172
WORMS FOR WORM AND WORM WHEEL ASSEMBLY AND METHOD OF FORMING THE SAME
 Bernhard Ulrich, Jr., and Philip Ulrich, Corpus Christi, Tex., assignors to Ulrich Bros., Inc., Corpus Christi, Tex., a corporation of Texas
 Original application Nov. 3, 1961, Ser. No. 150,026, now Patent No. 3,186,082, dated June 1, 1965. Divided and this application Jan. 4, 1965, Ser. No. 423,013
 4 Claims. (Cl. 74-458)



1. A worm thread device comprising a cylindrical shaft and a helical coil mounted on the outer circumference of said shaft and forming a series of convolutions, said convolutions having a predetermined pitch



1. In a motor vehicle having an engine with an engine output control member and a change-speed transmission having shifting means for engaging the speeds thereof, an automatic control device for automatically shifting said transmission, comprising:
 two relatively movable control members,
 first means operatively connected with one of said control members and operable in dependence on the rotary speed of the transmission for influencing said one control member,
 second means operatively connected with the other of said control members and operable in dependence on the output control member of the engine for influencing said other control member,
 line means for supplying pressure fluid to said shifting means including speed selector slide means for selecting the speed to be engaged,
 adjusting piston means operatively connected with said speed selector slide means,
 further means for supplying pressure fluid to said adjusting piston means including one of said control members,
 and transmitter means operatively connected with the last-mentioned control member and influenced by the rotary speed of said transmission as well as by the position of the output regulating member in such a manner that said last-mentioned control member regulates the pressure fluid supplied to said adjusting piston means against the action of said transmitter means in a step-like manner in relation to the other control member.

3,313,174

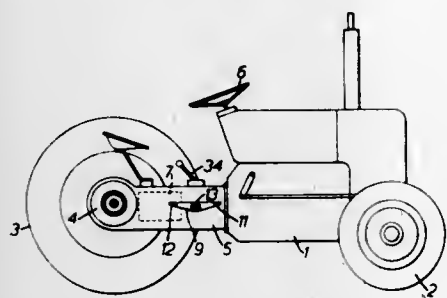
SELF-CENTERING SPEED CONTROL FOR HYDRAULIC TRANSMISSIONS

Allen C. Walker, Longridge, near Stroud, Derrick T. Newman, Cheltenham, Thomas D. H. Andrews, Leckhampton Hill, Cheltenham, and Edward V. Ward, Cheltenham, England, assignors to Dowty Technical Developments Limited, Cheltenham, England, a British company

Filed Nov. 18, 1963, Ser. No. 324,493

Claims priority application Great Britain, Nov. 23, 1962, 44,504/62; Jan. 3, 1963, 336/63; July 11, 1963, 27,451/63

4 Claims. (Cl. 74-474)



1. In a vehicle having ground engaging elements interconnected with a source of power by a hydraulic power transmission, apparatus for controlling the speed ratio of the transmission including a pair of pedals in the area of the driving position, to be operated by the driver, a lever which is pivotally mounted about a central pivot thereon, and interconnected with the transmission so that pivotal movement of the lever in one direction of rotation adjusts the speed ratio of the transmission toward one limit of its adjustment, whereas pivotal movement of the lever in the opposite direction of rotation adjusts the speed ratio toward the other limit of its adjustment, yieldable biasing means tending to station the lever in a predetermined angular position about its pivot, and means operatively interconnecting the pedals with opposite end portions of the lever respectively so that alternative operation of the pedals operates to pivot the lever in one or the other direction of rotation, for adjustment of the transmission speed ratio.

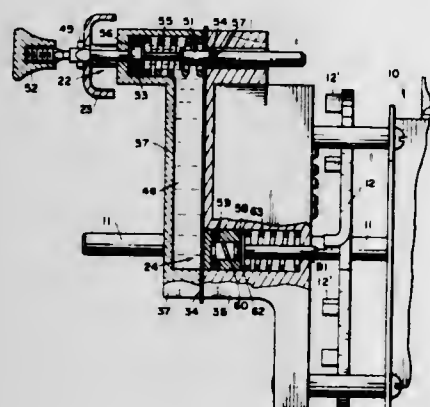
3,313,175

SELECTIVE INDEXING MECHANISM FOR A TIMER

Harold T. Simmons and Stephen F. Murray, Indianapolis, Ind., assignors to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware

Filed Aug. 25, 1965, Ser. No. 482,569

13 Claims. (Cl. 74-813)



1. A hydraulic pin setting mechanism for locating a cycle starting point of a timer comprising, a reservoir filled with a fluid, a first plunger means in a first end of said reservoir and a second plunger means in a second

end of said reservoir, a means for actuating said first plunger means so as to compress said fluid, said second plunger means being responsive to compression of said fluid so as to protrude from said reservoir, said second plunger means having an end which restrains a preselected stop-lug on an indexing member of said timer when said second plunger means protrudes from said reservoir, said preselected stop-lug being located on said indexing member so as to represent said cycle starting point of said timer, and a means for rotating said indexing member so as to be restrained by said second plunger means, thereby locating said cycle starting point.

3,313,176

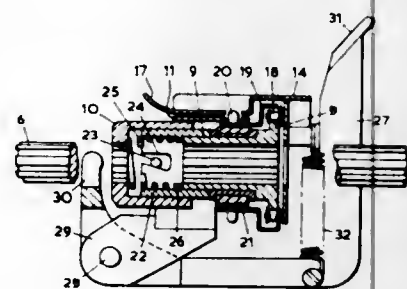
MECHANICAL LOCKING ARRANGEMENTS

Cyril John Atkinson and Eric William Jacobs, Kildsgrove, Stoke-on-Trent, England, assignors to English Electric-Leo Computers Limited, London, England, a British company

Filed Nov. 27, 1964, Ser. No. 414,067

Claims priority application Great Britain, Nov. 29, 1963, 47,316/63

8 Claims. (Cl. 74-531)



1. A mechanism arranged to be driven from a rotatable shaft having a non-circular cross-section, including two members each defining a through hole shaped and engaged drivingly with the shaft, and torque producing means operative in use to produce a relative angular displacement between the two members about the axis of the shaft so as to reduce backlash between the shaft and the members.

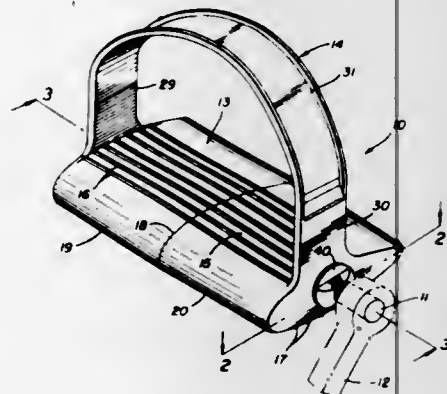
3,313,177

FOOT PEDAL

Eugene Albert Mueller, Akron, Ohio, assignor to The Hamlin Metal Products Corp., Akron, Ohio, a corporation of Ohio

Filed June 16, 1965, Ser. No. 464,508

5 Claims. (Cl. 74-594.6)



1. In combination with a mounting stud, a foot pedal, said foot pedal comprising, first and second tread segments, a continuous stirrup strap arched across said tread segments with its ends joined to the opposite ends of said

tread segments, a journal sleeve through said tread segments, said stud shaft rotatably receivable through said journal sleeve, and fastening means to secure said pedal laterally with respect to said stud shaft.

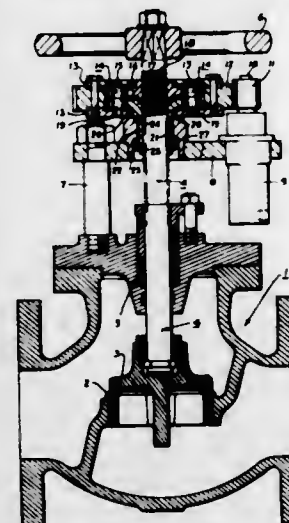
3,313,178

MEANS FOR MOVING A MEMBER LINEARLY
Charles William Thomas Saunders, London, England, assignor to Westinghouse Brake and Signal Company, Limited, London, England

Filed Aug. 9, 1965, Ser. No. 478,042

Claims priority, application Great Britain, Aug. 26, 1964, 34,915/64

12 Claims. (Cl. 74-626)



1. Means for moving a member constrained for linear movement between two positions, comprising an element which is co-axially rotatable about the member in both directions and which has rotatably mounted thereon planet gears which mesh with two sun gears and which provide with one of the sun gears a first gear ratio and with the second of the sun gears a second gear ratio different from the first gear ratio, said one sun gear having an axially extending screw thread of one hand threadedly engaged with a threaded portion on the member whereby relative rotation of said one sun gear and the member causes linear movement of the member, and said second sun gear having an axially extending screw thread of the opposite hand which threadedly engages a screw-threaded portion of an element whereby relative rotation of said second sun gear and the element causes relative axial motion between said second sun gear and the element, and means for limiting motion to an extent which is less than the extent of the linear movement of the member between its two positions.

3,313,179

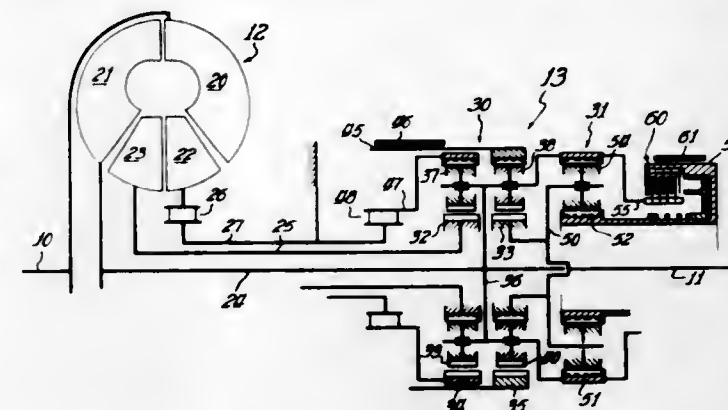
INFINITELY VARIABLE TYPE TRANSMISSION
George E. Flinn, Muncie, Ind., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed Aug. 3, 1964, Ser. No. 387,066

6 Claims. (Cl. 74-677)

1. An infinitely variable ratio transmission having input and output shafts and including a torque converter and a planetary gear set, said torque converter comprising an impeller element, two turbine elements, and a stator element, one of said turbine elements having blades thereon adapted to rotate said one turbine element in a reverse direction with respect to said other turbine element, said planetary gear set including a ring gear, a sun gear, a planetary carrier, and two sets of inter-meshing pinion gears mounted on said carrier, one set of pinion gears meshing with said sun gear and one set meshing with said ring gear, a clutch engageable to connect the carrier element to said output shaft, a one-way brake for said ring

gear, means connecting said other turbine element to said clutch whereby said other turbine element will drive said output shaft in a forward direction when said clutch is



engaged, said one turbine being connected to said sun gear and transmitting torque in a forward direction to said carrier element while rotating reversely with respect to said other turbine element.

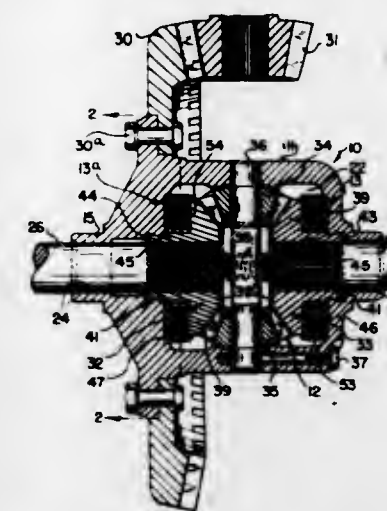
3,313,180

DRIVE MECHANISM

Arthur J. Balfour, Marshall, and Richard K. Brubaker, Warren, Mich., assignors to Eaton Yale & Towne Inc., a corporation of Ohio

Filed June 8, 1964, Ser. No. 373,187

4 Claims. (Cl. 74-711)

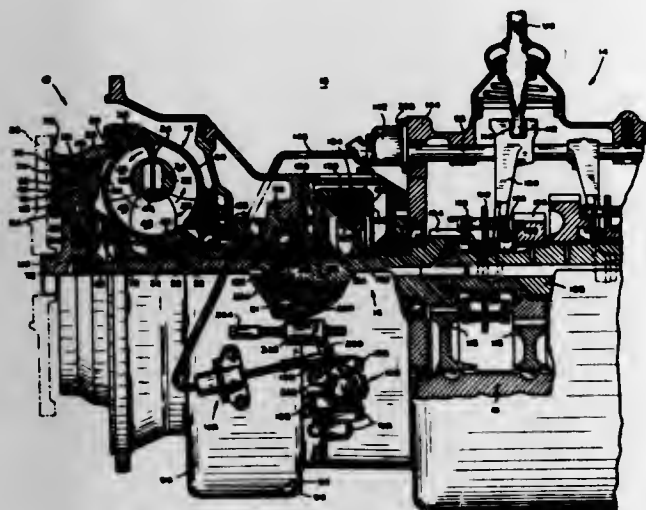


1. In a differential gear mechanism, a rotatable casing having a rigid wall carrying an annular thrust portion, a gear train comprising gears rotatable in the casing with the teeth of adjacent gears in meshed engagement, one of said gears comprising a rigid body having an annular thrust portion in a substantially opposed relation to the thrust portion of said casing, said one gear being axially loaded in response to a clutch actuating force produced by the pressure angle torque load reaction between the meshed teeth, pressure-responsive friction clutch means disposed between said thrust portions for retarding rotation of said one gear relative to said casing including a first steel friction disc having a plurality of lands and grooves on a radial face thereof and drivingly connected to said one gear, a second steel friction disc having a plurality of lands and grooves on a radial face thereof and drivingly connected to said casing and disposed adjacent said first friction disc, and a friction drive member of asbestos material positioned between said first and second friction discs having radially extending surfaces engageable with said radially extending faces of said friction discs and drivingly interconnecting said first and second friction discs and having a friction drive engagement with at least one of said friction discs so as to drivingly interconnect said first and second friction discs.

3,313,181

TRANSMISSION CONTROL

William F. Leonard and Wayne R. Howard, Jackson, Mich., assignors to Clark Equipment Company, a corporation of Michigan
Filed Oct. 30, 1961, Ser. No. 148,446
7 Claims. (Cl. 74-732)



5. For use with a drive mechanism including a hydrodynamic torque converter having an impeller member and a turbine member, a fluid actuated lock-up clutch for connecting the impeller and turbine members for rotation together, a gear transmission having a movable shift rail, a fluid actuated disconnect clutch for connecting the torque converter with the gear transmission, a fluid pump and a fluid reservoir, a control apparatus comprising fluid passage means communicating with the said lock-up clutch, fluid passage means communicating with the said disconnect clutch, an interlocking control valve assembly having a pair of valve means, one of said valve means having a first position operative to connect said disconnect clutch fluid passage means with the fluid pump and a second position operative to connect said disconnect clutch fluid passage means with the reservoir, the other of said valve means having a first position operative to communicate said lockup clutch fluid passage means with the fluid pump and a second position operative to communicate said lock-up clutch fluid passage means with the reservoir, and means interlocking said pair of valve means so that when said one valve means is in its second position said other valve means also is in its second position, means responsive to the position of the shift rail for actuating said other valve means to either its first or second position, and means including said fluid passage means for causing the said lock-up clutch to engage more slowly than the said disconnect clutch.

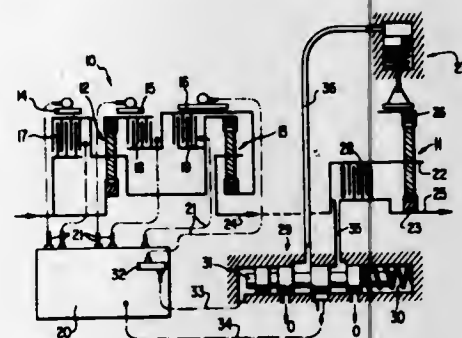
3,313,182

VEHICLE TRANSMISSION

Friedrich K. H. Nallinger, Stuttgart, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Sept. 18, 1964, Ser. No. 397,527
Claims priority, application Germany, Sept. 26, 1963, D 42,568
10 Claims. (Cl. 74-740)

1. A transmission arrangement for motor vehicles having a multi-speed main change-speed transmission and a two-speed auxiliary transmission, comprising:
means for automatically shifting said main transmission by an auxiliary force means including first actuating means operable by said auxiliary force means for engaging and disengaging the highest speed of the main transmission, and first control means operable to automatically control the auxiliary force means to said first actuating means,

and means controlled by said first control means for automatically controlling the shifting of said auxiliary transmission in such a manner that the auxiliary transmission is at least readied for shifting to the higher speed thereof by the auxiliary force means of the main transmission upon engagement in the main transmission of the highest speed thereof, second actuating means operable by said auxiliary force means for effectively engaging and disengaging the

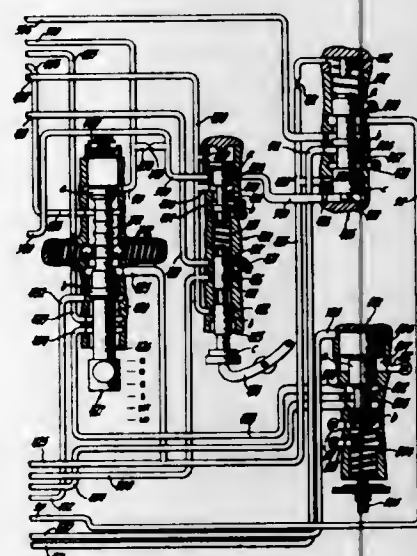


two speeds of said auxiliary transmission, said means for automatically controlling the shifting of said auxiliary transmission further including second control means operable to control the auxiliary force means to said second actuating means, and connecting means operatively connecting said second control means with one of said first control and actuating means to actuate the auxiliary transmission by the auxiliary force means of the main transmission.

3,313,183

TRANSMISSION

Kelth A. Bailey, Speedway, Robert L. Black, Indianapolis, and Mark E. Fisher, Carmel, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 4, 1964, Ser. No. 364,465
15 Claims. (Cl. 74-752)



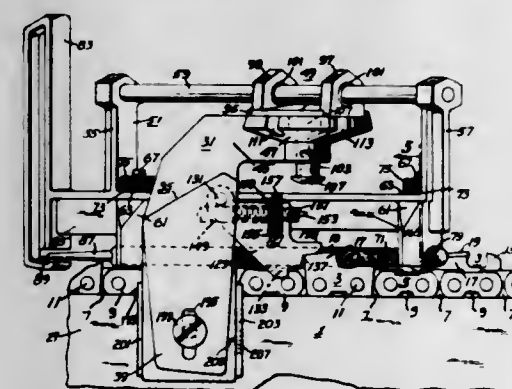
8. In a transmission; a gear unit having drive establishing means providing low and high drive ratios; a source of fluid under a regulated pressure; normal downshift means providing a downshift force; governor means providing a governor force proportional to transmission speed; shift means operatively connected to said drive establishing means operative in a downshift position to establish said low ratio drive and in an upshift position to establish said high ratio drive and normally positioned by said downshift force means in said downshift position and shifted by said governor means at a higher speed to said upshift position; control means connected to said shift means operative in response to fluid pressure

to downshift said shift means; manual valve means operative on movement from a higher to a lower position to operatively connect said source pressure to supply fluid under pressure to said control means and inhibiting means operative to control the pressure value of the fluid under pressure supplied to said control means at a value related to said downshift force and said governor force to prevent a manual downshift at excessive speeds and to provide a downshift at less than said excessive speeds.

3,313,184

CHAIN SAW SHARPENING MEANS

Elof Granberg, 2659 Mira Vista Drive, Richmond, Calif. 94805
Filed Aug. 20, 1964, Ser. No. 390,970
14 Claims. (Cl. 76-31)



1. Apparatus for sharpening of chain saws and the like comprising
a mounting bracket including
a mounting yoke having a pair of substantially parallel legs spaced to clear the chain of a chain saw and straddle the saw bar,
a bracket arm extending laterally from said yoke and terminating in a platform on which to support a file frame assembly,
a file frame assembly comprising a file frame and including means for slidably mounting the same on said platform,
and means for clamping said yoke to a saw bar with said file frame properly oriented as to elevation with respect to a cutting tooth of such saw chain, said means including
a clamp pad comprising a plate,
means adjustably affixing said plate to the inner side of one of said legs,
said plate having elevation determining guide means thereon adjacent the upper edge thereof and adapted to rest on the upper edge of a saw bar when mounting said apparatus thereon.

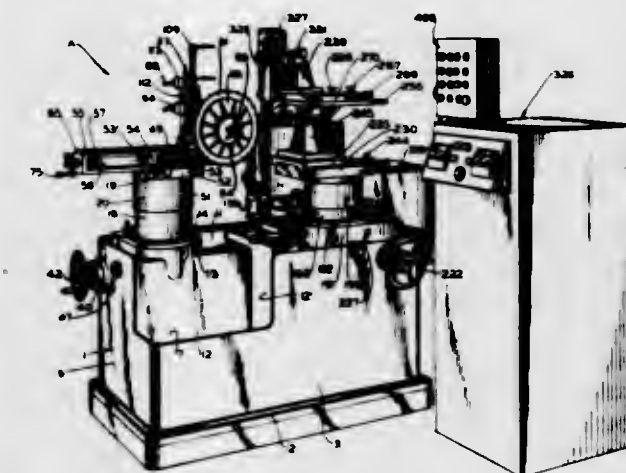
3,313,185

AUTOMATIC GRINDERS

Claud E. Drake, Brentwood, and Adolph H. Kleinsorge, St. Louis County, Mo., assignors to Drake Corporation, St. Louis, Mo., a corporation of Missouri
Filed Oct. 29, 1962, Ser. No. 233,554
26 Claims. (Cl. 76-43)

1. A grinding device for saw blades and the like, said device comprising base means, first and second support elements located on said base means in spaced relation so as to define a grinding zone therebetween, slide-forming means operatively mounted on the first support element for shiftable movement toward and away from said grinding zone, power-actuated means for shifting the slide-forming means toward and away from the grinding zone, grinding means operatively mounted on said slide-forming means, blade-holding means operatively mounted on

the second support element for positional adjustment with respect to the grinding zone, means interposed between the blade-holding means and the second support element for effecting said positional adjustment with respect to said grinding zone, indexing means operatively mounted on said base means and being operatively located proximate to said grinding zone for positioning each



tooth of a saw blade with respect to the grinding zone so that the grinding means can be brought into contact with the saw blade, and advancing means carried by the base means and being operatively connected to said blade-holding means for rotating said saw blade after each operative contact between the saw blade and grinding means.

3,313,186

METHOD OF AFFIXING A TUBE TO A TOOL BODY

Rolland F. Rochon, Phillipston, Mass., assignor to UTD Corporation, Athol, Mass., a corporation of Massachusetts
Filed July 2, 1964, Ser. No. 379,923
2 Claims. (Cl. 76-108)



1. The method of permanently affixing a tube to an elongated tool body comprising the steps of forming an elongated groove with at least two opposed undercut surfaces along substantially the entire length of said body, loosely laying a tube in said groove, and thereafter permanently deforming the wall of said tube to bring said wall into tight engagement with said opposed undercut surfaces.

3,313,187

BORING BAR INSERT

Milton L. Benjamin and David D. Walker, Chagrin Falls, Ohio, assignors to Erickson Tool Company, Solon, Ohio, a corporation of Ohio

Filed Feb. 28, 1966, Ser. No. 530,669

7 Claims. (Cl. 77-58)



1. In combination, a boring bar having a bore therein and a boring bar insert disposed in said bore, said boring bar insert comprising a sleeve bushing, means for releasably locking said sleeve bushing in said bore against both relative rotational and relative axial movement, a cylindrical tool holder telescopically received in said sleeve bushing and keyed thereto against relative rotational but not relative axial movement, said sleeve bushing having inwardly tapered seats at either end, a split collet disposed around each end of said holder and having tapered outer surfaces corresponding to the taper of the respective seats for engagement therewith, a dial member threadedly engaging said holder with one of said collets located between said dial member and bushing, and means for applying an axial inward force against said other collet to cause wedging of said collets into tight frictional engagement with said holder, thereby accurately centering said holder within said bushing.

3,313,188

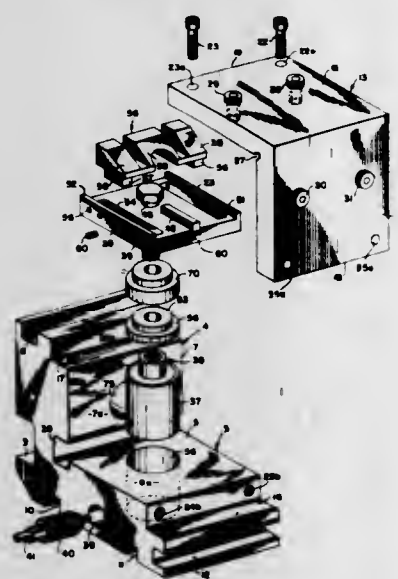
MULTI-PLANE DRILL JIG VISE

Robert R. Abernethy, 240 Logan Ave.,

Bedford, Ohio 44014

Filed Nov. 3, 1964, Ser. No. 408,522

8 Claims. (Cl. 77-62)



1. A drill jig for holding a workpiece, comprising:
(a) a base;
(b) a bushing plate secured to the base, having at least two sides which form a right angular corner therebetween, the plate designed to guide a drill into the workpiece from at least two planes; and
(c) means secured to the base and movable therefrom, for wedging the workpiece into the corner of the bushing plate.

3,313,189

DUAL CARTRIDGE CONSTRUCTION FOR REPAIR PRODUCT

Lewis Marra, 306 Westwood Manor, Butler, Pa. 16001

Filed June 15, 1965, Ser. No. 487,944

6 Claims. (Cl. 81-15.7)

(Filed under Rule 47(b) and 35 U.S.C. 118)



1. A repair tool for inserting outside-in repair material comprising: a canister formed of an elongated tubular container having an elongated slot providing an inspection opening through the length of said canister, at least two transparent storage means proportioned to fit slidably within said canister and having repair material coiled therein, said repair material being in the form of continuous length elongated string-type material which can be drawn continuously from each of said transparent storage means, an elongated needle and needle base proportioned to fit within the end of said canister and reversible whereby the needle can be positioned either interiorly of said canister or project from said canister, means forming a guide opening within said needle base through which the repair material is continuously passed and then threaded through the end of said needle, and a clamping ring threadedly received on the end of said canister to clamp the needle base in position and retain the contents of said canister and position said needle either interiorly of the canister or in a repair-producing position.

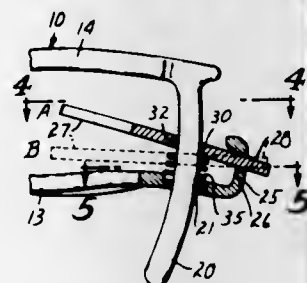
3,313,190

LOCKING MECHANISM FOR PLIERS AND THE LIKE

John David Bothum, 604 Commercial St., Albert Lea, Minn. 56007

Filed Oct. 22, 1965, Ser. No. 501,341

2 Claims. (Cl. 81-325)



1. Locking mechanism for a gripping type tool having a pair of cooperating pivoted handles comprising:
(a) an arcuate shaped member fixedly attached to one of said handles and extending toward the other of said handles;
(b) an opening in said other handle for receiving said arcuate shaped member therethrough;

- (c) an actuating lever pivotally attached adjacent one end to said other handle;
- (d) an opening through said actuating lever having an axis substantially perpendicular thereto for receiving said arcuate shaped member therethrough, said actuating lever having generally inwardly converging edges around said opening for frictionally engaging said arcuate shaped member when said actuating lever is in a first position and allowing free movement thereof when said actuating lever is in a second position; and
- (e) spring means biasing said actuating lever normally into said first position.

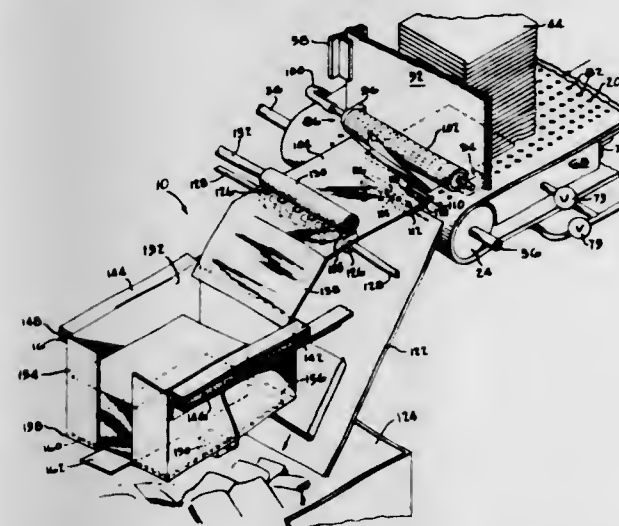
3,313,191

SEPARATING APPARATUS

Ellis Zakroff, Philadelphia, Pa., and George J. Brennan, Blackwood, N.J., assignors to Ellis Zakroff, Cheltenham, Pa.

Filed Dec. 29, 1964, Ser. No. 421,853

9 Claims. (Cl. 83-89)



1. Apparatus for segregating individual sheets from a bound pile of sheets comprising means for transporting a stack of bound piles to severing and separating means, a stack restrainer including a gate spaced away from a moving surface a distance substantially equal to the thickness of said piles, said moving surface being adapted to apply a translational force upon piles juxtaposed thereto for removing individual piles from a restrained stack, means for partially separating a sheet from a removed pile, a blade positioned to be received between said pile and sheet, cutting means adjacent said blade, said cutting means being positioned to sever said sheet from said pile, means for directing a severed sheet away from said pile, said means for directing said sheet away from said pile including a fixed surface for supporting a severed sheet, and cooperating sheet drive rollers, at least one of which is adapted to be driven, positioned to engage said severed sheet and move it over said fixed surface, and a container positioned to receive said sheet.

3,313,192

APPARATUS FOR THE DETECTION OF BROKEN YARN AND THE LIKE ON TEXTILE MACHINES

Anthony Hugh Archer, 32 Homefield, Road, Old Coulsdon, England

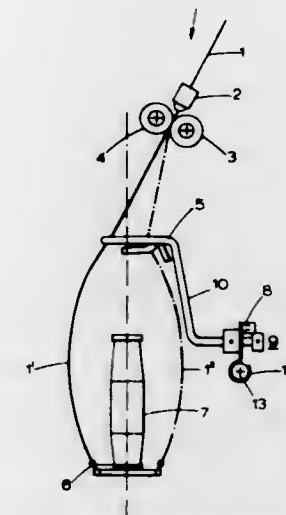
Filed July 19, 1965, Ser. No. 473,094

Claims priority, application Great Britain, July 17, 1964, 29,347/64

7 Claims. (Cl. 83-370)

1. A yarn spinning apparatus comprising a yarn drafting means, a yarn guide, a stationary member having means for winding yarn about a bobbin, and means for holding a bobbin;

said drafting means being adapted to feed yarn towards said yarn guide and said winding means;
said yarn guide being adapted to engage the yarn between said drafting means and said winding means; the operation of said winding means vibrating said yarn guide by vibrating the yarn in engagement therewith;
a stationary apparatus member;



resilient mounting means supporting said yarn guide from said stationary apparatus member;
a detector device for detecting a break in the yarn connected to said yarn guide so as to be preferentially responsive to the presence of vibrations in said yarn guide and minimally responsive to other vibrations; said device being differently responsive to the absence of vibrations in said yarn guide due to a break in the yarn.

3,313,193

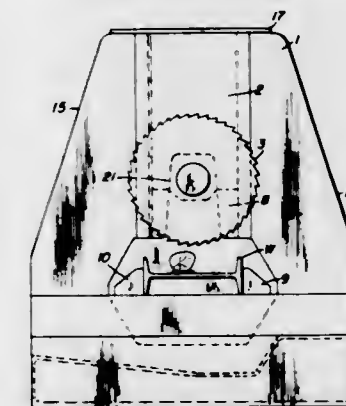
CIRCULAR SAW WITH A VERTICAL TOOL FEED

Roderich Orendi, Reutlingen, Wurttemberg, Germany, assignor to Gustav Wagner Maschinenfabrik, Reutlingen, Wurttemberg, Germany, a corporation of Germany

Filed Apr. 20, 1965, Ser. No. 449,536

Claims priority, application Germany, Apr. 20, 1964, W 36,738

4 Claims. (Cl. 83-488)



1. A circular machine saw comprising a vertical frame formed with a portal-like opening for the passage of a workpiece therethrough; said frame having a pair of side members defining a slot therebetween; a slide mounted for sliding movement in said slot; and a circular saw blade, having a spindle mounted on said slide, said spindle being horizontal and mounting said saw blade at a position outside of the opening of said frame and close to the front thereof said members and said slide

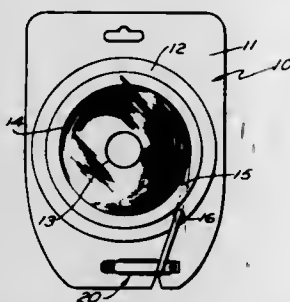
being formed with matching guide surfaces, one surface extending in a plane transverse to said spindle.

3,313,194

TAPE DISPENSER

Harris F. Hanscom, Barrington, R.I., assignor to H. F. Hanscom & Company, Inc., a corporation of Rhode Island

Filed Oct. 23, 1965, Ser. No. 503,611
4 Claims. (Cl. 83-568)



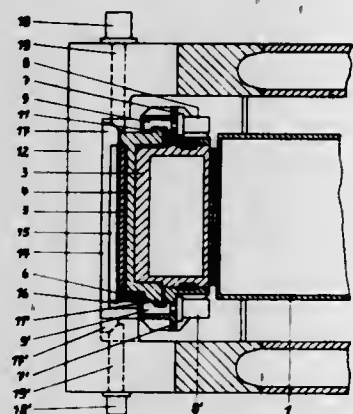
2. A strip material cutter comprising a flexible base, an overhanging shear blade beneath which a strip of stock to be cut is positioned secured to said base, an actuating arm also secured to said base and fulcrumed relative to said shear blade for flexing said base and engaging the strip of stock and moving it past said shear blade during flexing of the base to sever it by a swinging action about said fulcrum.

3,313,195

MEANS FOR SECURING UNITS CONSISTING OF A SHEAR BLADE AND ITS MOUNTING TO THE SADDLES OF SHEET-METAL SHEARS

Georg Bollig, Dusseldorf-Oberkassel, Germany, assignor to Schloemann Aktiengesellschaft, Dusseldorf, Germany, a German company

Filed Jan. 26, 1965, Ser. No. 428,106
Claims priority, application Germany, Feb. 8, 1964, Sch. 34,612
4 Claims. (Cl. 83-698)



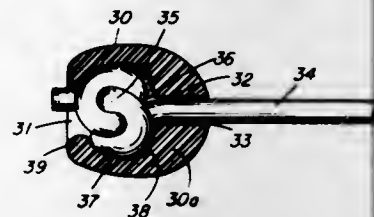
1. A device for securing units, each consisting of a shear blade and its mounting, to the upper and lower saddles of a sheet-metal shearing machine, comprising: a mounting supported on the shear saddle in the direction of the shearing pressure and the chewing pressure, and hydraulically actuated securing means provided on the shear saddle at both ends of the said mounting, the co-acting contact surface of the mounting and of the securing means being at such an inclination that the holding force transmitted from the hydraulically actuated securing means to the mounting is not purely axial in direction but includes a component acting in the direction of the horizontal chewing pressure applied to the front of the blade.

3,313,196

MUSICAL INSTRUMENT STRING HAVING IMPROVED ANCHOR MEANS AND METHOD OF MAKING THE SAME

Daniel L. Marl, New York, N.Y., assignor to E. & O. Marl, Incorporated, New York, N.Y., a corporation of New York

Filed July 12, 1963, Ser. No. 294,690
4 Claims. (Cl. 84-297)



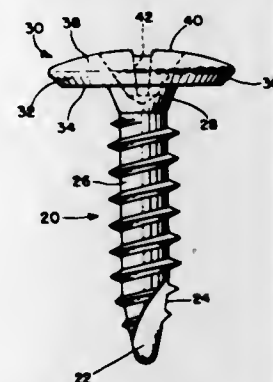
1. A musical instrument string having a knot tied at one end thereof and anchoring means at said end, said anchoring means having a first cavity positioned in an end wall thereof and adapted for the passage therethrough of the musical instrument string, said anchoring means having a side wall defining a second cavity, the bore of said second cavity being larger than the bore of the first cavity, said first cavity being connected to said second cavity, the knot on said string being fixed in position within said second cavity, said side wall of said second cavity being adapted to hold securely the knot tied on said musical instrument string by positive contact therewith, said end wall being thicker than said side wall.

3,313,197

SCREW

Friedrich Karl Knohl, Roselle, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

Filed Sept. 8, 1965, Ser. No. 485,782
2 Claims. (Cl. 85-9)



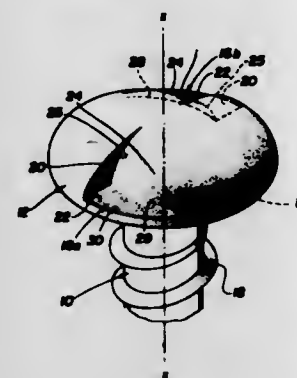
1. A fastener comprising a threaded shank having at one end a cutting edge means for drilling an aperture, said shank at its opposite end having a tapered, unthreaded neck flaring radially outwardly from said shank and terminating in a head having a lower portion and an upper portion, said lower portion having a clamping surface normal to said shank and providing a juncture with said tapered neck, said lower portion further having a periphery flaring radially outwardly from said clamping surface at an included angle of from 80° to 100°, said upper portion having a top curvilinear surface, the combined height of said lower and upper portions being less than $\frac{1}{2}$ the diameter of said shank and the diameter of said head being at least two and one-half times the diameter of said shank, said tapered neck having an included angle of from 40° to 55° and having a height measured along the axis of said shank substantially equal to the combined axial height of said lower and upper portions of said head, said head being continuous about its periphery and being provided with a recess in said upper portion for engagement with a driving tool.

3,313,198

ONE-WAY SCREW FOR OPERATION WITH HIGH SPEED POWER TOOLS

Marvin Walton, 134 Tuscaloosa Ave., Atherton, Calif. 94025

Filed May 25, 1965, Ser. No. 458,604
3 Claims. (Cl. 85-45)



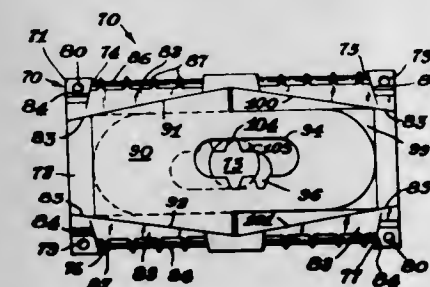
1. A one way screw comprising a threaded stem carrying upon one end thereof a rounded head having a circular base, said head having excisions in diametrically opposite areas of its surface, each of said excisions forming an abutment area for engagement by the drive tool located in a plane containing the center axis of the screw and having a peripherally open ramp leading to said abutment area along a circle concentric with the axis of the screw and in a plane parallel to the base of the screw head, the inner side wall of said ramp being arranged to curve both in a direction longitudinally of, and around, the screw axis to merge smoothly with the surface of the screw head.

3,313,199

DOWEL

Irving S. Houvener, Houghton Lake, and Albert J. Palfey, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Original application Mar. 6, 1964, Ser. No. 349,914, now Patent No. 3,273,444. Divided and this application Mar. 4, 1966, Ser. No. 540,125

12 Claims. (Cl. 85-66)



1. A dowel comprising a generally cylindrical body having a longitudinal axis, the body defining an internal space, at least two tumbler receiving recesses disposed at opposite ends of the body, a tumbler disposed within each of the tumbler receiving recesses, the tumblers having a surface adapted to engage a cavity wall, at least a pair of tumbler pins, each of said tumbler pins having a camming surface adapted to engage a face of the tumbler generally opposite the cavity engaging face, the tumbler pins being slidably positioned within the cavity, means to move the tumbler pins within the cavity thereby extending and retracting the tumbler pins in a radially outward direction and in a direction toward the central portion of the body, the tumbler pins defining a longitudinal slot, the tumbler pins are adapted to be positioned in overlapping relationship with at least a portion of the longitudinal slots being generally coextensive, each of the slots having a longitudinal edge defining a rack and the racks of the slots being disposed oppositely from one another.

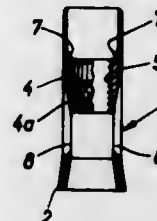
3,313,200

EXPANSIBLE FASTENER MEANS

Artur Fischer, Tübingen, Germany

Filed Feb. 12, 1965, Ser. No. 432,111

Claims priority, application Germany, Feb. 17, 1964, F 42,027
1 Claim. (Cl. 85-75)



Fastener means for connecting two elements, especially sheet metal members, to each other comprising, in combination, an elongated one-piece sleeve member having a pair of opposite circumferentially complete annular end portions and an intermediate slotted portion between said circumferentially complete annular end portions and being formed in said intermediate portion with a plurality of slots angularly spaced from each other and extending in the longitudinal direction of said sleeve member, said intermediate portion having an inner frustoconical surface tapering toward one of said circumferentially complete annular end portions; a frustoconical member in said intermediate slotted portion of said sleeve member, having a length smaller than the length of said intermediate slotted portion spaced from said one circumferentially complete annular end portion and engaging with a conical surface thereof said inner surface of said intermediate portion, said frustoconical member being formed with a central bore therethrough provided with an inner screw thread, whereby when said one circumferentially complete annular end portion of said sleeve member is driven in a bore of a sheet metal member with the remainder of said sleeve member projecting to one side of said sheet metal member, a screw may be extended through an aligned bore in another sheet metal member abutting against the other side of the first mentioned sheet metal member and be threadingly engaged with said threaded bore of the frustoconical member so that subsequent turning of the screw will cause movement of said frustoconical member toward said one circumferentially complete annular end portion of said sleeve member and thereby radial expansion of the slotted intermediate portion only without any deformation of said opposite circumferentially complete annular end portions so that the two sheet metal members will be held together between the expanded intermediate portion of said sleeve member and the head of said screw; and means at the other circumferentially complete annular end portion of said sleeve member preventing movement of said frustoconical member through said other end portion, said means comprising a plurality of short tongues integral with said other circumferentially complete annular end portion, respectively aligned with said slots and extending from the ends of said slots adjacent to said other circumferentially complete annular end portion toward the axis of said sleeve member.

3,313,201

CONTROLLED DEPTH PRIMER TOOL

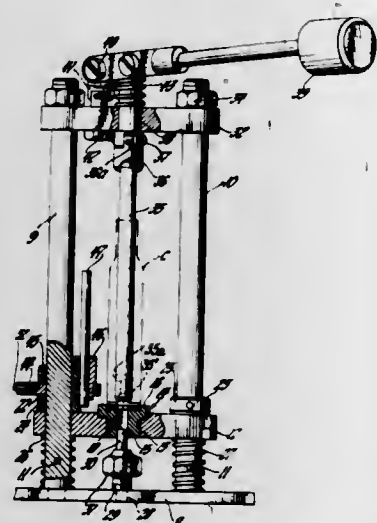
Elmer E. Lawrence, R.R. 2, Hayward, Wis. 54843

Filed Apr. 22, 1965, Ser. No. 450,058

8 Claims. (Cl. 86-32)

1. An apparatus for applying primers to a controlled depth within cartridge cases each provided with a face and primer pocket comprising; slide means carried by support means permitting vertical displacement thereof, guide means having a seating recess mounted on said slide

means for supporting said cartridge face and including a vertical axial aperture therethrough, means biasing said slide and guide means to a normal upward at-rest position, a plunger adapted to fit within the case and including actuating means for moving said plunger downwardly to press the face of the case against said seating recess against the force of said biasing means, a stem fixedly disposed in axial alignment below said guide means and

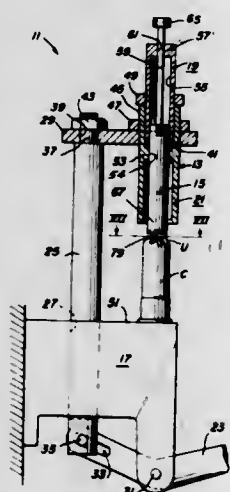


within said aperture, and fixed control means for limiting the concurrent downward displacement of said plunger, guide means and case, whereby, a primer inserted in said aperture and resting upon said fixed stem will be pressed into the primer pocket of the case an exact distance as limited by the abutment of said guide means against said fixed control means when said plunger is urged downwardly.

3,313,202

MEANS FOR COMPLETING THE CLOSURE OF A PARTIALLY CLOSED SHOTGUN SHELL CASING

James H. Tuck, Memphis, Tenn., assignor to Mary R. Tuck, Memphis, Tenn.
Filed Feb. 26, 1965, Ser. No. 435,464
8 Claims. (Cl. 86-40)



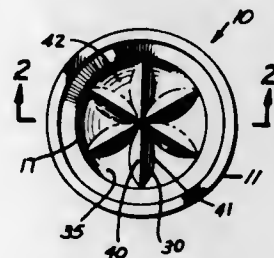
1. In a shotgun shell reloading apparatus of the type including a base having a flat upper surface, a vertically disposed bar slidably secured in said base, lever operable actuating means for moving said bar up and down, a horizontal plate member rigidly secured on the upper end of said bar, a sizing member including a lower section having a downwardly opening cylindrical recess and means securing said sizing member to said plate member with said cylindrical recess disposed over said upper surface of said base; the structure for completing the closure of a partially closed shell casing having a partially closed

open end edge portion including a plurality of undulations therein, said structure comprising an upper section relatively fixedly secured to said lower section, a core member in said upper section and said lower section freely turnable for at least a part of 360° rotation and freely axially movable relative to said sizing member, said core member including a vertically disposed cylindrical head portion having a circularly extending undulated bottom surface with the number of undulations thereof being equal to the number of undulations of said partially closed open end edge portion of said shell casing; stop means for stopping the upward travel of said core member relative to said sizing member; and finger grip means for freely and quickly raising and lowering said core member relative to said sizing member and for turnably aligning said undulated surface of said core member with said undulated edge portion of said shell casing, said core member being freely movable to a lowered position wherein said head portion extends out of said sizing member; said vertically disposed cylindrical head portion of said core member including a plurality of circularly arranged pyramidal portions and a like plurality of circularly arranged recessed portions, said pyramidal portions and said recessed portions being alternately and equiangularly arranged, each pyramidal portion having a radially extending blunt edge surface and a substantially blunt apex surface, each recessed portion disposed between two pyramidal portions having a concave surface extending radially and substantially perpendicularly of the axis of said cylindrical head portion of said core member, said blunt edge surface of each said pyramidal portion being disposed obliquely of said axis of said core member and extending radially downwardly and outwardly and with each edge surface terminating respectively in a blunt apex surface, said apex surface of each said pyramidal portion lying substantially in a plane disposed perpendicularly of said axis of said core member.

3,313,203

SHELL CRIMPER

Leland A. Pace, 545 S. Los Robles, Pasadena, Calif. 91106
Filed June 22, 1965, Ser. No. 465,850
10 Claims. (Cl. 86-41)



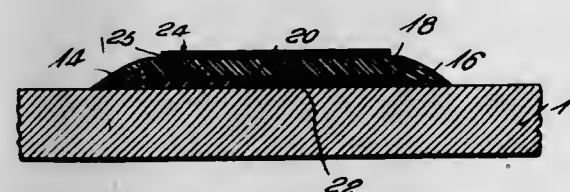
1. A crimper for closing the open end of a shotgun shell, comprising a body having a cavity with a central axis, and an open end to receive the open end of the shell, there being within the cavity and defining the shape thereof the following surfaces: a peripheral bounding surface so disposed and arranged as at least partially to engage the shell and hold it in coaxial alignment with the axis of the cavity; a plurality of divider edges adjacent to the boundary wall and extending radially toward the central axis; a deflector surface between each pair of divider edges, extending toward the central axis from the boundary wall, each said deflector surface forming adjacent to its intersection with the boundary wall, a fragment of a surface of revolution generated around the central axis whose generator is inclined relative to the central axis; and a plurality of inverter surfaces which extend from and interconnect said divider edges in pairs and

deflector surfaces, there being one of said inverter surfaces on each side of each of said divider edges, said inverter surfaces extending laterally away from said divider edges as they extend axially away from the open end, each pair forming a dihedral angle with a respective divider edge functioning as the dihedral edge.

3,313,204

PHOTOELASTIC STRAIN GAUGE WITH BUILT-IN STRESS PATTERN

George U. Oppel, State College, Pa. (Putzstrasse 17, 5321 Niederbachem, Germany)
Filed May 29, 1959, Ser. No. 816,918
Claims priority, application Germany, July 25, 1958, O 6,284
12 Claims. (Cl. 88-14)

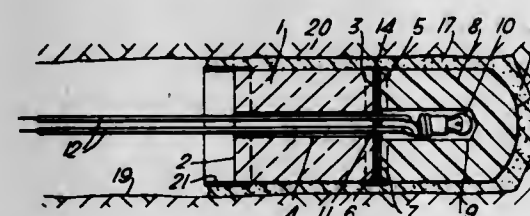


1. A photoelastic strain gauge comprising a photoelastic layer of material, means bonding said material to a structural part subject to strain analysis, a mirror interposed between the structural part and the bottom surface of said photoelastic layer, said photoelastic layer of material being optically inhomogeneous so that the indices of refraction at a given point are of differing values thereby causing relative retardation of a light wave whereby if polarized light is employed stress fringe lines of varying colors are present when viewed through a polarizing analyzer and are a function of a fixed stress pattern induced by heating the material above its elastic-visco-elastic phase point, applying a load, maintaining the load and slowly cooling the piece below the phase point to establish said stress pattern so that it is fixed free of any external forces to create the optical inhomogeneity, and means for subjecting said photoelastic layer of material to polarized light such that colored fringe lines and their displacement are observable as the structural part and the photoelastic layer of material, by being attached thereto, are subjected to strain.

3,313,205

PHOTOELASTIC STRESS INDICATING DEVICES

Albert Roberts, 1 Abbeydale Park Rise, Totley Rise, Sheffield, and Ivor Hawkes, 25 Wyatt Ave., and Frederick Trevor Williams, 7 Norton Park Drive, both of Sheffield, England
Filed Apr. 30, 1963, Ser. No. 276,808
Claims priority, application Great Britain, May 3, 1962, 17,005/62
6 Claims. (Cl. 88-14)



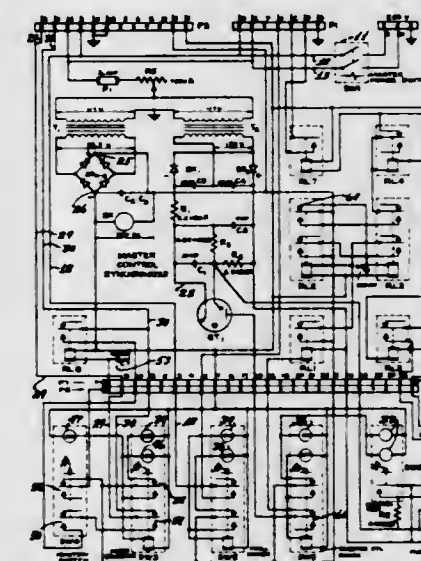
1. A stress indicating device for a structure to be tested having a hole therein comprising a longitudinal block of birefringent material having a transverse cross-section to provide a close fit with the cross-section of the hole in the structure to be tested when the block is inserted lengthwise into the hole along the longitudinal axis, a circularly

polarizing filter cemented along said axis to one end of the block, a housing secured adjacent the other side of the filter from that of the block, the housing containing a holder for a light source and constituting the inner end of the device to be inserted first into the hole in the structure, a light source, and leads for the light source carried through the filter and the block to the end of the device remote from the housing.

3,313,206

LIGHTING FOR PHOTOGRAPH IN COLOR AND BLACK AND WHITE

Walter F. Sinn, 61-21 Linden St., Ridgewood, N.Y. 11227, and Robert Shively, Continental Village, Peekskill, N.Y. 10566
Filed Jan. 31, 1964, Ser. No. 341,700
5 Claims. (Cl. 88-24)



1. In constant burning single flash lighting for illuminating objects and for picture-transparency projection in photography, in combination with a projector, exemplified by the "Zeiss Ikon heavy duty," said projector having an optical system consisting of a housing with a D.C. constant-burning high pressure xenon-filled, short arc, non-filament and non-flash D.C. lamp of the Osram xenon type, a reflector for said lamp and condenser means for the lamp beam, whereby the beam is projected from the housing, and forwardly of said projector and in line therewith a member detachable from the housing and having a transparency-receiving frame and beam condenser means preceding the same, an electrical circuit with an A.C. input in which said lamp is connected, transformer and rectifier means in said circuit adapted to convert the A.C. current to D.C. with a substantially lower voltage, line means leading said D.C. current to the lamp and projector elements in accordance with the lamp required voltage and amperage, A.C. choke means in the circuit preceding the transformer and rectifier means and adapted to limit the normal output current under load, means for momentarily shorting the A.C. choke means and adapted momentarily to effect production of a non-pulsating current output led to the lamp amounting to a multiple of said normal output under load and momentarily multiplying the normal output of the said constant burning lamp, a synchronizing control for the elements leading to the projector and lamp, comprising a line from the A.C. master power switch, a trim rheostat receiving current therefrom, then a transformer providing about 25.2 volts, then bridge rectifier and filter condenser means, said assembly providing a D.C. output trimmed to about 24 v. D.C. under load; a second assembly of a thyatron, and transformer, rectifier, and condenser elements providing

about 340 v. D.C. to the thyatron, a 2.2M 1 watt resistor in the line to the thyatron, a 24 v. D.C. relay fired by the thyatron, a camera-shutter synchronizing jack fed by said relay, a booster test switch for said jack and in circuit with the thyatron, a magnetic detent booster power switch fed by said relay and in a line leading to the projector and lamp through magnetic detent switch assemblies, one for projector normal power, one for mode selector and one for ignition, a D.C. input line from the output of first trim rheostat-transformer-rectifier and condenser assembly feeding said three last named switches, manual operating means for each of said switches, as of the push-button type, two sets of contacts in each switch alternately closed and opened by the manual operating means, an output line running from one set of contacts of the projector power switch to the projector-lamp power supply assembly for normal operation thereof, a line running from one set of contacts of the mode selector switch to the projector-lamp assembly for normal operation thereof, a line running from the second set of contacts of the mode selector switch to the booster power circuit including the camera-shutter jack, for automatic booster action by the latter through said mode selector second set of switch contacts, when the shutter is operated.

3,313,207

UNDERWATER WEAPON

Arthur T. Biehl, Calle los Calados, and Robert Mainhardt, Calle Arroyo, both of Diablo, Calif. 94528
Original application Apr. 2, 1965, Ser. No. 445,277. Divided and this application Oct. 22, 1965, Ser. No. 514,426

7 Claims. (Cl. 89—1.813)



1. A self-contained weapon comprising an elongated launching tube having unobstructed forward and rear end portions, the latter being provided with a flange means, a rocket having a casing including front and rear portions positioned in said launching tube, said casing being provided in the area of the rear portion with a nozzle means adapted to support a pyrotechnic element, a pyrotechnic element mounted within said nozzle means, a friction type ignition means extending through said pyrotechnic element, a warhead carried by the front portion of said casing, a longitudinally perforated propellant spaced from the ignition means and interposed between said warhead and said nozzle means, cover means associated with the forward and rear end portions of said launching tube and pull means extending through the rear cover and connected to said ignition means, whereby the relative motion between the pyrotechnic element and said ignition means ignites said pyrotechnic element when the pull means is actuated.

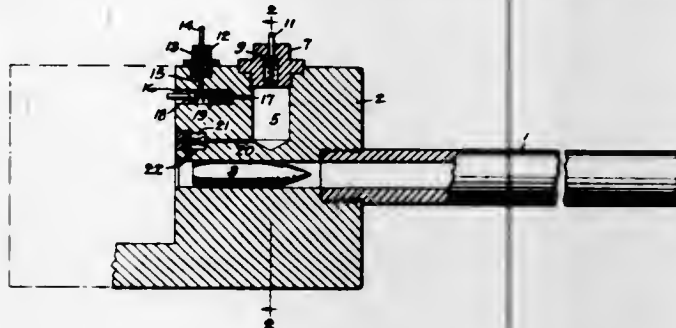
3,313,208

LIQUID PROPELLANT FOR SMALL CALIBER GUN

Edward G. Dorsey, Jr., Bernard A. Niemeler, and Eugene T. Fleischhauer, Richmond, Va., assignors, by mesne assignments, to the United States of America, as represented by the Secretary of the Army
Filed Mar. 25, 1953, Ser. No. 344,652
11 Claims. (Cl. 89—7)

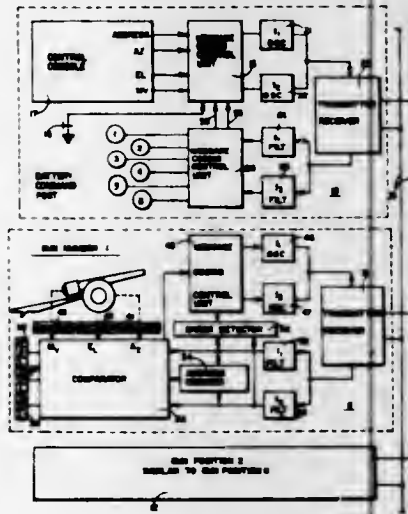
1. A gun comprising a breech casing, a barrel affixed to said casing, a projectile in said casing and aligned with the said barrel, a propellant comprising an oxidant and a fuel, said oxidant and said fuel contained in separate chambers formed in said gun, means including a passage

to admit a predetermined quantity of fuel into the oxidant chamber, a passage to admit a quantity of oxidant into the fuel chamber to pressurize each said fuel and oxidant



chambers, and means forming passages from the chambers to intermingle the said oxidant and the said fuel behind the said projectile and detonate spontaneously.

3,313,209

ARTILLERY FIRE CONTROL SYSTEM
Malcolm F. Thompson, Santa Ana, Calif., assignor to North American Aviation, Inc.
Filed June 24, 1965, Ser. No. 446,613
3 Claims. (Cl. 89—41)

1. In a fire control system including a communication channel for transmitting fire commands in true azimuth and elevation between a battery command post and a gun crew and means for comparing the actual gun setting in azimuth and elevation with said commands, a coordinate converter for translating apparent azimuth and elevation derived from the actual movement of a gun about its elevation and deflection axis into true azimuth and elevation, where true azimuth is taken from an arbitrary reference point, comprising

means for translating the axis of the gun in elevation to a position which intercepts the axis of deflection in azimuth,

a first gimbal-like member coupled to the gun deflection mechanism for rotating said translated elevation axis about said axis of deflection in response to training said gun in azimuth,

a second gimbal-like member for rotating a third axis about said translated elevation axis in a plane passing through said axis of deflection,

a third gimbal-like member connected to said second gimbal-like member at said third axis, said third gimbal-like member being constrained to rotate about an axis in the same plane as the translated elevation axis,

a fourth gimbal-like member connected to said third gimbal-like member to restrain the axis of rotation of said third gimbal-like member perpendicular to a vertical axis,

leveling means for adjusting said vertical axis to true vertical, whereby training said gun in elevation and azimuth will cause said third and fourth gimbal-like members to rotate about the true elevation axis and the true azimuth axis in response to actual movement of the gun,

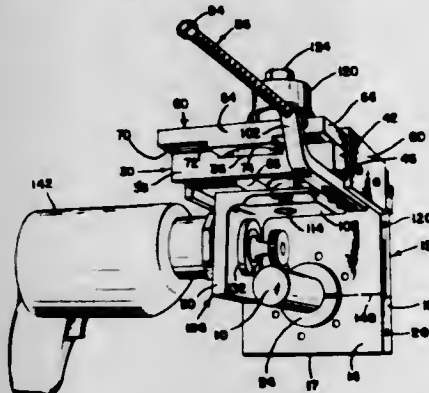
and angular position transducers connected to said third and fourth gimbal-like members for producing signals indicating the true elevation and azimuth of the gun.

3,313,210

PORTABLE KEY WAY CUTTING FIXTURE

Donald W. Statter, 9858 Thermal St.,
Oakland, Calif. 94605

Filed Mar. 4, 1965, Ser. No. 437,168
7 Claims. (Cl. 90-12)



1. A portable key way cutting fixture for shafts and the like, comprising: (a) a supporting plate having an aperture and means in said aperture for receiving and holding shafts and the like; (b) a generally rectangular guide plate detachably secured at one end to one edge of said supporting plate forming substantially a right angle, said guide plate being slotted along the midportion of its length between its ends; (c) a slide plate slidably received on said guide plate, said slide plate having an opening therein registering with said slotted portion of said guide plate; (d) guide means for guiding said slide plate on said guide plate; (e) a cutter tool holding means detachably secured to said opening in said slide plate to receive a cutter tool for extending through said slotted portion; and (f) a slide plate feed means comprising a brace member attached to said guide plate and a feed screw threadably received in said brace member and rotatably received in said slide plate for moving said slide plate on said guide plate.

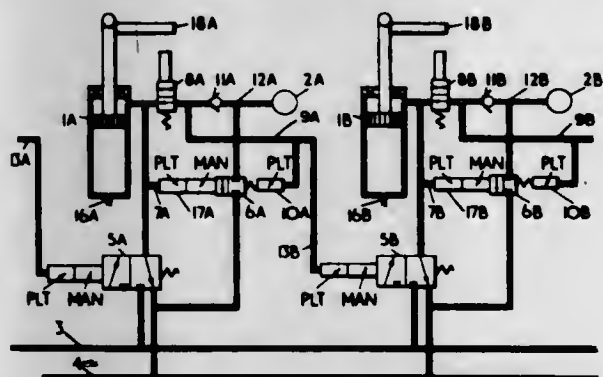
3,313,211

ADVANCING ROOF SUPPORTS

John D. Kibble, London, and Ronald G. Penn, Ashford,
England, assignors to Coal Industry (Patents) Limited,
London, England

Filed Mar. 11, 1965, Ser. No. 439,026
Claims priority, application Great Britain, Mar. 20, 1964,
11,932/64

12 Claims. (Cl. 91-189)



1. A control system for at least two fluid operated advancing mine roof support units each including a unit

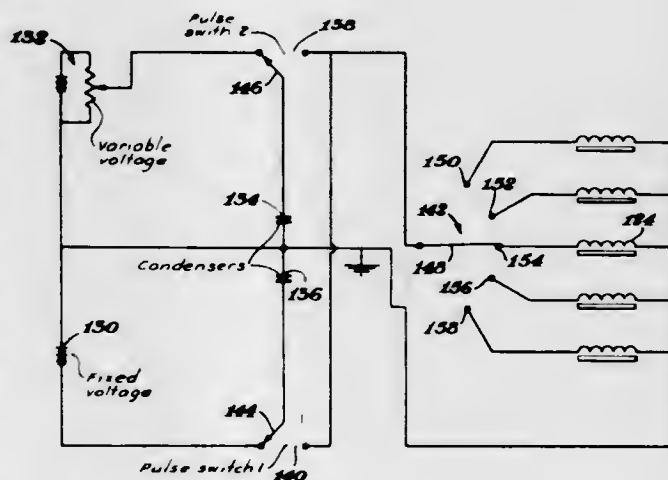
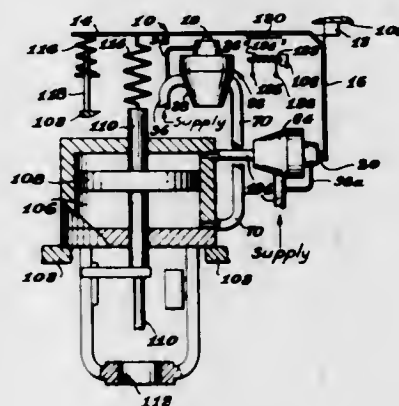
advancing ram and a roof support member, wherein each unit comprises a first control means adapted to control the lowering of the associated support member from the roof in response to pressure conditions appertaining in the associated ram and second control means responsive to a predetermined positional setting of the associated ram and adapted to override the associated first control means in such manner as to cause the roof support member to reset to its roof supporting position, and wherein the second control means of a unit is arranged to produce a control signal which serves to initiate the operation of the first control means of the next unit to be advanced.

3,313,212

MAGNETIC-PNEUMATIC CONTROL SYSTEM

Alfred V. Baker, Freeport, and Porter Hart, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed June 1, 1964, Ser. No. 371,631
6 Claims. (Cl. 91-387)



1. Control element positioning apparatus comprising a balance beam, said balance beam being coupled to a pivot element, a pair of pneumatic force balance elements each having an air nozzle, the nozzle of each force balance element being disposed adjacent to said balance beam and positioned whereby movement of said beam towards one nozzle moves the beam away from the other nozzle, each of said force balance elements having a pneumatic output element, a pneumatic cylinder, said cylinder having a piston disposed therein, said piston being coupled to a shaft, each of said pneumatic output elements being coupled to an end of said cylinder, a first permanent magnetic element having a fixed degree of magnetism, a second permanent magnetic element, one of said magnetic elements being fixedly coupled to said balance beam and the other said magnetic element being disposed a fixed distance therefrom such that the magnetic fields of the two magnetic elements interact, said second permanent magnetic element having an electrical

coil coupled thereto and means whereby said coil may be electrically pulsed at predetermined intervals to re-set the degree of magnetism of said permanent magnetic element to a predetermined value.

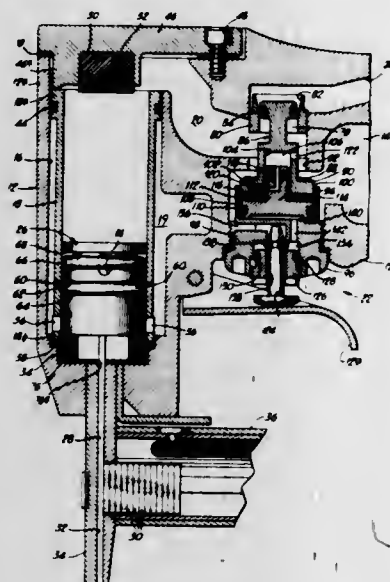
3,313,213

FASTENER DRIVING TOOL

Oscar A. Wandel, Mundelein, Ill., assignor to Fastener Corporation, Franklin Park, Ill., a corporation of Illinois

Filed May 20, 1965, Ser. No. 457,302

4 Claims. (Cl. 91-399)



1. A fastener driving tool comprising a housing having a head portion provided with a circular opening, a sleeve forming a cylinder positioned in said opening, a cavity between said sleeve and said head portion forming an air return chamber, a fluid reservoir, fastener driving means including a piston slideably mounted in the cylinder, control valve means carried on the housing and operable sequentially to connect one end of said cylinder between a normal position exhausting to the atmosphere and an operated position communicating with said reservoir, port means extending through said sleeve adjacent the other end of said cylinder placing said other end of said cylinder in communication with said air return chamber, said piston being provided with a pair of spaced annular grooves in its outer wall, the one of said grooves closest to said one end of said cylinder being elongated, a first O-ring in said one of said grooves and being free to slide therein into engagement with the end surfaces thereof, a recessed slot extending from near the outer edge of said one of said grooves to beyond the inner edge thereof to provide a fluid bypass around said O-ring when said O-ring is out of engagement with the outermost one of said end surfaces, another O-ring in the one of said grooves closest to said other end of said cylinder and forming a pneumatic seal between said piston and said cylinder, and fluid bleed passageway means extending between said air return chamber and said cylinder to a point in said cylinder spaced between said O-rings where said piston is adjacent said other end of said cylinder.

3,313,214

POWER FEED WITH LIQUID CHECK

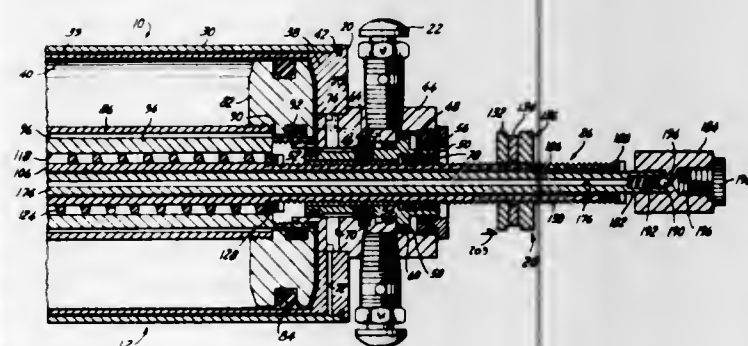
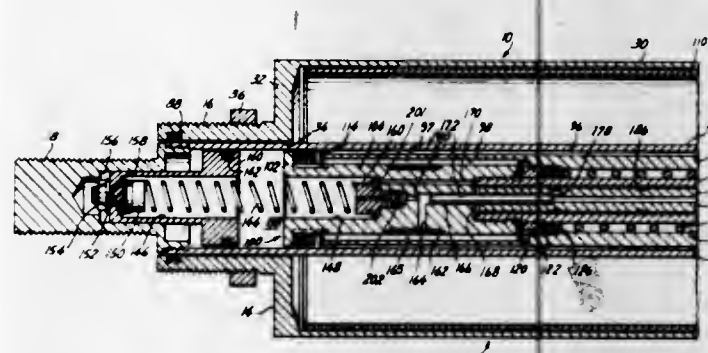
Nathan Ackerman, Lake Success, N.Y. (% Sandex, Inc., 678 Berriman St., Brooklyn, N.Y. 11208)

Filed June 16, 1964, Ser. No. 375,436

14 Claims. (Cl. 92-8)

1. In combination a power driven member and a restraining means therefor, said restraining means including a cylinder, a piston movable as a function of the movement of the power driven member, a hollow piston rod carried

by the piston, a liquid in said cylinder compressed by movement of the piston in at least one direction, a first reservoir within the piston rod including a first movable wall within the piston rod, a first passageway connecting the cylinder with the first reservoir, a second reservoir within the piston rod including a second movable wall within the piston rod on the said one direction side of the first movable wall, a second passageway connecting the first reservoir with the second reservoir, a restricted flow zone in the second passageway, and limit means including a member carried by the first wall and external-



ly abutting the cylinder to stop at a predetermined point the movement of the first wall in a direction expanding the volume of the first reservoir so that the power driven member may move rapidly while the oil expressed from the cylinder flows into the first reservoir and the first wall thereof moves in a direction expanding the volume of the first reservoir until such movement of the first wall is stopped and thereafter the movement of the power driven member is restrained by the impedance to flow of liquid expressed from the cylinder and flowing into the second reservoir through the restricted flow zone.

3,313,215

CYLINDER AND PISTON ARRANGEMENT

Hans Bieri, Uster, Switzerland
(Obereck, Pfaffikon, Zurich, Switzerland)

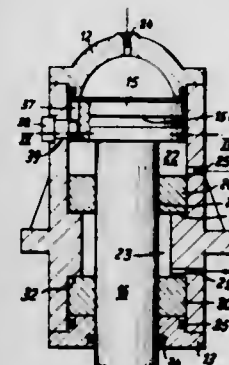
Filed Oct. 18, 1965, Ser. No. 497,428

Claims priority, application Switzerland, Feb. 9, 1962, 1,606/62

5 Claims. (Cl. 92-86)

1. A cylinder and piston arrangement comprising a housing having a chamber formed therein; a guide sleeve having a bore therethrough dividing said housing chamber into a cylinder compartment and a working fluid collecting chamber; closure means at the opposite ends of said housing chamber closing said cylinder compartment and said collecting chamber; at least one piston means including a piston slidably disposed in said cylinder compartment and a piston rod slidable in said bore; the relative sizes of said piston rod and bore being such as to provide for the restricted leakage of fluid around said piston rod and into said collecting chamber to thereby considerably reduce the pressure of said leaked working fluid in said

collecting chamber; means for admitting a working fluid under pressure into said cylinder compartment for reciprocating said piston and said piston rod; rotation preventing means located at least partially in said housing chamber and comprising a cooperating key and keyway



means, one of said key and keyway means being fixed relative to the housing chamber, the other of said key and keyway means being located on the exterior peripheral surface of said piston means whereby said rotation preventing means is lubricated by said working fluid.

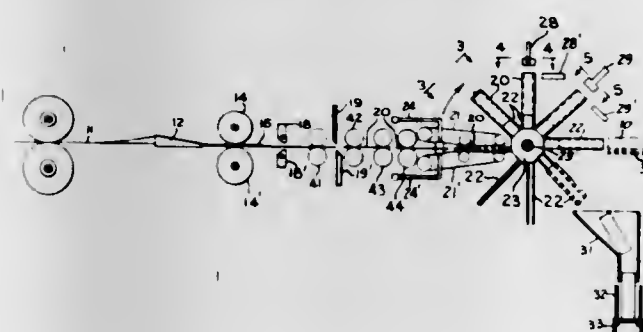
3,313,216

BAG MAKING APPARATUS

Thomas E. Plazze, Mount Vernon, Ohio, assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Original application Jan. 11, 1962, Ser. No. 165,689, now Patent No. 3,150,573, dated Sept. 29, 1964. Divided and this application June 29, 1964, Ser. No. 378,808

5 Claims. (Cl. 93-8)



1. Apparatus for forming bags from heat sealable plastic film material comprising means for folding a continuous web of the film material into a tube, means for transversely severing and sealing the tube at longitudinally spaced intervals to form a plurality of bag sections each having a closed end, means forming a turret rotatably mounted adjacent said tube severing and sealing means, a plurality of expansible mandrels mounted in spaced relation on said turret, means for feeding the bag sections to successive mandrels, means for telescoping each bag section over a mandrel which is in collapsed condition, means for expanding each successive mandrel to square up the bag section thereon with the closed end of the bag section folding into a flat plane at the free end of the mandrel and providing generally triangular end portions which project on opposite sides at the end of the mandrel. Heat sealing means are mounted adjacent the periphery of the turret for sealing across said triangular end portions along the end edges of the mandrel, and trimming means are mounted adjacent the periphery of the turret for cutting across said triangular end portions so as to remove the waste portion thereof which extends outwardly beyond the edge seals.

3,313,217
CROSSED-BOTTOM SACK AND PROCESS
AND METHOD FOR MANUFACTURING SAME

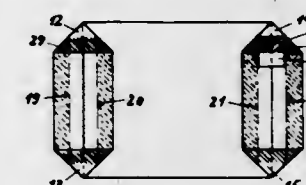
Hermann Kappelhoff, Hamburg, Max Georg Gennerich, Walter Paul, and Walter Steinbeck, Lengerich, and Willy Niemeyer, Natrup-Hagen, Germany, assignors to Windmoller & Holscher, Lengerich, Germany

Filed Apr. 2, 1964, Ser. No. 356,882

Claims priority, application Germany, Apr. 11, 1963,

W 34,295

24 Claims. (Cl. 93-35)



1. A method of manufacturing crossed-bottom sacks from collapsed tube lengths of thermoplastic material comprising, applying an adhesive dissolved in a solvent to the outside of each of said tube lengths along the edge of one of its open ends in a width which corresponds to the width of bottom side flaps to be subsequently formed, said adhesive being of a type which is effective in a substantially dry condition, evaporating substantially all of said solvent from said adhesive, pulling open and folding said one end of said tube length to form side flaps and infolded corner portions, folding said tube flaps inwardly and pressing said side flaps and folded corner portions together so that they permanently adhere to each other.

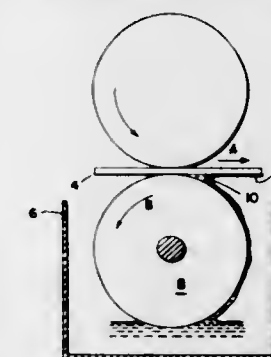
3,313,218

METHOD FOR JOINING WAXED PAPERBOARD SURFACES

Iven G. Nichol, Stamford, Conn., assignor to Morningstar-Paisley, Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 6, 1963, Ser. No. 321,854

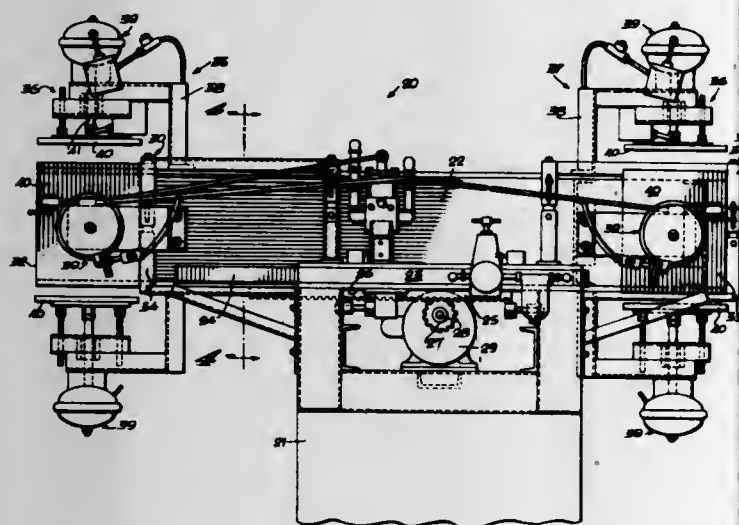
3 Claims. (Cl. 93-36)



1. In the formation of paperboard containers or the like from wax-covered blanks having flap portions and wherein the wax melts at a predetermined temperature, a process of joining two of said flap portions comprising: moving said blank toward a glue applying station including a roller rotatably mounted in a supply of hot melt glue, heating said supply of glue at said station to a temperature substantially above the melting temperature of the wax on said blank, forming a pocket of said heated glue between said blank and the peripheral surface of said roller by rotating said roller in a direction opposite to the direction of movement of said blank, applying said glue to one side of one of said flaps from said pocket while at said heated temperature, substantially immediately thereafter moving said flaps toward one another until they are in superposed position and the applied glue contacts one side of the other of said flaps, applying pres-

sure to said flaps while in said superposed position to thereby melt the wax on the facing sides of both of said flaps, and maintaining said pressure on the flaps until the glue has set.

3,313,219
APPARATUS AND METHOD FOR FORMING
CARTONS OR THE LIKE
Justin F. Michel and Joseph Williamson, Cincinnati, Ohio,
assignors to M & S Machine & Engineering Company,
Cincinnati, Ohio, a partnership
Filed Apr. 2, 1964, Ser. No. 356,897
20 Claims. (Cl. 93—36.3)

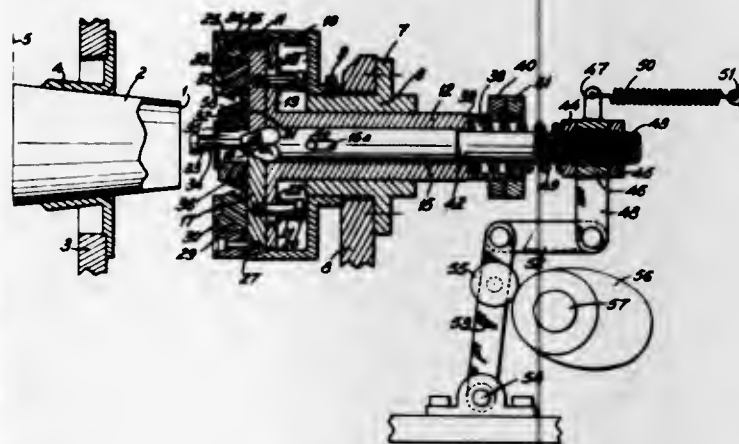


5. Apparatus for forming a carton or the like comprising frame means, mandrel means horizontally movable relative to said frame means from one position to another position, first pressure plate means for pressing a carton structure against said mandrel means while said mandrel means is in said one position to complete said carton, first stripping means for stripping said completed carton from said mandrel means when said mandrel means is moved from said one position to said other position, second pressure plate means for pressing another carton structure against said mandrel means while said mandrel means is in said other position to complete said other carton, and second stripping means for stripping said completed other carton from said mandrel means when said mandrel means is moved from said other position thereof back to said one position thereof.

3,313,220
APPARATUS FOR FORMING A ROLLED EDGE ON
CONTAINERS MADE OF SHEET MATERIAL
Robert Georges Engène Durat, Jouet-sur-l'Aubois, France
Filed Jan. 27, 1965, Ser. No. 428,324
Claims priority, application France, June 3, 1964,
976,876, Patent 1,405,968
10 Claims. (Cl. 93—36.5)

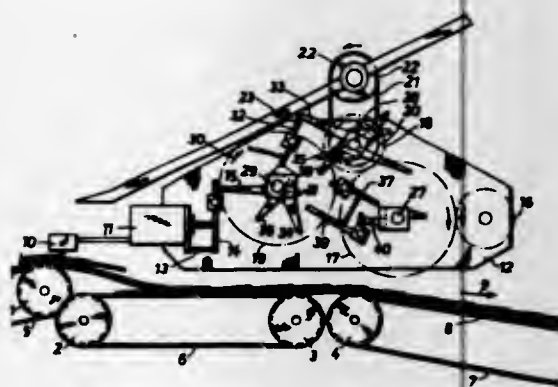
1. An apparatus for forming a rolled edge on a container in sheet material having a shape of revolution and mounted on a fixed support, comprising, in combination, a central part which is centered on the axis of the container mounted on its fixed support and which has formed thereon rearwardly of its perimeter an arcuate throat of quarter-circle section at a distance from said axis equal to the distance therefrom of the container edge on which the rolled edge is to be formed; movable hollow support means coaxial with said part and defining a space with the rear portion of said part; a plurality of jaws mounted on said support means, radially movable in said space, in contact with said central part and said support means, and projecting radially and forward of the perimeter of said central part, said jaws being provided facing said part and on their forwardly projecting portion with an

arcuate groove of semicircular section which, when said jaws are in their retracted position, forms with said throat a rolling die of three-quarter torus shape open toward said container; means for applying said jaws against said support means under slight pressure; means for applying said central part against said jaws under slight pressure; means for displacing said support means axially toward said container whereby to roll down the



edge thereof in said die outwardly of the container and move said support means away from the container after formation of the rolled edge; means for displacing said jaws radially between said support means and said central part on completion of the rolled edge whereby to open said die; means for reclosing said jaws when said support means has moved away from the container formed with its rolled edge; and control means of said two displacing means.

3,313,221
APPARATUS FOR DIVIDING A STREAM OF
COPIES OF FOLDED NEWSPAPERS, PERI-
ODICALS OR OTHER SIMILAR COMMODI-
TIES CONTINUOUSLY FOLLOWING ONE
ANOTHER IN SUCCESSION
Ferdinand Gübell, Hinwil, Zurich, Switzerland, assignor
to Ferag, Fehr & Reist AG, Zurich, Switzerland
Filed June 24, 1964, Ser. No. 377,767
Claims priority, application Switzerland, June 26, 1963,
7,926/63
16 Claims. (Cl. 93—93)

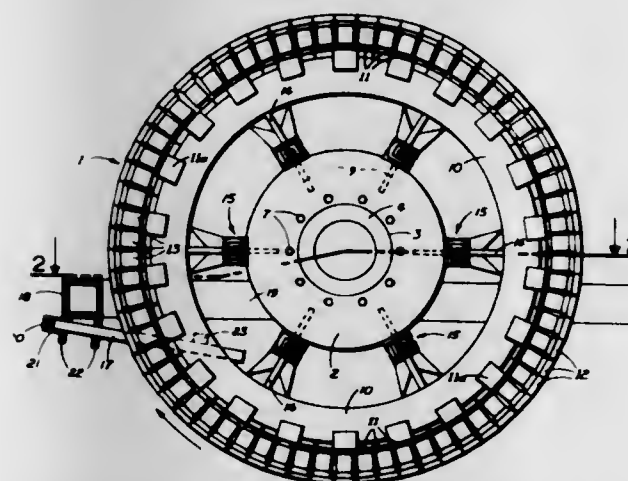


1. Apparatus for dividing into counted groups a stream of commodities continuously following one another in succession, said apparatus comprising a separation lever mounted for displacement between a starting position and a separation position, said lever in the latter position being inserted into the path of the stream of commodities to interrupt passage of the arriving commodities and to permit continued passage of a divided number of com-

modities constituting a counted group, counter means for counting the commodities in said stream and upon having reached a count corresponding to a given number of commodities defining a group delivering a control pulse; said counter means being arranged upstream of the separation lever with respect to the direction of movement of the stream of commodities, adjustable means responsive to said control pulse for operating said separation lever, said adjustable means being disposed downstream of the counter means with respect to the direction of movement of said stream of commodities, said adjustable means including means for delaying the operation of said separation lever until the last commodities of a counted group has passed the separation position so that the separation lever upon attaining said separation will arrest the first commodity following said counted group, means for arresting the separation lever in the separation position in order to provide an interval between the counted group and the successively following stream of commodities, and means for releasing the arresting action of said separation lever to permit the latter to return to its starting position.

3,313,222
SHEEPSFOOT TYPE EARTH COMPACTING
WHEEL

Orville G. Barnum, South San Francisco, and Fred J. Caron, Citrus Heights, Calif., assignors to Pactor Corporation, West Sacramento, Calif., a corporation of California
Filed Jan. 11, 1965, Ser. No. 424,712
1 Claim. (Cl. 94—50)

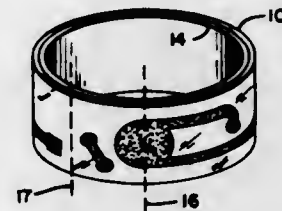


A sheepfoot compacting wheel including a pair of axially spaced rings, radially extending transverse spoke plates connecting the rings and projecting radially inwardly therefrom in circumferentially spaced relation, said spoke plates being deeply recessed between the rings in radially outward facing relation, and a cleaner bar fixed exteriorly of the wheel and projecting between the rings substantially radially of the wheel and of a length sufficient to extend into the spoke-plate recesses.

3,313,223
ENDLESS BELT FILM FOR MAKING PHOTO-
PRINTED REPRODUCTIONS
John J. Frantzen, St. Paul, Minn., assignor to Buckbee-Mears Company, St. Paul, Minn., a corporation of Minn.
Filed Mar. 24, 1965, Ser. No. 442,411
3 Claims. (Cl. 95—1)

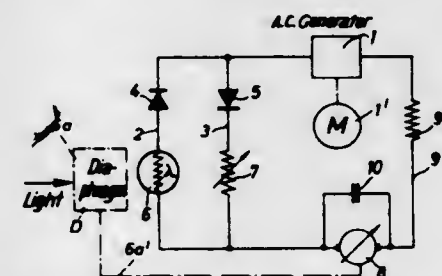
1. An endless-belt photographic film containing clear and opaque areas defining a pattern to be photographically reproduced constructed of a first layer of a strip of film having its ends butted and joined together with the patterns at the ends aligned so that the pattern appears

continuous; and a second layer of a strip of photographic film coextensive with the first layer and bonded thereto breadthwise by a coating of clear adhesive, the second layer strip being clear throughout except for a section



which overlies the butted ends of the first layer strip, said section containing a duplicate of the pattern contained on the corresponding section of the first layer strip and being in exact registry therewith.

3,313,224
AUTOMATIC APERTURE CONTROL FOR
PHOTOGRAPHIC CAMERAS
Friedrich Biedermann, Unterhaching, Munich, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen, Germany
Filed May 11, 1964, Ser. No. 366,294
Claims priority, application Germany, June 1, 1963,
A 43,245
6 Claims. (Cl. 95—64)



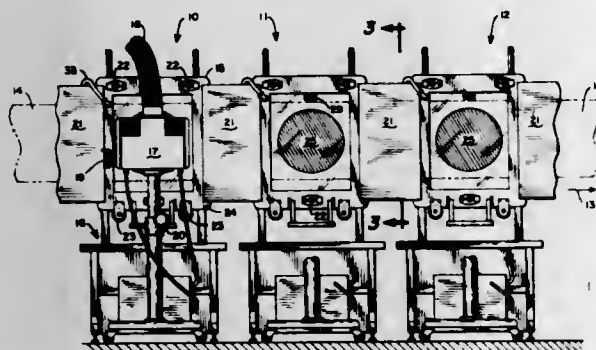
1. In a photographic camera having an adjustable aperture diaphragm, an automatic aperture control, comprising, in combination, photo-responsive resistance means located for being exposed to at least a predetermined fraction of the light passing through the diaphragm aperture; ohmic resistance means of predetermined resistance; electric energy source means furnishing alternating voltage; moving-coil instrument means for producing a torque and for applying such torque to the adjustable diaphragm for adjusting the latter, said torque corresponding in magnitude and direction to the magnitude and direction of electric current flow acting on said moving-coil instrument means; and circuit means including two branches respectively connecting said source means, said photo-responsive resistance means, said ohmic resistance means and said moving-coil instrument means with each other, one of said branches containing the terminals of said source means, said photo-responsive resistance means, said moving-coil instrument means and a first rectifier means so poled that a first current from said source means flows through said one of said branches containing said photo-responsive resistance means and said moving-coil instrument means in one direction and with an intensity depending on the amount of light passing through said aperture and impinging on said photo-responsive resistance means, and the other one of said source means, said ohmic resistance means, said moving-coil instrument means and a second rectifier means so poled that from said source means a second current flows simultaneously through said other one of said branches containing said ohmic resistance means and said moving-coil instrument means in the opposite direction and with an intensity depending upon the resistance of said ohmic resistance means, so that the amplitude of the adjustment of said aperture corresponds to a current

determined by the difference between said first and second currents flowing in opposite directions through said circuit branches and said moving-coil instrument means.

3,313,225 AUTOMATIC MULTIPLE PHOTOPRINTING SYSTEM

Norman B. Mears, St. Paul, Minn., assignor to Buckbee-Mears Company, St. Paul, Minn., a corporation of Minnesota

Filed Aug. 7, 1964, Ser. No. 388,077
16 Claims. (Cl. 95-75)

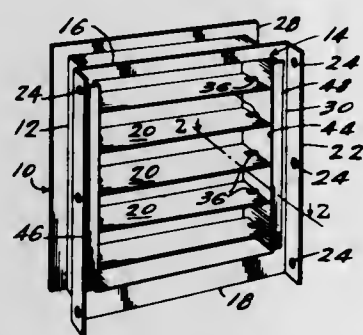


1. Apparatus for automatic photoprinting of circuit patterns on a continuous elongated web of light-sensitized material, comprising: at least one photoprinting station containing images of patterns to be printed on opposite sides of a continuous web; drive means for advancing the web longitudinally through said station; control means for operating said drive means in a cyclical stop-go manner; and means responsive to said control means for initiating photoprinting of said patterns in register on opposite sides of said web at said station when said drive means is in the stop condition.

3,313,226 BLADE MOUNTING MEANS FOR AIR CONTROL APPARATUS

Edward H. Johnson, Maumee, Ohio, assignor to The American Warming & Ventilating, Inc., Toledo, Ohio, a corporation of Ohio

Filed Sept. 30, 1964, Ser. No. 400,431
7 Claims. (Cl. 98-40)

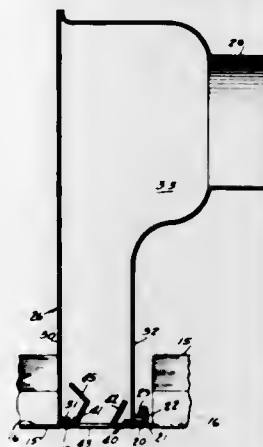


1. Air control apparatus comprising a frame member including a web and spaced supporting flanges extending the length of the web, said web having a plurality of substantially equally-spaced openings therealong, a plurality of blades, axles for said blades rotatably received in said openings, a blade-contacting plate interposed between said frame member and the ends of said blades, said plate having side flanges extending parallelly, alongside, and close to said supporting flanges of said frame member in nesting relationship therewith to restrict flow of air therebetween, said side flanges being narrower than said supporting flanges, and resilient means urging said plate toward the ends of said blades.

3,313,227 AIR DISTRIBUTION SYSTEM

George K. Ralder, Schiller Park, Ill., assignor to The Pyle-National Company, Chicago, Ill., a corporation of New Jersey

Filed Oct. 21, 1964, Ser. No. 405,535
5 Claims. (Cl. 98-40)

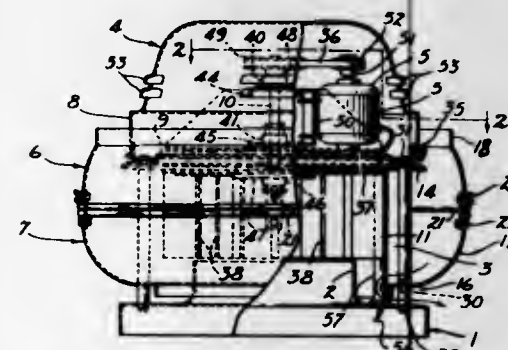


1. An air distributing apparatus for the ceiling of a room to be ventilated comprising, a false ceiling for the room including a plurality of interlocking panels supported beneath the ceiling of the room, each panel having a first flange extending along one side thereof and terminating into an upright lip having an outwardly opening downwardly hooked end portion, and having a second flange extending along the opposite side of said panel terminating into an upright lip adapted to be engaged by the downwardly hooked end portion of a next adjacent panel for supporting said next adjacent panel, at least one of said flanges having spaced air slots extending therealong in the space between the panel and the upright lip, an air duct extending along the ceiling of the room in the space above said panels, and a separate air diffuser in association with each flange having said spaced air slots extending therealong, and connected with said air duct at one end and having a downwardly opening air diffusing end in air diffusing association with the slots extending along the associated flange.

3,313,228 ROOF TYPE POWERED VENTILATOR

Loren Cook, Berea, Ohio, assignor to Loren Cook Company, a corporation of Ohio

Filed Sept. 28, 1965, Ser. No. 490,867
3 Claims. (Cl. 98-43)



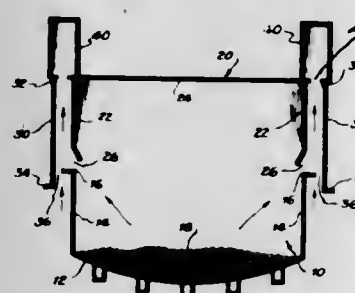
1. A ventilator including a base having an upper wall for application to a curb surrounding an opening in a roof which base has an upwardly extending duct means arranged in alignment with the axis of the ventilator, a motor casing having a substantially vertical wall portion, a motor arranged in the motor casing, a blower arranged

below the motor casing, a shaft operatively associated with the motor and said blower for rotating the blower when the motor is energized, annular baffle means consisting of upper and lower annular baffles having contiguous beads engaging each other, means for bracing the baffles and connecting them together comprising a plurality of spaced straps arranged interiorly of the baffle means, each having a threaded bushing in its upper portion, means for locking the lower portion of each of the straps to the upper portion of the lower baffle, spaced fastening means extending through the lower part of the upper baffle, each being releasably threaded into one of said bushings, said lower baffle having a downwardly extending annular rim which extends below said duct means and is perpendicular to the upper wall of the base portion, means for supporting said motor casing and said baffle means with the rim of the lower baffle spaced a short distance upwardly from said base to provide an annular opening between the lower portion of said rim and the upper wall of said base, said lower baffle also including an annular portion extending substantially radially outwardly from its rim and an outwardly and upwardly flared portion which terminates radially outwardly from substantially the central portion of said blower, and said upper baffle being tapered inwardly from the upper portion of the lower baffle and terminating in a short vertical annular rim which is substantially parallel to and is spaced radially outwardly from the vertical portion of the motor casing to thereby provide a chamber through which air may be expelled outwardly and upwardly and through which weather elements entering between the annular rim of the upper baffle means and the lower portion of the motor casing which are liquid or become liquid may be drained downwardly upon the flaring wall of the lower baffle and outwardly on to the base portion below the annular rim of the the lower baffle.

3,313,229 GAS HOOD

Hermann Müller, Frankfurt am Main, Germany, assignor to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany

Filed July 19, 1965, Ser. No. 473,053
Claims priority, application Germany July 23, 1964, M 61,854
3 Claims. (Cl. 98-115)



1. In combination with a vessel having a bottom and side walls and adapted to hold hot material emitting gases containing dust, a hood for removing the gases comprising hood plates each being an upwardly extending hood plate mounted above and spaced from the upper edge of each vessel side wall for forming a first slot for the passage of gases, damper plate means mounted on said hood outwardly of the upwardly extending hood plate for forming therebetween a gas passageway, said damper plate means extending below the upper edge of the vessel and being adjustably spaced therefrom for forming a second slot for the entry of variable quantities of cooling air into said passageway, an exhaust gas duct joined to the upper end of the passageway for the removal of the gas and cooling air, and a roof between the upwardly extending hood plates.

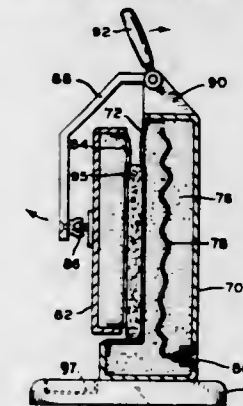
ERRATUM

For Class 99-271 see:
Patent No. 3,313,631

3,313,230 COOKING APPLIANCE

Luther G. Simjian, Laurel Lane, Greenwich, Conn. 06830

Filed Jan. 15, 1965, Ser. No. 425,898
11 Claims. (Cl. 99-375)

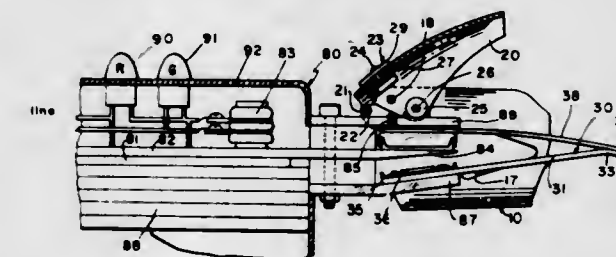


1. A cooking appliance comprising in combination: a pair of opposed diaphragms adapted to be in contact with respective opposite sides of an article to be cooked; each diaphragm being sufficiently flexible to conform at least in part to the contour of the article and each diaphragm being provided with a surface having relatively high release properties at the area of contact with the article; a frame for holding each respective diaphragm along its periphery; a flexible filler medium adapted to yield under pressure disposed between said frame and the underside of said diaphragms for supporting each respective diaphragm along its surface inward from the periphery, and heating means for heating the filler medium and at least one of said diaphragms whereby to provide a cooking surface for the article.

3,313,231 EMBOSSING SEAL PRESS

Charles Priesmeyer, Park Ridge, and Gildo G. Prosen, Chicago, Ill., assignors to Meyer & Wenhe, Inc., Chicago, Ill., a corporation of Illinois

Filed June 29, 1965, Ser. No. 467,848
11 Claims. (Cl. 101-3)



5. In a paper embossing seal press having matrix die and male die carriers driven towards each other in fixed relationship by a hand squeezed seal press frame, the combination of a matrix die of high heat conductive material of a low coefficient of heat expansion of approximately .0000011 inch per inch ° F. having recessed indicia in the working face thereof with facing walls defining approximately a 55° included angle and rigidly carried by the matrix die carrier, and a male die of thermoplastic material having a mold shrinkage rating of approximately .004 inch per inch integrally heat molded in inter-

locked relationship on its bottom face with the male die carrier, and having its working face intimately following in the recessed indicia of the matrix in even registry therewith, and said dies having the mating indicia positions disposed within a couple thousandths of an inch and spaced equally on all sides of the mating indicia elements with the flat portions of the dies closed empty in contacting relationship.

3,313,232

APPARATUS FOR PREVENTING THE LEAKAGE OF PAINT THROUGH A SCREEN

Johannes Bernardus van der Winden, Amstelveen, Netherlands, assignor to Gebr. Stork & Co's Apparatenfabriek N.V., Amsterdam, Netherlands

Filed Sept. 11, 1964, Ser. No. 395,879

Claims priority, application Netherlands, Sept. 12, 1963, 297,818

1 Claim. (Cl. 101-118)



A screen printing machine comprising a surface for supporting material to be printed upon, a cylindrical printing member disposed adjacent said surface and having a screen extending completely therearound for continuously printing on material supported by said surface throughout each complete and successive revolutions of the printing member, means for relatively moving said surface and said printing member into and out of operative engagement with each other, means for normally continuously moving said surface longitudinally, means for rotating said screen for operative cooperation with said surface as the latter is moved longitudinally, continuously operated drive means including a pair of clutches respectively connected with said surface moving means and said screen rotating means, and means for controlling said clutches selectively for continuously driving said screen rotating means to continue rotation of said screen and disconnecting said surface moving means when said first mentioned means is operated to disengage said surface and said screen, whereby to prevent settlement of printing fluid in and dripping from said screen when the printing operation is stopped.

3,313,233

PROCESS OF LACQUERING PLANOGRAPHIC PRINTING PLATES

Fritz Uhlig and August Rebenstock, Wiesbaden-Blebrich, Germany, assignors, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.

No Drawing. Filed Dec. 6, 1962, Ser. No. 242,629

Claims priority, application Germany, Dec. 9, 1961, K 45,402, K 45,403

14 Claims. (Cl. 101-149.2)

1. A process for improving a planographic printing plate having a hydrophilic support and a light-exposed layer thereon consisting essentially of a diazo compound and containing image-free areas and oleophilic image areas, which process comprises treating the layer with a lacquer comprising about 3 to 20 percent by weight, based on the weight of the lacquer, of a resinous, water-insoluble, oleophilic film-forming substance in solution in a solvent mixture capable of dissolving the image-free areas of the layer and containing about 40 to 80 percent by weight, based on the weight of the solvent mixture, of a polyhydric aliphatic alcohol, whereby the resinous substance adheres to the image areas, the solvent mixture removes the image-free areas of the layer, and the polyhydric alcohol maintains the support hydrophilic in the image-free areas.

8. A process for improving a planographic printing plate having a hydrophilic support and a light-exposed layer thereon containing image-free areas and oleophilic image areas, which process comprises developing the light-exposed layer by removing the image-free areas thereof and applying directly to the surface of the developed plate a lacquer comprising about 3 to 20 percent by weight, based on the weight of the lacquer, of a resinous, water-insoluble, oleophilic film-forming substance in solution in a solvent mixture containing about 40 to 80 percent by weight, based on the weight of the solvent mixture, of a polyhydric aliphatic alcohol, whereby the resinous substance adheres to the image areas and the polyhydric alcohol maintains the support hydrophilic in the image-free areas.

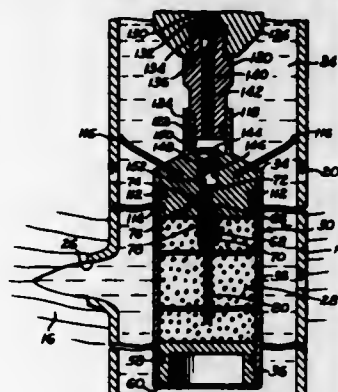
3,313,234

EXPLOSIVE WELL STIMULATION APPARATUS

Henry H. Mohaupt, Santa Barbara, Calif., assignor to Petroleum Tool Research, Inc., Fort Worth, Tex., a corporation of Texas

Application Feb. 18, 1965, Ser. No. 433,564, now Patent No. 3,264,986, dated Aug. 9, 1966, which is a division of application Ser. No. 708,481, Jan. 13, 1958, now Patent No. 3,174,545, dated Mar. 23, 1965. Divided and this application Mar. 28, 1966, Ser. No. 537,830

3 Claims. (Cl. 102-20)



1. In combination:

- (a) a main explosive charge;
- (b) means connected to said main explosive charge for lowering it into a well bore;
- (c) means carried by said main explosive charge for supporting it in the well bore;
- (d) means including an auxiliary explosive charge carried by said lowering means for igniting said main explosive charge;
- (e) means responsive to ignition of said auxiliary explosive charge for disconnecting said lowering means from said main explosive charge; and
- (f) said main explosive charge including slow-burning delay train means ignitable by said auxiliary explosive charge for delaying ignition of said main explosive charge to provide time for movement of said lowering means away from said main explosive charge.

3,313,235

SHOTGUN SHELL WITH DEFORMABLE CLOSURE

William J. Middleton, Jr., Orlando, Fla., assignor to Chellife Corporation, Orlando, Fla., a corporation of Florida

Filed June 10, 1964, Ser. No. 373,944

7 Claims. (Cl. 102-42)

1. In a shotgun shell comprising a base and a casing having inner and outer walls and being open at one end and closed at the other end, with a primer, propellant and wad column conventionally associated with the shell base and casing, the combination comprising:

- (a) a thin-walled deformable member positioned within said shell casing;

(b) said deformable member forming a receptacle open at one end and closed at the other end and being positioned within said shell casing so that its closed end is in close proximity to said open end of said shell casing, its open end abuts said wad column, and its outer surface substantially abuts the inner walls of said shell casing;



(c) shot load means positioned within said receptacle; and

(d) said closed end of said receptacle being folded over sections of one end of said member, and being positioned within said shell casing so that said open end of said shell is terminated only by said receptacle, thereby holding said shot load in a desired position within said shell casing.

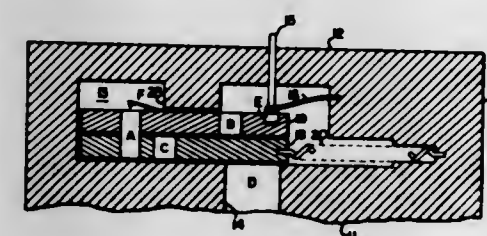
3,313,236

MULTIPLE FUNCTION FUZES

Arthur M. Lohmann, Hopkins, Minn., assignor to Honeywell Inc., a corporation of Delaware

Filed May 12, 1965, Ser. No. 455,201

9 Claims. (Cl. 102-72)



9. A munition fuze, comprising:

- (a) a housing having a chamber therein;
- (b) a first carrier member mounted in said chamber for movement from a safe position through an intermediate position to an armed position;
- (c) a second carrier member mounted in said chamber adjacent said first carrier member for movement between corresponding safe and intermediate positions, said carrier members each being adapted to carry explosive elements that are spaced apart for safety in the safe position and that are positioned to perform distinct fuzing functions in the intermediate and armed positions;
- (d) means for holding said carrier members in said safe position and for releasing said carrier members;
- (e) means for driving said first carrier member from said safe to said armed position;
- (f) a delay primer mounted in said carrier members to lock said carrier members together for simultaneous movement between said safe and said intermediate position;
- (g) means for igniting said primer upon movement of said carrier members from said safe to said intermediate position; and
- (h) said primer having a shearing charge therein to shear the primer casing adjacent the intersection of said carrier members after a timed delay after ignition to release said first carrier member for movement to said armed position by said driving means.

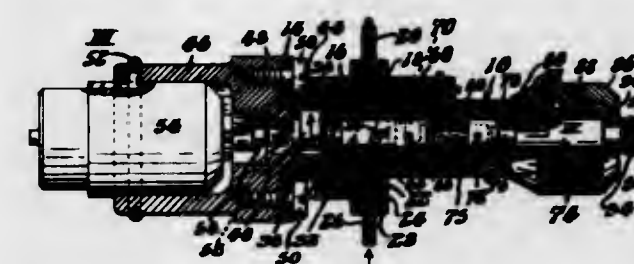
3,313,237

ROTARY METERING PUMP

Vitalis von Plato, Springfield, Pa., assignor to Ryvon International Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Nov. 18, 1964, Ser. No. 412,074

4 Claims. (Cl. 103-38)



4. In a rotary pump for metering liquids, the combination comprising a hollow cylinder provided with inlet and outlet ports, an axially fixed rotatable piston in said cylinder having an oblique surface at one end whereby said piston during its rotation alternately opens and closes said ports in sequence, a motor directly connected to said rotatable piston for actuating the same, an O-ring embracing said rotatable piston to prevent seepage of liquid past said rotatable piston, a reciprocable piston having an oblique surface cooperating with the oblique surface of said rotatable piston for shifting said reciprocable piston axially in one direction during rotation of said rotatable piston, a link having a sliding tongue and groove lost motion connection with said reciprocable piston, a member slidably fitted into said cylinder and connected to said link, an O-ring embracing said member to prevent seepage of liquid past said member, means fixing said member, link and reciprocable piston against rotation, means embracing said link and yieldably biasing said reciprocable piston axially in the opposite direction, a cap threaded over one end of said cylinder and connected to said member, said cap being operable for shifting the same axially.

3,313,238

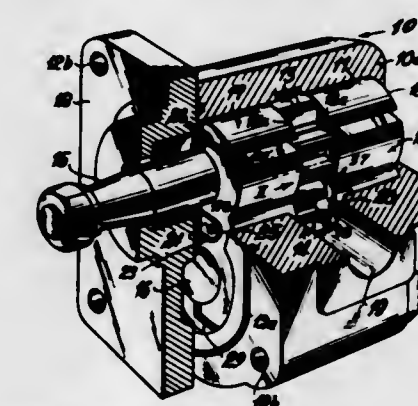
HYDRAULIC APPARATUS

Karl-Heinz Muller, Gerlingen, Roland Stelmann, Stuttgart-Sillenbuch, and Wilhelm Weigert, Gerlingen, Germany, assignors to Robert Bosch, G.m.b.H., Stuttgart, Germany

Filed July 6, 1965, Ser. No. 470,349

Claims priority, application Germany, July 4, 1964, B 77,532

5 Claims. (Cl. 103-126)

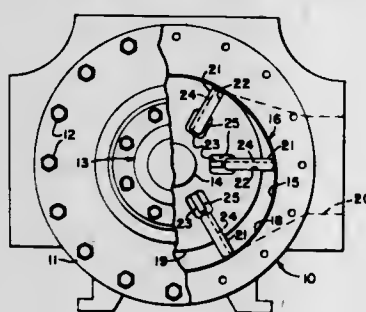


1. In a hydraulic gear pump, in combination, a housing including two end walls each having a surface spaced from and facing the surface of the other end wall; and a pair of rotary gears located between said surfaces and having meshing teeth, said gears defining with said housing a suction chamber and a pressure chamber separated from each other by said meshing teeth, at least one of said end walls being provided with at least two elongated

recesses, one for each gear, said recesses having open ends in said surface located at least partially outside of the root circle of the respective gear, said recesses communicate at portions spaced from said open ends thereof with said pressure chamber to be filled with fluid under pressure and said open ends being spaced from said pressure chamber to such an extent that the space between adjacent gear teeth first communicates with the open end of the respective recess and only thereafter communicates directly with said pressure chamber, said recesses extending toward said surface in such a manner that pressure fluid passing from said recesses into a space between adjacent teeth of the respective gear will flow substantially parallel to the flanks of said teeth.

3,313,239 VANE-TYPE PUMP

Virgil A. Brunson and Harold L. Vanden Hoek, Grand Rapids, Mich., assignors to Dover Corporation, Grand Rapids, Mich., a corporation of Delaware
Filed June 30, 1965, Ser. No. 468,466
1 Claim. (Cl. 103—136)



A vane-type rotary pump comprising, in combination, a rotor chamber having a side wall of varying radius in which is formed an inlet, and an outlet angularly displaced from the inlet, a rotor eccentrically mounted in the chamber, having radial slots and vanes radially movable in the slots, and a sheet metal liner for the chamber which when flat is in the form of a non-rectangular parallelogram, having openings for registry with the inlet and outlet, the liner being flexible and resilient and tending to straighten out so that when its ends are brought into offset butting relationship the liner takes the form of a helix which can be inserted into the chamber, the butting ends extending at such an angle that a wedging action to expand the helix is produced by tapping the protruding end of the helix into place, and the liner when in place being coextensive with the side wall of the chamber and being distorted, by the wedging action of the butting ends, into intimate contact with the side wall of varying radius, thereby locking the liner in place.

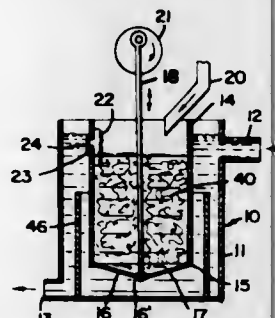
3,313,240 PUMP

Itzhak E. Bentov, 407 Belmont St., Belmont, Mass. 02178
Filed Jan. 8, 1965, Ser. No. 424,253
6 Claims. (Cl. 103—151)

1. A method of forming a low concentration uniform fiber slurry from a high concentration fiber slurry, said method comprising placing said high concentration fiber slurry above a tank and separated from said tank by a wall defining an orifice, alternately compacting and releasing fibers of said high concentration slurry to form a plug blocking said opening and alternately disperse said plug to pass fibers through said orifice to said tank, said tank carrying a flowing stream of diluent in which said fibers are uniformly suspended to form said uniform slurry when said fibers pass through said orifice.

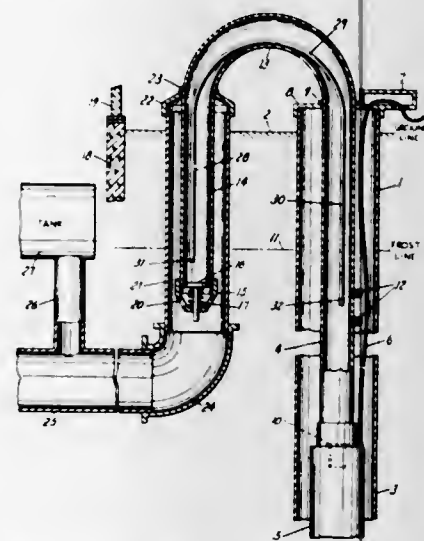
4. A metering and mixing pump for forming uniform low concentration fiber slurries from high concentration fiber slurries,

said pump comprising,
means defining a first chamber,
means defining a second chamber surrounding a portion of said first chamber,
a resilient diaphragm mounted on a side wall of said first chamber and having a first side facing said first chamber and a second side facing said second chamber,
an unobstructed substantially constant size orifice defined by a bottom wall of said first chamber and



interconnecting said first chamber with said second chamber,
means for reciprocating said diaphragm between said chambers when said first chamber carries a high concentration fiber slurry and said second chamber carries a diluent,
said orifice being constructed and arranged to be blocked by fibers of said slurry upon movement of said diaphragm into said first chamber and to be cleared upon movement of said diaphragm into said second chamber whereby fibers of said fibrous slurry are pumped into said second chamber during a first portion of travel of said diaphragm into said first chamber.

3,313,241
OVER-THE-TOP DELIVERY FOR PUMPS HAVING ANTI-FREEZE PROPERTIES
JC Newman, 2215 E. Main St., Kalamazoo, Mich. 49001
Filed Sept. 23, 1965, Ser. No. 489,504
3 Claims. (Cl. 103—221)



1. An over the top delivery system for a well having a casing, a drop pipe with a foot valve and submerged pump at the bottom thereof located below the frost line in the casing, a bleeder opening between said drop pipe and the inside of the casing below the frost line, and a delivery pipe extending from the top of said drop pipe above ground level and downwardly to below the frost line exteriorly of the casing,

characterized by a second delivery pipe casing extending in surrounding relation to said delivery pipe to above ground level and sealed to the delivery pipe above ground level,
said second casing defining a chamber along said delivery pipe and being adapted to be connected at its lower end to a water distribution system under pressure,
a check valve connected to the lower end of said delivery pipe and within said chamber below the frost line and arranged to seat rearwardly towards said pump,
and a siphon tube having a short leg opening at the bottom in said delivery pipe below the frost line and above said check valve and extending to a long leg opening in said drop pipe below the frost line and below the level of the end of said short leg.

3,313,242 ROAD RACE SET

Carl Voce, Gardena, Calif., assignor to Eldon Industries, Inc., Hawthorne, Calif., a corporation of California
Filed Feb. 10, 1964, Ser. No. 343,839
7 Claims. (Cl. 104—60)



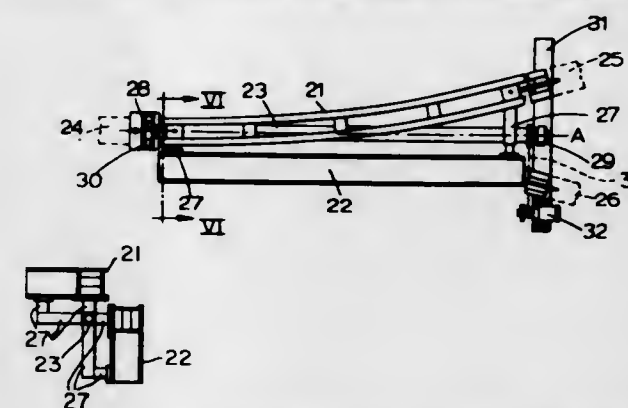
1. A race car comprising: a chassis; a direct current motor having a drive shaft carried by said chassis; wheels suspended from said chassis to support the same; means connecting the motor drive shaft with said wheels; a pair of motor leads; a diode connected serially with one of said leads; a pair of rail brushes suspended from said chassis; a first quick detachable electrical connector connected between one of said leads and one of said brushes; and a second quick detachable electrical connector connected between the other of said leads and the other of said brushes, said connectors being substantially identical.

3,313,243 MONORAIL SWITCH

Ernst Lauber, Thun, Switzerland, assignor to Maschinenfabrik Habegger, Thun, Switzerland
Filed Sept. 4, 1964, Ser. No. 394,576
Claims priority, application Switzerland, Mar. 20, 1964, 3,690/64
2 Claims. (Cl. 104—101)

1. A switch for suspension rails and monorails, said switch being designed to establish connections between at least one fixed trunk rail and at least two spaced and fixed branch rails, said trunk rail and said branch rails being positioned so that when considered in plan view, and with the end portions of the rails connected by straight lines, a horizontal plane figure is defined, the corners of such plane figure lying at the ends of the fixed rails, said switch

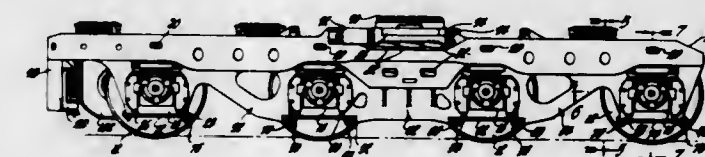
including at least two separate switch rails adapted to establish said connections, said switch including support means upon which said switch rails are mounted, said support means comprising a tubular member rotatable about an axis which is beneath said horizontal plane of said fixed rails and which in plan view is disposed within said plane



figure, said tubular member being supported at its ends in bearings and having radially extending arms which support said switch rails, and means for rotating said tubular member and rails mounted thereon for moving said switch rails into operative position to establish a desired connection.

3,313,244 RAILWAY VEHICLE TRUCK

Ludvik F. Koci, Downers Grove, Ill., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 15, 1964, Ser. No. 367,671
3 Claims. (Cl. 105—172)



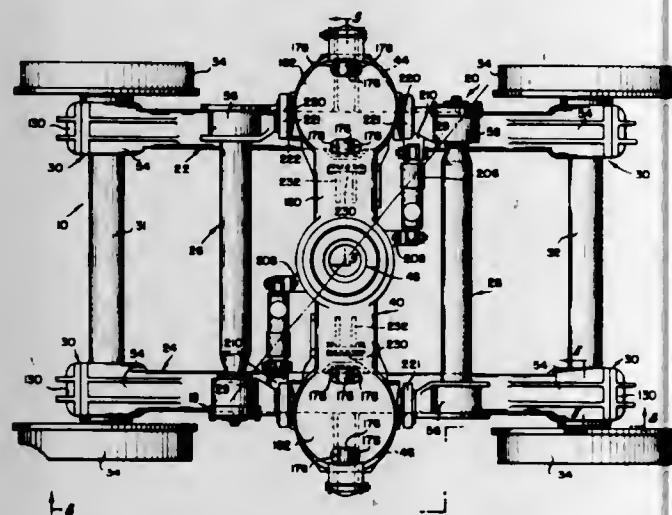
1. A cast integral frame for a railway vehicle 4-axle truck comprising a pair of longitudinally extending transversely spaced side members, said side members being interconnected by four transversely extending longitudinally spaced transom members, each of said side members having a hollow generally rectangular section, each of said side members having portions removed at four longitudinally spaced intervals to form downwardly facing channel portions in which helical frame-supporting springs may be received, each of said side members having eight pedestals depending therefrom, each of said pedestals having a hollow generally rectangular section with side portions and a base portion, said pedestals being grouped into four longitudinally spaced pairs of pedestals, each of said pairs being adapted to embrace an axle journal box, each of said side members having a strengthening web depending therefrom and extending longitudinally between the fourth and fifth of said pedestals which form adjacent pedestals of the second and third of said pairs of pedestals, said web having a hollow generally rectangular section with side portions, said side portions of said web and of said fourth and fifth pedestals being connected, each of said side members having reinforcing webs depending therefrom and extending longitudinally upwardly from the third of said pedestals to the second of said pedestals which form adjacent pedestals of the first and second of said pairs of pedestals and from the sixth of said pedestals to the seventh of said pedestals which form adjacent pedestals of the third and fourth of said pairs of pedestals, said reinforcing webs having downwardly facing channel sections with side portions, said side portions of said reinforcing webs and of the associated pedestals being connected, each of said side mem-

bers having a portion removed to form an upwardly facing channel portion within which helical bolster-supporting springs may be received, said base portions of said third, fourth, fifth and sixth pedestals each having an opening extending therethrough, each opening being adapted to receive means for retaining a tension member between said third and fourth and between said fifth and sixth pedestals.

3,313,245 RAILWAY TRUCKS

Gustav B. Sundby, Atchison, Kans., assignor to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 10, 1964, Ser. No. 388,403
9 Claims. (Cl. 105-197)



1. A vehicle truck assembly, comprising:
 - (a) a first frame section comprising a first side frame and a first transom rigidly fixed to said first side frame and extending laterally therefrom;
 - (b) a second frame section comprising a second side frame and a second transom rigidly fixed to said second side frame and extending laterally therefrom;
 - (c) the transoms of said first and second frame sections being spaced from each other longitudinally of said truck;
 - (d) wheel and axle assemblies journaled in said frame sections at opposite ends of the truck and providing wheels at locations corresponding generally to the four corners of said truck;
 - (e) first and second independent non-resilient means for so connecting said first frame section to said second frame section as to permit vertical displacement of any one of said wheels relative to the remaining wheels while substantially maintaining said side frames substantially in rectangular form and substantially preventing lateral tilting of said side frames;
 - (f) said first and second connecting means comprising means confining the relative movement between said first and second frame sections to an axis extending diagonally across said truck adjacent the ends of said first and second transoms.

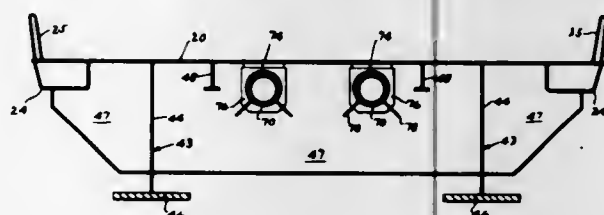
3,313,246 RAILWAY CAR

Hai-Chang Benjamin Koo, Toledo, Ohio, assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

Filed May 3, 1965, Ser. No. 452,489
4 Claims. (Cl. 105-454)

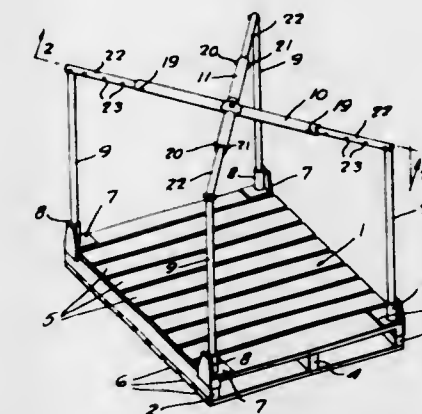
1. A low level railway flat car comprising, an underframe, a generally flat deck over the underframe, a coupler at each end of the car, a draft gear housing projecting above the upper surface of the deck, a fixed center sill

structure extending the length of the underframe, a bolster structure adjacent each end of the underframe, a sliding center sill structure extending the length of the underframe generally in alignment with the longitudinal centerline of the couplers and adapted to move relatively to the fixed sill structure and underframe upon impact forces being exerted against the railway car, and cushioning means between the sliding sill structure and the underframe to provide cushioned movement of the sliding sill structure, said sliding center sill structure comprising an end section adjacent each end of the underframe positioned centrally of the width of the car outboard of the adjacent bolster structure, and a pair of horizontally spaced intermediate sliding sill members extending between the end sections and passing through the bolster structures, said cushioning means being positioned between the spaced intermediate sliding sill members generally centrally of the length of the underframe to cushion the movement of the sliding sill structure, said sliding center sill structure fitting within said draft gear housing and having an upper and lower lip projecting from each side thereof, the lower lips being supported on said underframe and mounting the sliding center sill structure for sliding movement, the upper lips being closely spaced from the superjacent flat deck whereby upon the exertion of impact forces and flexure of the sliding sill structure the upper lips engage the superjacent deck to restrain the flexure of said center sill structure.



3. In a cushioned underframe for a railway car, a fixed center sill structure extending the length of the underframe, a bolster structure adjacent each end of the underframe, a sliding center sill structure extending the length of the underframe and adapted to move relatively to the fixed sill structure and underframe upon the exertion of impact forces against the railway car, said sliding center sill structure comprising a pair of end sections, a pair of adjacent connecting transition sections, and an intermediate section, said end sections being positioned adjacent the ends of the underframe centrally of the width of the car outboard of the adjacent bolster structure and being tubular in cross section at least adjacent the inner ends thereof, said intermediate sliding sill section having a pair of horizontally spaced, resilient intermediate sliding sill members of a tubular cross section passing through the bolster structures, said transition sections being of a tubular cross section and positioned between the inner

ends of the end sections and the intermediate sliding sill section, each transition section having a pair of bifurcated tubular legs, means to secure the intermediate tubular sill members to the tubular bifurcated legs in a telescoped position, cushioning means positioned between the spaced intermediate sliding sill members intermediate the length of the underframe to cushion the movement of the sliding sill structure, a plurality of crossbearers spaced along the length of the underframe between the bolster structures each having a generally vertical web, said vertical webs having openings therein to receive the intermediate tubular sliding sill members, and separate bearing members for said intermediate sliding sill members secured to said vertical webs and aligned with the adjacent vertical web openings for guiding and accurately positioning the intermediate sliding sill members, said tubular intermediate sill members being of a cross-sectional area substantially less than the area of the openings in the bearings and vertical webs for providing clearance to permit a limited predetermined flexure of said sliding sill structure relative to and independent of the underframe thereby to absorb at least a portion of the impact forces, an additional flexure of said sliding sill structure after said predetermined flexure effecting contact of the sliding sill structure with said bearings at said vertical web openings thereby to provide flexure of said sliding sill structure with the underframe.

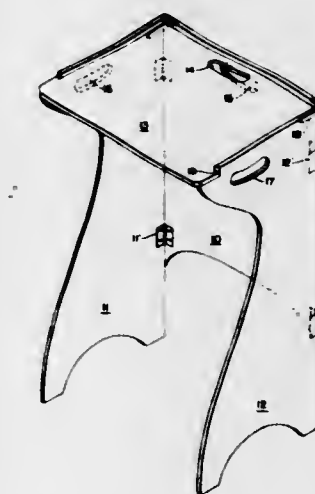


necting each of said elongated members to a pair of said uprights extending laterally thereof.

3,313,249 STUDENT'S TYPEWRITER DESK

Oliver M. Marcy, Webster Lake, West Franklin, N.H. 03235

Filed Apr. 21, 1966, Ser. No. 544,264
2 Claims. (Cl. 108-124)



1. A student's typewriter desk comprising an upright back panel, side panels hinged to opposite sides of the back panel and extending forwardly in parallel relation from the back panel, and a lid hinged to the back panel and provided in each edge with a reentrant notch arranged to interlock with an angular tongue formation of the adjacent side panel thereby holding the side panels against separation and supporting the lid by direct contact outwardly beyond said notch.

3,313,250 TRAP TO PREVENT ROBBERY OF A BANK

Louis A. Turano, 118 Center Ave., Atlantic Highlands, N.J. 07716

Filed Nov. 18, 1965, Ser. No. 508,422

3 Claims. (Cl. 109-6)

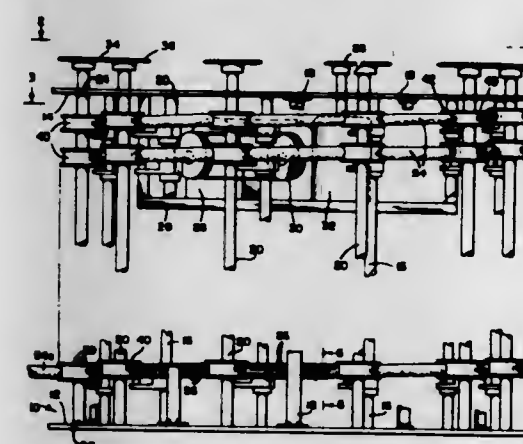
1. A robbery trap for a teller's section in a bank, comprising a pair of retractable floor panels, retractable away from each other to provide an opening in said floor, an enclosure below said opening, said enclosure being slightly greater in periphery than said opening in said floor and of a depth greater than a human body with upstretched arms, said retractable floor panels retracted away from each other by a pair of cylinders provided with an explosive charge in each cylinder, said explosive charge deto-

3,313,247 FOOD PROCESSING APPARATUS

John O. Benson, Mayer, Minn., assignor to General Mills, Inc., a corporation of Delaware

Filed Aug. 28, 1964, Ser. No. 392,847

7 Claims. (Cl. 107-7)



1. An apparatus for continuously tempering an elongate food material or the like, said apparatus comprising: an elongate mounting frame having a longitudinal axis, a plurality of feed units, and means for mounting said feed units to the frame, said feed units being helically disposed at predetermined locations on said frame so that they collectively guide said material in a continuous helical path about the longitudinal axis of the frame, said helical path making a plurality of substantially equal size convolutions which are separated from each other by a prescribed distance, each of said units maintaining the convolutions spaced apart with respect to each other and being arranged to continuously engage said material and move it along said helical path.

3,313,248 STACKING FRAMES FOR PALLETS

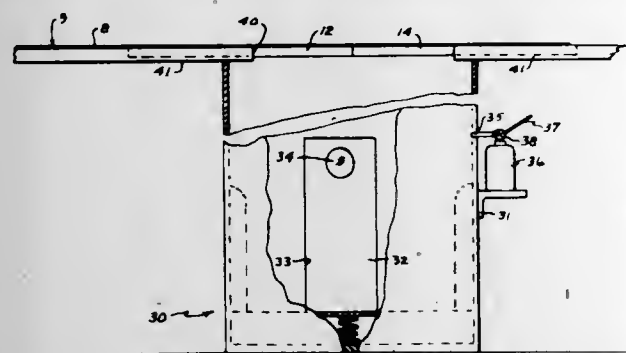
John Bayluk, 4850 Wood St., Willoughby, Ohio 44094

Filed June 2, 1966, Ser. No. 554,866

11 Claims. (Cl. 108-53)

1. A stacking frame for pallets comprising a plurality of tubular uprights capable of being detachably mounted

nated by an electrical circuit connected to a switch, each cylinder provided with a piston and piston rod that is moved by said explosive charge, said piston rods each connected to one of said floor panels, said floor panels



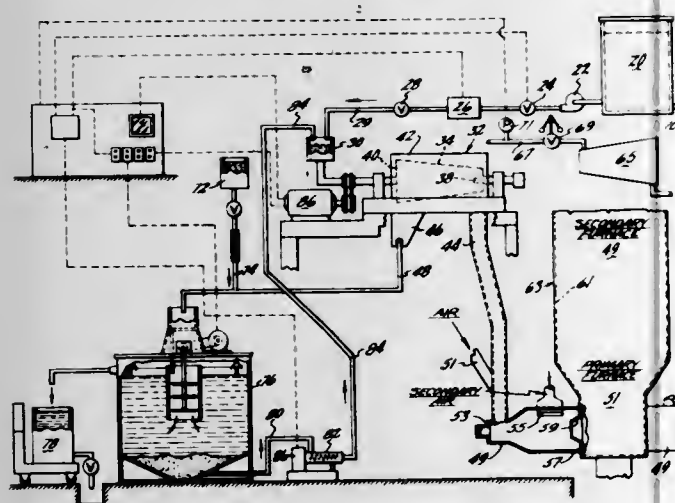
closeable by a switch that is operated by a timing device to close said floor panels by introducing fluid pressure into said cylinders to force said piston in an opposite direction.

3,313,251

METHOD AND APPARATUS FOR HANDLING AND BURNING COAL SLURRIES

James Jonakin, Simsbury, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed Dec. 15, 1961, Ser. No. 159,603
11 Claims. (Cl. 110-7)



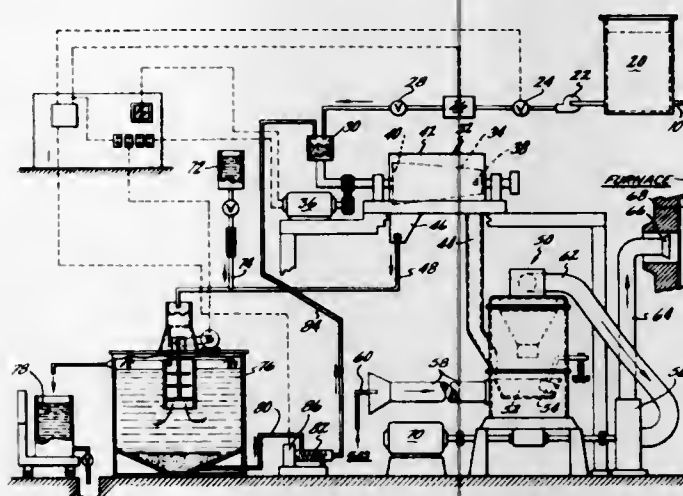
7. In a coal handling and burning system the combination including means through which a pumpable slurry of crushed coal and water is conveyed, mechanical dewatering mechanism receiving slurry from said means and operative to dewater the coal by removing water from the slurry so that it contains only approximately 20 percent moisture, a cyclone furnace and means operative to convey the mechanically dewatered crushed coal with the approximately 20 percent moisture directly from the mechanical dewatering mechanism to said cyclone furnace for burning therein.

3,313,252

DRYING AND BURNING OF PIPELINE COAL
James Jonakin, Simsbury, Conn., and Robert C. Tullis, Chattanooga, Tenn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Continuation of application Ser. No. 159,603, Dec. 15, 1961. This application Dec. 20, 1965, Ser. No. 521,238
23 Claims. (Cl. 110-7)

1. A method for feeding pipeline coal to a furnace comprising feeding a pumpable slurry of crushed coal and water, containing over 25 percent water, in a continuous stream directly from the pipeline to and through a mechanical dewatering station, mechanically removing water from said continuous stream at said station thereby

mechanically reducing the water content of said stream to less than 25 percent and approximately fifteen to twenty percent to provide a continuing partially dewatered continuous stream of coal and water and directing said



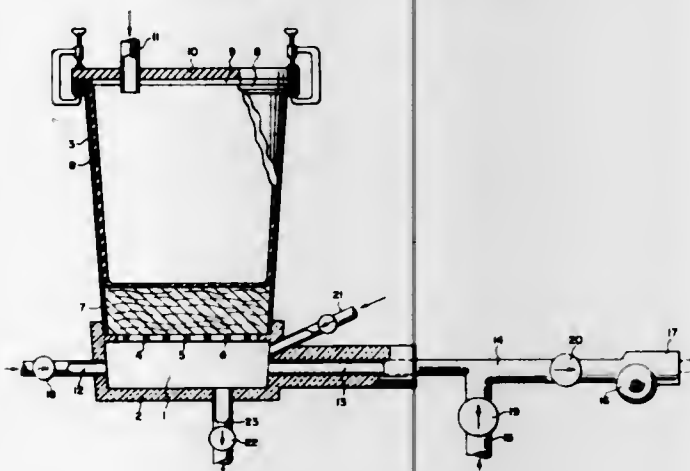
continuous stream of mechanically dewatered coal and water to a furnace at the rate at which the mechanically dewatered coal and water is discharged from said mechanical dewatering station for burning the coal therein.

3,313,253

WASTE INCINERATOR

Franklin S. Mallick, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 9, 1963, Ser. No. 329,044
7 Claims. (Cl. 110-8)

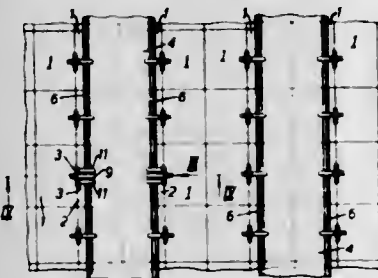


1. A waste incinerator device comprising, combustion chamber means in which combustible waste material introduced thereto burns following ignition and in the presence of combustion air; a waste material storage bin having an inlet for accepting loose waste material and an outlet open to said combustion chamber means; waste compacting means for compacting waste within said storage bin into an imporous plug having a leading face urged into exposure to the interior of said combustion chamber means; the several aforesaid means being so constructed and arranged that the inlet to said storage bin is accessible for introduction of loose waste material into said bin while an imporous plug of previously-compacted waste material therein is in interposition between such loose waste material and said combustion chamber means; heater means for igniting said leading face of said plug while exposed to the interior of said combustion chamber means and for supplying heat, in addition to heat created by combustion of such plug, to main-

tain a temperature in said interior adequate to support complete combustion conditions therein; exhaust duct means for exhausting gaseous media from the combustion chamber means to the exterior of the device; and air supply means for introducing air into said device for support of complete combustion in said combustion chamber means and for cooling gaseous media exiting from said exhaust duct means.

3,313,254
FURNACE ROOFS

Alexander Low Birse, Bonnybridge, Scotland, assignor to John G. Steh & Company Limited
Filed Nov. 23, 1964, Ser. No. 413,234
2 Claims. (Cl. 110-99)



1. A suspended roof structure, comprising a horizontal I-section girder (4) having vertical flanges (6); a first pair of spaced horizontal rows of first bricks (1, 1) parallel with said girder; a second pair of rows of second bricks (2, 2) parallel with and arranged between said first bricks, all of said bricks lying in a common horizontal plane at a lower elevation than said girder, said rows of second bricks being arranged beneath said girder and having a total lateral extent at least as great as that of said girder; and a plurality of suspension means associated with each of said first and second bricks, respectively, for suspending from one of said flanges one row of said first bricks and one row of said second bricks and for suspending from the other of said flanges the other rows of said first and second bricks, each of said suspension means being connected at its lower end with a given brick of one of said row pairs at the side thereof adjacent the corresponding brick of the other row pair, the suspension means of said given brick comprising a pair of first suspension members (11, 11) spaced longitudinally of the associated flange, and the suspension means of said corresponding brick comprising a second suspension member (9) arranged between said first suspension members, the suspension means of that one of said given and corresponding bricks lying in said second pair of rows (2, 2) being contained wholly within the boundary of said brick as viewed in plan, whereby said given and corresponding bricks may be successively connected with said flange without disturbing any of the other bricks.

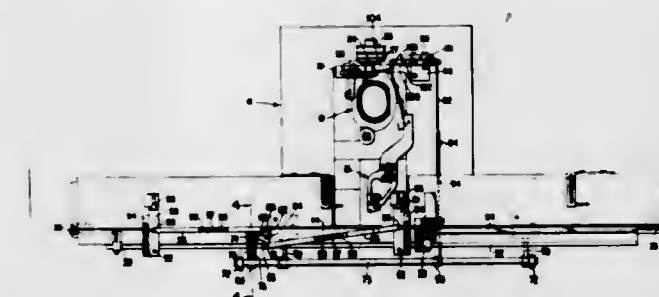
3,313,255

WORK INDEXING MECHANISM FOR AUTOMATIC SEWING MACHINE UNIT

Edward A. Rausch, Jr., Newark, and Lionel J. Coulombe, Matawan, N.J., assignors to The Singer Company, Elizabeth, N.J., a corporation of New Jersey
Filed Nov. 24, 1961, Ser. No. 154,726
5 Claims. (Cl. 112-2)

1. In a sewing unit including a support, a cyclic sewing machine on said support and having stitch forming instrumentalities, a work clamp shiftable during opera-

tion of said stitch forming instrumentalities, and actuating mechanism for imparting cyclic interrelated motion to said stitch forming instrumentalities and said work clamp in the formation of predetermined stitch groups, a traveling work holder including spaced work grippers, means on said support constraining said traveling work holder for movement in a linear path relatively to said sewing machine, and an indexing mechanism for alternately shifting said traveling work holder and initiating operation of said cyclic sewing machine, means for preventing interference on a work fabric held by said spaced work grippers by the motion of said sewing machine work clamp comprising, means for shiftable supporting

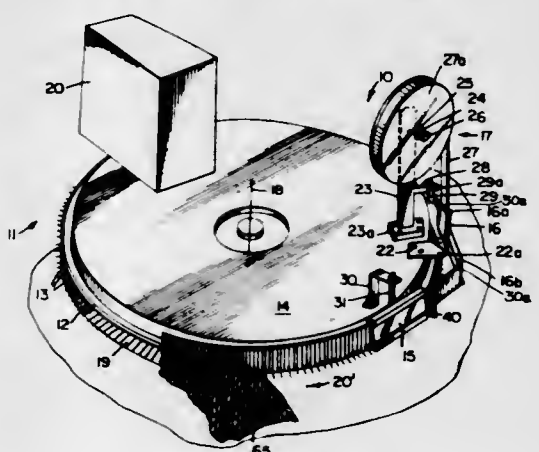


said work grippers relatively to said traveling work holder, gripper shifting linkage operatively connecting said work grippers and effective to shift said work grippers from a predetermined spaced relationship toward each other or to return said work grippers to said predetermined spaced relationship, and means operatively connecting said gripper shifting linkage with said mechanism for controlling the cyclic interrelated motion of said stitch forming instrumentalities and said work clamp for shifting said work grippers toward each other prior to stitch formation upon each initiation of operation of said sewing machine and returning said work grippers to said predetermined spaced relationship at the completion of each cycle of sewing machine operation.

3,313,256

GARMENT MANUFACTURING MEANS AND METHOD

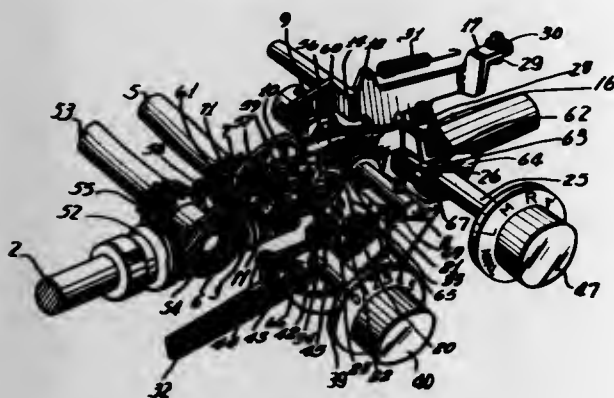
Alison Solomon, Framingham, Mass., assignor to Garland Knitting Mills, Jamaica Plain, Mass., a corporation of Massachusetts
Filed June 7, 1963, Ser. No. 286,422
10 Claims. (Cl. 112-25)



1. An apparatus for feeding a reinforcing ribbon to a disc having a plurality of radially extending needles mounted on a peripheral edge thereof with said needles lying in a first plane, said apparatus comprising, a guide for guiding an elongated reinforcing ribbon onto said needles, said guide defining an elongated passageway extending laterally of said guide substantially in a second plane at an angle to the plane of said plurality of needles,

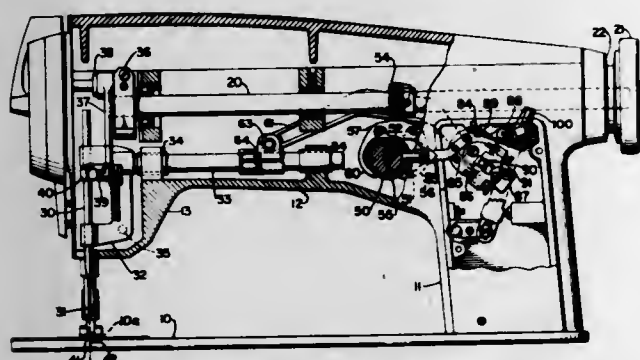
an uninterrupted elongated channel defined by a portion of said guide in the plane of the needles for successively receiving a plurality of said needles, and means for continuously supplying said guide with said elongated reinforcing ribbon.

3,313,257
STITCH CONTROL ARRANGEMENT FOR A ZIG-ZAG SEWING MACHINE
Susumu Hanyu, Hachioji-shi, and Noboru Kasuga, Koganei-shi, both of Tokyo, Japan, assignors to Janome Sewing Machine Co., Ltd., Chuo-ku, Tokyo, Japan
Filed Feb. 6, 1964, Ser. No. 343,075
19 Claims. (Cl. 112-158)



1. In a zig-zag sewing machine, in combination, a needle bar assembly; field position adjusting means for moving the needle bar assembly between central and lateral field positions; operating means for transversely oscillating the needle bar assembly; control means having an actuated position for controlling the operating means to cyclically vary the amplitude of the oscillating movement of the needle bar assembly so that a plurality of consecutive straight stitches are followed by a zig-zag stitch; and manually operated means including one knob having a plurality of positions for moving the field position adjusting means between said field positions and for actuating said control means when said field adjusting means is in a selected lateral field position whereby blind stitches are made.

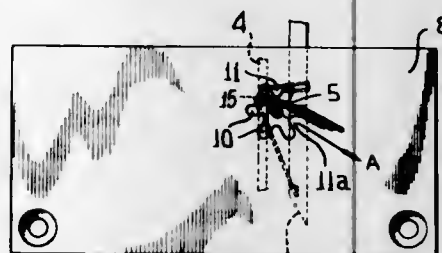
3,313,258
NEEDLE JOGGING MECHANISMS
Ernst Wulbrede and Gerhard Sewing, Karlsruhe-Hagsfeld, Germany, assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 30, 1964, Ser. No. 363,890
6 Claims. (Cl. 112-158)



1. A needle jogging mechanism for a sewing machine having a frame, a work support on the frame having an aperture, a needle bar gate, means connected to the needle bar gate and mounted on the frame for permitting lateral oscillation of the needle bar gate, a needle bar, a needle connected to the needle bar, means for mounting the needle bar on the needle bar gate for endwise reciprocation of the needle into and out of the aperture in the work support, and means for imparting endwise reciprocation to the needle bar, said needle jogging mechanism comprising a shaft, means for journaling the shaft on the frame, means for rotating the shaft in timed relation with reciprocation of the needle, two crank means on the shaft oriented around the shaft in spaced angular relationship to each other, two pitmans, one pitman pivotally connected to one of the crank means and the other pitman pivotally connected to the other of the crank means, and integrating link, first and second pivot means in spaced relation to each other on the integrating link for connecting the pitmans to the integrating link, connecting means for transmitting lateral oscillation to the needle bar gate, and third pivot means for connecting the integrating link to the connecting means; the angular velocity and timing of the shaft relative to reciprocation of the needle, the magnitude of the spaced angular relationship between the crank means, and the mutual distances between the axes of the shaft, the crank means and the three pivot means being such that during the time when the needle is projecting into the aperture in the work support the crank means pivot the integrating link around the third pivot means which connect the integrating link to the connecting means substantially without shifting said third pivot means in a way that no lateral oscillation can be imparted to the needle bar gate and when the needle is out of the aperture in the work support the crank means can shift said third pivot means laterally to impart lateral oscillation to the needle bar gate.

2. A needle plate for chain stitch sewing machines having a needle hole formed therein adapted to provide a path for the passage of a needle therethrough, and having three or more slots formed therein extending from the needle hole in radiating relation to said hole.

3,313,259
NEEDLE PLATE OR THROAT PLATE FOR CHAIN STITCH SEWING MACHINES
Hermann F. Daniel and Eugen Angele, Stuttgart, Germany, assignors to Union Special Maschinenfabrik G.m.b.H., Stuttgart, Germany
Filed Feb. 23, 1965, Ser. No. 434,368
Claims priority, application Germany, Mar. 12, 1964, U 10,584
15 Claims. (Cl. 112-260)

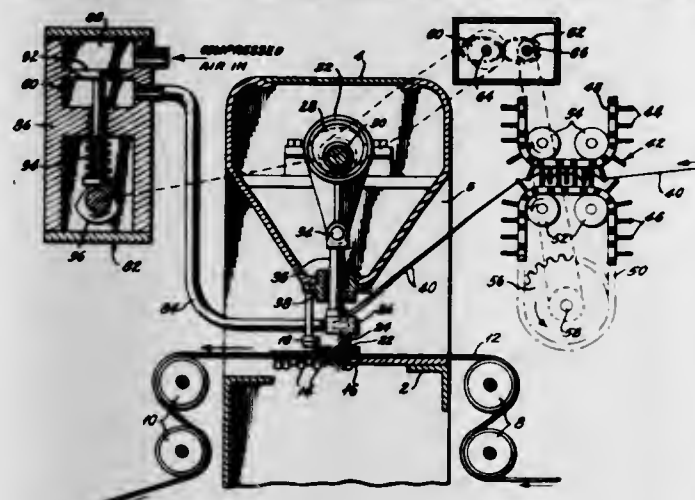


1. A needle plate for chain stitch sewing machines having a needle hole formed therein adapted to provide a path for the passage of a needle therethrough, and having three or more slots formed therein extending from the needle hole in radiating relation to said hole.

3,313,260
METHOD OF AND APPARATUS FOR CONTROLLING AIR FLOW THROUGH TUFTING NEEDLES
Joe T. Short, West Point, Ga., assignor, by mesne assignments, to Callaway Mills Company, La Grange, Ga., a corporation of Georgia
Filed Apr. 30, 1963, Ser. No. 276,906
13 Claims. (Cl. 112-266)

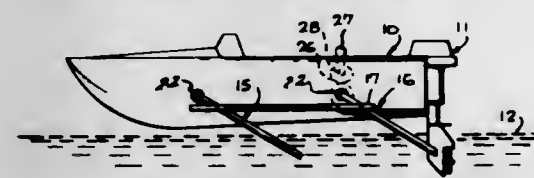
7. A method of making a tufted fabric having pile loops extending from a backing comprising a cycle including the steps of advancing the backing longitudinally; inserting and withdrawing from the backing the tip portions of a plurality of hollow needles each carrying a pile yarn extending from the backing through the hollow passage in the needle and back to a yarn supply; feeding from the yarn supply a controlled length of yarn for each

needle; and flowing gas continuously through said passages in said needles in the direction of the tip portions thereof in such a manner that the flow rate decreases during a portion of the time when the relative movement of the needles and the backing is in a direction to insert the needles through the backing and increases, during



a portion of the time when the needles extend through said backing, beyond a velocity sufficient to impel yarns relative to said backing through said needles and maintains a velocity sufficient to continue to impel yarns relative to said backing through said needles until the tip portions of the needles are withdrawn from the backing.

3,313,261
HYDRO-LEGS FOR BOATS
David R. Davis, Beverly Hills, Calif., assignor to V and W Aircraft Castings, Inc., Bell Gardens, Calif.
Filed Aug. 2, 1965, Ser. No. 476,518
2 Claims. (Cl. 114-66.5)

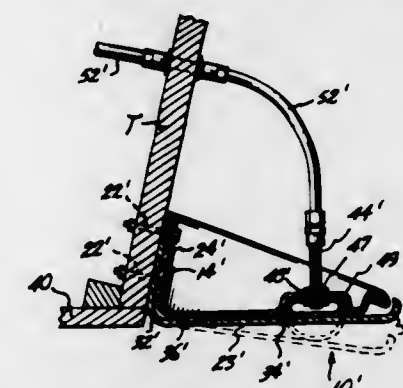


1. A boat having at least two hydro-legs in tandem mounted on its hull on one side of the longitudinal axis of said hull, and at least two hydro-legs in tandem mounted on said hull on the opposite side of said longitudinal axis; and means for positioning said hydro-legs in a downward and rearwardly extending direction into the water to a depth greater than the boat's draft and at an angle less than 30° from the water level, the portion of each of said hydro-legs extending into the water consisting solely of a single elongated member lying generally in a vertical plane.

3,313,262
TRIM CORRECTING APPARATUS FOR BOATS
Robert E. Yunker, 3635 Evanston 98103, and John P. Southern, 910 Valley St. 98109, both of Seattle, Wash.
Filed Aug. 18, 1966, Ser. No. 573,380
15 Claims. (Cl. 114-66.5)

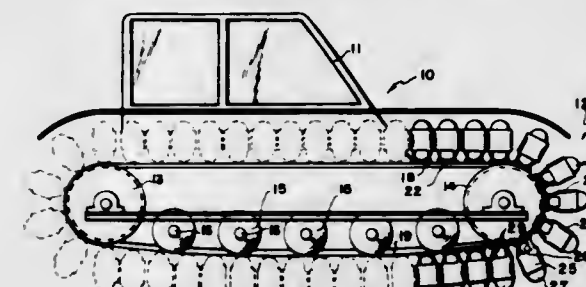
1. For use on a boat having a transom and a bottom, an outboard trim correcting device connectable to said boat generally rearwardly of said transom, and including a rigid, rearwardly extending support portion, a water reaction panel positioned below said support portion, and including hinge means for connecting a forward portion of said panel to the boat, substantially at the level of the bottom, and substantially where said bottom joins the boat transom, and an elongated bladder of tubular form extending transversely of the boat and angularly disposed between said transom and said water reaction panel,

and between said support portion and said water reaction panel, and including means closing and hermetically sealing both of its ends, and a stem portion extending upwardly from an intermediate portion thereof, and through an opening in said support portion; a source of



pressurized fluid positionable inboardly of the boat; conduit means for interconnecting between the inboard source and the stem of the outboard inflatable bladder; and inboard control valve means in said conduit means, to control the ingress and egress of fluid to and from said inflatable bladder.

3,313,263
TRACK APPARATUS FOR CRAWLER TYPE VEHICLES
Royden H. Ferguson, 3688 Marine Drive, West Vancouver, British Columbia, Canada
Filed Oct. 11, 1965, Ser. No. 494,570
8 Claims. (Cl. 115-1)

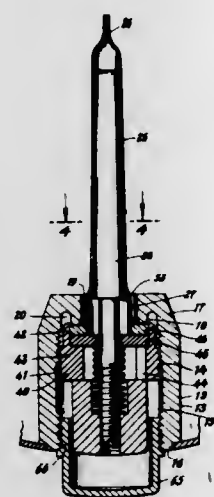


1. Track apparatus for crawler type vehicles comprising an endless travelling surface, a plurality of individually inflatable members arranged in longitudinally spaced alignment around the surface, each of said members having a convex resiliently deformable surface engaging portion, means for individually tethering the inflatable members to said surface for travel therewith, said means being arranged to draw said surface engaging portions into deformed engagement with said surface, thereby yieldably restraining said members against lateral and longitudinal deflection.

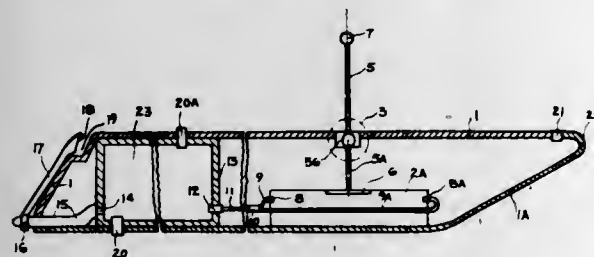
3,313,264
PRESSURE INDICATOR
William E. Keller, Fox Point, Wis., assignor to Ansol Chemical Company, Marinette, Wis., a company of Wisconsin
Filed Sept. 2, 1964, Ser. No. 393,867
4 Claims. (Cl. 116-70)

1. A device for indicating a reduction of pressure in a pressurized container to a predetermined level, comprising: main housing means adapted to be sealingly affixed to said pressurized container; means sealingly mounted at one end of said housing means for providing a pressure reduction signal station; a flexible, pressure transmitting diaphragm member sealingly mounted to the other end of said housing means and adapted to extend into said pressurized container; indicator means for signalling a pressure reduction at said signal station includ-

ing an elongated plunger member mounted for axial movement within said diaphragm means and said housing means; said flexible diaphragm member adapted to frictionally engage the longitudinally extending side surfaces of said plunger of said indicator means when the pressure in said container is above a predetermined value thereby normally maintaining said indicator means in a first position remote from said signal station; and means axially biasing said indicator means in a direction toward said signal station, whereby when the pressure in said container is below said predetermined value said diaphragm member releases said plunger and said indicator means is positioned at said signal station thereby signalling said pressure reduction.



3,313,265
POWERED WATER-SKI SURF-BOARDS
Joel B. Guin, 148 E. 48th St., New York, N.Y. 10017
Filed May 6, 1965, Ser. No. 453,597
2 Claims. (Cl. 115-70)



1. A water sport device combining features of water skis, land skis and a surf board, comprising in combination:

- a hollow floating unit shaped like a surf board;
- a pressurizing means comprising:
 - a collapsible lever extending from above to the under side of the upper hull of the floating unit;
 - a water-tight bearing within the hull surrounding the lever but permitting free back and forth movement of the lever;
 - a two-way pump attached to the lower end of the collapsible lever and actuated thereby and contained within the hull;
 - valves and tubes attached to and running between said pump and the air tank described below;
- a containing means comprising a pressure tank within said hull communicating with the pump by means of said valves and tubes; and
- a controllable nozzle by which high-pressure gas is vented astern, the nozzle being controlled by a kick-lever protruding upward along the stern of the floating unit and having a toe extension by which the user can kick it open to release gas and kick it shut to stop the gas, as desired, without bending over.

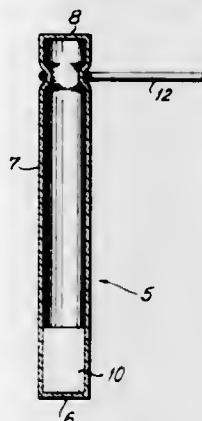
ERRATUM

For Class 116-70 see:
Patent No. 3,313,264

3,313,266

FUSIBLE PELLET TUBE CONTROL

Arthur W. Kelson, New York, N.Y., assignor to Propper Manufacturing Company, Inc., Long Island City, N.Y., a corporation of New York
Filed Aug. 30, 1965, Ser. No. 483,436
8 Claims. (Cl. 116-114)

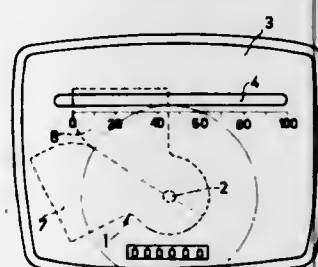


1. A device for checking the temperature of high speed sterilizers comprising a sealed transparent tube containing a solid composition adapted to change color and fuse at temperatures of from about 268° F. to about 278° F., said composition comprising a solid neutral organic material capable of releasing an alkali and fusing at temperatures of from about 268° F. to about 278° F., a chemical indicator which will change color within the pH range of from about 8 to 12, said composition containing from about 0.2% by weight to about 5% by weight, based on the weight of the composition, of water.

3,313,267

INDICATOR DEVICE

Vittorio Casini, Pisa, Italy, assignor to Piaggio & C. S.p.A., Genoa, Italy, a company of Italy
Filed Feb. 25, 1965, Ser. No. 435,284
Claims priority, application Italy, Mar. 3, 1964, 716,481/64
4 Claims. (Cl. 116-116)



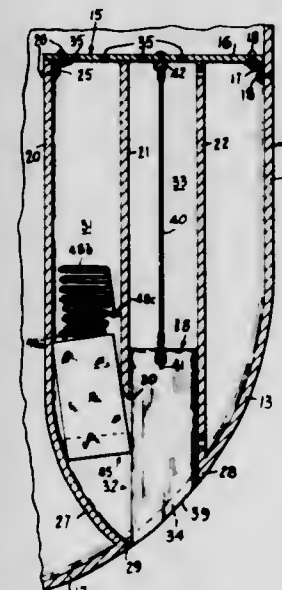
1. An indicator device comprising first and second planar elements in spaced relation, said first element having a slot through which the said second element is visible, said second element having first and second zones, each of said zones having a distinctive appearance, the first zone extending over a first portion of the length of the slot, the second zone extending over a second portion of the length of the slot, rotatable indicator means mounted between said elements, means supporting the indicator means for rotation, said indicator means including a first portion having an appearance corresponding to that of said second zone and covering said first zone in an initial position of the indicator means, said indicator means further including a second portion having an appearance corresponding to that of said first zone, said first and second portions being arranged so that said first

portion uncovers said first zone as the indicator means undergoes a first part of rotation, after which the second portion covers the second zone whereby a band corresponding in appearance to that of the first zone appears to change length in said slot as the indicator means undergoes rotation.

3,313,268

AUTOMATIC DYE MARKER DEVICE FOR AIRCRAFT

Howard B. Reiffel, Bronxville, N.Y., assignor to Presto Dyechem Co., Inc., a corporation of New York
Filed Oct. 19, 1964, Ser. No. 404,783
6 Claims. (Cl. 116-124)



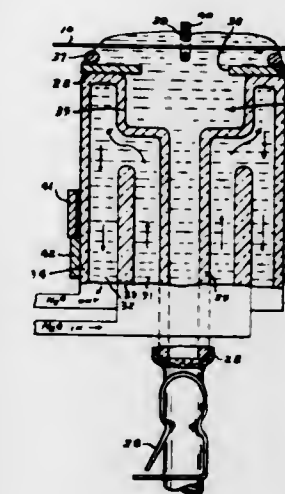
1. An ocean dye marking device for aircraft comprising a housing having a first means defining a first guideway having a generally downward first opening, a non-floatable dye-dispensing package movable along said first guideway for gravitational release through said first opening, a second means in said housing defining a second guideway having a generally downward second opening and extending across said first opening in said first guideway, and a floatable closure means freely movable along said second guideway between a lower position blocking said first guideway opening and said second opening and an upper position unblocking said first guideway opening and said second opening whereby submersion of said housing in a liquid medium passes liquid upwardly through said second opening to float said closure means from its blocking position to its unblocking position for gravitational exit from said housing of said package through said first and second openings.

3,313,269

VAPOR PLATING APPARATUS

Ralph L. Hough, Springfield, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force
Filed Aug. 11, 1964, Ser. No. 388,964
15 Claims. (Cl. 118-49.5)

1. An apparatus for continuously vapor plating upon a moving electrically conductive substrate comprising a vapor chamber, means for moving said substrate through said chamber, a plurality of electrical contacts aligned within said chamber and engaging said substrate at points spaced longitudinally thereof, means for applying separate electrical currents to individual segments of said substrate through successive pairs of said contacts thereby segmentally to heat the substrate as it passes through the chamber, wherein said contacts comprise a mercury

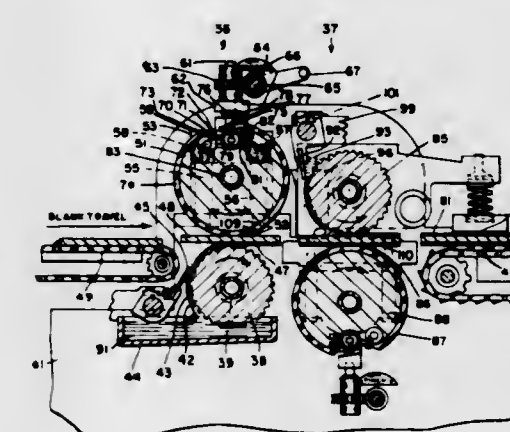


said reservoir and said meniscus, and a wall defining said reservoir and wherein the structure of said wall is made hollow to thereby accommodate a circulating fluid which comprises said coolant means.

3,313,270

PATTERN COATING APPARATUS

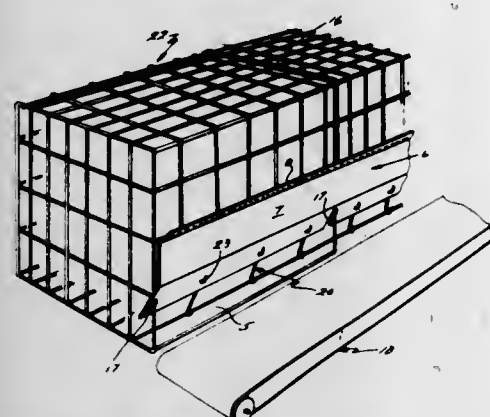
Raymond A. Labombarde, Nashua, N.H., and Ernest J. Dewhurst, Toronto, Ontario, Canada, assignors, by direct and mesne assignments, to The International Paper Box Machine Co., Nashua, N.H., a corporation of New Hampshire
Filed Jan. 3, 1964, Ser. No. 335,603
14 Claims. (Cl. 118-249)



14. Apparatus for pattern coating a plurality of sheets, on at least one face, in one pass through the coating zone of a coating machine said apparatus comprising: timed sheet feed means feeding said sheets individually and successively along a path into said coating zone, and at least one roll coating means mounted along said path in said zone, said means including: a coating applicator roll, having a hard gravure surface for overall coating of said one face, and a backing roll having a yieldable, pattern surface with relieved areas therein, for eliminating coating pressure in said areas, said rolls forming a pressure nip therebetween for applying a coating on said face, in said pattern, while advancing said sheets along said path with said backing roll free of contact with said coating.

3,313,271

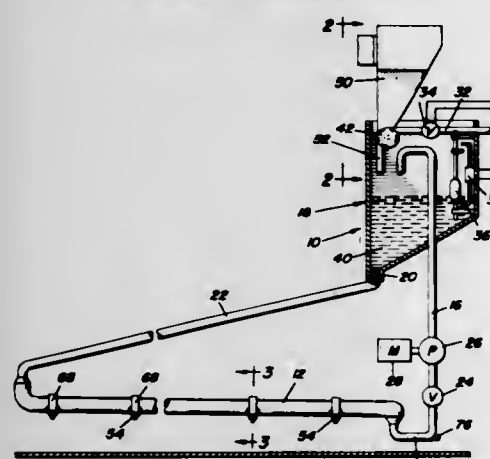
POULTRY CAGE SYSTEM WITH BIRD RETAINER AND BOTTOM SUPPORTING MEANS
Jewel Graves, Holland, Mich., assignor to Big Dutchman, Inc., Zeeland, Mich., a corporation of Michigan
Filed Oct. 21, 1965, Ser. No. 499,915
5 Claims. (Cl. 119—48)



1. A poultry enclosure comprising: an elongated wire mesh cage having a slanted bottom and an opening in the wall adjacent the lower side of said bottom, said opening being substantially rectangular in shape and extending substantially the entire length of said cage; egg conveyor belt means adjacent said opening; an egg guard of substantially the same length as said opening affixed to the upper mesh boundary of said opening, said egg guard extending downwardly and into said cage, the lower edge of said egg guard terminating a sufficient distance from said bottom to allow eggs to pass therebetween; and a plurality of dead bird-retaining, spaced, tensile, wire clips connected on their upper ends to a lower portion of said egg guard and on their lower ends to said cage bottom intermediate the sides of said cage.

3,313,272

AUTOMATIC STOCK NURSING FEEDER
James V. Moloney, Rte. 1, Moxee City, Wash. 98936
Filed Aug. 12, 1965, Ser. No. 479,062
11 Claims. (Cl. 119—51.11)



1. An automatic stock nursing feeder comprising a supply conduit including a section having nipple means operatively associated therewith adapted to nurse young farm stock with fluid disposed within said conduit, a fluid supply reservoir including an inlet and an outlet, one end of said conduit being operatively communicated with said outlet to receive fluid from within said reservoir, the other end of said conduit being operatively communicated with said inlet for discharging liquid into said reservoir from said conduit, pump means operatively connected with said conduit for pumping liquid through said conduit from said one end to said other end thereof, fresh liquid inlet means adapted for communica-

tion with a suitable source of liquid under pressure and operatively associated with said reservoir for admitting fresh liquid thereto, supplemental nutrient reservoir means including outlet means operatively associated with said fluid reservoir for discharging nutrient into said fluid reservoir to be mixed with the fluid disposed therein, said nutrient reservoir means including driven nutrient metering means operative to meter nutrient from said outlet means into said liquid reservoir, said fresh liquid inlet means including fluid motor means drivingly connected to said metering means for driving the latter in response to the flow of liquid through said fresh liquid inlet means into said liquid reservoir and the resultant operation of said fluid motor means.

3,313,273

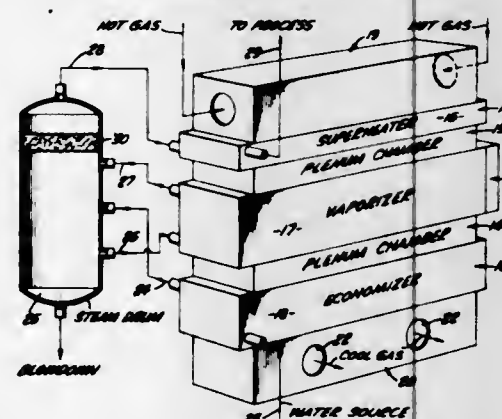
POULTRY WATERING TROUGH AND LINER
George F. Mitchell, Sidney, Ohio, assignor to Everyday Manufacturing Company, Sidney, Ohio, a corporation of Ohio
Filed Feb. 21, 1966, Ser. No. 529,102
5 Claims. (Cl. 119—72)



1. A trough, particularly adapted for watering poultry, comprised of a series of elongated supporting troughs of liquid retaining cross-section longitudinally aligned and connected together, support means for said troughs, a removable continuous plastic waterproof liner having a preformed cross-sectional shape conforming to the interior contour of the trough and extending the full length of said series, said liner being removably secured to the trough with the preformed cross-sectional shape generally conforming to the liquid retaining configuration of the trough, said supporting trough being provided with outwardly extending flanges along its top side edges, and said liner being provided with corresponding flexible flanges having reverted outer edge portions snappingly engaging around said first mentioned flanges completely covering all exposed interior parts of said supporting troughs to simplify cleaning thereof.

3,313,274

STEAM GENERATOR
Lloyd T. Hendrix, Santa Ana, Calif., assignor to Atlantic Richfield Company, a corporation of Pennsylvania
Filed Feb. 25, 1965, Ser. No. 435,128
8 Claims. (Cl. 122—7)



1. A waste heat steam generator comprising: a plurality of heat exchange sections, each of said sections having an outer casing and tubes in a tube bundle for containing a heat exchange fluid, coupling sections joining said outer casings to define with said casings a flow conduit for heat source gases, plenum sections attached to two of said sections to define entrance and exit chambers for heat

source gases flowing through the flow conduit, means joining said plenum sections, said coupling section, and said heat exchange sections whereby any of said tube bundles may individually be removed, an external steam drum receiving said heat exchange fluid from one of said tube bundles, a single downcomer conduit and a single return conduit arranged for circulating said heat exchange fluid from said steam drum to another of said tube bundles by thermosyphonic flow, and means associated with said steam drum for separating the vapor phase for delivery to yet another of said tube bundles.

3,313,275

STEAM GENERATOR
Paul W. Goggins, P.O. Box 936,
Thomasville, Ga. 31792
Filed Oct. 2, 1964, Ser. No. 401,032
8 Claims. (Cl. 122—156)

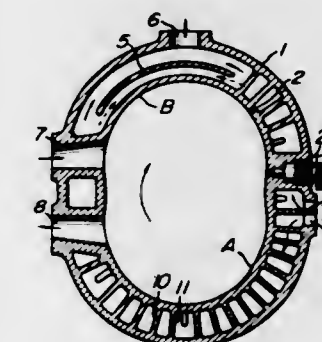


1. A steam generator comprising a combustion unit for burning fuel and a boiler unit for heating water from the heat of said burning fuel, said boiler unit including a water jacket portion for holding water to be heated by conduction and a reservoir portion for storing heated water and steam, said water jacket portion and said reservoir portion being in communication with one another for circulation of water between the two portions; said water jacket portion comprising an inner wall and an outer wall, said inner wall forming a firing tube in open communication with said combustion chamber so that hot combustion gases may pass from the combustion chamber unit into the water jacket portion of the boiler unit; an end wall in said water jacket portion common to the reservoir portion and forming a closed end to the central firing tube whereby said central firing tube is completely surrounded by water retaining walls; a plurality of radial discharge openings through said water jacket portion located near the closed end of said central firing tube thereby providing exits for hot combustion gases which have been deflected by the closed end wall of said central firing tube after completing a first pass through said boiler unit, deflection means associated with said outer wall of said water jacket portion for turning the hot combustion gases as they exit from said radial discharge openings whereby said gases are caused to make a second pass through said boiler unit through a first plurality of spaced paths extending substantially the entire length along said water jacket portion outer wall, additional deflection means associated with said outer wall of said water jacket portion for turning said gases upon completion of the second pass through said boiler unit whereby said gases are caused to make a third pass through the boiler unit along a second plurality of spaced paths on said water jacket portion outer wall, said second plurality of spaced paths being alternated with said first plurality of spaced paths so that a counter-flow of hot gases is established between adjoining paths; heat control means associated with said outer

wall of said water jacket for promoting a more rapid conduction of heat into the water to be heated and for directing the flow of hot gases along the outside wall paths of said water jacket; and insulating means cooperating with said deflection means and said heat control means for confining heat to selected portions of said boiler unit whereby a heat pattern is established in the water jacket portion of said boiler unit.

3,313,276

METHOD OF COOLING A ROTARY ENGINE
Ryusuke Ito, Amagasaki-shi, and Hiroshi Tado, Suita-shi, Japan, assignors to Yanmar Diesel Engine Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Oct. 12, 1964, Ser. No. 403,130
4 Claims. (Cl. 123—8)



1. In a rotary internal combustion engine including a casing comprising side covers and a cylindrical center housing having axially disposed end surfaces and an inner sliding surface of a multi-lobal epitrochoid profile, a gas inlet port and an exhaust port, and a rotor having a number of angular edges mounted in the casing for eccentric rotation therein, a cooling means comprising a cooling fluid inlet in said center housing adjacent the highest temperature region of the inner sliding surface, cooling fluid passage means within the housing through which the cooling fluid is caused to flow in opposite circumferential directions from said cooling fluid inlet, partition means arranged on the low temperature side of said housing to prevent overcooling thereof by the passage of the cooling fluid thereabout, a plurality of ribs extending axially of the end surfaces of said center housing less than the full length thereof, said ribs being interdigitated to form a zigzag path in the high temperature region of said housing for increasing the cooling water flow rate therein while obtaining a sufficient cooling area and axial rigidity.

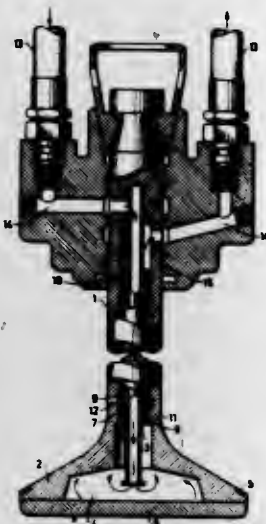
3,313,277

LIQUID COOLED VALVE FOR INTERNAL COMBUSTION ENGINES
Rune Gerren Adolfsson, Centralg. 8, and Thomas Eugen Haagen, Groudalsvagen 8, both of Nynashamn, Sweden
Filed June 7, 1966, Ser. No. 555,836
Claims priority, application Sweden, June 8, 1965, 7,462/65

5 Claims. (Cl. 123—41.41)

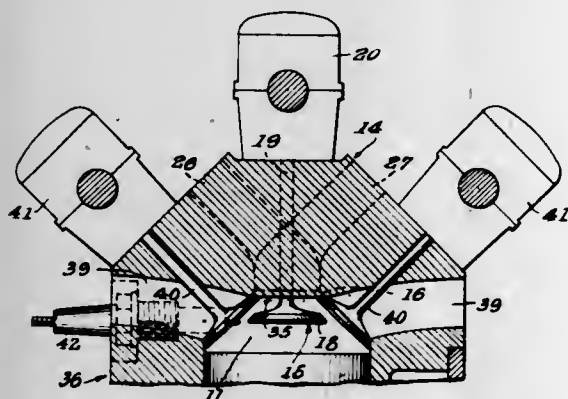
5. A liquid cooled disk like valve for an internal combustion engine comprising in combination:
 - (a) A hollow valve stem,
 - (b) a valve head mounted on said stem, the inner walls of said valve defining a cooling chamber,
 - (c) an annular insulating jacket coaxially mounted within said valve stem and adjacent to the inner walls of said valve stem, and
 - (d) a coolant supply tube coaxially mounted within said insulating jacket to supply a coolant to said valve head, the exterior wall of said supply tube and the in-

terior wall of said insulating jacket defining an annular return passage for a coolant from said valve head,



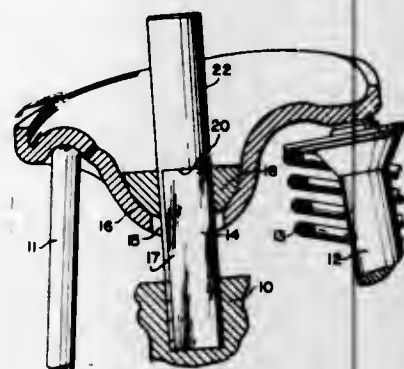
whereby the coolant is thermally separated from said valve stem by said insulating layer.

3,313,278
VALVE PORT PASSAGES AND THE ARRANGEMENT THEREOF IN ENGINES
Niel C. Thoesen, 6021 Compton Ave.,
Los Angeles, Calif. 90001
Filed Sept. 15, 1965, Ser. No. 488,835
3 Claims. (Cl. 123-75)



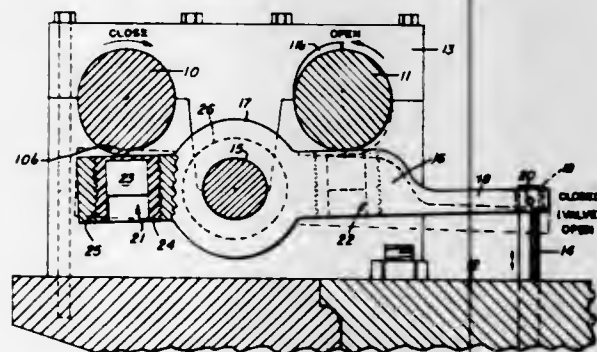
2. In an engine:
 - (a) a cylinder having a combustion chamber defined by oppositely angled converging faces and a top face between the nearer portions of the converging faces,
 - (b) two intake port and passage means in side-by-side relation on a plane on the axis of the cylinder and through the center of said top face,
 - (c) an exhaust port in each of the converging faces on a plane normal to the mentioned plane, and
 - (d) an exhaust valve to control each exhaust port.
3. In an engine:
 - (a) a cylinder having a combustion chamber defined by oppositely angled converging faces and a top face between the nearer portions of the converging faces,
 - (b) two intake port and passage means in side-by-side relation on a plane on the axis of the cylinder and through the center of said top face,
 - (c) an exhaust port in each of the converging faces on a plane normal to the mentioned plane,
 - (d) an exhaust valve to control each exhaust port, and
 - (e) two spark plugs having their electrodes extending through the converging walls to the combustion chambers.

3,313,279
GUIDE BEARING FOR VALVE ROCKERS
Lorenz R. Burweger, Montvale, N.J., assignor to Welles Manufacturing Corp., Union City, N.J., a corporation of New Jersey
Filed July 31, 1964, Ser. No. 386,610
4 Claims. (Cl. 123-90)



1. The combination with a bearing for the valve rocker of internal combustion engines, said bearing being perforated to receive a supporting element, the bearing being composed of a plurality of coaxial approximately half bodies of revolution formed by rotation about a common axis of a straight line parallel to the axis and two straight terminal lines angularly and symmetrically disposed with respect to the axis and forming acute angles therewith, said terminal lines forming obtuse angles with the first-mentioned line of a dish rocker having a concave surface facing upwardly, said rocker having an opening in registry with the opening in the bearing for receiving the said element, the concave surface of the rocker being shaped to interfit with the surfaces of revolution of the bearing and acting to inhibit relative movement between the bearing and rocker, both angularly and axially with respect to the axis of the bearing.

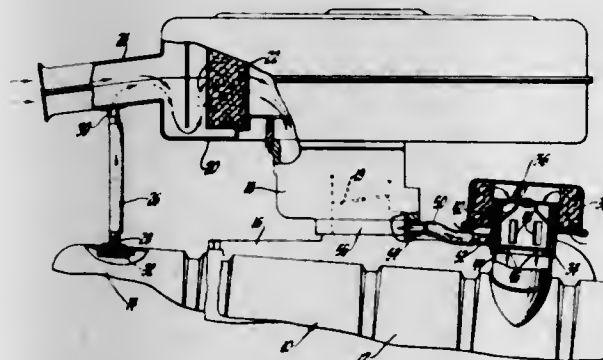
3,313,280
VARIABLE VALVE TIMING MECHANISM
Anatoly A. Arutunoff and Horace Bryan Crow, Bartlesville, Okla., assignors to Automobile Racing Club of Oklahoma, Inc., Bartlesville, Okla., a corporation of Oklahoma
Filed Apr. 16, 1965, Ser. No. 448,720
4 Claims. (Cl. 123-90)



1. A valve timing mechanism for internal combustion engines, including a cylinder head and a series of valves respectively provided with projecting valve tappets; said mechanism comprising a series of rocker arms spaced on said cylinder head corresponding to the spacing of said valve tappets and respectively connected at one end to said valve tappets, said rocker arms being pivoted intermediate their ends and provided with cam followers on opposite sides of their respective pivots, a pair of laterally spaced, parallel cam shafts extending at right angles to said rocker arms, across said cam followers, said cam shafts having peripheral cam lobes spaced for engagement with respective cam followers upon rotation of said cam shafts, said cam followers and cam lobes being magnetically attracted, complementary gear means

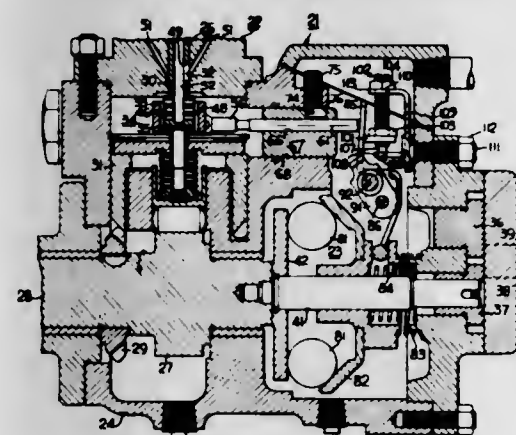
on said cam shafts, driven by the engine crankshaft and operatively connecting said cam shafts for simultaneous rotation in opposite directions, the cam lobes on one cam shaft being oppositely arranged with respect to the corresponding cam lobes on the other cam shaft, whereby upon the simultaneous rotation of said cam shafts, the respective valve tappets are sequentially operated by said rocker arms to open and close the engine valves.

3,313,281
CRANKCASE VENTILATION SYSTEM
Harold R. Schneider, Lansing, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 24, 1965, Ser. No. 442,366
7 Claims. (Cl. 123-119)



1. For use with an internal combustion engine having a crankcase and an induction system including throttling means, a crankcase ventilation system comprising conduit means connecting the crankcase with the induction system upstream of the throttling means to carry crankcase vapors to the induction system and inlet means on said crankcase to admit ventilating air thereto, said inlet means being connected with the induction system downstream of the throttling means whereby excess crankcase vapors escaping into said inlet means will be drawn into the induction system.

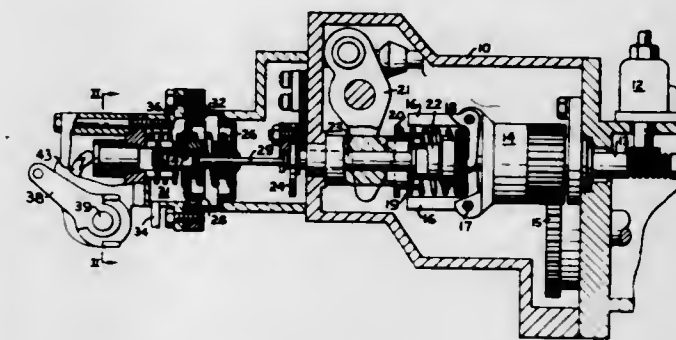
3,313,282
FUEL INJECTION PUMP GOVERNOR
Alexander Dreisin, Olympia Fields, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Dec. 21, 1964, Ser. No. 419,694
11 Claims. (Cl. 123-139)



1. A fuel injection pump and governor comprising:
 - a housing including walls defining a supply chamber, and
 - a plunger bore opening at one end into said supply chamber,
 - a pump plunger reciprocally and rotatably mounted in said bore and having a fuel inlet portion in said supply chamber,

a control sleeve receiving said plunger in surrounding and controlling relation to said inlet portion and pivotally and reciprocally mounted in said housing for pivotal and reciprocal movements relative to said housing, means for rotating and reciprocating said plunger relative to said sleeve and said housing including a drive shaft, mechanical means operating said control sleeve for effecting one of said pivotal and reciprocal movements of said control sleeve in response to changes in speed of rotation of said shaft, means supplying fuel to said supply chamber and causing the pressure therein to increase with increasing rotary speed of said shaft, and hydraulic means for effecting the other of said pivotal and reciprocal movements of said control sleeve in response to pressure changes in said supply chamber.

3,313,283
FUEL RATIO CONTROL OVERRIDE
Robert H. Miller, Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed June 4, 1965, Ser. No. 461,330
2 Claims. (Cl. 123-140)

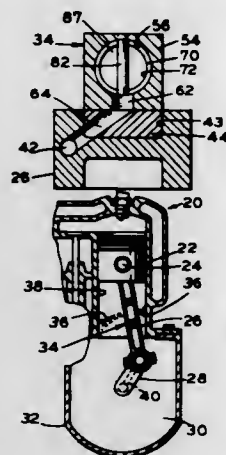


1. In combination with an engine governor for controlling flow of fuel to an internal combustion engine and having a fuel to air ratio control which comprises a spring tending to prevent an increase in fuel and means to disable the spring with pressure from the engine air supply when the pressure attains a sufficiently high value, manually actuated means to disable said spring when the engine is shut down to enable starting of the engine with low pressure air supply, the improvement which comprises means to hold said manual means in its actuated condition by friction, a spring urging it toward disengagement, and means actuated by the building up of air supply pressure to effect disengagement.

3,313,284
CYLINDER WALL LUBRICATION
Harry L. Polidan, Muskegon, Mich., assignor to Sealed Power Corporation, Muskegon, Mich., a corporation of Michigan
Filed Oct. 30, 1964, Ser. No. 407,686
10 Claims. (Cl. 123-196)

1. In an internal combustion engine having a cylinder, a piston reciprocable in the cylinder, a crankshaft and a rod connecting the piston and crankshaft so that rotation of the crankshaft reciprocates the piston in the cylinder, said rod and crankshaft having interconnecting oil conducting passageways, said engine further having an oil pump driven by the engine at a rate which varies directly with engine speed and communicating with said passageways, the combination therewith of a casing supported on said rod and having a chamber communicating with said rod passageway, a valve exposed to oil in said chamber and movable in said casing in response to a change in the pressure of oil admitted to the chamber and means biasing said valve against the force of chamber oil pres-

sure acting on said valve, said casing having a port controlled by said valve and communicating when said port is open with the rod passageway for directing oil under pressure toward the cylinder wall, said biasing means

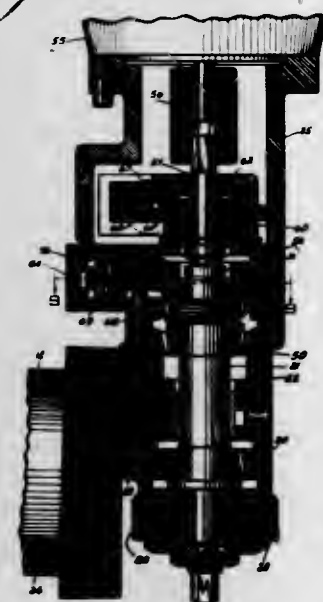


yielding in response to a predetermined oil pressure acting on said valve corresponding to a given engine speed so that said valve controls discharge of oil via said port as a function of engine speed.

3,313,285 IMPREGNATED INDEXING ROLLER FOR GRINDING WHEEL DRESSERS

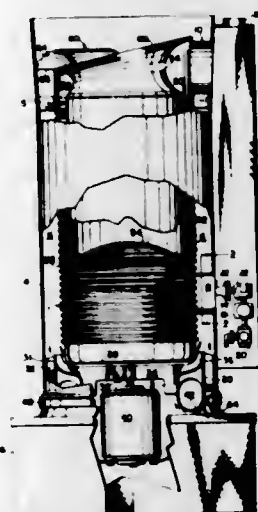
Ralph E. Price and William P. Flohr, Jr., Waynesboro, Pa., assignors to Landis Tool Company, Waynesboro, Pa.

Filed Apr. 27, 1964, Ser. No. 362,677
6 Claims. (Cl. 125-11)



1. Means for dressing a grinding wheel comprising
 - (a) a dressing roller mounted for rotation in a plane normal to the plane of said grinding wheel with its peripheral face inclined so that initial engagement of said roller with the peripheral face of said grinding wheel is on one edge of said roller,
 - (b) said roller having a diamond impregnated continuous peripheral surface,
 - (c) means for moving said roller toward and from said grinding wheel along a path passing through the axis of said grinding wheel,
 - (d) a longitudinally movable carriage for traversing said roller across said grinding wheel,
 - (e) an incremental device operable at one end of said longitudinal movement for rotating said roller to present different portions of said roller to said grinding wheel,
 - (f) and means to hold said roller in a fixed angular position as it passes across said grinding wheel.

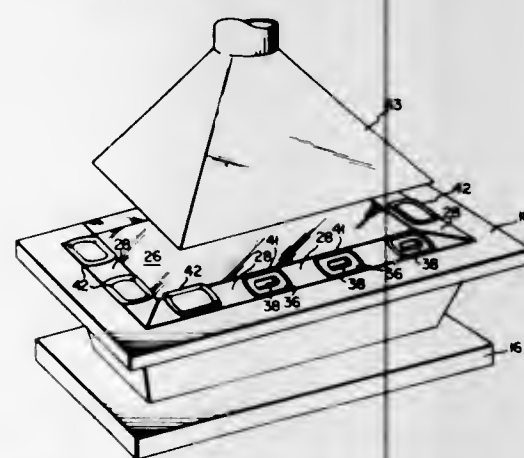
3,313,286 HEAT EXCHANGE APPARATUS Chester D. Ware, La Crosse, Wis., and Harry D. Foust, Dakota, Minn., assignors to The Trane Company, La Crosse, Wis., a corporation of Wisconsin Filed Nov. 5, 1965, Ser. No. 506,506 7 Claims. (Cl. 126-110)



6. Heat exchange apparatus comprising: an elongated casing: a tubular heat exchange member disposed concentrically within said casing and spaced inwardly therefrom so as to form an annular passage for the flow of a fluid stream to be heated; a fan for circulating said fluid stream through said annular passage, said fan being disposed adjacent one end of said heat exchange member; a hollow baffle element extending into said heat exchange member from the opposite end thereof, and spaced inwardly therefrom; means for diverting a portion of the heated fluid stream discharging from said annular passage into said hollow baffle element, said means comprising a scoop extending a substantial distance around said annular passage in sealing relationship with the inside of said casing and having a portion thereof extending towards the interior of said hollow baffle element; an inlet for conducting a heating medium into said heat exchange member in proximity to said one end; and an outlet for discharging heating medium from said heat exchange member in proximity to said opposite end.

3,313,287 COMBINED FOOD COOKING AND SERVING ARRANGEMENT

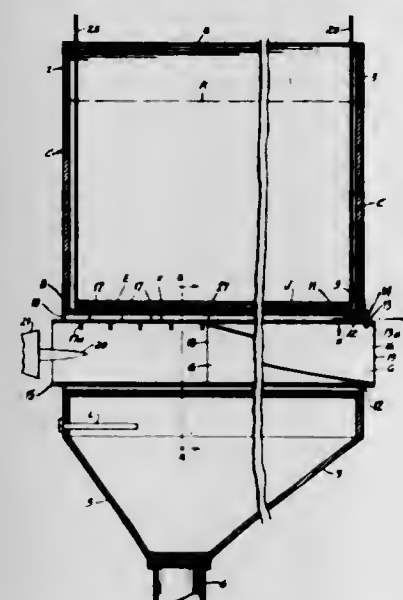
James T. Sakata, 1020 Kearny St., San Francisco, Calif. 94111
Filed Sept. 27, 1965, Ser. No. 490,557
6 Claims. (Cl. 126-216)



1. A combined food cooking and serving arrangement comprising a brazier, a board arranged adjacent the upper edge of said brazier exteriorly thereof, a panel arranged adjacent said upper edge within said brazier, said panel having a horizontally disposed upper surface containing a

number of depressions adapted to receive a dished plate, and a cooking plate supported adjacent said panel within said brazier.

3,313,288 HEATING MEANS FOR DEEP FAT FRYER Martin Paul Aho, 3048 Partridge Ave., Oakland, Calif. 94605 Filed Dec. 28, 1964, Ser. No. 421,485 2 Claims. (Cl. 126-391)

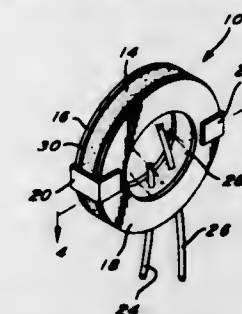


1. In a device of the type described:
 - (a) a deep well fryer adapted to hold grease for frying purposes;
 - (b) a grease-heating tube extending through said well and being open at both ends;
 - (c) a heating cartridge of smaller diameter than that of said tube and having two outwardly extending annular flanges adapted to contact with the inner cylindrical surface of said tube adjacent to the ends thereof for spacing the cartridge wall from the tube wall and providing an annular air space between the two walls that extends substantially throughout the length of said tube;
 - (d) said cartridge wall having longitudinally extending rows of openings therein for permitting the hot gases of combustion to pass from the cartridge interior into said annular air space;
 - (e) means for directing a gas flame into said cartridge interior from one end thereof; and
 - (f) said cartridge wall having inwardly extending lips, one for each opening in the rows of openings, each lip being disposed adjacent to the portion of its associated opening that is positioned nearest to the entrance of the gas flame;
 - (g) whereby said lips will deflect laterally within said cartridge the flow of gases of combustion striking the lips for preventing any portion of the gas flame from passing through said openings and striking said tube wall while permitting the heated gases to pass into said annular air space for heating it and said tube wall; the annular flange farthest removed from the gas flame having passages therein for the flow of gases and air therethrough.

3,313,289 IMPLANT CHAMBER Frank A. Kapral, 1065 Maple Ave., Ardley, Pa. 19038 Filed June 23, 1964, Ser. No. 377,202 7 Claims. (Cl. 128-1)

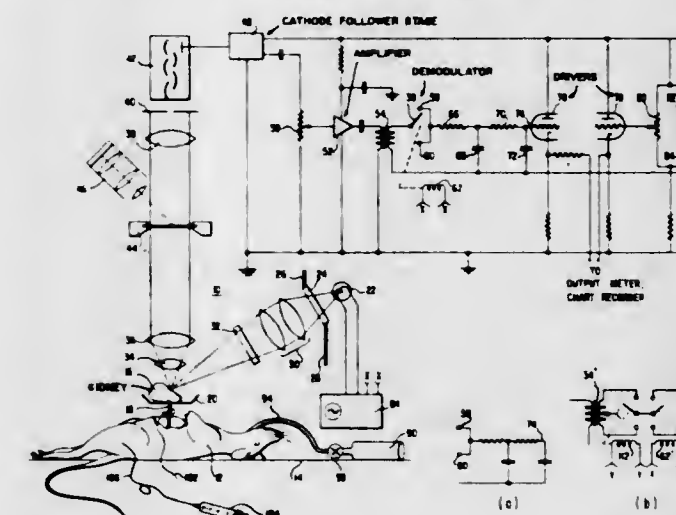
1. An implant chamber adapted to be inserted within a body cavity of an animal comprising a ring formed of resilient material, said ring including a pair of opposed

faces substantially perpendicular to the axis of said ring and an orifice substantially parallel to the axis of said ring, a pair of dialysis membranes, each membrane being of a size and shape to completely cover said orifice in overlapping relationship with one of the pairs of faces, each of said membranes being associated in overlapping relationship with one of said faces and covering one end



of the orifice, clamping means for securing the membranes to the faces of said ring in sealing engagement therewith, and flexible conduit means extending through said ring into said orifice for the introduction and removal of an in vivo growth into and from said orifice after said chamber has been inserted within a body cavity of said animal.

3,313,290 SPECTROFLUOROMETER Britton Chance, Philadelphia, and Victor A. Legallais, Havertown, Pa., assignors, by mesne assignments, to Research Corporation, New York, N.Y., a non-profit New York corporation Filed Aug. 14, 1963, Ser. No. 302,093 6 Claims. (Cl. 128-2)



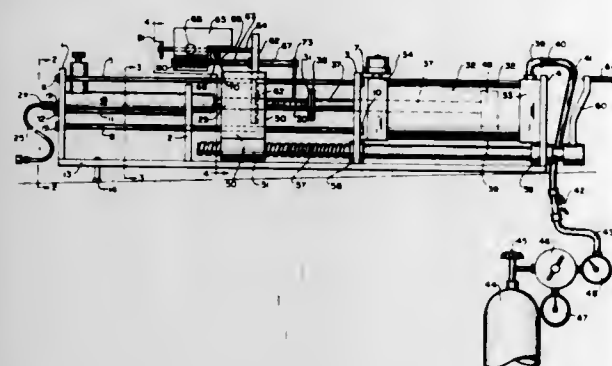
1. An apparatus for nondestructively measuring the intracellular oxidation-reduction state in exposed surface tissue of intact internal organs of a living animal comprising, in combination, means to irradiate said tissue with radiant energy of a predetermined wavelength, and means to measure intracellular oxidation-reduction levels as evidenced by changes in the fluorescence emission spectra of mitochondrial pyridine nucleotide near the exposed irradiated surface.

3,313,291 APPARATUS FOR THE INJECTION OF RADIO-OPAQUE LIQUID IN ANGIOGRAPHY Thomas R. Marshall, Louisville, Ky., assignor to Sigma-motor, Inc., village of Middleport, N.Y., a corporation of New York Filed Nov. 6, 1963, Ser. No. 321,884 9 Claims. (Cl. 128-2)

1. A power-driven medical apparatus, adapted for use in percutaneous non-catheter angiography, which comprises:

- (a) a frame;

- (b) a diagnostic medical syringe mounted on said frame and including:
- a barrel having an outlet orifice and including a plunger assembly slidably mounted for axial reciprocation therein;
 - said plunger assembly comprising a head portion and a shaft in which one end of said shaft is connected to said head portion, and the other end of the shaft extends outside of said barrel;
 - a cylinder including a piston assembly slidably mounted for axial reciprocation in said cylinder and a gas orifice;

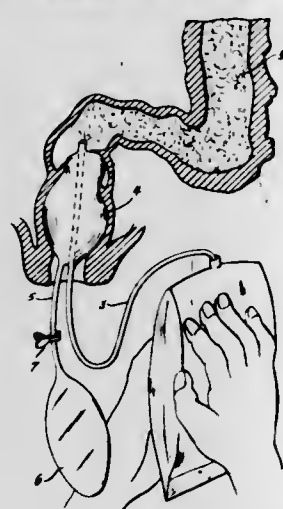


- said piston assembly including a head portion and a rod in which the rod is connected to said head portion at one end with the free end extending outside of said cylinder, said free end being positioned in operative relation with the shaft of said plunger assembly to drive same;
- a source of compressed gas connected to said gas orifice and valve means for controlling the flow of gas to said orifice; and
- a movable stop mounted for axial movement on said frame to physically stop the full stroke of the piston rod and plunger assembly, so that by movement of said stop, sequential injections can be made without reloading the syringe.

3,313,292

DIAGNOSTIC COMPOSITION PACKAGE

Galen B. Cook, Columbia, Mo. 65201
Continuation of application Ser. No. 113,413, May 29, 1961, now Patent No. 3,247,841, dated Apr. 26, 1966.
This application June 24, 1965, Ser. No. 466,703
2 Claims. (Cl. 128-2)



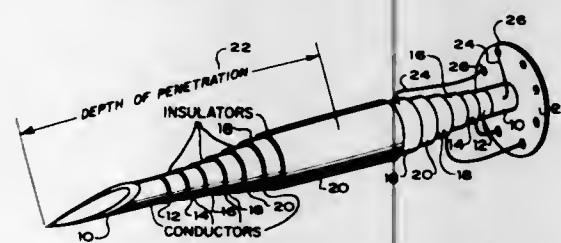
1. A composition package adapted for use in performing a method of diagnosis of abnormalities in the cavity defining wall of a human being, said package comprising a flexible, liquid impervious bag; a non-toxic, liquid elastomeric material introducible into an internal cavity of a human being and capable of being set in the presence of a setting agent at a temperature compatible with cell viability to a surface-conforming, coherent unplastic,

pliant conditions, with a sufficiently fine-grained surface to reproduce for diagnosis the physical features of abnormalities sought to be detected, and sufficient of a radiopaque substance to render the elastomeric material readily observable radiologically when said material is within the body, both the elastomeric and the radiopaque substance being contained within said bag; a rupturable container within said bag; a setting agent sealed within said rupturable container; a conduit communicating with the interior of said bag at one end, and adapted for insertion into and opening into said cavity at its other end, and cavity entrance-blocking means mounted on said conduit around the outside thereof.

3,313,293

MULTI-ELECTRODE NEEDLE

James A. Chesebrough, Los Altos Hills, and Frank T. Ura, Palo Alto, Calif., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Jan. 13, 1964, Ser. No. 337,234
7 Claims. (Cl. 128-2.1)



1. An electromedical needle for insertion into an animal body to provide a plurality of signal conduction paths to a subsurface region of the body, comprising: a hollow elongated conductor adapted for insertion into the body to provide a first signal conduction path to the subsurface region of the body, said conductor having a tapered end for piercing the body and having a contact portion near the tapered end for contacting the subsurface region of the body; an insulating layer fixedly supported on the outer surface of said conductor for insulating a selected portion of the conductor from the body when the electromedical needle is inserted into the body, said selected portion extending along the outer surface of the conductor from outside the body to the subsurface region when the electromedical needle is inserted into the body but not including said contact portion near the tapered end of the conductor; and a conductive layer fixedly supported on the outer surface of said insulating layer for providing a second signal conduction path to the subsurface region of the body, said conductive layer being insulated from said conductor by the insulating layer and including a contact portion for contacting the subsurface region of the body when the electromedical needle is inserted into the body.

3,313,294

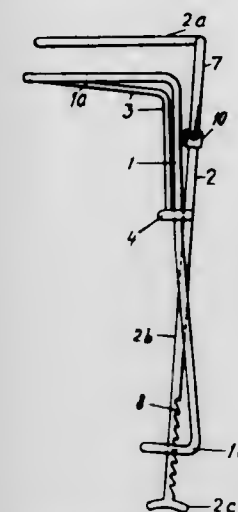
INSTRUMENTS FOR OPEN-HOLDING OF CAVITY OPENINGS IN THE HUMAN BODY

Göran Olof Uddenberg, Rangeltorpsgatan 49, Göteborg, Sweden

Filed June 4, 1964, Ser. No. 372,575
Claims priority, application Sweden, Sept. 6, 1963, 9,762/63
4 Claims. (Cl. 128-20)

1. An instrument for holding open cavities, wounds and cuts in a human body, comprising a pair of wire shanks with one shank being a holder shank and the other a shank displaceable relative to the holder shank, each of said shanks having a jaw blade disposed substantially at right angles to the length of the shanks, a

bearing plate on said holder shank adapted to receive said displaceable shank for tilting and sliding movements in said bearing plate, and a rack assembly including teeth on one of said shanks and a toothed rack on the other shank with said teeth and toothed rack coacting to maintain said shanks in different tilting positions, said holder shank including two wire parts extending in spaced relationship thereto and providing at one end a bow portion

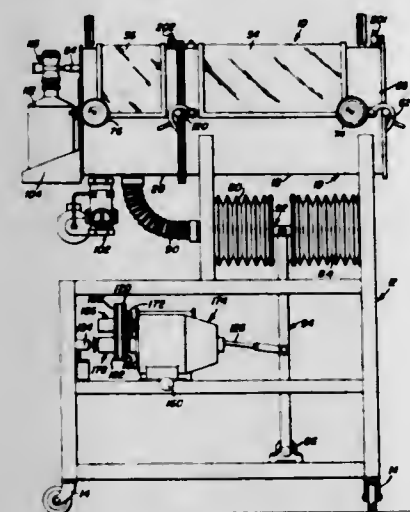


constituting the jaw blade, said bearing plate being secured to said wire parts adjacent the mid point of the length of said holder shank, said bearing plate having an axial groove open at the edge of said bearing plate between said two wire parts and said other shank including a straight wire part slidable in said groove with said rack assembly and bearing plate detachably connecting said two shanks in each mutual operating position.

3,313,295

INFANT RESUSCITATOR

Elbert W. Robinson, Amarillo, Tex., assignor to The Congregation of the Sisters of Charity of the Incarnate Word, Inc., San Antonio, Tex.
Filed Nov. 26, 1962, Ser. No. 240,035
12 Claims. (Cl. 128-30)



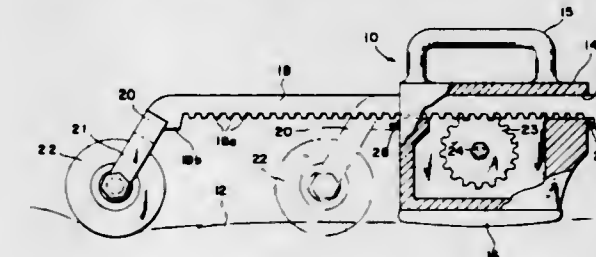
12. An infant resuscitator comprising a closed housing compartment adapted to receive the head of a person or animal and including means adapted to form a fluid-tight seal about the neck of said person, air pump means communicated with the interior of said compartment including a substantially closed variable volume pumping chamber and operable to alternately increase and decrease the pressure of the atmosphere in said compartment, said compartment including exhaust valve means communicated directly with the interior of said compartment and operable in response to operation of said pump means for intermittently venting said compartment to the ambient atmosphere near the ends of periods of increased

atmospheric pressure in said compartment, and means for admitting a selected atmosphere into said compartment, said closed pumping chamber means being directly communicated with the interior of said compartment independent of any air flow controlling valve means, said exhaust valve means including actuating means therefor connected with said air pump means and operative to intermittently open said exhaust valve means near the periods of minimum volume of said pumping chamber means independent of the differential in pressure between the air pressure of the ambient atmosphere and the air pressure in said compartment wherein said exhaust valve includes actuating means which may be adjusted to vary the duration of the opening of the exhaust valve means independently of the cycling speed of said pump means.

3,313,296

POWER DRIVEN RECIPROCATING MASSAGING DEVICE

Paul E. Ruuska, Medical-Dental Bldg., 509 Olive Way, Seattle, Wash. 98101
Filed May 22, 1964, Ser. No. 369,556
4 Claims. (Cl. 128-51)

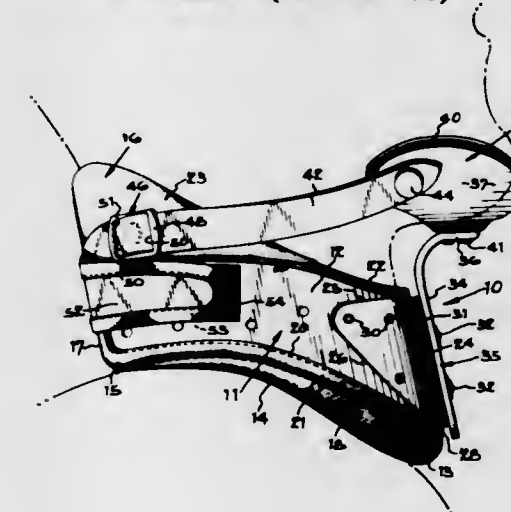


1. A portable device for massaging the human body comprising a housing, a reversible motor in said housing, a movable bar mounted in and extendable from opposite ends of said housing, means interconnecting said motor and bar for longitudinal reciprocal movement of said bar, a massaging roller mounted at one end of the bar for rolling contact upon the area to be massaged, said housing being relatively small and portable and adapted to be positioned and firmly held on the body adjacent the area to be massaged.

3,313,297

CERVICAL SPLINT

Leslie T. Applegate and Peter Kavula, Cincinnati, Ohio, assignors to Surgical Appliance Industries, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed June 18, 1962, Ser. No. 203,024
3 Claims. (Cl. 128-75)



1. A cervical splint comprising a cervical collar formed of a semi-rigid plastic sheet shaped to snugly encircle the neck of a wearer, the lower edge of said collar being configured to engage the contiguous portions of the

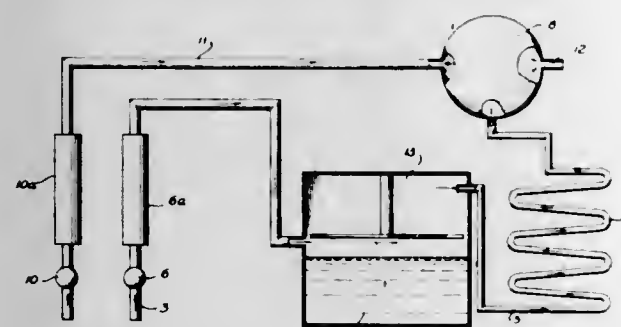
wearer's shoulders and clavicle, the rear portion of said collar including an upwardly extending pad portion for engaging the rear area of a wearer's neck, a reinforcing member mounted on the front surface of said collar, a vertically extending bracket member, means carried by said reinforcing member mounting said bracket member thereon, said bracket member including an outwardly extending horizontal arm formed at its upper end, and a chin cup shaped to receive the wearer's chin mounted upon said horizontal arm, and straps extending rearwardly at each side of said cervical splint, each of said straps being secured at one end to said chin cup and at the other end to the rear portion of said collar.

3,313,298

ANESTHESIA VAPORIZER

Peter Schreiber, Lubeck, Germany, assignor to Otto Heinrich Dräger, Lubeck, Germany
Filed June 25, 1964, Ser. No. 377,814
Claims priority, application Germany, June 26, 1963, D 41,839

2 Claims. (Cl. 128—188)

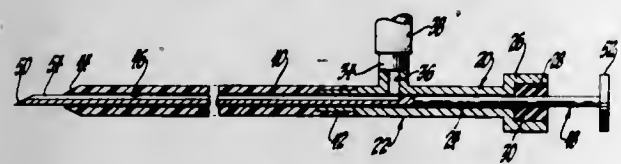


1. In a vaporizer for an anesthetic liquid at normal temperatures, as used in an anesthesia apparatus, said vaporizer having a mixing chamber, a vaporizer unit, first pipe means for leading intake gas from a gas supply into said unit, second pipe means for leading vaporized gas from said unit into said mixing chamber, outlet tube means for exhausting gas from said mixing chamber, and third pipe means joined to said mixing chamber for leading intake gas directly from a gas supply into said mixing chamber, the improvement in which said second pipe means has a very long length relative to the distance traversed by the gas during normal gas back-flow from said mixing chamber due to pressure pulsations caused by the breathing of the user of the vaporizer.

3,313,299

INTRAVASCULAR CATHETER WITH COAXIAL PUNCTURING MEANS

Richard G. Spademan, 300 Pasteur Drive, Palo Alto, Calif. 94304
Filed Feb. 5, 1964, Ser. No. 342,602
9 Claims. (Cl. 128—214.4)



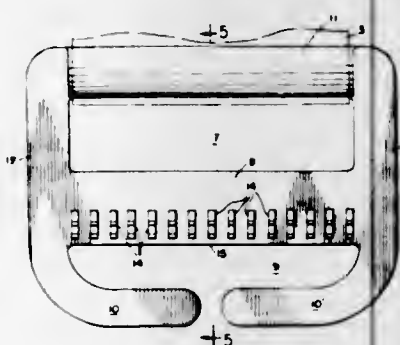
1. An intravascular catheter comprising:
a hub having a bore formed therethrough and a passage therein angularly disposed relative to said bore and in communication therewith;
a resilient plastic tube secured at one end to said hub and extending axially therefrom, said tube being in alignment with said bore in said hub;
a trocar extending through said bore in said hub and through said tube and having a sharpened end extending beyond the end of said tube, said trocar being

adapted to pierce a vascular wall to permit insertion of said tube into the vascular channel, and said trocar being retractable from said tube and said hub when said tube is disposed in the vascular channel to permit unimpeded flow through said tube and to permit said tube to flex within the vascular channel;
blocking means in said hub for preventing the flow of fluid from the end thereof opposite from said one end when said trocar is retracted from said tube and said hub;
and means for connecting infusion means to said angularly disposed passage in said hub prior to insertion into the vascular channel for infusing a fluid directly through said tube and into said vascular channel immediately upon retraction of said trocar from said tube.

3,313,300

SANITARY NAPKIN BELT AND FASTENER

Robert V. Mathison, Asheville, N.C., and John C. Bletzinger and Charlotte L. Rickard, Neenah, Wis.; said Bletzinger and said Rickard assignors to Kimberly-Clark Corp., Neenah, Wis., a corporation of Delaware
Filed Sept. 27, 1963, Ser. No. 312,230
14 Claims. (Cl. 128—289)



1. In a device for supporting sanitary napkins comprising in combination a belt and fastening means mounted on said belt, the improvement wherein said fastening means comprises a fastener of generally oblong configuration having paired side bars, a lower bar, an upper bar to which said belt is attached, and an intermediate bar having a substantially straight lower edge, said intermediate bar having spaced protuberances contiguous to said lower edge and extending in an obliquely downward direction from one face of said bar.

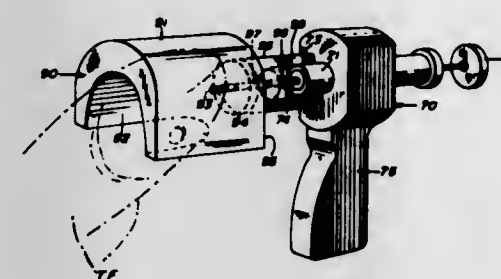
3,313,301

INSTRUMENT TO IMPLANT TAGS IN MACRO-ORGANISMS

Keith B. Jefferts and Peter K. Bergman, Seattle, Wash., assignors to the United States of America as represented by the Secretary of the Interior
Original application Jan. 2, 1963, Ser. No. 249,103, now Patent No. 3,128,744, dated Apr. 14, 1964. Divided and this application Jan. 16, 1964, Ser. No. 345,058
2 Claims. (Cl. 128—330)

1. An instrument to implant a tag at a designated location in a macro-organism, comprising an injector device having elongated means displaceable in a longitudinal path to pierce and enter the body substance of the macro-organism and eject a tag so as to lodge said tag in said body substance close by said means, a guiding enclosure constituted by a hood-like housing having an opening therein, spread across two angularly disposed sides thereof, constituting an entrance to a relatively large cavity in said housing, said cavity being internally contoured to receive and maintain closely fitted therein a substantial portion of said body substance in a position whereby said designated location is in the longitudinal path of said

means to pierce and enter, and further means fixed to said enclosure and slidably connected to said injector device adapting said device to be operative with respect to said enclosure, said further means comprising a connector element having a part defining a hollow passage opened at one end and communicating with said enclosure cavity through a conduit in said connector element which extends between said cavity and another end of

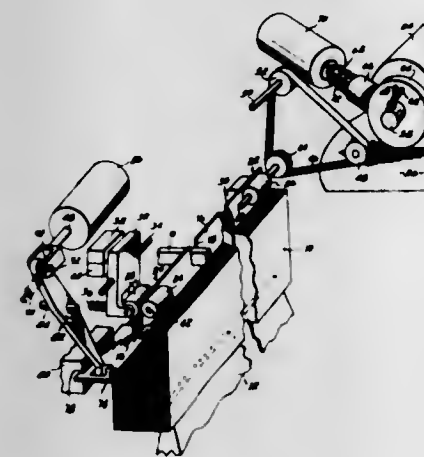


said passage, and said injector device further having fixed thereto a bearing band encircling said means to pierce and enter, a slot in said connector element opening into said passage, a pin projecting from said bearing band which is disposed to slide in said slot when said bearing band is arranged to slide within said passage whereby said means to pierce and enter is disposed to slide in said conduit for displacement in said enclosure cavity.

3,313,302

CARD REMOVAL APPARATUS

Robert A. Lasley and Siegfried K. Handel, Hamilton, Ohio, assignors to The Mosler Safe Company, Hamilton, Ohio, a corporation of New York
Filed Apr. 16, 1965, Ser. No. 448,685
12 Claims. (Cl. 129—16.1)



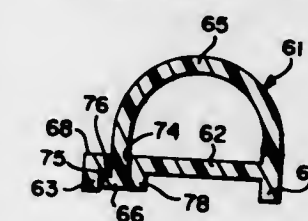
1. In a card filing system of the type having means for removing a selected file card out of a deck of such cards, an apparatus for preventing the withdrawal of more than the selected card, comprising:

- (a) stripping means reciprocally mounted adjacent one side of the deck of cards and having a slot therein wider than the thickness of one card but narrower than the thickness of two,
- (b) sensing means for detecting the presence of a selected card, and
- (c) motive means responsive to the sensing means for extending the stripping means into the path of travel of the selected card, whereby the selected card enters the slot and may be completely withdrawn from the deck therethrough while the remaining cards in the deck are prevented from being withdrawn by the stripping means.

3,313,303

BINDER

Lewis R. Beyer, 1853 Huntington Circle, Brunswick, Ohio 44212
Filed Dec. 7, 1964, Ser. No. 416,362
7 Claims. (Cl. 129—24)



1. A plastic ring binder comprising:
 - (a) an elongated back plate;
 - (b) a plurality of binder fingers integral with and extending from the back plate adjacent one longitudinal edge and terminating in free ends movable relative to the back plate;
 - (c) interlocking portions on the free ends of the binder fingers and on the back plate, constructed so that the binder fingers must be moved both transversely and longitudinally of the back plate to interlock said interlocking portions including:
 - (i) projections extending from the free ends of the binder fingers,
 - (ii) first parts of the back plate defining projection receiving openings for the binder fingers, and
 - (iii) second parts of the back plate defining locking portions adjacent the receiving openings, each of said locking portions defining an opening in the back plate connected with the projection receiving opening, being narrower and extending longitudinally therefrom along the back plate, each of said projection receiving openings being of a size to fully receive a finger projection and said locking portion opening being of a size to receive a free end of a finger but to prevent withdrawal of a finger projection therefrom, complementary beveled surfaces (a) on the projections that extend from the binder fingers and (b) on the second parts of the backing plate that define the locking portions and which contact the associated projections, said beveled surfaces being arranged to retain the fingers in engagement against transverse movement that would tend to open the fingers; and
 - (d) a retaining wall associated with each locking portion, extending longitudinally of the back plate, contiguous with the locking portion directly behind and opposite the lower terminus of the free end of the associated binder finger when interlocked, constructed and arranged to restrict lateral movement of the terminus of the free end of the associated binder finger by contacting the same but allowing longitudinal movement of the finger whereby the finger may be moved from the locking portion opening to the projection receiving opening to release the finger from the back plate.

3,313,304

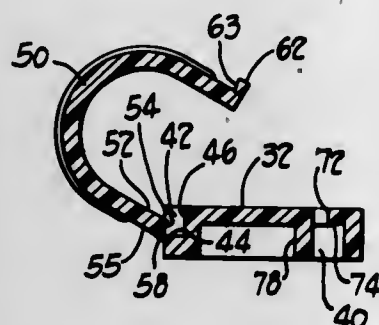
BINDER

Lewis R. Beyer, 1853 Huntington Circle, Brunswick, Ohio 44212
Filed May 4, 1966, Ser. No. 547,669
7 Claims. (Cl. 129—24)

1. In a ring binder:
 - (a) a back plate to be fastened inside a binder cover and having a first side or bottom surface to be positioned against a back of the cover and a second

side or top surface that faces away from the back of the cover;

(b) a plurality of binder ring elements integral with the back plate along a first longitudinal side edge of the back plate, each having a narrow finger portion and a wider base portion, said wider base portion being substantially shorter than the length of the back plate and said narrow finger portion having a free end portion interengageable with the back plate adjacent a second longitudinal side edge of the back plate; and



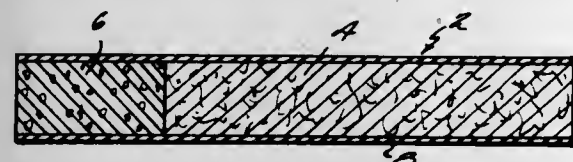
(c) flexible hinge portions

- (i) integrally connecting the ring elements at spaced locations along the said first longitudinal side edge of the back plate,
- (ii) substantially thinner than the thickness of the finger and base portions of the ring elements, and
- (iii) located beneath the top surface of the back plate.

3,313,305

CIGARETTE FILTER

Peter F. Noznick and Kwok H. Li, both of Evanston, Ill., assignors to Beatrice Foods Co., Chicago, Ill., a corporation of Delaware
Filed Aug. 11, 1965, Ser. No. 478,854
10 Claims. (Cl. 131-10.7)



1. The combination with a smoker's article having therein a smoke passage of substantial cross-section of a filter section having dispersed therethrough a chemical agent selected from the group consisting of beeswax, cholesterol, paraffin and hydrogenated methyl ester of rosin, said chemical agent being encased in a member of the group consisting of carbohydrates and proteinaceous materials, said chemical agent serving to reduce the amount of tar and nicotine in the smoke.

3,313,306

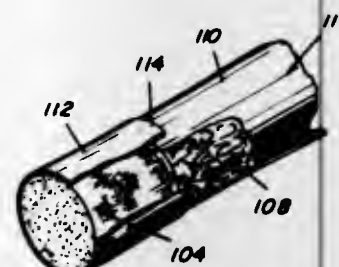
STABLE ELONGATED ELEMENTS AND SMOKING MEANS INCORPORATING THE SAME

Richard M. Berger and Reavis C. Sproull, Richmond, Va., assignors to American Filtrona Corporation, a corporation of New York

Filed Oct. 22, 1965, Ser. No. 502,261
8 Claims. (Cl. 131-10.7)

5. A filter comprising a stable, porous, rod-like element consisting essentially of a tow of generally longitudinally extending, filamentary material bonded together throughout to be self-sustaining, said rod-like element additionally including means on its peripheral surface rendering the same substantially resistant to filament

separation, said rod-like element and means together having substantially uniform physical characteristics and porosity throughout any complete transverse cross-sectional area of the rod-like element and means, at least

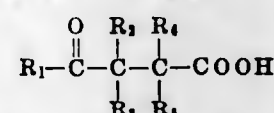


the predominant portion of the filaments of said filamentary material each being of generally uniform diameter throughout its length and extending over at least the major extent of the length of said element.

3,313,307
TOBACCO

Wilmer A. Rohde, Winston-Salem, N.C., assignor to R. J. Reynolds Tobacco Company, Winston-Salem, N.C., a corporation of New Jersey
No Drawing. Filed Apr. 13, 1965, Ser. No. 447,914
14 Claims. (Cl. 131-17)

1. A domestic tobacco having added thereto a small amount sufficient to alter the flavor of the tobacco of a compound having the following formula:

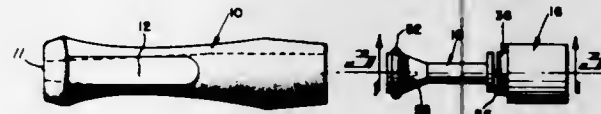


wherein R₁ is selected from the group consisting of alkyl and cycloalkyl groups of 1 to 8 carbon atoms and R₂, R₃, R₄ and R₅ are selected from the group consisting of hydrogen and alkyl groups of 1 to 4 carbon atoms.

3,313,308

HOLDER FOR CIGARETTES AND THE LIKE

Joseph R. Grasso, 8458 Wuest Road, Cincinnati, Ohio 45239
Filed Oct. 2, 1964, Ser. No. 401,129
2 Claims. (Cl. 131-187)



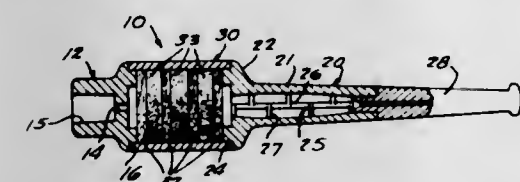
1. A holder for cigarettes and the like comprising a holding member, said holding member having a receptacle for a cigarette and the like at one end thereof, said holding member having a reduced threaded portion at its other end, a dividing member, said dividing member having a baffle wall disposed adjacent one end thereof, means for removably connecting said dividing member to said holding member, a cover member having one end interiorly threaded for cooperation with said threaded reduced portion of said holding member to attach said cover member to said holding member, said cover member enclosing said dividing member, said means removably connecting said dividing member to said holding member comprising a transverse wall on said holding member, said transverse wall having apertures opening toward the downstream end thereof, said apertures defined by walls providing slots having an enlargement at one end thereof, and extending arcuately from said enlargement, said baffle wall having means engaging said slots and enlargements to provide a bayonet type joint for supporting said baffle to dispose its edge portions inwardly spaced from the

walls of said cover member, said dividing member having means at its other end cooperating with the inner wall of said cover member to form a first chamber and a second chamber within said cover member, said holding member having a passage connecting said receptacle with said first chamber, said dividing member having means therein to provide communication between said first chamber and said second chamber, said cover member having an opening in its end to provide communication from the second chamber to the exterior of said cover member whereby when said cover member is disposed in the mouth of a smoker and suction is exerted through said opening in the end of said cover member tobacco smoke will flow through said passage, said first chamber, said communicating means in said dividing member, and said second chamber to the mouth of the smoker, said baffle wall being disposed to divert the smoke from said passage in said holding member at substantially right angles to the longitudinal axis of said passage whereby particles in the smoke impinge against said baffle wall and are removed from the smoke.

3,313,309

WET FILTER-CONTAINING SMOKER'S APPLIANCE

Wensan Wang, 344 Seijo-machi, Setagaya-ku, Tokyo, Japan
Filed Sept. 25, 1964, Ser. No. 399,229
5 Claims. (Cl. 131-265)

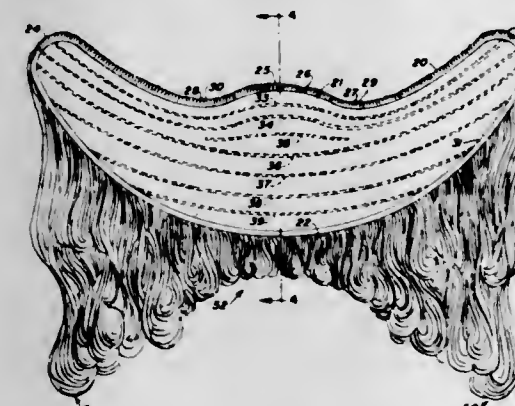


1. In a filter cartridge for tobacco smoke, means forming a tubular chamber adapted to be located between a mouthpiece and a holder for burning tobacco, said chamber having axial inlet and outlet openings adapted to permit smoke to pass therethrough and a plurality of adsorbent and adsorbent abutting planar members arranged in an alternate array, transversely of the longitudinal axis of said chamber, said chamber containing water whereby the adsorbent members will hold some of the water and also maintain the adsorbent members in a wetted condition.

3,313,310

HAIR ASSEMBLY ADAPTABLE FOR USE ON MALE OR FEMALE CADAVERS

Robert E. Sullivan, Jacksonville, Fla., assignor to Sull Hans Hair Pieces, Inc., a corporation of Florida
Filed June 15, 1964, Ser. No. 374,921
5 Claims. (Cl. 132-53)



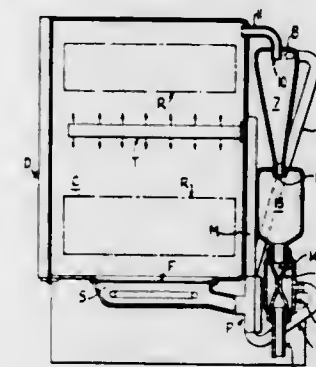
1. A hair assembly for covering the exposed bald portion of the head to simulate the natural hair of a sheared or shaven head of a cadaver comprising an elongated base

having a forward hairline portion and a rearward portion and end portions, said base being adapted to be positioned adjacent the crown of the head with said forward hairline portion located along the natural hairline of the cadaver, said rearward portion terminating forwardly of the back of the head to which said base is applied, said end portions being narrow and terminating adjacent the ears on either side of the head to which said base is applied, at least one row of hand stitched strands of hair extending downwardly from said base along said forward hairline portion, at least one row of hand stitched strands of hair extending upwardly from said base along said forward hairline portion, a plurality of rows of machine stitched strands of hair attached to said base and extending generally longitudinally thereof, said strands of hair adjacent said end portions of said base extending rearwardly of said rearward portion of said base, said strands of hair generally medial of said base between its said end portions terminating rearwardly of said rearward portion of said base and forwardly of said strands of hair adjacent said end portion.

3,313,311

DISHWASHING MACHINE WITH LIQUID FILTERING CYCLONE

Robert John Gilson, High Wycombe, England, assignor to Charles Colston Limited, High Wycombe, England, a corporation of England
Filed Dec. 18, 1964, Ser. No. 419,355
Claims priority, application Great Britain, Dec. 23, 1964, 432/64
8 Claims. (Cl. 134-109)



1. A dishwashing machine comprising means providing a washing chamber; main spray means in said chamber; a pump; means for delivering liquid from said chamber to the inlet of said pump; a cyclone separator having an inlet, a vortex finding tube and a discharge passage; a settling tank; means for delivering a major part of the liquid discharged by said pump under pressure to said main spray means; means for delivering a minor part of the liquid discharged by said pump to said cyclone separator inlet; means for delivering relatively soil free liquid from said vortex finding tube to a secondary spray means in the upper part of said chamber where it will be available for discharge over dishes therein; and means for delivering the relatively soil rich fraction of said liquid from the discharge passage of said separator to said settling tank.

3,313,312

THERMALLY RESPONSIVE ACTUATOR DEVICES

Wilfred W. Weese, Flushing, N.Y., assignor to Harry Swartz, New York, N.Y.

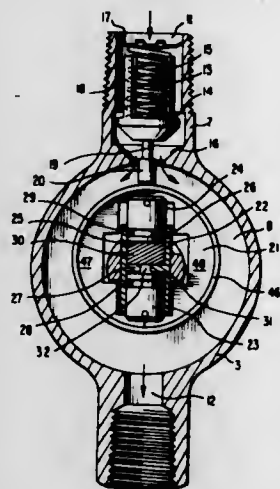
Filed Jan. 24, 1964, Ser. No. 339,974
8 Claims. (Cl. 137-75)

1. A thermal-responsive actuator apparatus comprising: an assembly including, cylinder means, and piston means slidably mounted in said cylinder means;

said cylinder means and piston means defining a first variable size cavity and a second variable size cavity coaxially aligned with said first variable sized cavity, and

restricted passage means interposed axially and providing communication between the outermost axial extremities of said first and second cavities;

a mass of solidified, fusible material supported within said cylinder means in one of said cavities;



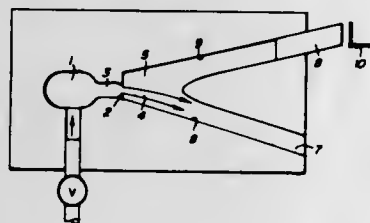
operating means operatively associated with said piston means so as to cause said piston means to compressively engage said mass of fusible material; and mounting means supporting said cylinder means whereby, when said mass has melted and become liquid in response to an ambient temperature rise and the thus-formed liquid has at least in part moved from one of said cavities, through the restricted passage means into the other of said cavities and resolidified therein, the cylinder means and piston means assembly may be reoriented to cause the piston means to compressively engage the resolidified mass in the other of said cavities.

3,313,313

FLUID PRESSURE REFERENCE

Silas Katz, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Army

Filed Apr. 10, 1964, Ser. No. 358,964
6 Claims. (Cl. 137-81.5)



1. Apparatus responsive to increase of fluid input pressure above a predetermined level, comprising:

- a source of varying fluid pressure,
- nozzle means connected to said source for producing at the output of said nozzle means a fluid jet the amplitude of which increases with increase in the pressure of said source,
- a chamber connected to the output of said nozzle means for receiving said fluid jet,
- first and second output channels leading from the end of said chamber remote from said nozzle means,
- the axis of said first and second output channels and of said input nozzle lying substantially in a first plane,

(f) said chamber having a first sidewall that is substantially continuous with one wall of said first output channel and having a second sidewall that is substantially continuous with one wall of said second output channel,

(g) said second sidewall being offset from the axis of said nozzle, the distance from said second sidewall to the axis of said nozzle being greater than the distance from said first sidewall to the axis of said nozzle,

(h) whereby

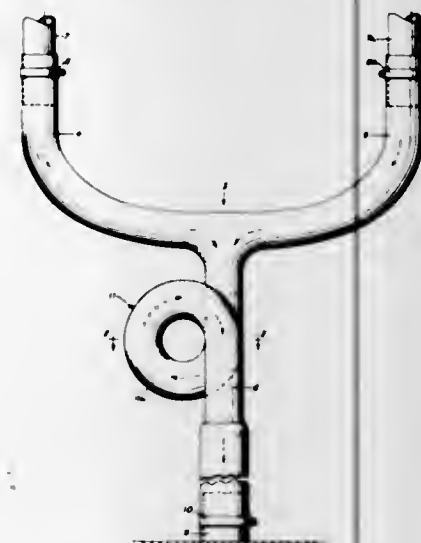
- fluid entering said chamber from said input nozzle attaches itself more readily to said first sidewall than to said second sidewall,
- substantially all fluid entering said chamber from said input nozzle leaves through said first output channel when the pressure of said fluid input is less than a certain fixed critical value,
- a portion of the fluid entering said chamber from said input nozzle leaves through said second output channel only when the pressure of said fluid input is at least equal to said critical value.

3,313,314

FLEXIBLE DRAIN FOR SINKS

Vernon Burke and Jesse E. Byrd, both of Lobelville, Tenn. 37097

Filed May 8, 1964, Ser. No. 366,107
2 Claims. (Cl. 137-247.27)



1. A drain assembly for sinks and the like comprising a drain pipe formed of an integral tube of flexible, resilient material, internally uninterrupted throughout its length, a predetermined portion of said tube between its extremities being bodily, vertically coiled upon itself forming an internally uninterrupted, flexible, resilient trap loop interposed in the line of flow through said tube, providing a continuous helical passageway, and means for connecting respective extremities of said tube to a sink drain and floor drain, whereby solid materials clogging said trap may be dislodged and caused to continue through said drain pipe by squeezing the clogged area of the trap loop.

3,313,315

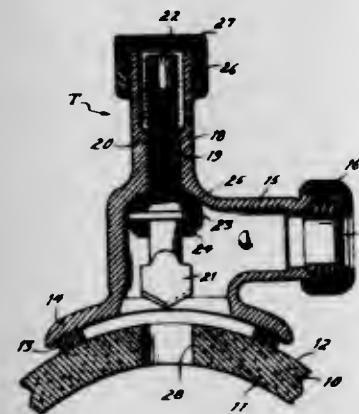
WATER MAIN SERVICE VALVE

Thomas F. Rothwell, Bradford, Pa., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Filed Jan. 7, 1964, Ser. No. 336,159
3 Claims. (Cl. 137-318)

1. A water main tapping and valve fitting comprising a hollow casing having a portion provided with an underside adapted to be fixed in a fluid-tight condition on a pipe

to be tapped and providing a valve chamber having an opening radially inwardly at said underside, said casing having a radially directed internally threaded passage opposite said opening and in communication with said chamber and a laterally directed house extension in direct communication with said chamber between said passage and opening for selectively connecting another pipe thereto; a tapping tool having a threaded shank portion received in said internally threaded passage and having a cutting bit at an inward end, said tapping tool being mounted rotatable in said threaded passage for feeding advancement by the thread thereof axially inwardly against said pipe on which said casing portion is fixed and thereby effect the making of a hole therein to provide communication through said opening between said chamber and said



pipe to be tapped, gasket means on said tool between said threaded shank portion and said cutting bit including a lower inwardly facing resilient gasket circumferentially of said tool and having of a transverse dimension less than that of said opening whereby it can be freely moved through said opening at the underside of the casing and seat directly against a surface of said pipe to be tapped circumferentially of said hole to conform thereto and seal off said hole produced therein, an upper gasket on said tool having a generally upwardly facing seating surface; and said casing having at a lower end of said internally threaded passage a seat engageable by said upper gasket to seal off the threaded passage when said tool is rotated in the opposite direction to withdraw said cutting bit from said hole through the threaded interengagement of said shank portion and said threaded passage.

3,313,316

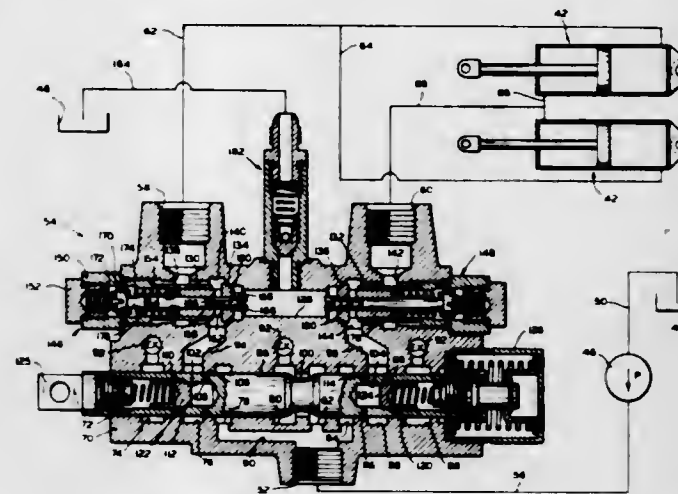
RELIEF AND ANTI-CAVITATION VALVE ASSEMBLY

Henry J. Thomas, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan

Filed June 1, 1964, Ser. No. 371,283
2 Claims. (Cl. 137-596)

1. For use with a valve body having a bore with a shoulder in the wall thereof and fluid passage means intersecting the bore, a dual valve assembly comprising a first valve member having a first bore extending partially therethrough from one end thereof, the said valve member being securable to the valve body so that the open end of the said first bore is disposed in the bore adjacent the shoulder, a second valve member having a second bore extending completely therethrough, the said second valve member being partially telescoped in the said first bore for sliding movement therein and actuatable into fluid sealing abutment with the shoulder, first fluid passage means in the said second valve member for connecting the fluid passage means with the said second bore, second fluid passage means in the said first valve member for connecting the said first bore intermediate the bottom thereof and the said second valve member with the bore, a third valve member slidably disposed in the second bore and extending beyond the ends thereof, the said third valve member having an enlarged end portion larger

than the adjacent end of the said second bore and actuatable into fluid sealing abutment with the said adjacent end and a reduced portion which serves to provide fluid passage means through the said second bore between the said first fluid passage means and the said adjacent end of the said second bore, a spring retaining member fixed to the said third valve member adjacent the end opposite the said enlarged end portion, spring means



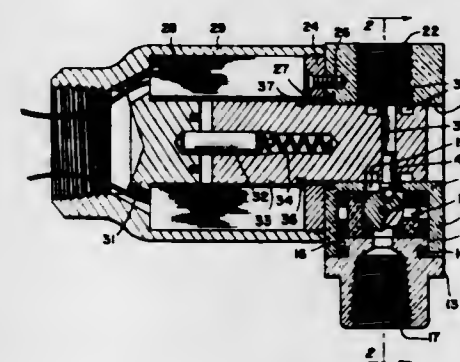
disposed between the said retainer member and the said second valve member for biasing the said enlarged end portion of the said third valve member and the said adjacent end of the said second bore into fluid sealing abutment with each other, and spring means disposed between the said retainer member and the said bottom of the said first bore for biasing the said second valve member into fluid sealing abutment with the shoulder.

3,313,317

FLUID VALVES

Kenneth C. Moser, 3516 Springdale Ave., Dayton, Ohio 45419

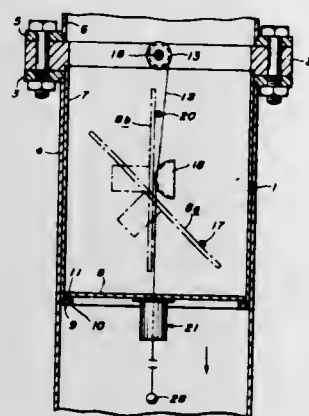
Filed Mar. 10, 1964, Ser. No. 350,722
6 Claims. (Cl. 137-625.46)



1. In a valve of the type comprising a body having an inlet port, an exhaust port and an intermediate port, a cartridge sealed in the body having a transverse bore communicating with the intermediate port, and valve means comprising a spherical seat in the cartridge and a sphere diametrically pivotally mounted in said seat having a truncated face adapted on rocking of the sphere on its pivot axis to establish communication of said intermediate port alternatively with said inlet and exhaust ports and having a cylindrical opening normal to said pivot axis, an operating pin having an inner spherical end received in said cylindrical opening in the sphere and having an outer cylindrical end portion, and an operator element movably mounted on the valve body close to the sphere and having a cylindrical opening slidably receiving the outer end portion of the pin for reciprocation of its cylindrical portion therein, whereby a relatively small movement of the operator element produces relatively large angular

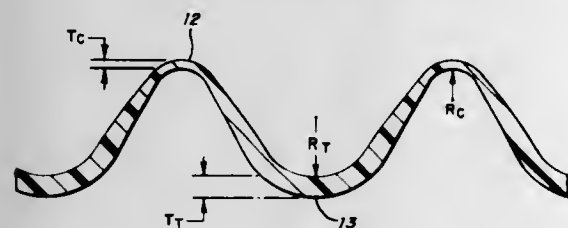
movement of the truncated face of the sphere for establishing said alternative communications of the intermediate port.

3,313,318
SEQUENTIALLY OPERATED PLURAL VALVES FOR VACUUM CASTING APPARATUS
Richard E. Lyman, Homewood, Ill., assignor to United States Steel Corporation, a corporation of Delaware
Filed Jan. 22, 1964, Ser. No. 339,437
7 Claims. (Cl. 137-630.15)



1. A valve comprising a valve seat having an annular seating surface facing axially outwardly therefrom, a circular valve plate adapted to occupy a closed position with a peripheral edge portion thereof engaged with said seating surface, a pilot valve means on said plate comprising a cylinder having one end secured to said plate and projecting axially therefrom in a direction opposite that in which said seating surface faces, said plate having an opening therein aligned with said cylinder, a liner about the inner surface of said cylinder having V-shaped notches therein with the small ends of said notches arranged adjacent the other end of said cylinder, an annular pilot valve seat at the said other end of said cylinder in a position spaced axially beyond the said small ends of said notches, and a pilot valve plate movable axially in said cylinder and adapted to occupy a closed position at the said other end of said cylinder engaged with said annular pilot valve seat, and valve operating means operable initially to move said pilot valve plate axially toward said circular valve plate to disengage it from said annular valve seat and over said notches to provide restricted valve openings of gradually increasing dimensions between opposite sides of said circular valve plate, and thereafter to move said circular valve plate axially to move it out of seating engagement with said annular seating surface.

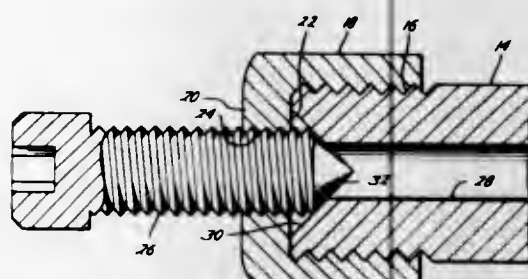
3,313,319
FLEXIBLE HOSE
Carroll H. Osborn, Waynesville, and Russell E. Fultz, Lake Junaluska, N.C., assignors to Dayco Corporation, Dayton, Ohio, a corporation of Ohio
Filed Aug. 25, 1964, Ser. No. 391,857
1 Claim. (Cl. 138-121)



A flexible hose composed of a single plastic member having a wall defining convolutions with alternate crests and troughs, said wall being approximately one-third to one-half as thick at said crests as at said troughs, said convolutions having a depth which is less than 11% of the

internal diameter of said hose, and the internal radius of said troughs being approximately twice that of said crests.

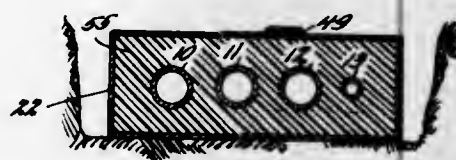
3,313,320
SAFETY DEVICE
Claremont F. Clure, P.O. Box 36425, Houston, Tex. 77036
Filed Feb. 28, 1964, Ser. No. 348,035
1 Claim. (Cl. 138-49)



Apparatus for positively sealing a male-threaded outlet of an indicator cock, said outlet being beveled at its opening and attached opposite thereof to a cylinder, which comprises:

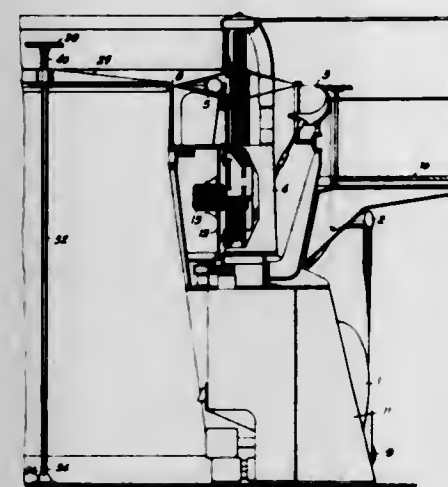
- a cap-shaped member, internally thereof having first straight female threads adapted to engage the threads of said outlet,
- an axially extending aperture through said cap provided with second straight female threads concentric with said first female threads, but of a lesser diameter,
- a shoulder between the aperture and the larger threads adapted to abut the end of the outlet when the cap is screwed onto the outlet,
- a cap screw engaged in said aperture threads, and
- a conical end of no greater diameter than that of the threaded portion of the screw positioned on said cap screw pointing toward said outlet and said conical end being correlative in configuration to said beveled portion of said outlet, thereby being adapted to close said outlet upon screwing the cap screw into said aperture threads.

3,313,321
INSULATED UNDERGROUND CONDUIT
James P. Keller, Springfield, Va., assignor to Rensulate Corporation, Silver Spring, Md., a corporation of Maryland
Filed May 10, 1963, Ser. No. 279,492
3 Claims. (Cl. 138-105)



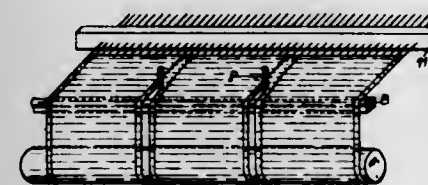
1. An underground insulated pipe structure in a trench therefor comprising at least one pipeline containing runs of straight piping and fittings and a monolithic sheath of weight-supporting stiffly resilient unicellular plastic foam material sufficiently resilient to withstand thermal expansions and contractions in said pipeline by virtue of concomitant contractions and expansions in the individual cell volumes of said foam, said sheath encompassing said pipeline and in direct intimate contact with substantially the entire exterior surface of said pipeline, the outside contours of said sheath being in general conformance with those of said trench rather than those of said pipeline.

3,313,322
MEANS FOR BRAKING AND BLOCKING THE FABRIC IN CIRCULAR LOOMS
Armand Malchahr, Herstal, Belgium, assignor, by mesne assignments, to Peltzer & Fils S.A., societe anonyme, Verviers, Belgium, a company of Belgium
Filed Dec. 28, 1964, Ser. No. 421,516
Claims priority, application France, Dec. 30, 1963, 958,818, Patent 1,388,874
4 Claims. (Cl. 139-13)



1. In a circular loom, the device which comprises means for braking and blocking the fabric, said means comprising at least one male element and a weaving ring constituting at least one female element, said elements cooperating to define deflectors forming a passage for the fabric, said male and female elements being adjacent to said fabric, said male element being inside said weaving ring, and means for varying the pressure exerted by the male element on the fabric, wherein the upper end of the weaving ring is provided successively, working inwards from the outside of the loom, with a rounded edge, a horizontal table, an annular groove, a shoulder and a chamfered edge, said male element being adjustable and designed to cap said weaving ring, said male element also having a lower horizontal face formed with a rib designed to enter the groove of the female element.

3,313,323
AUTOMATIC CONTROL DEVICES FOR CONTROLLING THE OPERATION OF SEPARATING THERMO-FUSIBLE FABRICS
François Calémard, 15 Rue Buffon, Saint-Etienne, Loire, France
Filed Nov. 30, 1964, Ser. No. 414,674
Claims priority, application France, Dec. 5, 1963, 8,814, Patent 1,376,400; Feb. 19, 1964, 8,872
14 Claims. (Cl. 139-291)

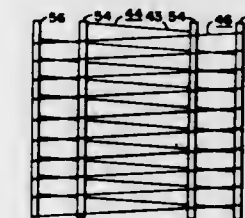


1. A device for controlling the operation of separating thermo-fusible fabrics and adapted to be mounted on a loom having a sley, said device comprising:

- a pin arranged to be heated;
- means for heating said pin;
- a member arranged to receive said pin;
- means for mounting said pin in said member;

- means for adjustably mounting for rotation said member on the loom in such a manner that said pin is movable between an operative position, wherein said pin is capable of separating fabric, and an inoperative position;
- resilient means arranged to urge said pin into its operative position;
- a control arm having a bearing surface adapted to engage in operation the sley of the loom; and
- means for adjustably mounting said control arm in said member whereby pivotal movement of said control arm by engagement of said bearing surface by the sley causes said pin to move between its operative and inoperative positions.

3,313,324
ELECTRON DEVICE AND METHOD OF MANUFACTURE
Gerald J. Dries, Arkport, and Richard L. Giovanoni, Bath, N.Y., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 26, 1964, Ser. No. 370,163
8 Claims. (Cl. 140-71.5)

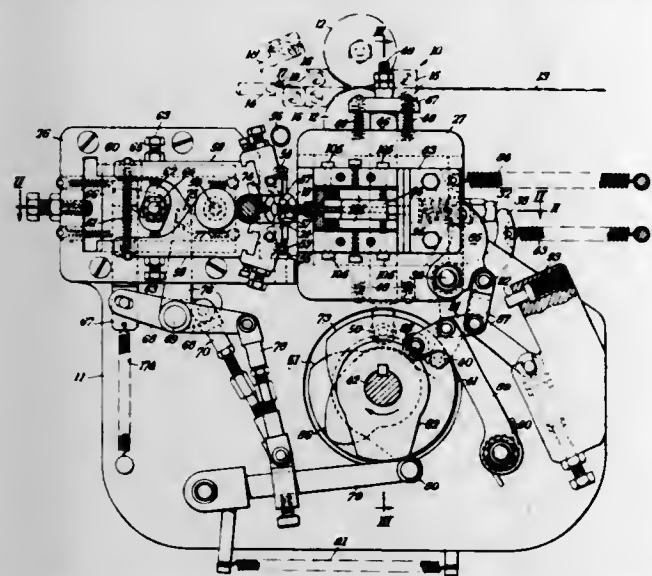


1. The method of manufacturing and assembling a control grid assembly having at least an inner and outer grid electrode, the method comprising the steps of winding the inner grid electrode upon a lathe by simultaneously placing a groove in the side rods at a first angle measured with respect to a normal to the side rods, and placing the grid wire into said groove, winding the outer grid electrode upon a lathe by simultaneously placing a groove in the side rods at a second angle measured with respect to a normal to the side rods, and placing the grid wire into the groove, said first and second angles totaling approximately 6°, cutting said grids to given lengths, assembling said inner and outer grid electrodes into unitary arrangement, and the step of aligning adjacent grid electrodes by a single adjustment to the outer grid electrode.

3,313,325
WIRE COILING MACHINE
Alfred Charles Wells, Arkley, Barnet, England, assignor to A. Wells & Company Limited, London, England, a British company
Filed June 25, 1964, Ser. No. 377,937
Claims priority, application Great Britain, June 28, 1963, 25,873/63
7 Claims. (Cl. 140-103)

1. A loop forming mechanism for use with a machine for making helically coiled wire springs, said mechanism comprising means for grasping springs and transferring them in succession from a coiling station, at which the springs are coiled, to a looping station, holding jaws for engaging the ends of a spring transferred to the looping station by the transfer means, means for closing the jaws on the spring and afterwards opening them, dies at the looping station for embracing the barrel of the spring held in the jaws, means for closing the dies and afterwards opening them, blades at one side of the spring which are engageable with the end coils of the spring so held, means for advancing the blades to displace the extreme ends of said end coils to positions situated within

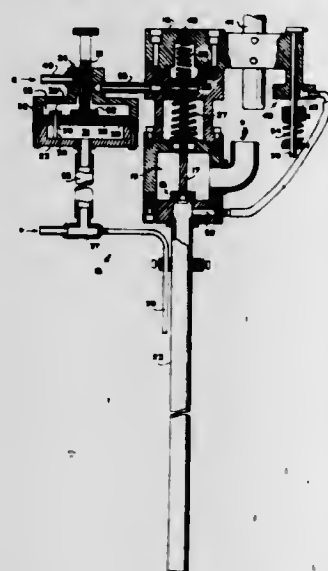
the internal diameter of the barrel, forming knives at the other side of the spring and means for advancing the forming knives after advance of said blades to lift the



end coils and displace them into recesses in the jaws to form loops extending outwardly from the ends of the barrel of the spring.

3,313,326
FILLING APPARATUS FOR DISPENSING MEASURED AMOUNTS OF LIQUID INTO RIGID OR NON-RIGID CONTAINERS

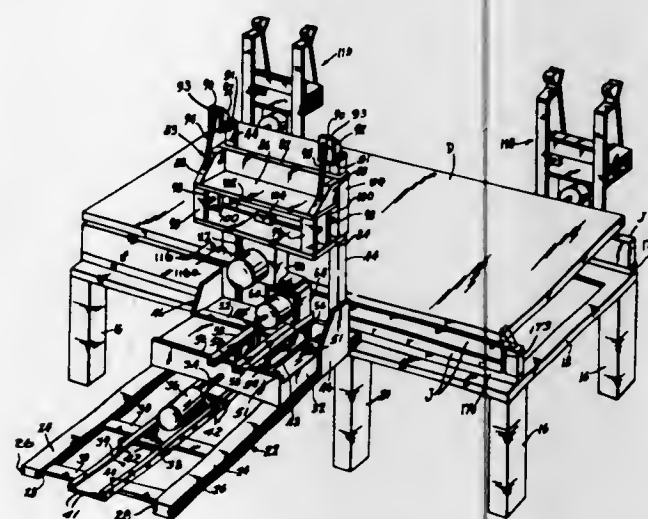
Ernest Pellerino, 325 Bleecker St.,
New York, N.Y. 10014
Filed Nov. 2, 1964, Ser. No. 408,149
17 Claims. (Cl. 141-40)



1. In a filling apparatus of the character described, the combination of a normally closed first valve structure having an intake port for connection to a supply of liquid with which containers are to be filled and a discharge port whereby liquid entering the intake port is free when said valve is open to flow down through said nozzle into a container which is constantly communicative with the atmosphere, a tube extending along and mounted to move with said nozzle, to extend into a container, a cylinder having a piston movably fitted therein; said piston having an opening therethrough making communicative a first space in said cylinder, which is the space to one side of said piston, with the second space which is the space to the other side of said piston in said cylinder; said piston being normally at a position in said cylinder where it is only free for movement therein to increase said first space, a second normally open valve means controlling said opening in said piston, means to close said second valve

means, made operative upon movement of said piston to increase said first space; said second space being communicative with the atmosphere; said first space having an intake port; said intake port to said first space and the upper end of said tube being connected to a supply of vacuum, means actuated by movement of said piston to open said first valve when said piston moves to increase said first space, means for moving said piston to increase said first space; the strength of said vacuum supply being insufficient to move said piston unless the bottom end of said tube is sealed; said sealing occurring when the level of the liquid in the container is sufficiently high to close the bottom end of said tube, means to close the first valve and means to open the second valve, upon the return of said piston to its normal rest position within the cylinder and means for relatively moving said first valve structure and a container to be filled, so the bottom end of said tube is at a predetermined height from the bottom of the container and for moving them apart so the container can be removed and replaced with the next container to be filled.

3,313,327
APPARATUS TO WORK SIMULTANEOUSLY ON A DOOR AND ITS FRAME JAMBS
Milton Goldstein, 26 Bay St., Long Beach, N.Y. 11561
Filed Mar. 7, 1966, Ser. No. 532,281
1 Claim. (Cl. 144-2)

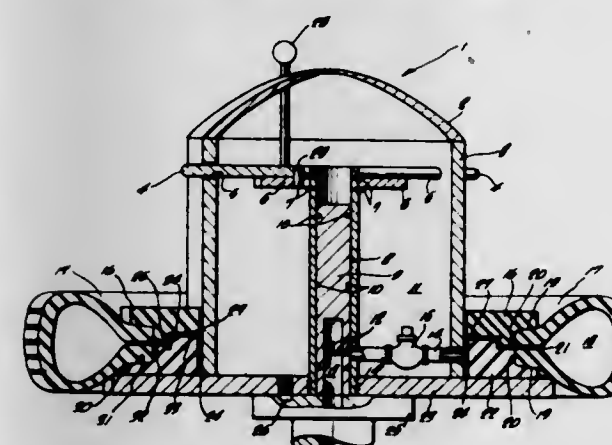


Apparatus to enable producing relatively simultaneously in a door and the jambs for a frame for it the required recesses and holes for receiving the respective door hanging and locking hardware in their respectively required locations, to allow assembling the door in its frame merely by fitting said hardware in place and securing the necessary parts of the frame and the hardware, which apparatus comprises

- support means for releasably supporting a door in a fixed position;
- means for releasably supporting a hinge-receiving jamb on one long edge thereof and adjacent a long edge of the door and with the width of the jamb positioned perpendicular to the door and aligned with said adjacent long edge thereof;
- a plurality of hinge leaf recess routing mechanisms each separately respectively enabling routing a pair of complementary hinge leaf recesses one of each pair of said recesses to be routed in said aligned long edge of the door and the other recess of each pair to be routed in the aligned outer surface of said adjacent jamb;
- means for boring a lock-hole in its required location in said door, said boring means being so located to enable it to carry out said boring at said location in said door;

door lock bolt hole boring means for boring through the edge of said door adjacent said door lock-hole a door lock bolt hole to communicate with said door lock-hole, said door lock bolt boring means being so located to enable it to carry out said boring operation at said location in said edge of the door; and means for releasably supporting a lock-side jamb; and strike-plate and bolt receiving hole boring means to enable boring in a said lockside jamb a strike-plate and bolt-receiving hole, said means being so located to enable it to carry out said boring operation at a location in said lock-side jamb to enable it to receive the locking end of the door lock bolt when said door and jamb are assembled in their frame.

3,313,328
MULTIPURPOSE MOUNTING WHEEL
Maurice Clapp, 325 E. Cypress Ave.,
Redlands, Calif. 92373
Filed Apr. 7, 1966, Ser. No. 540,929
10 Claims. (Cl. 144-288)



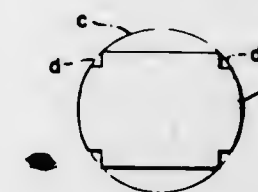
1. A multipurpose mounting wheel for mounting, at different times, different sized tires having a casing and two beads, each bead having a sole, a heel and a toe; said mounting wheel comprising:

- (a) a base;
- (b) a cylindrical drum mounted on said base having a relatively large diameter;
- (c) a first annular bead ring mounted on said base around said drum having an outer periphery defining at least two steps of different diameters progressing from the largest diameter step upwardly and inwardly towards said hub, each step sized to at least substantially conform to the sole and heel of one bead of a tire;
- (d) a second annular bead ring being capable of disposition in airtight relation to the outer cylindrical surface of said drum and having one step complementing one of the steps in said first annular ring such that it conforms to the sole and heel of the second bead of a tire having its first bead's sole and heel in the complementary step of said first annular ring, said second annular ring being shaped such that it is capable of forcing the toes of the beads of the tire together; and
- (e) means for introducing air under pressure into said casing.

3,313,329
PRODUCTION OF STUD LUMBER FROM LOGS OF SMALL DIAMETER
Leonard A. Mitten, Vancouver, British Columbia, Canada,
assignor to Ernest E. Runnion, Shelton, Wash.
Filed Nov. 10, 1965, Ser. No. 507,111
6 Claims. (Cl. 144-312)

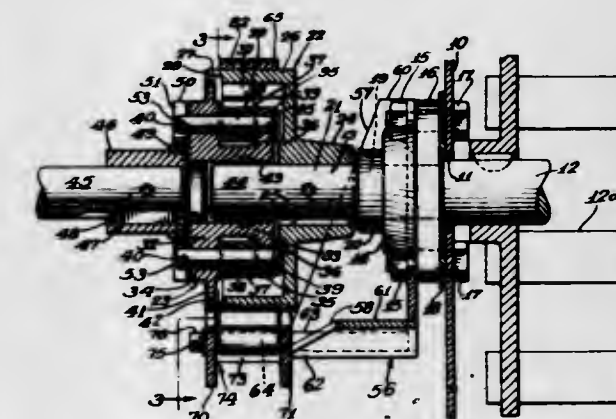
1. The method of profiling a log to produce a cant which is rectangular in cross-section, comprising conveying the log along a linear travel path, in an early stage

of the log's travel cutting in the form of pulp chips from both the top and the bottom of the log's periphery a respective portion which includes in each instance a segment and two notches, the chords of the segmental cuts forming two of the cant's opposite flats and each pair of notches being let in from opposite ends of the related flat and being formed so that an inner wall of each notch is located normal to the plane of the flat and co-planar with the inner wall of one of the notches of the opposite



flat, employing said flats and the inner walls of the notches as bearing surfaces to guide the log in following stages of the log's conveyed travel, and in one of said guided following stages cutting from both sides of the log's periphery, in the form of pulp chips, segmental portions the chords of which latter cuts occupy planes approximately coinciding with the planes occupied by said inner walls of the notches and form the other two flats of the rectangular cant.

3,313,330
CUTTER HEAD WITH SELF-CLEANING CLUTCH AND BRAKE
Manfred L. Hoch, Lockport, Ill., and James Corwith, Jr., Bettendorf, Iowa, assignors to International Harvester Company, a corporation of Delaware
Filed Feb. 3, 1965, Ser. No. 429,989
3 Claims. (Cl. 146-117)

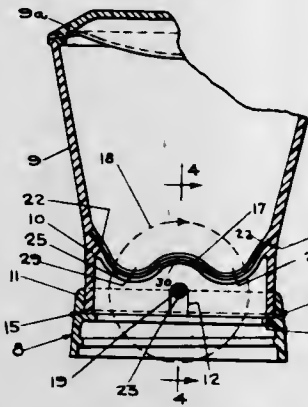


3. In a forage harvester having a cutter head, means for driving the head including an overrunning clutch having a relatively thin generally cylindrical housing portion constrained for rotation with the head, and heat generating brake means including a brake band frictionally engageable with the housing along a substantial external peripheral extent thereof for stopping the head and coincidentally heating the housing through frictional engagement therewith said housing being of sufficient thinness to cause said brake means when engaged to heat the interior thereof to vaporize condensation and foreign material thereon and free abrasive accretions accidentally entered into the housing, said overrunning clutch including pawl means and teeth within the housing, said pawl means adapted to jar the accretion within the housing loose therefrom coincidentally with the application of said brake band heating said housing whereby causing said accretions to loosen from the housing, and said housing having an opening at one end thereof oriented to gravitationally discharge said accretions therefrom.

3,313,331

NUT MEAT CHOPPER

Michael J. Di Pierro, Shrewsbury, and J. Richard Lawrence, Worcester, Mass., and Robert E. Pulver, Rockford, Ill., assignors to The Washburn Company, Worcester, Mass., a corporation of Massachusetts
Filed June 29, 1964, Ser. No. 378,820
8 Claims. (Cl. 146—123)



1. In a material chopping device of the character described comprising a hopper, a slotted plate across the lower portion of said hopper on which the material to be chopped is supported, and a rotary cutter having projections all disposed substantially in a common plane through the axis of rotation movable through the slots in said plate to chop the material between said plate and projections, the device being adapted to be mounted in fixed relation to the top of a container, whereby material placed in said hopper and chopped will drop into said container and may be dispensed from said container through the slotted plate when the container is inverted and the rotary cutter is turned, the improvement which consists in providing the hopper of circular form and molded of plastic material, the slotted plate being disposed inside the hopper and being also of circular form but being undulated to provide two parallel material retaining troughs transversely of said plate spaced on opposite sides of the center of said plate and hopper to facilitate chopping of the material with the rotary cutter turned in either direction, one trough being used in one direction of rotation of the cutter and the other trough in the opposite direction of rotation, said plate having its edges embedded in said plastic material so that it serves to seal the joint between the edges of said plate and said hopper, the undulations positively preventing turning of said circular plate relative to said circular hopper, the slotted plate in the inverted position of the container and chopping device defining another material retaining trough diametrically thereof between the first mentioned two material retaining troughs to facilitate further chopping of the material and also to regulate the discharge of the material through the hopper with the rotary cutter turned in either direction.

3,313,332

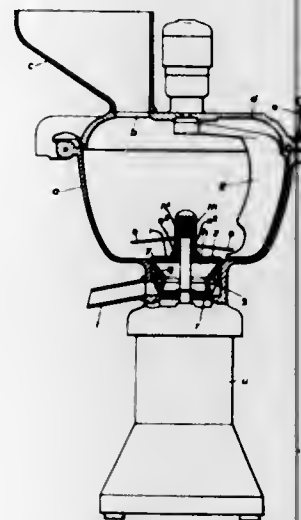
TWO STAGE COMMUNUTOR

Siegfried Stephan and Fritz Otto, Hamelin (Weser), Germany, assignors to Stephan u. Sohne, Hamelin (Weser), Germany
Continuation of application Ser. No. 49,278, Aug. 12, 1960. This application Apr. 7, 1964, Ser. No. 359,543
Claims priority, application Germany, Aug. 12, 1959, St 15,455

8 Claims. (Cl. 146—192)

3. In a device for comminuting meat or the like, in combination, a stationary container; pre-comminuting means located in said container; fine comminuting means located in said container subsequent to said pre-comminuting means in the direction of flow of material for receiving material from said pre-comminuting means and for fine comminuting the received material; an upper plate extend-

ing across the container between said pre-comminuting means and fine comminuting means for separating said pre-comminuting means and fine comminuting means from each other, said plate being formed with an opening passing therethrough; means cooperating with said pre-comminuting means for recirculating and mixing the material during treatment thereof in said pre-comminuting means; and a rotary closure plate located beneath and directly



next to said upper plate and having in one angular position a portion aligned with the opening of said upper plate to close said opening thereof and in another angular position said closure plate having said portion thereof out of alignment with and uncovering said opening of said upper plate so that the latter may be optionally closed or opened to cut off or provide communication between said pre-comminuting and fine comminuting means.

3,313,333

COLLAPSIBLE PLASTIC SHEET CONTAINER

Frank E. Lord, Beaver, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed May 3, 1965, Ser. No. 452,613
3 Claims. (Cl. 150—5)



1. A container comprising: a single rectangular sheet of flexible plastic material, fastening means disposed on opposite sides of said sheet for engagement with each other whereby a cylindrical body is formed from said sheet, a pair of locking strips near the top of said sheet comprising a continuous locking strip and a discontinuous locking strip comprised of a plurality of strips, juxtaposed to and spaced a distance apart from said continuous locking strip, said discontinuous locking strip

positioned between the top end of said sheet and said continuous locking strip, a second pair of locking strips near the bottom of said sheet comprising a continuous locking strip and a discontinuous locking strip comprised of a plurality of strips juxtaposed to and spaced a distance apart from said continuous locking strip, said plurality of strips extending a short distance beyond the bottom edge of said sheet, and discs slidably mounted between each of said parts of locking strips, the diameter of said discs corresponding to the interior diameter of said cylindrical body, the distance between said continuous and said discontinuous locking strips of each of said pairs corresponding to the thickness of said discs, said discs having indentations in their perimeters whereby said discs are inserted past said discontinuous locking strip of each of said pairs and turned to position the unindented portion of the perimeter of said discs between said continuous locking strips and sections of said discontinuous locking strips to secure said discs and form a top and bottom to said container.

3,313,334

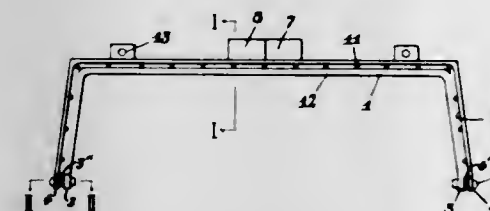
FRAME FOR FABRIC MATERIAL HANDBAGS

Takashi Naruke, Tokyo, Japan, assignor to Naruke Sangyo Co., Ltd., Sumida-ku, Tokyo, Japan, a Japanese company

Filed Sept. 22, 1964, Ser. No. 398,170

Claims priority, application Japan, Dec. 30, 1963, 38/71,382

6 Claims. (Cl. 150—29)



1. A frame for fabric material handbags comprising two frame members having adjacent ends forming joints, each joint comprising a washer part on one frame member, a corresponding washer part on the other frame member, a hinge pin extending through said washer parts pivotally connecting said frame members, a first raised portion on said one frame member inward of said washer part, a second raised portion on said other frame member inward of said corresponding washer part, said first raised portion pivotally complementary to said corresponding washer part and said second raised portion pivotally complementary to said washer part, and a spring coiled around said pin between said washer part and said corresponding washer part, said spring being capable of absorbing substantially all the stresses and the impingement on said joint.

3,313,335

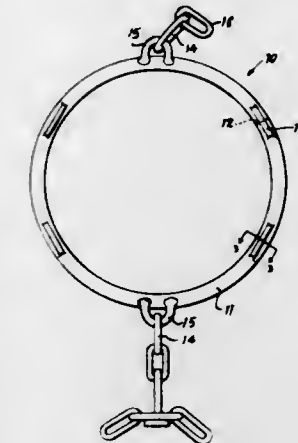
TIRE CHAINS

Roger L. Gower, P.O. Box 65, Canaan, Maine 04924

Filed June 4, 1965, Ser. No. 461,350

1 Claim. (Cl. 152—229)

In an automobile tire chain, a ring made from a rod and bent upon itself and welded together, a plurality of road gripping members being welded to the latter, one of said members being welded over the spot where said rod is welded together, thereby forming a substantially unbreakable joint and a half-size link welded horizontally



of a tire, causing, in operation, said half-size link to be in substantial alignment with said side wall chain of the tire.

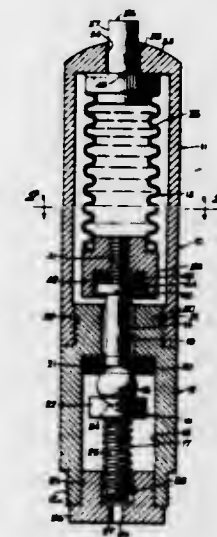
3,313,336

THERMAL-CONTROLLED SAFETY GAS VALVE

William De Palma, 15 Hildreth Place, Yonkers, N.Y. 10704

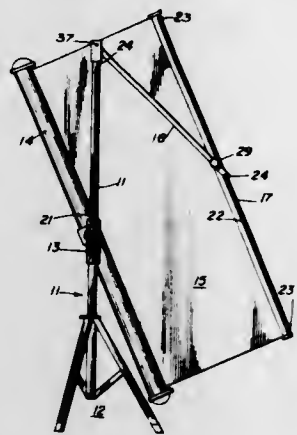
Filed July 28, 1965, Ser. No. 475,424

5 Claims. (Cl. 158—140)



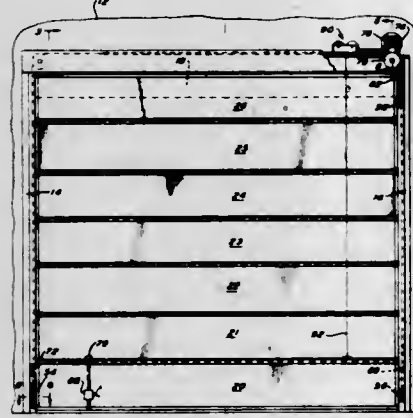
1. A thermally-controlled safety gas valve comprising, in combination, an elongated housing member having a jet opening at one end and means for connection to a source of gas at the other end, said housing member having an interior opening for the passage of gas through said housing member to said jet opening, a valve in said interior opening and movable between closed and open positions with respect to the passage of gas through said housing member, and thermally-responsive means controlled by heat given off by an ignited stream of gas passing through said jet opening for holding said valve in open position, said thermally-responsive means comprising a cylindrical bellows in said housing member containing a material having a high coefficient of heat expansion, said bellows having secured to one end a head member formed with a tip portion extending through said jet opening, and means including said bellows for moving said valve, when in said closed position, to said open position upon pushing in upon said tip portion.

3,313,337
PROJECTION SCREEN CONSTRUCTION
 Joseph Bernat, South Bend, Ind., assignor to Da-Lite Screen Company, Inc., Warsaw, Ind., a corporation of Illinois
 Filed Aug. 12, 1965, Ser. No. 479,234
 6 Claims. (Cl. 160-24)



1. A portable projection screen comprising, a supporting standard, a screen-housing pivotally connected to the standard and enclosing a spring-retracted screen having a slat fixed along its free edge and dimensioned for normal peripheral disposition exteriorly along the housing when the screen is coiled in non-use position within the housing, and an arm pivotally connected to the screen slat and to the standard to effect the coordinated pulling of the screen out of the housing and the swinging of the housing on its standard-pivot from a horizontal to a vertical disposition relative to the standard as the screen is extended into its vertical projection position and the arm shifts into vertical alignment with the standard.

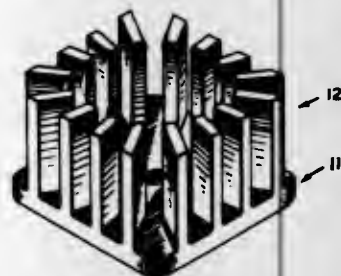
3,313,338
DOOR STRUCTURE
 William H. Knight, Flourtown, Pa., assignor to Panel-Lift Door Corp., Philadelphia, Pa., a corporation of Pennsylvania
 Filed Oct. 7, 1964, Ser. No. 402,211
 2 Claims. (Cl. 160-189)



1. A door structure comprising a plurality of laterally disposed panels in substantially parallel planes, side frame members having a plurality of spaced channels of progressively increasing length, each panel being disposed in a separate one of said channels, whereby each panel is displaceable along its respective channel by an amount determined by the length of the channel, engagement means on each panel for engaging the next adjacent panel when a displaced panel has been moved to a position substantially equidistant with said adjacent panels from a fixed end panel, means for reciprocally displacing the panels successively beginning with the end panel opposite said fixed panel, said displacing means including an endless flexible member having one portion

coupled to one side of said opposite end panel and a second portion coupled to the other side of said opposite end panel, motor means for driving said endless member, said motor means being mechanically coupled to said endless member to drive it, brake means for arresting the displacement of said panels at any position, said brake means including a hollow flexible member extending along the end of said end panel, switch means responsive to the distortion of said flexible member for closing an electric circuit, said switch being connected in circuit relation with a solenoid having a mechanical actuator, said mechanical actuator being connected to a pivotally mounted lever, said lever being connected for rotating a threaded member threadably supported by a bracket, a brake disc connected to and rotatable with said motor means, said threaded member being mounted with one of its ends adjacent said disc, whereby rotation of said threaded member by said lever causes said one end to be longitudinally displaced to frictionally engage said disc.

3,313,339
HEAT TRANSFER APPARATUS
 Thomas D. Coe, Winchester, Mass., assignor to Wakefield Engineering Company, Wakefield, Mass., a corporation of Massachusetts
 Filed Mar. 15, 1965, Ser. No. 439,753
 4 Claims. (Cl. 165-80)

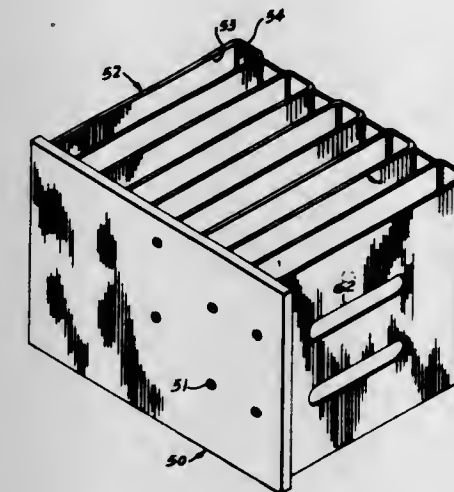


1. Apparatus for cooling a semiconductor device comprising, a conducting plate of material of high thermal conductivity, a plurality of fins of material of high thermal conductivity perpendicular to and in good thermal contact with said plate, each fin extending from the perimeter of said plate with the plane of each fin essentially in a radial plane emanating from the center of said plate, the edges of said fins inside of said perimeter coacting with the central portion of said plate to define a volume for supporting a semiconductor device to be cooled with said fins defining radial passages extending from said volume to the outside of said perimeter along the entire perimeter length with each radial passage from said volume to said perimeter embraced along the entire passage length by an embracing pair of said fins, the separation between adjacent fins being less than the height of each fin.

3,313,340
HEAT EXCHANGER
 Lester Dublin, Westchester, N.Y., assignor to Lambda Electronics Corporation, Huntington, N.Y., a corporation of New York
 Filed Mar. 23, 1965, Ser. No. 442,146
 6 Claims. (Cl. 165-80)

1. A multi-positional heat exchanger for electronic equipment having heat generating electronic components comprising a metallic base member directly thermally coupled to said heat generating electronic components, a plurality of parallel spaced apart heat conductive plate members orthogonally depending from said base member

in thermal engagement therewith, each of said plate members having at least one elongated aperture extending perpendicularly away from said base member, said openings



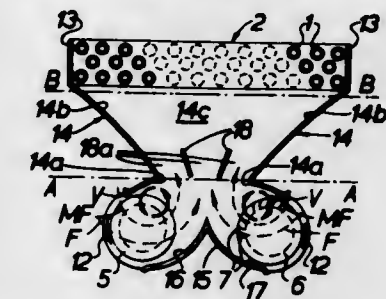
being aligned with one another to provide air communication between said plate-members whereby an upward passageway is provided through said plate members when said members are horizontally disposed.

3,313,341
HEAT EXCHANGER
 Heinz List, Pratteln, Switzerland, assignor to Buss AG, Basel, Switzerland
 Filed Feb. 15, 1965, Ser. No. 432,636
 Claims priority, application Switzerland, Feb. 22, 1964, 2,245/64
 3 Claims. (Cl. 165-92)



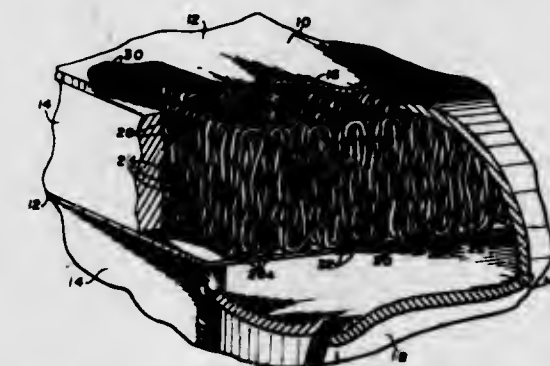
1. A heat exchanger for the evaporation, crystallisation and drying of products in powder and in paste form, said heat exchanger comprising a horizontal mounted double walled cylindrical housing, the double walls of said housing defining an interior space which is fed with a heated fluid adapted to maintain the contents being dried within said housing at a uniform temperature, an inlet duct at the upper surface of said housing for supply of product into said housing, an outlet duct at the bottom of said housing to discharge the product after drying, a rotatable tubular internally heated shaft lying along the longitudinal axis within said housing; longitudinally spaced apart discs each comprising heated sector-shaped members which are located in a plane at right angles to the axis of rotation of said shaft; stirring members corresponding in location to said discs which project radially inwardly from and are secured to the interior wall of said housing, said tubular shaft, discs and sectors creating a rotating and oscillating movement of concentrated product entrapped between the surfaces of the discs and the surfaces of the sectors, whereby the sector-shape of said members and the shape of said discs causes a continuous self-cleaning action of these members during continuous agitation of the material being dried under the influence of internal and external heat.

3,313,342
BLOWERS
 Nikolaus Laing, Hofener Weg 35, Aldingen, near Stuttgart, Germany
 Filed Feb. 4, 1966, Ser. No. 525,040
 Claims priority, application Great Britain, Apr. 19, 1962, 15,401/62
 8 Claims. (Cl. 165-124)



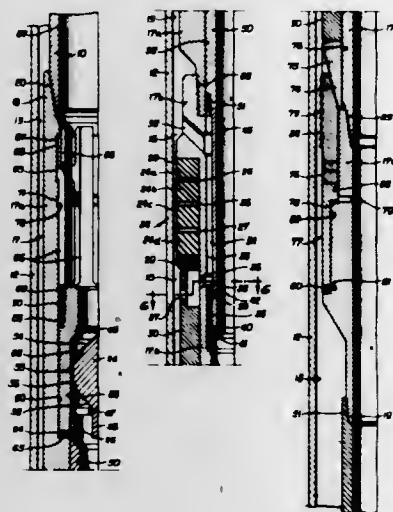
1. A blower comprising a bladed rotor, guide means providing an inlet and outlet for said blower and co-operating with said rotor in operation to provide a flow of air through said inlet and outlet, an outwardly flared diffuser having a narrow neck portion adjacent one end joining with the outlet of said blower and having a diffuser outlet at the opposite end thereof, and at least one vane positioned within said diffuser in the neck portion thereof to divide flow therein and to form diverging diffuser portions on either side of the vane and wherein the vane extends only along a minor portion of the length of the diffuser.

3,313,343
HEAT EXCHANGE APPARATUS
 Chester D. Ware and Albert O. Tadewald, La Crosse, Wis., assignors to The Trane Company, La Crosse, Wis., a corporation of Wisconsin
 Filed Mar. 26, 1964, Ser. No. 355,036
 8 Claims. (Cl. 165-166)



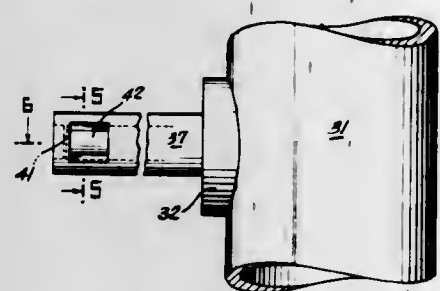
1. A heat exchanger comprising two fluid confining planar plates disposed in generally parallel spaced relationship defining a fluid passage therebetween; and a corrugated screen defining an elongated row of elongated fins disposed in said fluid passage, said elongated fins being arranged in juxtaposed generally parallel relationship, each of said fins extending between said plates and having its ends disposed in heat conductive relationship with said plates, said row of fins being undulated in a direction parallel to said plates normal to the general axis of said row; and a plurality of elongated fin positioning members disposed in spaced generally parallel relationship, each of said elongated positioning members extending between said plates supportingly engaging said fins and the general axis thereof defining an acute angle with said plates, said elongated positioning members crossing said elongated fins between the ends thereof at a substantial oblique angle as measured in a plane passing through the crossing substantially parallel to the general axes of the crossing fin and the fin positioning member, and substantially spaced one from the other a greater distance relative to the individual spacing of said first mentioned elongated fins.

sides of the packer and outside the string and also to decrease the upward flow of a second stream of production fluid in the string all in response to a change in pressure transmission by fluid within the string, said means including interconnected valve and piston structure movable vertically within the string and having a first surface to receive application of fluid pressure exerted upwardly by production fluid and a second surface exposed to receive application of control fluid pressure confined within and exerted downwardly solely via the interior of the string.



16. In the method of controlling production fluid flow in a well into which a string of production tubing is run, the annulus between the string and a well bore being packed off, the steps that include flowing a first stream of production fluid between well zones at upper and lower sides of the packer and outside the string, flowing a second stream of production fluid vertically in the string, and simultaneously changing flow of said streams by changing the pressure of control fluid transmitted downwardly in the well solely within the string.

3,313,351
PREPERFORATION APPARATUS FOR WELLS
Richard H. Widmyer, Houston, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed July 1, 1964, Ser. No. 379,660
4 Claims. (Cl. 166-100)



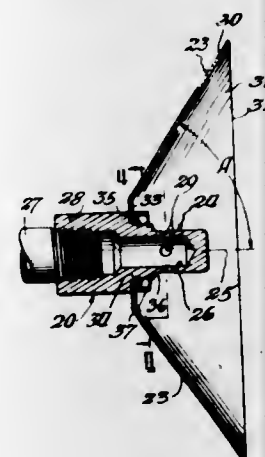
1. Preperforation apparatus for wells, comprising in combination tubing for use in uncased multiple completion operations, radial flexible conduit means attached to said tubing at a predetermined location therealong, said flexible conduit means being hollow and connected in open communication with the inside of said tubing, and thin-walled closure means at the extremity of said flexible tube means, said thin-walled closure means comprising a plurality of windows for causing at least one of said windows to be in contact with the walls of said well.

3,313,352
WELL CASING PROTECTIVE SKIRT
James D. Tennison, Jr., 1896 Overton Park Ave., Memphis, Tenn. 38112, and Jack Craig Tennison, 510 W. Barton, West Memphis, Ark. 72301
Filed Apr. 6, 1964, Ser. No. 357,576
1 Claim. (Cl. 166-202)



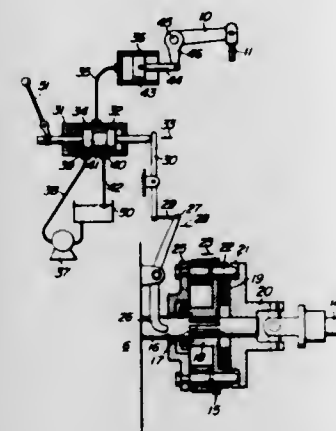
A guard-forming skirt for application about the lower end of a well casing for preventing matter from falling below said skirt in a well, said skirt comprising a relatively long flexible sheet of a length to wrap at least twice around the well casing to which it is to be applied and providing a corresponding number of layers, said sheet having a continuous portion with a plurality of relatively narrow finger-forming strips connected at one end thereto, and, when in operative position, providing overlapping layers of such fingers, said fingers being of a character to be compactly disposed during storage and transit, and to be spread out when the device is in use.

3,313,353
NOZZLE AND METHOD OF EXTINGUISHING FIRES
Hilding V. Williamson and Eduard J. Job, Chicago, Ill., assignors to Chemetron Corporation, Chicago, Ill., a corporation of Delaware
Filed May 15, 1964, Ser. No. 367,673
4 Claims. (Cl. 169-1)



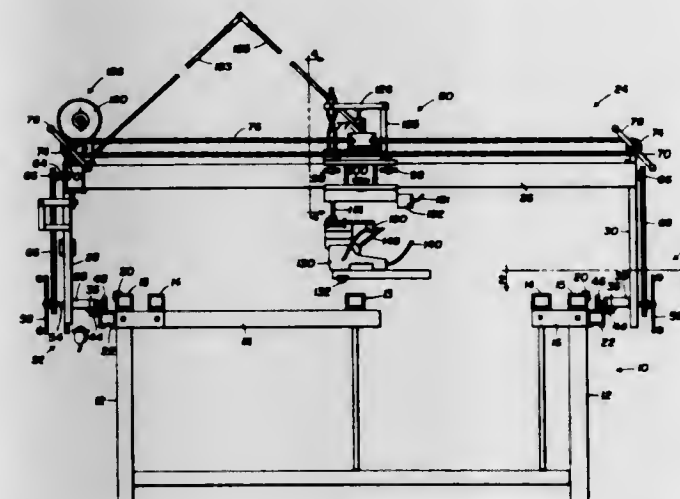
4. Method of extinguishing fires with carbon dioxide gas, comprising the steps of: passing carbon dioxide gas through orifice means at a predetermined velocity, directing the gas at a lesser velocity into a pattern resembling generally a hollow conical curtain having a cone angle of not less than about 110 degrees at its origin to create a sufficient dioxide concentration within the curtain to extinguish fires, with the carbon dioxide curtain being directed toward a fire to be extinguished.

3,313,354
APPARATUS FOR AUTOMATICALLY CONTROLLING THE DEPTH OF SOIL TILLED BY AGRICULTURAL TRACTORS
Kokichi Jin, Ibaragi-shi, Japan, assignor to Tadao Yamaoka, Ashiya-shi, Japan
Filed Nov. 4, 1964, Ser. No. 408,859
Claims priority, application Japan, June 22, 1964, 39/35,182
3 Claims. (Cl. 172-12)



1. In an agricultural tractor provided with a rotary implement driven by the power transmitted from the tractor engine through a power take-off shaft, and hydraulically operated means for causing vertical movement of said rotary implement, apparatus for automatically controlling the depth of soil being tilled by said tractor, comprising controller means disposed in the power transmission path from the tractor engine to said rotary implement and operative in response to any variation of the load applied to the power take-off shaft, control valve means for controlling the operation of said hydraulically operated means, and means to transmit the operation of said controller means to said control valve means.

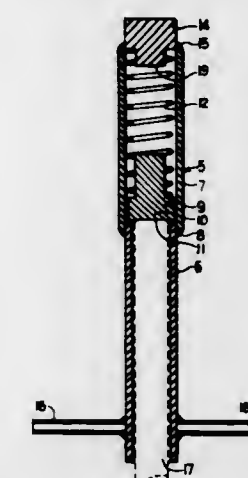
3,313,355
APPARATUS FOR SUPPORTING AND CONTROLLING POWER FASTENER TOOLS AND THE LIKE
Leslie Merle Pierce, 1531 10th Ave. SW., Cedar Rapids, Iowa 52404
Filed June 4, 1964, Ser. No. 372,632
8 Claims. (Cl. 173-43)



1. Apparatus for use in the prefabrication of modular panels or wall assemblies for buildings comprising: a supporting structure effective to support one such assembly disposed horizontally thereon with one of its surfaces

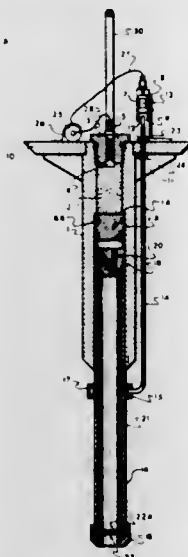
upwardly facing, a tool carriage carried by said supporting structure, said carriage having a portion overlying said surface and being horizontally movable relative to said supporting structure in a first direction so that the overlying portion of said carriage traverses said surface during said carriage movement, means for moving said carriage as aforesaid, a fastener driving power tool of the intermittently operable type carried by the overlying portion of said carriage and adjustable therealong in a second direction transverse to said first direction to any one of a plurality of positions thereon, said tool being mounted effective to be supported upon said surface in fastener driving position and to be horizontally moved thereover by said carriage movement, said tool mounting permitting vertical floating movement of said tool relative to said carriage during said movement of said tool by said carriage over said surface, the portion of said tool engaging said surface and supporting said tool thereon being provided with means reducing friction between said portion and said surface during said tool movement thereover, tool lifting means for optionally and positively raising said tool out of said floating contact with said surface, said lifting means being controlled from a location remote from said tool, and actuating means associated with said supporting structure and said carriage effective to automatically produce intermittent fastener driving actuation of said tool at predetermined intervals over said surface during said movement of said carriage.

3,313,356
POST DRIVER
Elmer R. Clevenger, 3602 Webster St., Fort Wayne, Ind. 46807
Filed Oct. 28, 1964, Ser. No. 407,068
4 Claims. (Cl. 173-91)



1. A post driver comprising, an elongated tubular member which has an inside diameter slightly larger than that of a post that is to be driven, a second elongated tubular member having an inside diameter slightly larger than the outside diameter of the first tubular member, one end of the second tubular member telescoping over one end of the first tubular member and permanently secured in that position, a cylindrical ram block slidably positioned in the second tubular member, said ram block having a diameter such that the ram block slides in said second tubular member but is too large to pass into the first tubular member, a closure secured to the other end of the second tubular member and a coil spring extending from the closure to the ram block, whereby the first tubular member can be placed over the end of a post that is to be driven and the driver repeatedly moved up and down to cause the ram block to oscillate and repeatedly cause impact between the end of the post and the ram block to drive the post into the ground.

3,313,357

UNDERWATER SAMPLING APPARATUS
Alexis A. Venghiattis, Houston, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of DelawareFiled Nov. 23, 1964, Ser. No. 413,106
17 Claims. (Cl. 175-6)

14. Apparatus for taking a sample of submerged earth substances, said apparatus comprising:
a gun body having a bore and a firing chamber;
a propelling charge of explosive disposed in said firing chamber;
a tubular sample-taking projectile slidably disposed in said bore with one end located in said bore adjacent said firing chamber and with the other end extending out of said bore;
plug means threadingly engaging and closing the end of said projectile in said bore and having an aperture extending therethrough;
a sleeve removeably disposed in said projectile, said sleeve including two substantially hemi-cylindrical members disposed therein forming a sample receiving bore;
means connected with the other end of said projectile retaining said sleeve therein; and,
ignition means operably connected with said propelling charge for igniting said propelling charge to discharge said projectile, plug, and sleeve from said bore.

3,313,358

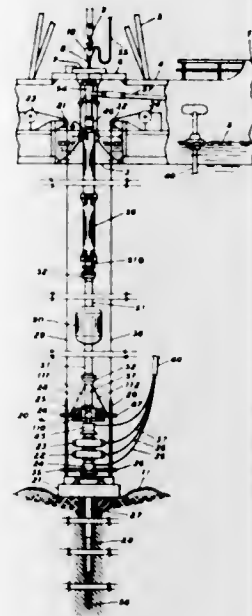
CONDUCTOR CASING FOR OFFSHORE DRILLING AND WELL COMPLETION

William R. Postlewaite, Menlo Park, and Milton Ludwig, Berkeley, Calif., assignors to Chevron Research Company, a corporation of Delaware

Filed Apr. 1, 1964, Ser. No. 356,461
5 Claims. (Cl. 175-7)

1. A conductor casing for connecting a wellhead on the ocean bottom to a vessel floating on the ocean surface substantially vertically above the wellhead comprising: an elongated tubular member containing a drilling fluid denser than water, said member having its lower end connected to a fixed wellhead adjacent the ocean floor and its upper end connected to a floating vessel, means near the lower end of said member for permitting universal angular movement of the axis of said member relative to said wellhead, means near the upper end of said member for permitting universal angular movement of the axis of said member relative to said floating vessel, means in the upper portion of said member permitting axial elongation and contraction of said member, means for exerting an upward force on said member, a mass operatively connected to said member adjacent its lower

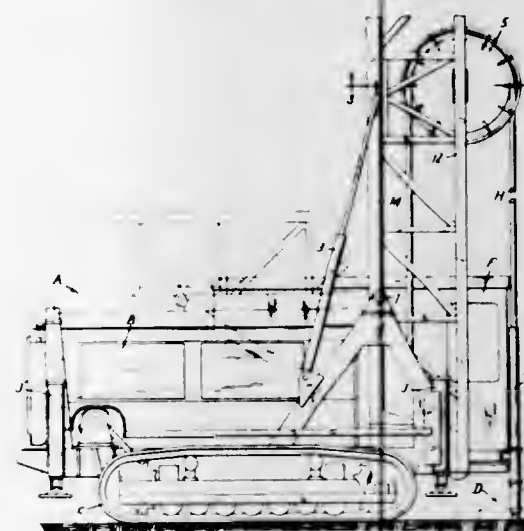
end for resisting said upward force, said mass and said upward force exerting means being proportioned with respect to each other and said member so that the longitudinal compressive force exerted by the drilling fluid in said member does not exceed the longitudinal tensile force exerted on said member throughout any substantial portion of the length of said member.



3,313,359

MACHINE FOR THERMALLY WORKING MINERALS

John W. Ross, Toronto, Ontario, and Donald R. Boynton, Don Mills, Ontario, Canada, and Cornelius S. Arnold, Cranford, N.J., assignors to Union Carbide Canada Limited, Toronto, Ontario, Canada, a corporation of Canada

Filed Apr. 23, 1964, Ser. No. 361,969
5 Claims. (Cl. 175-11)

5. Apparatus for supplying air and process fluids to a rock-working blowpipe comprising a flexible hose having an inlet and outlet, a blowpipe connected to the outlet end of said hose, a plurality of process fluid hoses extending from said blowpipe through said hose to a source of said process fluids; and a cable fixed to the blowpipe extending through said hose and anchored outside of said hose so that said cable carries the major portion of the blowpipe weight when said blowpipe is suspended from said hose.

3,313,360

HYDRAULICALLY ACTUATED ORIENTING DEVICE

Thomas M. Frisby, Houston, Tex., assignor to Eastman Oil Well Survey, Houston, Tex., a corporation of Delaware

Filed Jan. 11, 1965, Ser. No. 424,530
7 Claims. (Cl. 175-45)

1. An orienting sub for insertion in a drill string for earth boring operations comprising,
an outer tubular member having a bore therethrough, a tubular piston in said bore,
an external shoulder on said piston having a recess therein,
sealing means between said piston and the walls of said bore above and below said external shoulder, said piston being movable axially in said bore, means securing said piston against rotational movement,
spring biasing means between said piston and said outer tubular member biasing said piston against the inlet pressure of circulating fluid in said bore,
valve means,
a restricted outlet from said piston,
an unrestricted outlet from said piston,
said external shoulder defining a race, and
a movable weighted member co-acting with said race to hold said piston in its spring biased position when said weighted member is not in a predetermined position with respect to said recess,
said piston moving to a position opposite said spring biased position when said weighted member is in a predetermined position with respect to said recess to close said valve means thereby closing flow of circulating fluid through said unrestricted outlet from said piston to produce a noticeable increase in circulating fluid pressure to indicate said weighted member is in said predetermined position with respect to said recess.

3,313,361

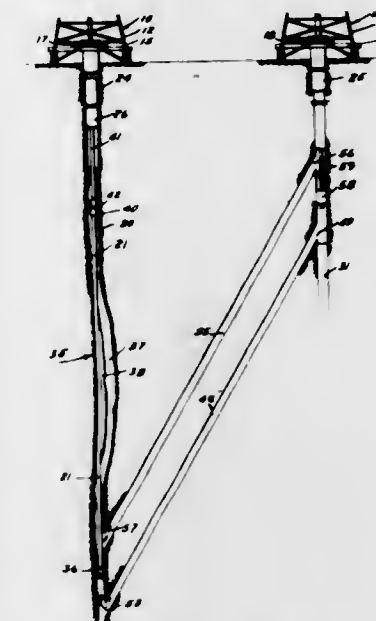
WELL CURING OPERATION BETWEEN SIMULTANEOUSLY FORMED BORES

Otis Johnson McCullough, P.O. Box 2575, Houston, Tex. 77001

Filed Mar. 13, 1964, Ser. No. 351,770
2 Claims. (Cl. 175-61)

1. A method for drilling for oil and the like, comprising:
(A) drilling a pair of wells simultaneously and maintaining the depth of the wells substantially the same during the drilling operation;

(B) circulating fluid from one well to the other well when a drill string becomes stuck in the bore of the other well and circulating said fluid back to the first well to create a flow of fluid around at least a part of said stuck drill pipe;



(C) while simultaneously conducting an operation through said one well to free said stuck drill pipe;
(D) and thereafter completing drilling operations in at least one of said wells.

3,313,362

METHOD OF, AND COMPOSITION FOR USE IN, GAS DRILLINGRalph P. Schneider, Oklahoma City, Okla., assignor to Air Drilling Specialties Co., Oklahoma City, Okla., a corporation of Oklahoma
No Drawing. Filed Feb. 3, 1965, Ser. No. 430,206
20 Claims. (Cl. 175-71)

1. The method of drilling a well using a gaseous drilling fluid to remove bit cuttings from the well bore comprising:
circulating a gaseous drilling fluid continuously into the well bore during the drilling of the well; and
injecting into said gaseous drilling fluid in an amount of 1 barrel of additive composition for each 1,500 to 100,000 cubic feet of gaseous drilling fluid circulated into the well, an aqueous additive composition comprising:
(a) water;
(b) from about 0.1 weight percent to about 10 weight percent of a bentonitic clay;
(c) from about 0.005 weight percent to about 2 weight percent of a water soluble natural gum; and
(d) from about 0.01 weight percent to about 20 weight percent of a foaming agent other than a cationic foaming agent and selected from the group consisting of alkyl aryl sulfonates, alkyl phenol ethoxylates, alkyl phenol ethoxy salts, alkyl ethoxy sulfate salts and alkyl amines.

3,313,363

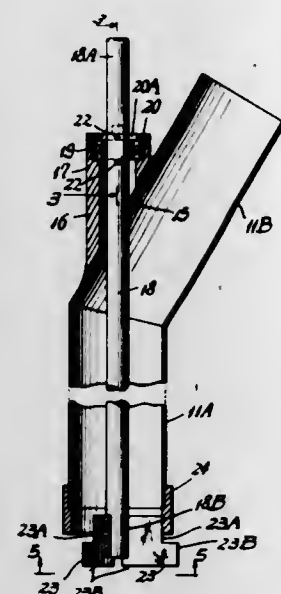
POWER OPERATED HOLE DIGGER

Thomas F. Henebry, Hawleyville Road, Bethel, Conn. 06801

Filed Mar. 2, 1965, Ser. No. 436,562
5 Claims. (Cl. 175-207)

1. A hole digger comprising:
(a) a tubular housing having an elongated body adapted to connect with a source of negative pressure,

- (b) a shaft extending longitudinally of said body, one end of said shaft extending through said opening in said housing,
 (c) a bearing for rotatably journaling the end of the shaft extending through said opening,
 (d) means for retaining said bearing to said housing,
 (e) means for prohibiting longitudinal displacement of said shaft within said housing,
 (f) and a cutter means connected to the other end of said shaft,



- (g) said cutter means having cutting edges projecting beyond the end of said housing to loosen the material as said shaft and connected cutter means rotate,
 (h) and said cutter means including a cutter having a cutting edge portion and a bearing edge portion, said bearing edge portion being disposed in rotatable bearing relationship with the internal surface of the lower end portion of said housing for rotatably journaling the other end of said shaft within said housing, and said cutting edge portion extending beyond the lower end of said housing.

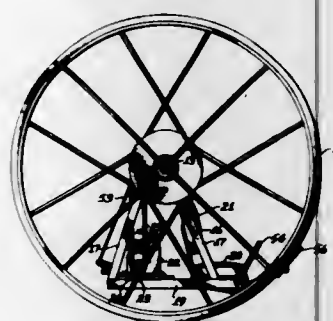
3,313,364
SELF-REAMING ROCK DRILL COUPLING
 Howard M. Binkley, Red River, N. Mex. 87558
 Filed June 15, 1964, Ser. No. 375,077
 4 Claims. (Cl. 175-325)



1. The improved coupling for detachably interconnecting rock drill rod sections together in axially-aligned end-to-end relation which comprises: a hollow cylindrical metal body having an axial bore therethrough shaped to

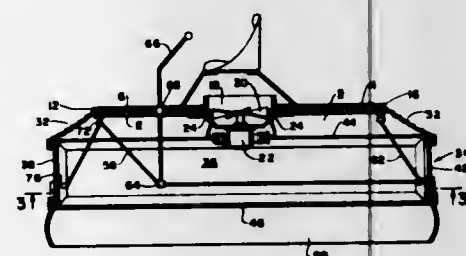
releasably retain the end portions of a pair of drill rod sections inserted into opposite extremities thereof, said body terminating at opposite ends in spaced substantially parallel surfaces normal to the bore axis, and axially protruding teeth projecting from both end surfaces of the body, said teeth having their outside surfaces located wholly within the external cylindrical surface of the body and their inside surfaces positioned to lie wholly outside the surface of the drill rod section fastened into the adjacent end of the axial bore.

3,313,365
TWO-WHEELED MOTOR VEHICLE
 Harold A. Jackson, Box 7, Soldatna,
 Kenai, Alaska 99669
 Filed May 7, 1965, Ser. No. 454,032
 4 Claims. (Cl. 180-6.2)



1. A road vehicle comprising a combination:
 (A) a pair of axially spaced road wheels,
 (B) an axle extending between said wheels and journaled at each end in said wheels,
 (C) a frame journaled on said axle between said wheels and suspended in pendulum fashion thereon,
 (D) a drive motor on said frame,
 (E) a positive drive transmission between said drive motor and said axle,
 (F) an operator's seat on said frame,
 (G) means on said frame for releasably clamping each of said wheels against rotation to said frame,
 (H) a reduction drive transmission supported by said frame connected to each of said wheels,
 (I) and means on said frame for releasably connecting said axle through said transmissions to drive said wheels from said axle.

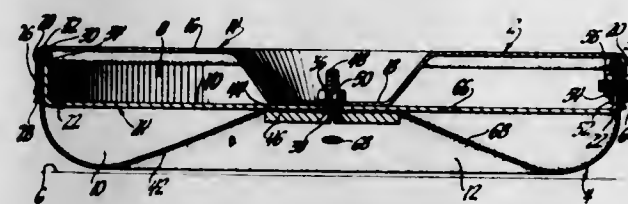
3,313,366
AIR SUPPORTED VEHICLE
 Louis A. Dionisio, Mastic Beach, and Kenneth A. Brockett, Port Jefferson, N.Y., assignors to U.S. Ground Effects Vehicles, Inc., Port Jefferson, N.Y., a corporation of New York
 Filed July 20, 1964, Ser. No. 383,837
 6 Claims. (Cl. 180-7)



2. A ground effects vehicle having a controllably variable fluid chamber comprised of a load-supporting platform having a fluid-intake passage provided therethrough, a rigid open-bottomed peripheral wall member and a flexible peripheral curtain, said flexible curtain being sealingly disposed intermediate said supporting platform and

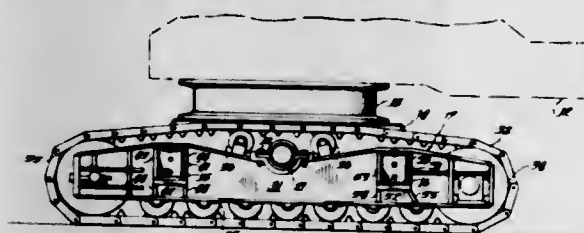
said wall member whereby said platform is adapted for movement relative said wall member, means for controllably effectuating said movement and means for introducing forced fluid flow through said fluid-intake passage and interiorly of said peripheral wall member.

3,313,367
AIR CUSHION DEVICE WITH SERIES RESONATOR CHAMBER
 Orvin L. Swedburg, Santa Barbara, Calif., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
 Filed Apr. 23, 1965, Ser. No. 450,453
 4 Claims. (Cl. 180-7)



1. An air cushion device comprising a pair of shell members having circular horizontal walls bounded by vertically oppositely extending cylindrical walls disposed in telescoped relation forming a fixed cross section resonator chamber vertically therebetween and an annular recess radially therebetween, a preformed flexible membrane having a dished lower wall portion secured centrally thereof to one of said member and an outer cylindrical wall portion disposed in said recess and re-entrantly folded about a circumferential bead, said bead having a cross sectional diameter greater than the radial dimension of said recess, means for introducing air under pressure into said fixed cross section chamber, means providing restricted communication between said fixed cross section chamber and said variable cross section chamber, and means forming a plurality of apertures in said membrane adjacent the center thereof.

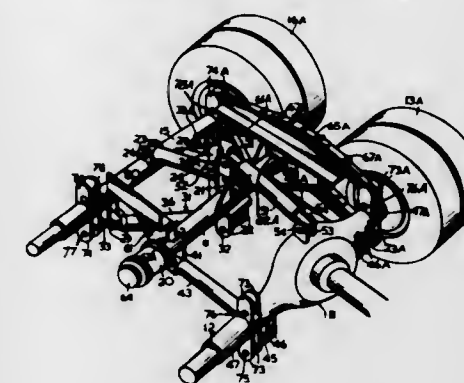
3,313,368
SIDE FRAME MOUNT
 Robert M. Carter and George L. Petrik, both of Cedar Rapids, Iowa, assignors to Link-Belt Company, a corporation of Illinois
 Filed Sept. 15, 1965, Ser. No. 487,409
 9 Claims. (Cl. 180-9.2)



1. Apparatus for attaching a side frame member to a vehicle undercarriage comprising:
 longitudinally spaced axle means extending laterally from said vehicle undercarriage,
 a side frame member having apertures extending laterally therethrough for receiving said axle means,
 said axle means and said apertures in the side frame member having associated projections and recesses formed thereon intermediate the ends of said apertures for a fitted relationship when the side frame member is assembled on the axle means,
 said axle means and said apertures having clearance therebetween for the insertion of said axle means into said apertures and movement of the associated projections and recesses into said fitted relationship, and

filler means detachably secured in fitted relationship with the clearance space between the assembled axle means and side frame member apertures for preventing displacement of said projections from their associated recesses.

3,313,369
SUSPENSIONS FOR VEHICLES HAVING TANDEM AXLES
 Robert Frederick Whitehead, 56 Boundary Road, Chester Hill, near Sydney, New South Wales, Australia
 Filed Aug. 6, 1965, Ser. No. 477,979
 Claims priority, application Australia, Aug. 7, 1964, 47,891/64
 10 Claims. (Cl. 180-22)



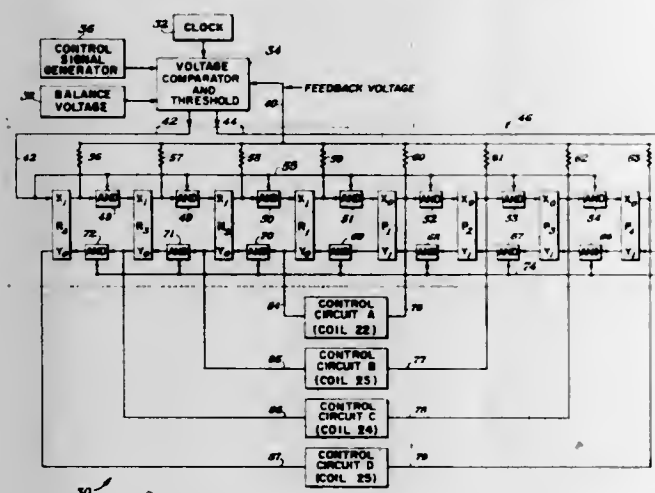
1. A bogie for the rear wheels of a road vehicle having a chassis, front wheels and two pairs of rear wheels, said bogie comprising a driving axle, a trailing axle spaced from said driving axle, a bogie suspension trunnion arranged between and extending substantially parallel to said driving and trailing axles, two mountings for rigid attachment to opposite sides of the vehicle chassis and rigidly secured to said trunnion in mutually spaced relationship, two hubs rotatably mounted on said trunnion at opposite sides of the bogie, an upper set of leaf springs arranged above each said hub and a lower set of leaf springs arranged below each said hub, said sets having each a middle section, and two end portions one of which extends freely forward and the other rearward from said middle section in the direction of the bogie travel, the two sets of leaf springs at any one side of the bogie being rigidly connected to each other and to the one of said hubs which is arranged at the same side of the bogie as the respective two sets of leaf springs, the forward extending portions of said sets of leaf springs bearing freely and resiliently upon elements rigidly connected with the said driving axle, and the rearward extending portions of said sets of leaf springs bearing freely and resiliently upon elements rigidly connected with the said trailing axle; and the bogie further comprising torque rods which connect the said driving axle with the said trunnion, including one pair of torque rods which extend between lugs arranged near the respective side of the bogie on the underside of the driving axle and on the underside of the trunnion, respectively, and a further torque rod which extends between lugs arranged in the median plane of the bogie on the upper side of the driving axle and on the upper side of the trunnion, respectively; and further torque rods which connect the said trailing axle with the said trunnion including two torque rods which extend between lugs arranged centrally on the underside of said trunnion and lugs arranged on the underside of the trailing axle near the opposite sides of the bogie and a further torque rod extending in the median plane of the bogie between lugs on the upper side of the trailing axle and on the trunnion, respectively; the connection

of at least some of said torque rods with the respective lugs being effected by resiliently deformable bushes on pins carried by said lugs.

3,313,370 ELECTROMAGNETIC SEISMIC TRANSDUCER SYSTEM

Jimmy R. Cole, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Mar. 18, 1964, Ser. No. 352,796
4 Claims. (Cl. 181—5)



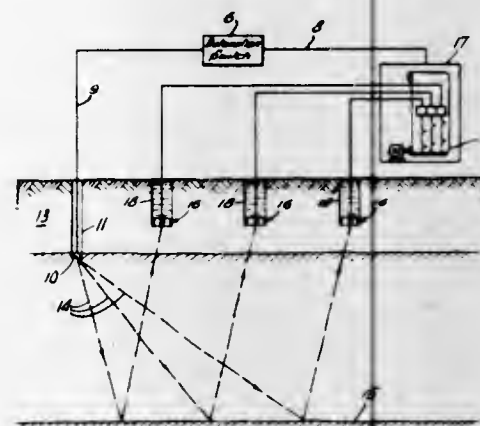
1. A system for generating a seismic signal in the earth having a wave shape closely approximating the wave shape of a control signal comprising:

- a base plate member for engaging the earth;
- a reaction mass member coupled to said baseplate member;
- electromagnetic drive means, said drive means having a plurality of coils attached to said reaction mass member such that when energized will reciprocate the mass member relative to the baseplate member;
- clock circuit means for generating a sequence of clock pulses;
- voltage comparator and threshold circuit means for comparing the voltage level of the control signal with a feedback signal voltage and passing the clock pulses through a positive output when the control signal voltage exceeds the feedback signal voltage by a predetermined threshold value and for passing the clock circuit pulses through a negative output when the feedback voltage exceeds the control signal voltage by a predetermined threshold value;
- logic circuit means for successively counting the pulses from the positive and negative outputs and producing a stepped feedback signal to the voltage comparator and threshold circuit which increases a step for each clock pulse counted from the positive output and decreases a step for each clock pulse counted from the negative output, the feedback signal being applied to the voltage comparator and threshold circuit means;
- power amplifier means for energizing said coils having positive and negative control terminals connected to each coil for applying a positive or negative current, respectively, to the respective coils; and,
- output circuit means interconnecting the logic circuit means and the positive and negative controls terminals of the power amplifier means for applying signals to the respective control terminals in synchronism with the steps of the feedback signal so as to produce a total output force from the coils having a stepped wave from synchronized with the feedback signal and approximating the wave form of the control signal.

3,313,371 PRESSURE ACTUATED SWITCH USED IN A SEISMIC PROSPECTING SYSTEM

Alvin L. Parrack, Bellaire, Roy J. Clements, Houston, and Oswald A. Itria, Bellaire, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 7, 1964, Ser. No. 358,028
3 Claims. (Cl. 181—5)



1. In a seismic prospecting system comprising a source of seismic waves and a seismic detecting array comprising a plurality of receiving stations for receiving seismic waves transmitted through the earth from said source and a signal utilization device coupled to the respective receiving stations for receiving signals from each of said receiving stations and for recording the signals received from each of said receiving stations in correlation with one another relative to a common time base, the improvement wherein each of said receiving stations comprise a pressure actuated switch and an automatic variable switch sensitivity adjustment means for increasing the sensitivity of said switch in accordance with a predetermined function of time to provide a fixed amplitude signal applied to said utilization device in response to seismic waves of sufficient amplitude, said pressure actuated switch comprises a housing, a resilient diaphragm attached to said housing and forming a wall thereof, an inner diaphragm made of conducting material located within and attached to said housing forming an inner wall displaced from and parallel to said resilient diaphragm, a pair of contacts, each of said contacts being attached to and carried by a respective one of said diaphragms at corresponding positions so that they are opposite one another, said contacts being separated by a predetermined air gap, an electrical circuit connected to said utilization device and to said contacts for completing a circuit therethrough when said pair of contacts are engaged.

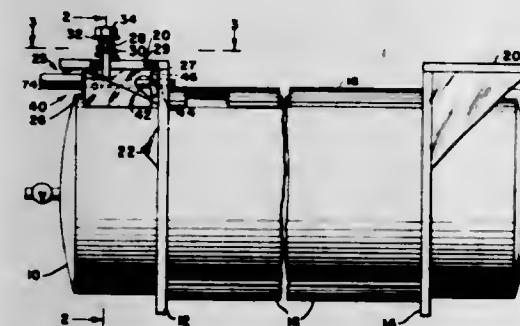
3,313,372 GAS TANK HOLDER FOR GAS EXPLODER SEISMIC GENERATORS

Lauren G. Kilmer, Tulsa, Okla., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

Filed June 30, 1964, Ser. No. 379,227
4 Claims. (Cl. 181—5)

1. In a vehicle adapted to transport a gas exploder means for creating a compressive wave at the surface of the earth to cause a seismic wave to be propagated through the earth and including support means for at least one gas supply cylinder for said gas exploder means, the improvement of means for preventing rotation of said gas supply cylinder during creation of said seismic wave and movement of said vehicle including first wedge means secured to said support means, second wedge means movable with respect to said first wedge means and said support means and including means adapted to bear against

the gas supply cylinder and prevent rotation of said cylinder, means for moving said second wedge means with respect to said first wedge means to cause said means adapted to bear against said cylinder to bear against said cylinder and prevent rotation thereof comprising a threaded rod secured to said support means and nut means threaded on said rod and including bearing surfaces arranged to move said second wedge means in both directions along said rod as said nut means is threaded, respectively onto and off of said rod, and means for movably supporting said second wedge means on said support means during said movement in both directions, said

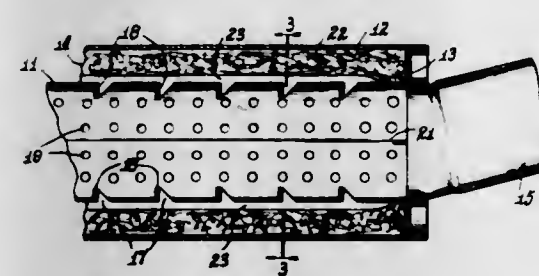


support means including at least one upstanding end plate having an aperture adapted to receive said cylinder and a substantially horizontal support plate above said tank, said support plate having at least one longitudinal slot therein, and said means for supporting said second wedging means on said support means including a bolt extending through said slot, a coil spring arranged above said last-mentioned substantially horizontal plate and around said bolt, and means on said bolt above said plate for retaining said coil spring around said bolt whereby said bolt is adapted to be moved horizontally in said slot and vertically against the bias of said spring.

3,313,373 MUFFLER WITH BAFFLES FORMED AS CHORDAL FLANGES

Joseph P. Marx, Hartford, Wis., assignor to Midas International Corporation, Chicago, Ill., a corporation of Illinois

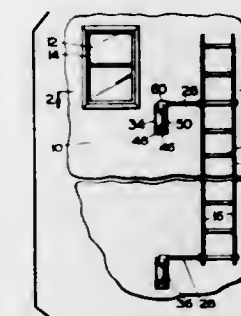
Filed Jan. 11, 1965, Ser. No. 424,559
13 Claims. (Cl. 181—59)



1. A muffler comprises a cylinder having a substantially uniform gas duct extending therethrough, a closed casing formed about said cylinder to form a chamber between the cylinder and casing, said cylinder having circumferentially spaced apart longitudinal rows of circumferentially elongated openings therein, a sound absorbing material substantially filling said chamber, and a plurality of chordal flanges one integral with a longitudinal edge of each opening, said flanges lying in planes perpendicular to the cylinder axis and extending into the interior of said cylinder.

3,313,374 ESCAPE LADDER

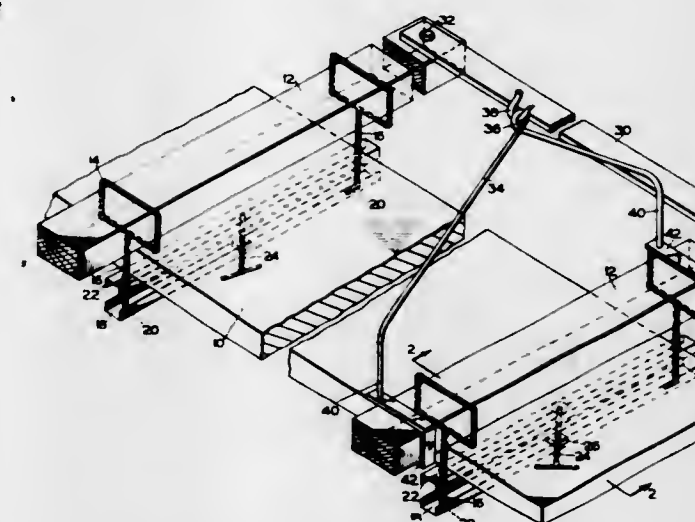
Virgil V. Teach, 3427 NE. 81st Ave., Portland, Oreg. 97213
Filed May 12, 1966, Ser. No. 549,576
8 Claims. (Cl. 182—89)



1. An escape ladder for buildings having an upper story window, comprising a pair of side rails and interconnecting steps, at least one supporting arm integrally connected to said ladder and projecting laterally in the plane of the ladder, a mounting bracket arranged to be secured to a building, an upright shaft on said supporting arm journaled in said mounting bracket whereby said ladder is movable from a non-use position substantially parallel with the building to an outwardly angled use position adjacent to the window, latch means operably connected between said bracket and said shaft and arranged to hold said ladder releasably in its non-use position parallel with the building as well as its outwardly angled position adjacent to the window, and spring means anchored to said shaft and said bracket arranged to rotate said ladder from its non-use position to its use position.

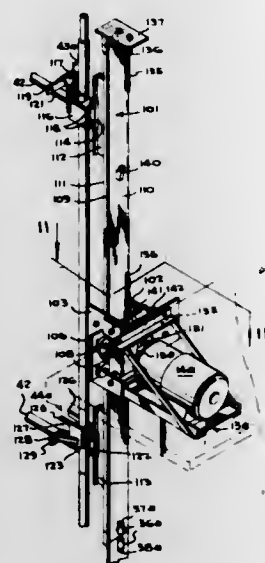
3,313,375 SUSPENDED SCAFFOLD STRUCTURE

Arnold McMurray, 285 Hazelwood Ave., San Francisco, Calif. 94127
Filed Aug. 31, 1965, Ser. No. 483,938
6 Claims. (Cl. 182—150)



1. A suspended scaffold structure comprising a work plank arranged to be suspended in a working position; a bumper bar extending laterally across said plank and projecting beyond one side edge thereof; and a clamp releasably securing said bumper bar to said work plank; said clamp including eye means arranged to receive said bar, an upright standard integrated with said eye means, and a laterally extending cross member slidably mounted on said standards arranged to clamp said work plank and bumper bar into integral relation with said eye means.

3,313,376
LIGHTWEIGHT ELEVATOR
 Warren L. Holland, Sr., 555 Mount Vernon Ave.,
 Portsmouth, Va. 23707
 Filed Sept. 1, 1965, Ser. No. 489,782
 7 Claims. (Cl. 187-2)



1. A lightweight easily erectable elevator for use with scaffolding comprising a plurality of vertically disposed sectional track means secured in an end-to-end relation adapted to be secured to the scaffolding, the track means including a plurality of elongated support members, a toothed rack secured to each support member and extending the full length therealong, first and second hanger means fixed to each sectional track means to effect the securing of the track means to the scaffolding, each hanger means having a first and second supporting positions, the first hanger means comprising a spacer bar extending outwardly from the support member and a pair of hooks secured to the spacer bar having a J shaped cross-section, the first hook being notched in the short leg of the J to provide the first supporting position, the second hook lying transverse to the longitudinal axis of the cross-sectional length of the first hook and adapted to provide the second supporting position, lifting means in operative relation with the track means and adapted to move therealong, motive means disposed intimately with the lifting means, the motive means engaging the track means, whereby when the motive means is energized the lifting means is caused to move along the track means.

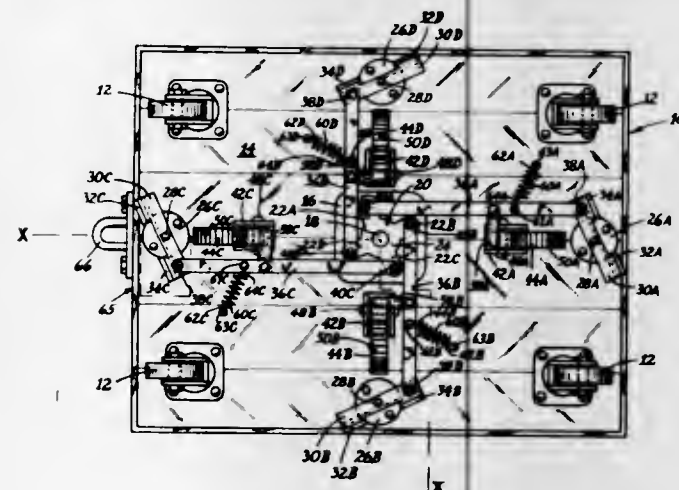
3,313,377
MATERIAL HANDLING AND TRANSPORTATION EQUIPMENT

John H. Aninger, 2031 S. Beverly Glen Blvd.,
 Los Angeles, Calif. 90025
 Filed Nov. 22, 1965, Ser. No. 509,121
 1 Claim. (Cl. 188-5)

A material handling and transportation equipment comprising:

- a platform having at least three casters mounted on its underside adapted to support said platform,
- at least three brake shoes, each said brake shoe having an operating surface with inherent high-friction qualities mounted rotatably about a horizontal axle on the underside of said platform and spaced from each other horizontally by effectually equal circular angles and adapted to make contact between said brake shoe surface and the floor surface when in uncontrolled position of each said brake shoe,
- a bracket having a perpendicularly and downwardly extending pivot stem mounted in the geometric center and on the underside of said platform,

- a starwheel having a plurality of arms and a hole formed in the extremity of each said arm mounted rotatably on said pivot stem,
- a plurality of brackets, each said bracket having a perpendicularly and downwardly facing pivot stem mounted near the perimeter of said platform and spaced apart from each other horizontally by effectually equal circular angles,
- a plurality of levers, each said lever having a pedal on each of its two extreme front faces and a hole formed in one extremity mounted rotatably on each said pivot stem adapted to be accessible and operable from said platform perimeter,
- a plurality of connecting bars, each said connecting bar having a hole formed in each of its two ends, each said connecting bar mounted rotatable at one end on said pedal extremity by means of a first axle, and



- mounted rotatably at its other end by means of a second axle on the co-acting arm of said starwheel,
- a plurality of bolts, each said bolt mounted on the underside of said platform adjacent to one of said connecting bars,
- a plurality of stems, each said stem mounted on one of said connecting bars in a before and past dead-center position, respectively, with regard to each said corresponding bolt,
- a plurality of mechanical compression springs, each said mechanical compression spring having one closed coil turn at each end, each said mechanical compression spring mounted with one said closed coil turn on one said bolt and with the other closed coil turn on one said corresponding connecting-bar stem, each said mechanical compression spring biased between said connecting bar stem and each said corresponding bolt.

3,313,378
HITCH CONSTRUCTION FOR WHEELED TROLLEYS

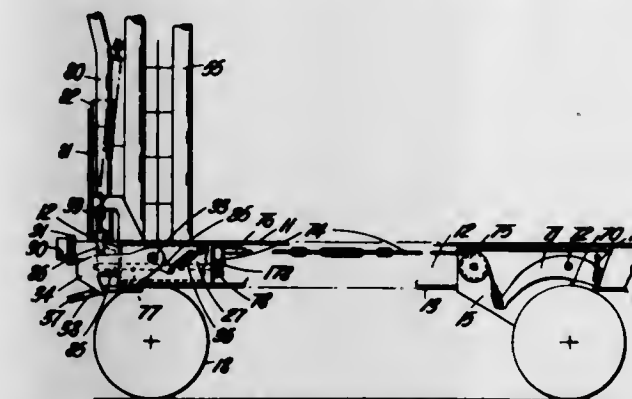
Dennis Henry Freeman and Gordon Jeffery, Basingstoke,
 William Edwin Weaver, Wallasey, and Gordon Christopher Yardley Holland, Swindon, England, assignors to
 Lansing Bagnall Limited, Hampshire, England, a British company

Filed June 9, 1964, Ser. No. 373,705
 Claims priority, application Great Britain, June 17, 1963,
 24,091/63

2 Claims. (Cl. 188-41)

- 1. A wheeled trolley comprising a body having a generally rectangular floor with chamfered corners, the chamfer at each corner extending for about a quarter of the width of the floor, an extendable spring-loaded drawbar, two pairs of ground wheels of which one pair are castor wheels, two interengageable coupling members of which one of said coupling members is fixed at one end of the floor and the other said coupling member is located

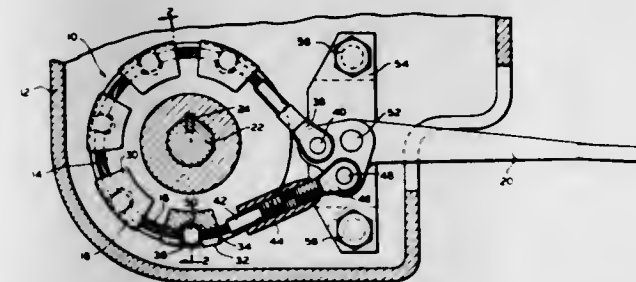
at the other end of the floor and is mounted on said drawbar, the said two coupling members projecting only a short distance beyond the end of the floor and such that, when one of said coupling members is coupled to the other of said coupling members of a similar trolley and



during turning with progressively decreasing radius, the two trolleys can first come into contact at the inner ends of the chamfers at one side and further decrease in radius can then be permitted by rocking movement between the trolley about the point of contact accompanied by extension of said drawbar.

3,313,379
BRAKE

Donald S. Dence, Jackson, Mich., assignor to Clark Equipment Company, a corporation of Michigan
 Filed Apr. 4, 1966, Ser. No. 540,016
 1 Claim. (Cl. 188-77)

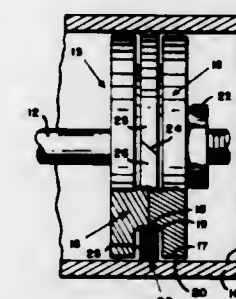


A friction device comprising a drum, a groove in the outer periphery of the said drum, the said groove having a pair of converging walls, a plurality of shoes disposed in the said groove, each shoe having an outer surface and a pair of converging sides engageable with the said walls, a groove in the outer surface of each shoe, each shoe groove including an enlarged portion, a bracket, a lever pivotally connected to the said bracket, a flexible cable substantially encircling the said drum and disposed in the said shoe grooves, the said cable having a pair of ends connected in spaced apart relation to the said lever so that pivotal movement of the said lever in one direction tightens the said cable around the said drum, and a plurality of retaining members fixed to the said cable in spaced apart relation to each other, each retaining member being disposed in one of the said enlarged portions.

3,313,380
PISTON DAMPENERS
 Ernest Hjalmar Persson, New Britain, Conn., assignor to
 Allied Thermal Corporation, New Britain, Conn., a
 corporation of Connecticut
 Filed Apr. 5, 1965, Ser. No. 445,557
 2 Claims. (Cl. 188-86)

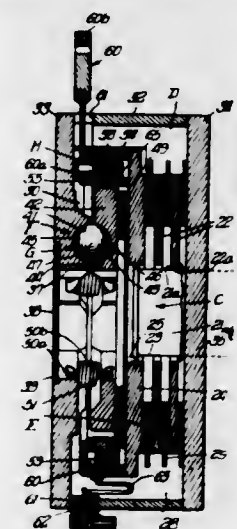
- 1. Apparatus comprising in combination, a cylinder; a piston rod extending into said cylinder; a piston connected to said piston rod within said cylinder, said piston including identical disks each having reduced diameter axially extending annular portions joined to portions of

greater diameter by a radially outwardly flaring cam surface; means for holding two of said disks in opposed abutting relation with the reduced diameter portions in contact in all positions of said piston rod, thereby forming an annular groove about the periphery of said piston; and transversely split ring means within said annular



groove and of a width substantially equal to that of the axially extending annular portions of said abutting disks, whereby when a force is applied in either direction to said rod, the segments of said ring means are cammed radially outwardly into contact with the inner peripheral surface of said cylinder.

3,313,381
ELECTRO-MAGNETIC BRAKING SYSTEM
 Glen R. Harting and Roman B. Spokas, Rockford, Ill.,
 assignors to Borg-Warner Corporation, Chicago, Ill.,
 a corporation of Illinois
 Filed July 2, 1964, Ser. No. 379,898
 6 Claims. (Cl. 188-161)



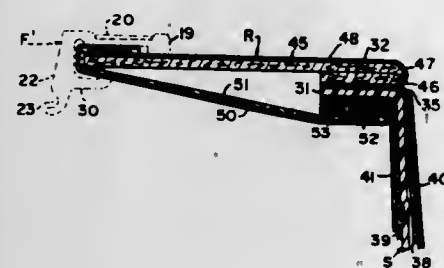
- 1. An electro-mechanical brake, comprising: rotating means carrying one or more friction elements to be braked and carrying an annular ferro-magnetic armature moveable along the axis of said rotating means; stationary means carrying one or more friction elements interengageable with said friction elements of said rotating means to provide a braking effect thereof and carrying at least one cam reaction portion; and brake-force applicator comprising an energizable coil member effective to induce a magnetic flux path through said armature causing a magnetic attraction between said coil member and armature, said applicator further comprising a camming means urged in a direction by relative rotation between said coil member and stationary means to move said friction elements into inter-engagement, and means normally urging said camming means into contact with said stationary means, said brake applicator comprises a friction disc disposed between said armature and cam follower means effective to provide for gradual conjoint rotation of said armature and camming means as said camming means is more fully urged toward said armature, said coil member being annular in configuration and effective to journal said friction disc for axial movement from a disengaged to a

friction engaging condition with said armature, said annular coil member being comprised of a pair of rings, each having a general L-shape cross section, the rings being overlapped and secured together to define an armature having annular radially spaced pole pieces.

3,313,382

LUGGAGE CASE

John Rosing, Littleton, and William R. King and Oscar C. Hewett, Denver, Colo., assignors to Samsonite Corporation, Denver, Colo., a corporation of Colorado
Filed May 3, 1965, Ser. No. 452,674
7 Claims. (Cl. 190-49)

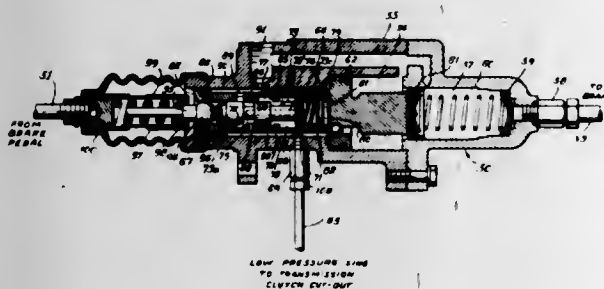


1. A luggage case comprising a pair of opposed concave sections, at least one of said sections having: a frame extending around the inner edge thereof; a side wall spaced from said frame and including a shell formed of relatively stiff but flexible material, having an outer side and an inwardly extending flange connected to said outer side by a curved portion of said shell; top, bottom and end walls extending between and attached to said frame and the outside of said shell flange, said top, bottom and end walls including a rail strip of relatively stiff but resilient material attached to said shell flange on the outside thereof and to said frame; a covering overlying said strip and extending beneath said frame and around the end of said strip and between said strip and said shell flange; and said side wall includes a covering outside said shell and extending between said strip and said shell flange.

3,313,383

APPARATUS FOR APPLYING BRAKES AND RELEASING TRANSMISSION CLUTCHES OF VEHICLES

Philip E. La Tendresse, Baraga, Mich. 49908
Filed Feb. 2, 1965, Ser. No. 429,782
2 Claims. (Cl. 192-4)



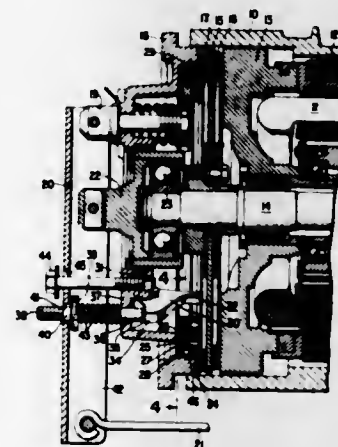
1. A master cylinder apparatus for use in operating the hydraulic brakes and the hydraulically operable clutch operating means of the transmission of a vehicle, said apparatus including: a master cylinder body having a hydraulic fluid supply connection, a clutch connection for connection to the clutch operating means, a fluid cylinder comprising a large bore and a small bore aligned with each other, and a brake line connection through which the fluid pressure in the small bore can be transmitted to the brakes; piston means in the fluid cylinder whereby fluid pressure applied to one end of the large

bore produces an increased pressure applied to the opposite end of the small bore; a passageway in the body communicating with said one end of the large bore and with said clutch connection; slide valve means in said body and including a manually operable spool, said valve means communicating with said supply connection and with said passageway to supply fluid to said passageway in response to the manual actuation of the spool; said clutch connection, when pressure has been applied through it to the clutch operating means, being free for return flow to cause reengagement of the clutch if the brake pedal is in the fully released position and mechanical means operated in conjunction with the valving means for actuating the piston means mechanically independently of the fluid actuation thereof.

3,313,384

CLUTCH-BRAKE DRIVING DEVICES

Edgar P. Turner, Scotch Plains, and Walter J. Schenerer, Califon, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 1, 1965, Ser. No. 505,854
6 Claims. (Cl. 192-18)



1. A clutch-brake driving device comprising a rotary driving element, a rotary driven element and a rotary friction element positioned in spaced relation on a common axis of rotation, the driven element being selectively slidable along said axis in one direction to engage the driving element and in the opposite direction to engage the rotary friction element, means responsive to rotation imparted to the friction element by engagement with the driven element for axially moving the driven element further into frictional engagement with the friction element, and means for subsequently limiting the rotation of the friction element whereby a braking torque is applied to the driven element having a magnitude related to the force of frictional engagement between the driven element and the friction element.

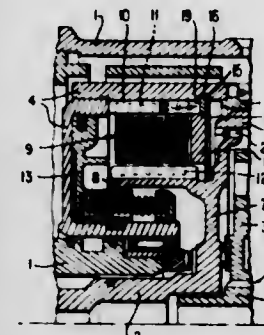
3,313,385

FRICTION CLUTCH

Hans-Joachim M. Förster, Stuttgart-Riedenberg, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed June 28, 1965, Ser. No. 467,277
Claims priority, application Germany, June 30, 1964, D 44,799
9 Claims. (Cl. 192-69)

1. A friction coupling, comprising first and second members rotatably mounted with respect to each other about an axis; a first friction plate mounted for rotation with said first member and mounted for limited relative axial movement with respect to said first member; a torque transmitting element mounted for rotation with said second member; means for mounting said torque

transmitting element and said friction plate for relative axial movement into and out of engagement; power actuating means for selectively moving said torque transmitting element and said friction plate into and out of engagement; said first member having an axial annular abutment shoulder; an axially undulated annular disc spring means mounted axially between said abutment

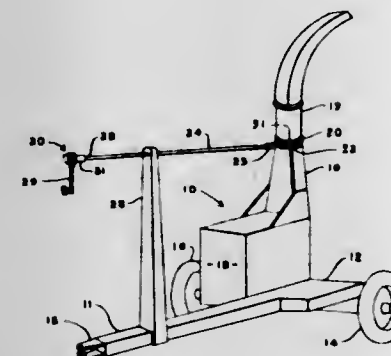


shoulder and said friction plate on the axially opposite side of said friction plate from said torque transmitting means for resiliently resisting axial movement of said friction plate away from said torque transmitting element during engagement; and means, including said abutment shoulders, for guiding said spring means for only axial parallel movement to prevent tilting of said spring means.

3,313,386

HARVESTER SPOUT CONTROL

Bruce D. Schwalm, Leola, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Feb. 3, 1966, Ser. No. 524,745
2 Claims. (Cl. 193-22)

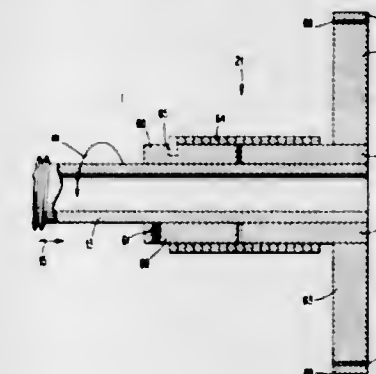


1. In a harvester having a mobile frame and a crop material discharge spout mounted on said frame for pivotal movement relative thereto, improved means for controlling the position of said spout to control the direction of crop material discharge comprising, a shaft supported on said frame for rotation about its own axis, means connecting one end of said shaft to said spout to pivot said spout in response to rotation of said shaft, a crank handle carried by said shaft, engageable and disengageable clutch means drivingly fixing said crank handle to said shaft when said clutch means is engaged, said clutch means comprising an annular member journaled on said shaft means fixing said crank handle on said annular member, a series of teeth on said annular member extending around said shaft and having spaces therebetween opening in the direction of extent out of the axis of said shaft, a slot extending transversely through said shaft and being elongated in the direction of extent of said shaft axis, said slot having one end thereof underlying the spaces

between said teeth and the other end disposed axially beyond the reach of said teeth, a pin extending through said slot and having ends receivable in said spaces when said pin is disposed at said one end of said slot, said pin being axially clear of said teeth when disposed at said other end of said slot, a spring operative engaging said pin and biasing it axially to said one end of said slot, and a member fixed to said pin and carried by said shaft for manual axial movement relative to the shaft to move said pin, in opposition to said spring, out of engagement with said teeth, thereby freeing said annular member and said crank handle for rotation about the axis of said shaft to gravitate said handle about said shaft to a generally vertical depending rest position when said spout has been located in a desired position, whereby gravity acting on said handle opposes rotational drifting of said shaft from the desired setting upon reengagement of said pin and said teeth by said spring.

3,313,387

REBOUND LIMITING DEVICE FOR TYPEWRITER
Edwin J. Lenney, Lexington, Ky., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 11, 1964, Ser. No. 417,623
3 Claims. (Cl. 197-64)



1. A rebound limiting device for substantially eliminating the rebound in a typewriter escapement system comprising: a typewriter carrier adapted to be moved in a stepwise manner in an escapement direction to a plurality of escapement positions; an elongated lead screw coupled to said carrier; drive means coupled to said lead screw tending to rotate the same in a first direction which controls the movement of said carrier in said escapement direction; a generally disc shaped pin wheel carrying a plurality of pins; means drivingly interconnecting said lead screw and said pin wheel whereby said pin wheel is biased for rotation by said drive means; each of said pins being movable to at least two positions defining at least two states and the distance between two adjacent pins defining a basic escapement unit; means for setting and maintaining said pins in selected states in accordance with selected characters; an escapement assembly comprising a first removable escapement member engaging those of said pins in one of said states to cause said pin wheel and lead screw to stop at positions defined by said pins in said one of said states and a second removable escapement member positioned to engage all of said pins regardless of the states thereof; means to remove said first and second escapement members from said pin wheel and position said first escapement member in a position to be engaged by a pin in said one of said states;

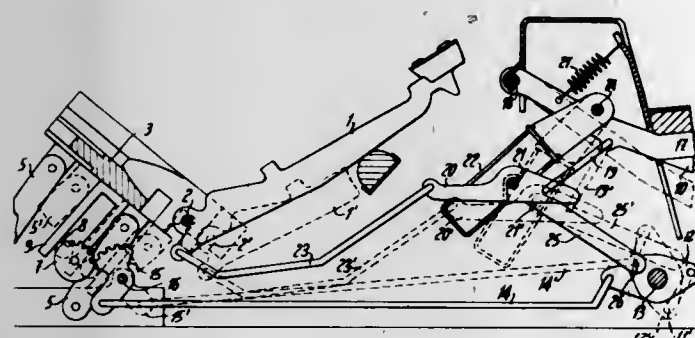
a rotatable disc shaped rebound limiting member located adjacent said lead screw; and
a uni-directional clutch means coupling said rotatable rebound limiting member for movement with said lead screw only when said lead screw rotate in a second direction in reaction to a pin in said one of said states on said pin wheel engaging said first escapement member to stop rotation of said pin wheel and lead screw at the escapement position defined by said pin.

3,313,388

CONTROL MECHANISM FOR TYPE BARS INCLUDING A PIVOTABLE RAKE

Otto Aebi, Yverdon, Switzerland, assignor to Paillard S.A., Vaud, Switzerland, a corporation of Switzerland
Filed Oct. 7, 1965, Ser. No. 493,833
Claims priority, application Switzerland, June 2, 1965, 7,708/65

3 Claims. (Cl. 197-74)



1. In a typewriter, a control mechanism for the type bars comprising a basket movable from a first position into a second position, type bars pivoted on said basket, the pivots of said type bars being located on an arcuate line, control means including a shift lever for shifting said basket from a first position into a second position and vice versa, key levers for actuating said type bars, a movable rake, levers pivoted on said rake, links connecting each key lever to its respective rake lever and connecting each rake lever to its respective type bar, said control means comprising connecting means displacing said rake in relation to the shifting of said basket from its first to its second position and vice versa by operation of said shift bar, said rake being mounted so that the pivoting points of said levers pivoted on the rake are located, in the first and second position of said basket, on lines parallel to the direction of the displacement of said basket from its first into its second position.

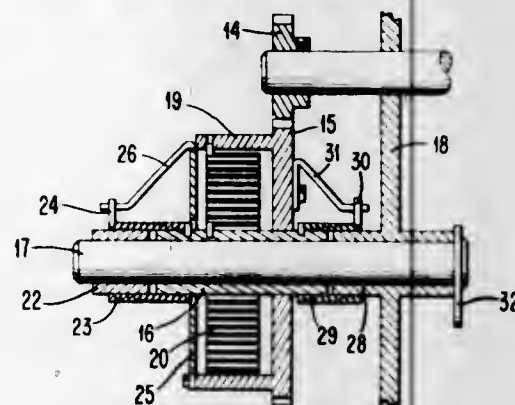
3,313,389

CONSTANT TORQUE DRIVE MEANS FOR TYPEWRITER

Walter O. Cralle, Jr., Lexington, Ky., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Sept. 25, 1963, Ser. No. 311,376
11 Claims. (Cl. 197-82)

1. A constant torque device for maintaining a substantially constant torque on a lead screw used in a typewriter to control movement of a typewriter carrier wherein the lead screw is driven by said constant torque device in one direction and said lead screw drives said constant torque device when said lead screw is rotated in the opposite direction comprising:
an input shaft and means to oscillate said input shaft;
a sleeve member received over said input shaft and rotatable independently thereof;
an annular spring housing received over said sleeve and rotatable independently thereof;

driving means interconnecting said spring housing and the lead screw of the typewriter to permit rotation of said lead screw in one direction by said spring housing and driving of the spring housing by said lead screw when said lead screw is rotated in the opposite direction;
a spiral spring received in said spring housing and having one end connected to said sleeve and the other end connected to said spring housing;
a first clutch spring interconnecting said input shaft and said sleeve to permit winding of said spiral spring when said input shaft rotates in one direction and to



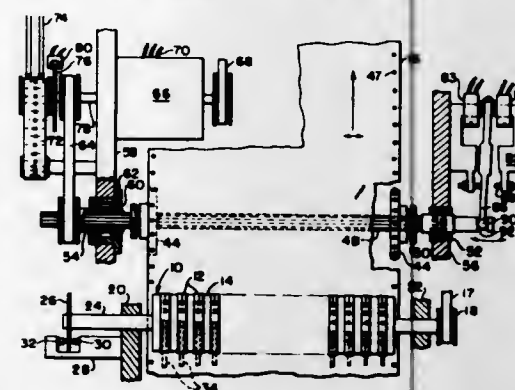
permit relative movement between said sleeve and said input shaft when said input shaft rotates in the other direction;
a stationary member and a second clutch spring interconnecting said sleeve and said stationary member; and
said second clutch spring being wound in a direction opposite to the direction in which said first clutch spring is wound to hold said sleeve against rotation when said input shaft rotates in said other direction and to permit unwinding of said spiral spring when said lead screw is rotated in said opposite direction to drive said annular spring housing.

3,313,390

PRINTING MACHINE INCORPORATING SPACED-FONT PRINT ROLL, AND METHOD OF PRINTING

Robert H. Curtiss, Wayland, Mass., assignor to Analex Corporation, Boston, Mass., a corporation of Massachusetts

Filed Jan. 18, 1965, Ser. No. 426,034
6 Claims. (Cl. 197-113)



1. The method of printing successive lines of characters upon a length of paper, which comprises the steps of:
preparing a cylindrical print roll with a series of circumferential type fonts spaced apart axially on the roll surface by intermediate blank spaces;
continuously rotating said print roll in tangential relation to the surface of the paper while impressing the paper against selected type characters as said characters pass in confronting relation to the paper surface, to imprint spaced-apart characters of a line, in columnar positions confronting said fonts;

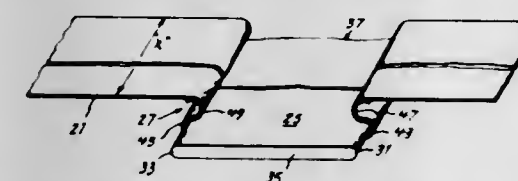
shifting the paper relative to said print roll in the direction of the printed line a distance sufficient to align a group of previously-unprinted columns in confronting relation to the type fonts;
continuing the rotation of said print roll while impressing the paper against selected type characters to imprint intermediate spaced-apart characters in the line;
and repeating the steps of relatively shifting the paper and impressing it against the type fonts until the line of characters is completely printed.

3,313,391

WEB CARRIED CONTROL STRUCTURE

Thaddeus J. Hyjek, Middletown, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 16, 1964, Ser. No. 360,301
1 Claim. (Cl. 197-172)



A device adapted to be carried by a web of material at any preselected position thereon, said device comprising:

- a flat control strip adapted to be disposed in juxtaposition to and in engagement with a predetermined portion of the web of material,
- said strip including opposing parallel planar side portions, one of said side portions engaging the web and extending at least from one edge of the web to the other edge thereof,
- said strip further including outwardly curved end edge portions interconnecting said side portions, and
- a resilient anchor clip formed with a channel portion for cooperating with said control strip to secure said strip to the web of material,
- said clip including opposing side portions curved to a shape corresponding to the curved end portions of said strip for snug registration therewith,
- said clip having opposing integral tab members extending substantially the width thereof and including an arcuate transverse cross section whereby the combined cross section of the tab portions and the associated clip side portions are substantially S-shaped in configuration,
- said clip being formed from a material having resiliency characteristics which permit said strip to be firmly seated in said channel portion of said clip to releasably secure the web of materials between said clip and said strip under conditions where the strip is urged into registration with said channel portion with a force sufficient to spread said opposing tab portions.

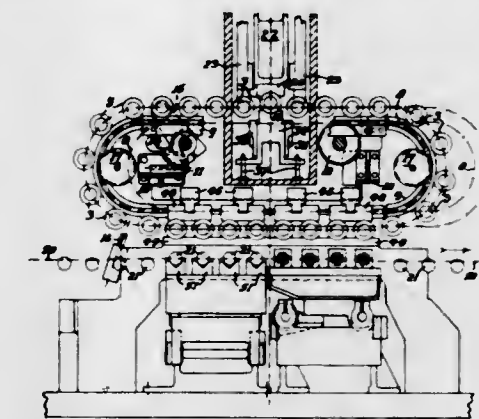
3,313,392

APPARATUS FOR CONVEYING HOLLOW ARTICLES TO A PRINTING STATION

Alfred Bentley Stott, Ronald Hemingway, and Brian Parker, Otley, Yorkshire, England, assignors to Dawson, Payne & Elliott Limited, Otley, Yorkshire, England

Filed Oct. 18, 1965, Ser. No. 497,359
2 Claims. (Cl. 198-19)

1. A conveyor system for conveying hollow articles to a printing station comprising: a delivery station; a feeding station which includes an endless track, a pair of endless chains supported by wheels riding on said endless track, a plurality of mandrels rotatably mounted on said chains to support said hollow articles which are conveyed; first means for raising and lowering the mandrels

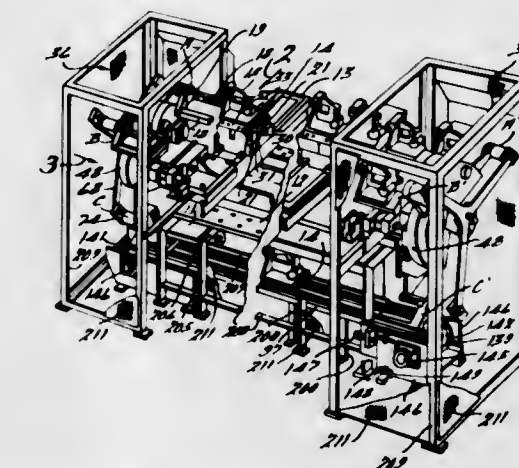


adjacent said feeding station, said other part of said track further including means for feeding a plurality of unprinted hollow articles to said first means after the removal of the group of printed articles, said other part of said track further including adjustable moving means for raising and lowering said mandrels, said mandrel-moving means including manually operated locking means for holding the lowered mandrels in a stationary condition to prevent horizontal displacement of said mandrels.

3,313,393

PALLET TRANSFER DEVICE

Frank A. Solski, Bloomfield Hills, Mich., and Lyman K. Shepard, Upper Saddle River, N.J., assignors to Standard Tool & Manufacturing Company
Original application June 17, 1963, Ser. No. 288,389, now Patent No. 3,237,759, dated Mar. 1, 1966. Divided and this application Sept. 17, 1965, Ser. No. 495,749
6 Claims. (Cl. 198-25)



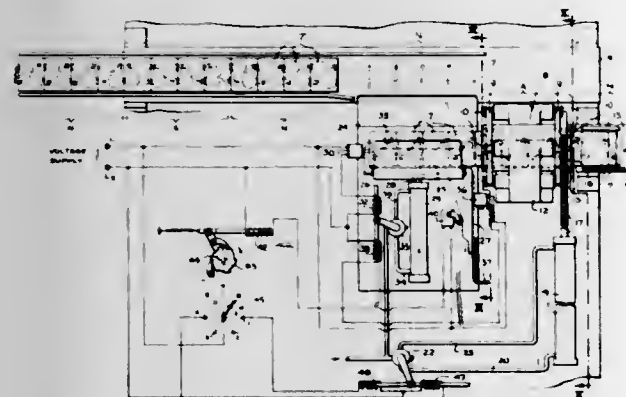
1. In a transfer device, a rotatable hub, arms fixed to said hub and spaced a predetermined distance apart, pivoted carriers on said arms, crank arms fixed to and extending from the pivots of the carriers and from the center about which the hub rotates, an element pivoted to the crank arms for retaining said carriers in horizontal planes, said hub arms being spaced an equal angular distance apart, stop means carried by the hub spaced the same distance apart as said hub arms, a pin projectable into said stop means for locating the hub at each advanced position, a machine having one of said transfer devices at each end oppositely disposed to have the hub and arm facing each other, means on said machine for the reception of workpiece supporting pallets which are

advanced to stations therealong, and means on said machine located below said pallet advancing means for returning said pallets to the starting end of the machine, said transfer devices at each end of the machine transferring the pallets from and to the advancing means and the returning means.

3,313,394

METHOD AND APPARATUS FOR STACKING AND PACKING WRAPPED ELECTRIC LAMPS

John E. Mills, Orange, and Edward J. Getz, Irvington, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 11, 1964, Ser. No. 350,993
4 Claims. (Cl. 198—33)



1. The method of stacking and packing wrapped articles such as electric incandescent lamps, which method comprises:

- continuously feeding such wrapped lamps in a straight line against a stop at the end of such line,
- preselecting a precisely numbered group of such wrapped lamps from the end of the feed-line against the stop by removal thereof with a sharp cut-off from the next succeeding wrapped lamps in the feed-line to avoid distortion of the wrappers and damage to such lamps,
- transferring the preselected precise group of lamps from the end of the feed-line and depositing such group at the beginning of a laterally spaced adjacent end of a second feed-line,
- and inverting every third group of the same precisely numbered wrapped lamps prior to their removal from the continuous feed-line for stacking and packing.

3,313,395

CLAMP ASSEMBLY

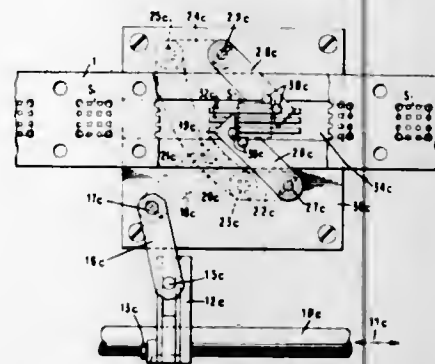
Frank L. De Turris, Wappingers Falls, and Jean J. L. Godat, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed May 27, 1965, Ser. No. 459,344

5 Claims. (Cl. 198—33)

1. A clamp assembly especially adapted for orienting the position of a square article comprising, in combination, a pair of lever arms adapted to swing into engagement with and out of engagement with two diagonally opposite corners of said article, contact means associated with each of said lever arms for making line contact with each side forming each of said two diagonally opposite corners of said article, each of said pair of lever arms having a fixed pivot pin centrally located at one end of said lever arm, the center of said fixed pivot pin of each of said lever arms being on a line with the article contact portions of said contact means which line is normal to the diagonal line through said two diagonally opposite

corners of said article, and means operatively connected to said fixed pivot pins for simultaneously turning said pivot pins in clockwise and counter-clockwise directions



thereby swinging said lever arms into and out of engagement with said two diagonally opposite corners of said article.

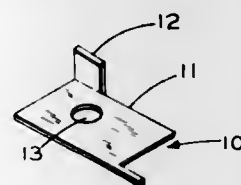
3,313,396

APPARATUS FOR FEEDING AND ORIENTING PLATE-LIKE ARTICLES HAVING ECCENTRICALLY LOCATED PROJECTIONS

Daniel James Caravetta, Easton, and Forrest George Lentz, Bethlehem, Pa., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 9, 1965, Ser. No. 512,739

9 Claims. (Cl. 198—33)



1. An apparatus for orienting articles having a base plate with an eccentrically located projection joined thereto, comprising:

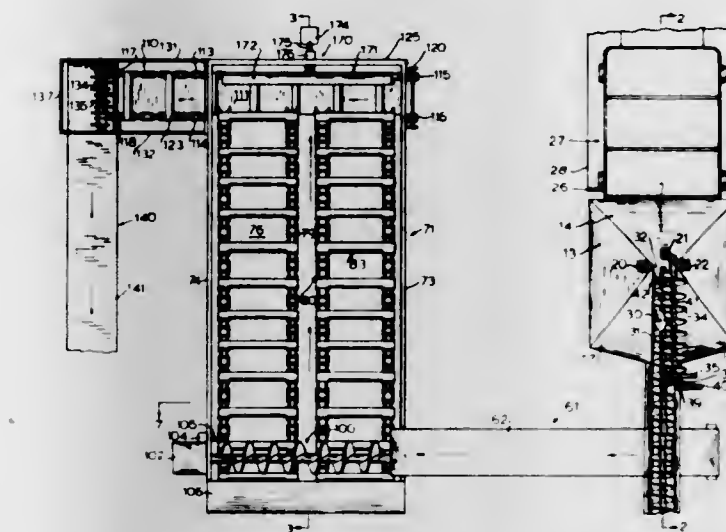
- inclined means enclosed along a first side thereof for conveying a plurality of articles with each base plate flat, and in contact with said conveying means and each projection normally extending vertically upward from said conveying means;
- first thinning means mounted on the first side of said conveying means and extending thereover to a predetermined distance from a second side of the conveying means for passing articles one at a time;
- second thinning means on said conveying means rendered effective by passage of articles moving abreast of other articles adjacent the first side of the conveying means for directing said articles from said conveying means;
- slotted means attached to said second side and extending over said conveying means toward said first side for intercepting articles having projections positioned toward said second side to pivot said articles for further movement with the projections positioned adjacent said first side;
- means on said conveying means rendered effective by passage of articles turned down with the projections engaging an edge along the second side of the conveying means for directing said articles from the conveying means;
- means extending across said conveying means and having an aperture therethrough for passing only those articles having the projections toward the first side of said conveying means; and

means for imparting an oscillatory vibration to said conveyor means.

3,313,397

FEATHER TRANSFER AND STORAGE SYSTEM

Monroe E. Evans and Cyril D. Willin, Fayetteville, N.C., assignors to Cape Fear Feed Products, Inc., Fayetteville, N.C., a corporation of North Carolina
Filed Mar. 25, 1966, Ser. No. 537,425
12 Claims. (Cl. 198—54)



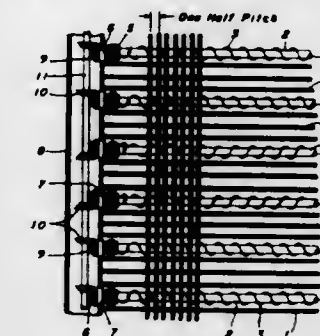
1. The combination of a feather storage and transfer system which receives feathers from a source and which selectively charges a rendering cooker with said feathers at a predetermined rate, said system comprising:

- charging hopper means for receiving said feathers from said source, said hopper means having inwardly and downwardly sloping converging sides;
- screw conveyor means extending into said hopper means and communicating with selected hopper sides for withdrawing said feathers from the same at a selected rate, said screw conveyor means including a gravity discharge means;
- intermediate conveyor means having one end positioned beneath said gravity discharge means for receiving said feathers from said screw conveyor means, said intermediate conveyor means directing said feathers away from said screw conveyor means and discharging the same from the other end thereof;
- storage bin means positioned under and adapted to receive said feathers from said other end of said intermediate conveyor means, said storage bin means including a flat bottom wall, upwardly extending side walls supporting said bottom wall, an end wall supported by said side walls above said bottom wall, an open end and at least one conveyor track means being operable to slide said feathers across said bottom surface and out said open end;
- spreader conveyor means positioned adjacent said open end of said storage bin means and adapted to receive said feathers being ejected from said open end by said track means, said spreader conveyor means including an endless conveyor, a feather spreading means mounted above said endless conveyor and in communication with said feathers carried thereby for separating and forceably sweeping said feathers outwardly from said spreader conveyor means and a funnel means for defining a path of travel for said separated feathers; and
- a feeder conveyor means mounted in said path for receiving said feathers from said spreader conveyor means, said feeder conveyor means adapted to transport said feathers to said rendering cooker.

3,313,398

TRANSFER TABLE METHOD AND APPARATUS

Steve Andrews, Lorain, Ohio, assignor to United States Steel Corporation, a corporation of Delaware
Filed Aug. 26, 1964, Ser. No. 392,244
6 Claims. (Cl. 198—88)

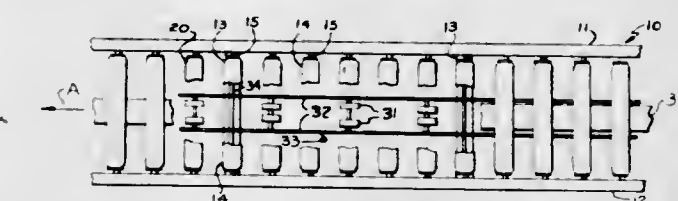


1. In a conveyor for moving elongated articles laterally over a transfer table such as a pipe cooling bed and the like, a plurality of conveyor mechanisms having pusher elements at equally spaced intervals along the lengths thereof for moving the articles over said table, said conveyor mechanisms being adapted for operation with the said pusher elements thereon in laterally aligned positions whereby an article being moved is engaged by a pusher element in each of said mechanisms and the spacing between said articles on said table corresponds to the spacing between said pusher elements along said conveyor mechanisms, and means for adjusting the pusher elements on selected ones of said conveyor mechanisms to positions in which they are out of lateral alignment with and arranged between the pusher elements on the remaining ones of said conveyor mechanisms whereby articles moving over said table are engaged only by the pusher elements on said selected conveyor mechanisms or on said remaining conveyor mechanisms, and the spacing between articles on said table is a fractional part of the spacing between the pusher elements along said conveyor mechanisms.

3,313,399

LOW PRESSURE ACCUMULATOR

Maynard J. De Good, Grand Rapids, Mich., assignor to The Rapids-Standard Company, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Oct. 20, 1965, Ser. No. 498,976
4 Claims. (Cl. 198—127)



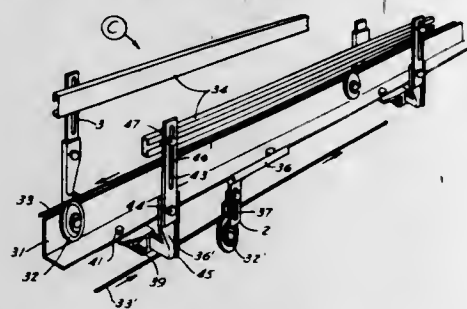
1. A conveyor having side rails and rotatable members over which articles travel, the rotatable members having a shaft supported by the side rails, a driven flexible propelling member beneath the rotatable members, pressure members at spaced intervals beneath the propelling member and holding the propelling member in driving engagement with the rotatable members; means supporting said pressure members in a fixed vertical position; one of the rotatable members being vertically aligned with each of the pressure members, the conveyor characterized by the side rails having pairs of transversely aligned horizontal slots elongated lengthwise of the conveyor, each pair receiving the shaft of one of the rotatable members vertically aligned with a pressure member with the shaft in abutment with one end of the slot when the rotatable and pressure members are vertically aligned, the slot extending therefrom in the direction of travel of the propelling member; a resilient element biasing the shaft to

ward the one end; when forward motion of an article in contact with the rotatable member is forcibly arrested, the rotatable member shifting to the other end of the pair of slots where it engages a non-supported portion of the propelling member and the frictional engaging member between it and the propelling member is reduced.

3,313,400

CAN CONVEYOR

Ralph K. Johnson, Palo Alto, Calif., assignor to Can-Veyor, Inc., Mountain View, Calif.
Filed May 6, 1965, Ser. No. 453,654
8 Claims. (Cl. 198-137)

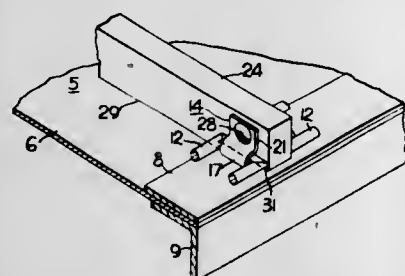


1. In a can conveyor of the type having a moving can transporting member, a support for said transporting member, spaced apart side rails supported from said support for containing cans on said transporting member, the improvement comprising a plurality of substantially identical L-shaped rail supporting bracket members, each of said bracket members having a side and a base portion defining the side and base of the L with said base portion provided with an elongate slot, said bracket members arranged in pairs spaced apart along the length of said support, the brackets of each pair positioned at opposite sides of said support with the bracket side portions extending upwardly spaced apart for supporting said side rails and containing a can therebetween and with the bracket base portions extending under said support in parallel planes, and screw means passing through a mating portion of the slots in each of the base portions of the brackets of each of said pairs for securing said pairs of brackets to said support.

3,313,401

RADDLE CONVEYOR

Lester E. Oberholtz, Independence, Mo., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Sept. 23, 1965, Ser. No. 489,620
1 Claim. (Cl. 198-175)



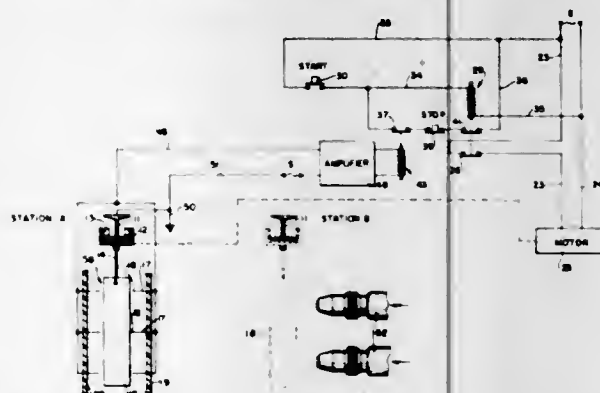
In combination in a riddle conveyor including a pair of transversely spaced endless chains connected at longitudinally spaced intervals by riddle slats and a floor over which said chains and said riddle slats move, the improvement comprising each said chain including forked links with each link having a base the lower surface of which contacts said floor and wherein portions of opposed sides said links are bowed outwardly adjacent to and above the bases of said links to provide openings in which adjacent links are received, said links each being provided with continuations of said bowed portions, said riddle slats each being provided with a pair of longitudinally spaced transversely extending side surfaces which are complementary to said continuations of said bowed portions, said riddle slats being positioned with said side surfaces in contact with said continuations of said bowed portions to provide a closure for said forked links, said riddle slats each being provided with a pair of transversely spaced lower surfaces which are complementary to the upper surfaces of said bases and such lower surfaces being positioned in contact with said upper surfaces to provide spacing between said adjacent links, said riddle slats also being provided with a surface positioned between said lower surfaces parallel thereto and at a lower height in scraping contact with said floor, and retaining means passing through said continuations and said side surfaces for joining same.

dinally spaced transversely extending side surfaces which are complementary to said continuations of said bowed portions, said riddle slats being positioned with said side surfaces in contact with said continuations of said bowed portions to provide a closure for said forked links, said riddle slats each being provided with a pair of transversely spaced lower surfaces which are complementary to the upper surfaces of said bases and such lower surfaces being positioned in contact with said upper surfaces to provide spacing between said adjacent links, said riddle slats also being provided with a surface positioned between said lower surfaces parallel thereto and at a lower height in scraping contact with said floor, and retaining means passing through said continuations and said side surfaces for joining same.

3,313,402

SILHOUETTE SAFETY CONTROL FOR PAINT SPRAY CONVEYOR

Richard F. Wiggins, Fairfield, Conn., assignor to The Gyromat Corporation, Fairfield, Conn., a corporation of Connecticut
Filed Apr. 29, 1964, Ser. No. 363,495
3 Claims. (Cl. 198-232)



1. Safety control for a spray painting system, comprising
(a) conveyor means adapted to transport a suspended electroconductive article having a predetermined, desired outline and orientation in a predetermined path,
(b) a spray painting station located at a point in said path,
(c) an orientation control station located in said path in advance of said spray painting station,
(d) said control station having an array of wire-like probe elements generally defining said predetermined outline,
(e) first electrical circuit means energizing said conveyor means,
(f) amplification means in association with said conveyor means and said probe elements, and
(g) second electrical circuit means normally open but being closable upon contact of an improperly oriented article with one of said probes, and
(h) interlock relay means associated with said amplifier and said first circuit means and adapted to de-energize said conveyor means upon completion of said second circuit means.

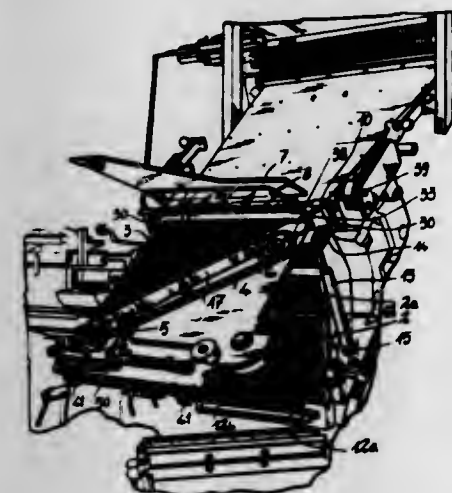
3,313,403

COMPOSING MACHINES FOR PRINTING TYPES

Daniele Menta, 16 Via Cesare Balbo, Milan, Italy
Filed Jan. 3, 1966, Ser. No. 518,445
5 Claims. (Cl. 199-15)

1. In a composing machine having a keyboard and a plurality of rods selectively actuated by said keyboard for releasing selected matrices, swingable means having an operating position situated in front of said rods and including a pair of plates between which a grooved struc-

ture is situated for guiding the released matrices for movement between said plates, said swingable means also including between said plates a rotary belt means, transmission means for driving said rotary belt means and including motion-transmitting components one of which is carried by said swingable means and the other of which is carried by said machine at a location which is situated beyond said rods so that said other component of said transmission means does not prevent access to said rods, said components of said transmission means being in op-

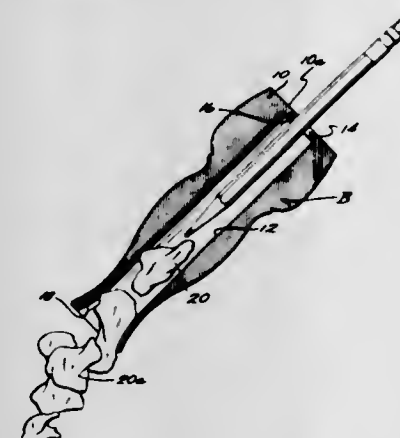


erative driving engagement with each other when said swingable means is in said operating position thereof, and a stationary shaft operatively connected with said swingable means to support the latter for swinging movement away from said operating position to a location giving free access to said rods and back to said operating position situated in front of said rods, said components of said transmission means automatically resuming their operative driving engagement with each other upon return of said swingable means to said operating position thereof.

3,313,404

TEMPORARY STORAGE RECEPTACLE FOR PACKAGE WRAPPERS

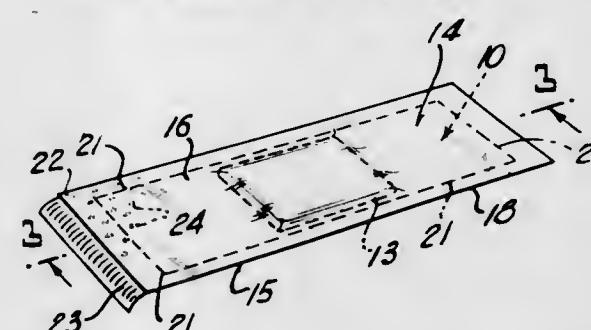
John H. Hekman, Wheaton, Ill., assignor to Keebler Company, a corporation of Delaware
Filed Feb. 21, 1966, Ser. No. 529,124
2 Claims. (Cl. 206-1)



1. In a temporary storage receptacle for articles such as package wrappers or the like, a vertically elongated body having an enlarged base portion for supporting said body on a table top or the like, said body having a bore extending longitudinally thereof and adapted to receive such articles, said bore having an open end at the top of said body and extending throughout the height of said body, the lower end portion of said bore being smaller in cross section than the remaining portion thereof to prevent free fallout of articles deposited therein,

3,313,405
PACKAGE

Benjamin B. Blackford, deceased, late of Metuchen, N.J., by Dorothy R. Blackford, administratrix, Metuchen, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed Nov. 5, 1964, Ser. No. 409,323
11 Claims. (Cl. 206-63.2)



1. In a sterile package a laminate forming at least a part of the outer wrapping of said package said laminate comprising an air-pervious bacteria impervious paper sheet having adhered to one side thereof a thermoplastic film, said film being impervious to air but having a plurality of small air-pervious areas in which said film is fused to said paper sheet, said areas of said laminate in which said film is fused to said paper being pervious to the passage of air but impervious to the passage of air-borne bacteria therethrough.

3,313,406

PACKAGE OF MILK CARTONS AND THE PROCESS OF MAKING THE PACKAGE

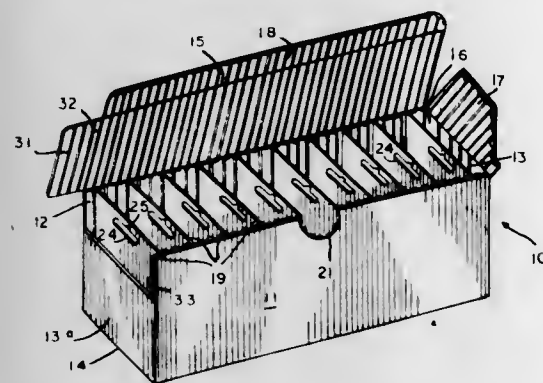
Eric B. Outwater, New York, N.Y., assignor to International Paper Company, New York, N.Y., a corporation of New York
Filed July 29, 1963, Ser. No. 298,270
5 Claims. (Cl. 206-65)



1. A package for liquids comprising a plurality of paperboard cartons for liquids arranged in rows, brace members of corrugated paperboard having a height substantially equal to that of the cartons inserted between at least two of the rows, and a carrier formed about the cartons and brace members from a one-piece, substantially rectangular blank and consisting of a bottom panel, side panels hingedly connected along longitudinal foldlines with and disposed perpendicularly to the bottom panel, first and second top panel sections hingedly connected along longitudinal foldlines with and disposed perpendicularly to the side panels, female locking means disposed in the first top panel section, male locking means extending from the second top panel section and engaged by the female locking means, end flap sections hingedly connected along lateral foldlines with and disposed perpen-

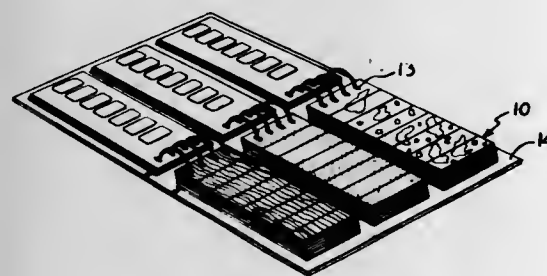
dicularly to the bottom panel, web corner sections hingedly connected along longitudinal foldlines and disposed perpendicularly to the end flap sections and, side flap sections hingedly connected along diagonal foldlines with and disposed parallelly to the web corner sections, the web corner sections and the side flap sections being wedged between the cartons and the side walls.

3,313,407
CARTON FOR STORING AND LOADING
MERCHANDISE DISPLAY CARDS
Floyd R. Palm, Jr., Rockford, Ill., assignor to National Lock Co., Rockford, Ill., a corporation of Delaware
Filed Jan. 15, 1965, Ser. No. 425,761
4 Claims. (Cl. 206-65)



1. A carton for storing and loading plural merchandise display cards on a display hanger where each display card includes an elongated slot adjacent the top of the card and with the slots of adjacent cards in horizontal alignment, comprising a carton formed of a single-faced corrugated board having front, bottom, rear and end panels and a pivoted lid all joined together to form a closed carton, the corrugations on the interior surface of the carton positioning the display cards in the carton in a soldier course, one of said end panels being of less height than the depth of the carton to provide an end opening between the upper edge of said end panel and the lid, said lid having an elongated front flap and a depending end flap adapted to cover the end opening formed by said end panel of reduced height, said opening providing access of a display hanger into the carton and through adjacent aligned slots in the display cards and suspending the plural display cards removed from the carton.

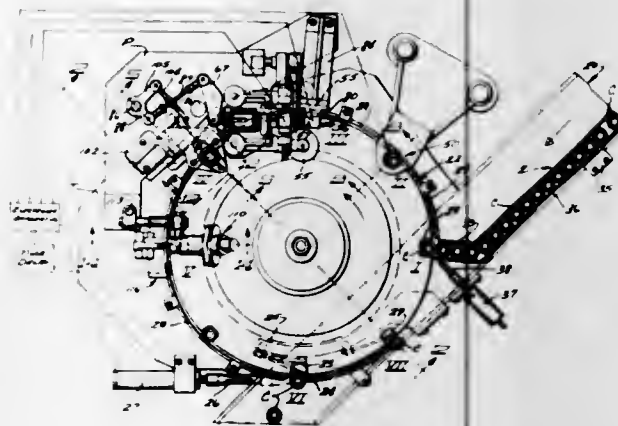
3,313,408
DECORATIVE LAMINATE
Gilbert Daniel Endrizzi, Wisconsin Rapids, Wis., assignor to Consoweld Corporation, Wisconsin Rapids, Wis., a corporation of Wisconsin
Filed July 10, 1964, Ser. No. 381,785
4 Claims. (Cl. 206-82)



1. A decorative laminate sampler comprising a unitary rigid strip having a decorative surface, said strip being divided transversely into a plurality of connected chips by lines of severance extending only partially into the thickness thereof and fully across said decorative face

whereby said strip may be manually bent and separated into individual chips representative of said decorative laminate.

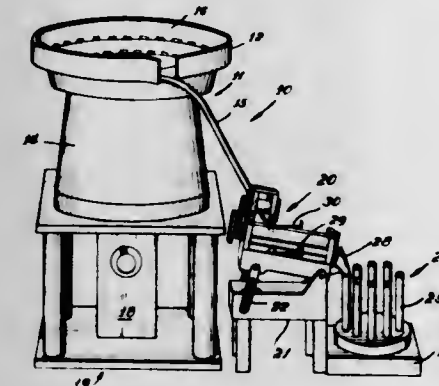
3,313,409
APPARATUS FOR INSPECTING GLASSWARE
John R. Johnson, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Feb. 7, 1964, Ser. No. 343,404
12 Claims. (Cl. 209-73)



3. In an apparatus for inspecting glass containers, the combination comprising
a conveyor,
a table,
an indexing head having a plurality of circumferentially spaced pockets mounted for rotation whereby said pockets are successively moved from the position overlying said conveyor to a position along said table,
a plurality of inspecting devices at circumferentially spaced points along the periphery of said indexing head and along said table,
an entry station adjacent the area of juncture of the conveyor and indexing head,
means providing a guideway for guiding the containers in a row and directing them substantially radially toward said indexing head,
a discharge station spaced from said entry station at the area of juncture of the periphery of said indexing head and said conveyor,
means responsive to an electrical signal from one of said inspection stations for preventing the normal discharge of a glass container from a pocket of said indexing head to the conveyor and removal from said pocket by said conveyor,
a reject station interposed between said entry station and said discharge station at the area where the periphery of said indexing head overlies said conveyor,
and means normally urging a container out of a pocket at said reject station,
whereby when said responsive means prevents the normal discharge of a glass container, subsequent movement of said pocket to the reject station brings the container into engagement with said reject means for discharge of said container from said pocket beyond the periphery of said conveyor,
switch means in said guideway means adapted to be engaged by said glass containers,
and means responsive to said switch means and movable in the path of said glass containers toward the periphery of said indexing head to obstruct the movement of said containers toward the periphery, when said guideway is not substantially filled with glass containers,
said guideway means including a first section extending radially toward the periphery of said indexing head and a second section extending at an angle to said

first section and substantially parallel to said conveyor whereby if a container is tipped over in its movement along said guideway, it is prevented from moving toward the periphery of the indexing head because of the change in direction caused by the angularity between the two sections of the guideway.

3,313,410
SIZING AND ORIENTING DEVICE AND METHOD
George J. Gardner, Fairview, Pa., assignor to Automation Devices, Inc., Erie, Pa., a corporation of Pennsylvania
Filed Oct. 17, 1963, Ser. No. 345,819
7 Claims. (Cl. 209-73)



1. Apparatus for feeding and sizing tapered locking parts comprising: a plurality of laterally spaced pairs of counter-rotating rollers positioned vertically one above the other; means for rotating said rollers; conveyor chute means extending between each pair of counter-rotating rollers and adapted to confine and to feed said parts in end-to-end relationship therein past said pairs of counter-rotating rollers; the center distance between said pairs of counter-rotating rollers being established to cause predetermined ones of said pairs of rollers to engage and to remove oversize parts from said conveyor means, to engage and to remove acceptable parts from said conveyor means, and to permit undersize parts to pass between said pairs of rollers.

3,313,411
METHOD AND APPARATUS FOR SORTING
HELICAL GEARS
Edward F. Fabish, Glenview, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed May 11, 1965, Ser. No. 454,887
6 Claims. (Cl. 209-80)



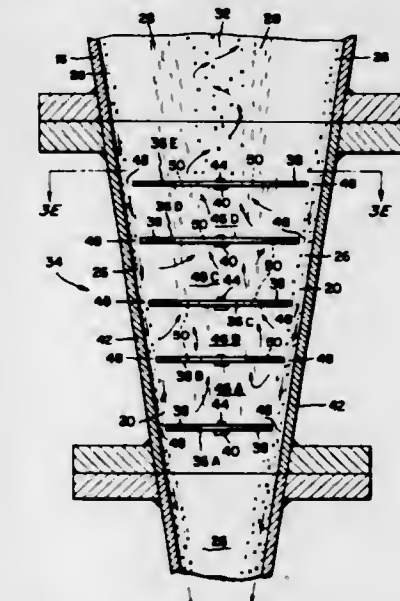
1. Apparatus for sorting helical gears having the same diameters but different numbers of teeth which comprises gear axis orienting means for engagement with the teeth of each of said helical gears and means for selectively col-

lecting said gears according to the axial orientation of said gears resulting from said engagement.

3,313,412
RECOVERY OF MOLYBDENITE FROM COPPER SULFIDE CONCENTRATES BY FROTH FLOTATION
Philip A. Bloom and Stuart J. Hussey, Tucson, Ariz., assignors to the United States of America as represented by the Secretary of the Interior
No Drawing. Filed Aug. 5, 1964, Ser. No. 387,813
6 Claims. (Cl. 209-167)

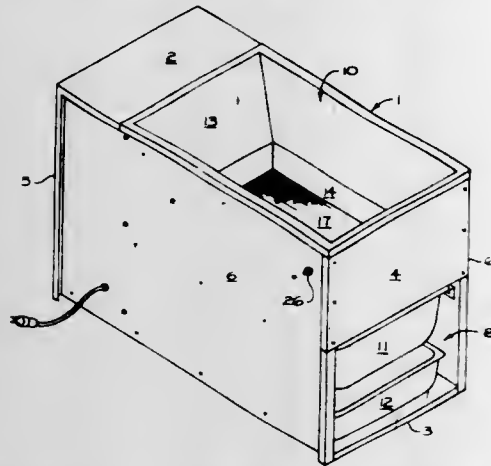
1. In a froth flotation process for the recovery of molybdenite from a molybdenite-copper sulfide concentrate wherein said concentrate is present in a flotation cell as an aqueous pulp, the improvement consisting of depressing the copper sulfide by adding to said aqueous pulp a depressant consisting solely of an aluminum salt and then froth floating the molybdenite.

3,313,413
APPARATUS FOR REMOVING DELETERIOUS MATERIAL FROM PULP STOCK
Henri A. Delcclier, Beaurepaire, Quebec, Canada, assignor to Canadian Ingersoll-Rand Co., Ltd., Montreal, Quebec, Canada, a corporation of Canada
Filed Aug. 31, 1964, Ser. No. 393,266
5 Claims. (Cl. 209-211)



1. A pulp stock cleaning device for separating deleterious material from pulp fiber comprising:
an elongated tubular member;
means at one end of said tubular member for introducing stock to be cleaned into said tubular member and creating a vortex flow of stock in said tubular member;
an outlet for pulp fiber at said one end of said tubular member;
an outlet for deleterious material at the other end of said tubular member;
a plurality of baffle plates mounted in said other end of said tubular member and spaced from each other to define chamber means;
said baffle plates being arranged to allow stock to be cleaned to pass into said chamber means and being spaced from the internal wall of said tubular member to define a continuous passage for said deleterious material between said plates and said internal wall to said outlet for deleterious material; and said baffle plates being provided with a plurality of apertures randomly spaced to provide a labyrinth path for cleaned stock moving toward said pulp fiber outlet.

3,313,414
FLOUR SIFTER
 Loyd Marvin Cox, 1315 E. Lancaster,
 Fort Worth, Tex. 76102
 Filed Sept. 11, 1964, Ser. No. 395,683
 1 Claim. (Cl. 209—236)



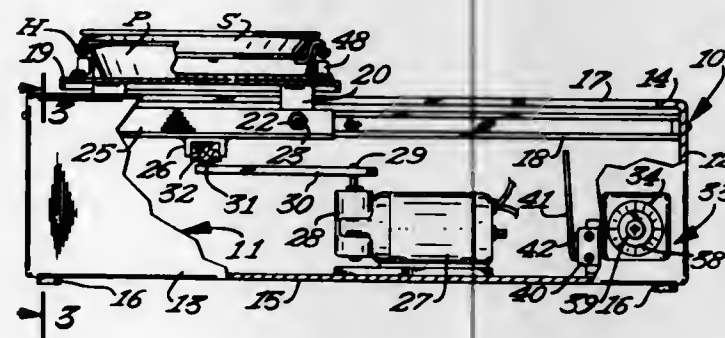
In a flour sifter for commercial use, as in restaurants, for sifting for further use flour which has been used for applying surface coatings of dry flour, alone or in combination with suitable batters, to articles of food such as chicken, onion rings, fish, and bakery products, preparatory to cooking such articles, to separate and remove from the flour lumps, dough, or dumplings of predetermined large particle size, the combination of a rectangular housing, formed substantially of sheet metal, having a front end and a rear end and having a transverse partition whereby it is divided into a front compartment and a rear compartment, said front compartment being open at the top and having a front opening extending upwardly from the bottom thereof, a sheet metal hopper removably inserted in said front compartment, above the bottom thereof, and having length and width dimensions at the top thereof coinciding with those of said front compartment, the length and width dimensions of said hopper being progressively reduced in a downward direction, a rectangular tray having a screen bottom, and having length and width dimensions slightly larger than the lower portion of said hopper, arranged immediately below said hopper with its screen bottom in closely spaced relation thereto, and having means whereby it is suspended from the sides of said front compartment for reciprocal swinging movement longitudinally thereof, said screen bottom being secured to said tray by a hinge and a spring biased latch positioned on opposite sides thereof, a sifted flour receiving pan removably inserted in said front compartment, below said hopper and said tray, said pan having length and width dimensions coinciding with those of said front compartment, and having means whereby it is slidably supported for longitudinal movement therein, a dumpling receiving pan of like length and width dimensions slidably received in the bottom of said front compartment, below said first mentioned pan, a reciprocating arm having one of its ends connected to the rearward end of said tray and extending through an opening therefor in said partition, and means in said rear compartment for imparting a reciprocating movement to said arm whereby said tray is vibrated.

3,313,415
RECIPROCATING GRAIN SIZING DEVICE FOR SAMPLING
 Emil S. Swenson, 247 106th Ave. NW., Coon Rapids, Minn. 55420, and William L. Koski, 3905 Halifax Ave. N., Minneapolis, Minn. 55422
 Filed June 2, 1964, Ser. No. 371,931
 3 Claims. (Cl. 209—237)

1. Portable apparatus for use in classifying grain, seed and the like of samples thereof which are of predeter-

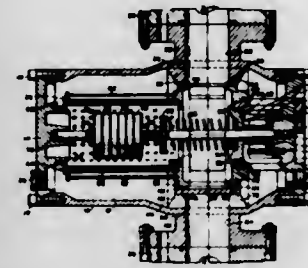
mined quantity to uniformly determine the relative amounts of the material of such samples which are larger and smaller than a predetermined size, said apparatus comprising

- a substantially closed housing having a substantially flat upper surface, said upper surface having a pair of elongate slots therein disposed in substantially parallel relation with respect to each other,
- a pair of elongate channel-shaped track members mounted within said housing and each being positioned below and in close proximity to one of said slots,
- a reciprocating table positioned above said upper surface of the housing for longitudinal reciprocating movement relative thereto through a forward stroke and a return stroke in each cycle of reciprocating movement,
- track engaging means mounted on said table and depending therefrom through said slots and engaging said track members for movement therealong,
- means on said table for positioning and releasably mounting a sieve pan and sieve thereon,
- electric motor means for reciprocating said table along said track members,
- circuit means connectible to a source of electrical current and to said motor means for supplying electrical current to the latter,



drive connections interconnecting said motor means with said table including an elongate, horizontally oriented crank arm revoluble about a substantially vertical axis, an inverted channel member fixedly connected with said table and extending transversely of said track members, a slide element connected to said crank arm and slidable in said channel member whereby upon revolving movement of said crank arm when said motor means is energized, the table will be longitudinally reciprocated along said track members, and electrical impulse counter control mechanism interposed in circuit controlling relation within said circuit means and including means for recording and counting each complete cycle of reciprocating movement of said table as an impulse, said recording and counting means including a normally open switch having a switch arm, means on said table disposed in obstructing relation with said switch arm and engaging the same during the terminal portion of movement of each return stroke to momentarily close the switch and cause an electrical impulse to be transmitted to said electrical impulse counter control mechanism, whereby said impulse is recorded and counted, said impulse counter control mechanism being variously adjustable to pre-set the number of impulses received thereby and de-energizing the motor means when said table has been driven through a predetermined number of cycles of reciprocating movement.

3,313,416
BAFFLED FILTER DEVICE
 Nils O. Rosaen, Bloomfield Hills, Mich., assignor to The Rosaen Filter Company, Hazel Park, Mich., a corporation of Michigan
 Filed Oct. 9, 1963, Ser. No. 314,919
 11 Claims. (Cl. 210—90)

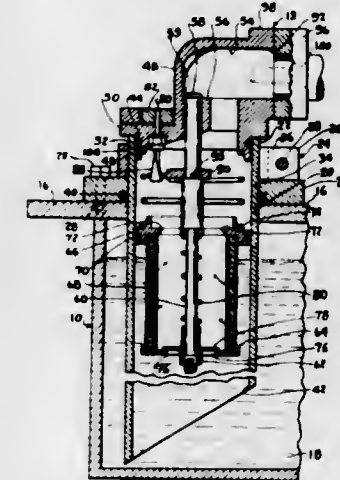


1. A filter device comprising
 - (a) a housing defining a closed cavity and having an inlet and an outlet communicating with said cavity,
 - (b) a filter assembly including a substantially cylindrical filter element carried in said cavity,
 - (c) said filter element being radially inwardly spaced from the inner wall of said housing and being substantially coaxial therewith to form a substantially annular outer chamber exteriorly of said filter element and a generally cylindrical chamber interiorly of said filter element,
 - (d) said housing having a radially inwardly enlarged portion intermediate the ends of said housing,
 - (e) said filter assembly further comprising a hollow porting member axially slidably engaging the surface of said enlarged portion and being secured to one end of said filter element in substantially axial alignment therewith,
 - (f) said enlarged portion being provided with said inlet, a baffle member adjacent said inlet and a passage adjacent said baffle member providing communication with said annular chamber,
 - (g) said outlet being provided in said enlarged portion and said porting member being provided with ports providing communication between said cylindrical chamber and said outlet,
 - (h) a pair of end caps each respectively removably secured to the ends of said housing,
 - (i) said filter assembly including means engaging said end caps to prevent fluid leakage therepast,
 - (j) said filter assembly being axially slidably removable from said housing upon removal of one of said end caps,
 - (k) a rod member carried by one of said end caps in a position substantially coaxial with respect to said housing,
 - (l) one of said end caps being provided with an axially inwardly extending hollow boss portion communicating with the interior of said porting member and ports providing communication between said inlet and the interior of said hollow boss portion,
 - (m) a valve member axially slidably carried by said rod member in a position to seat in the open end of said hollow boss portion, and
 - (n) by-passing means urging said valve member toward a position closing communication between said inlet and said porting member.

3,313,417
MOBILE FILTERS
 Nils O. Rosaen, Bloomfield Hills, Mich., assignor to The Rosaen Filter Company, Hazel Park, Mich., a corporation of Michigan
 Filed June 8, 1966, Ser. No. 562,417
 13 Claims. (Cl. 210—90)

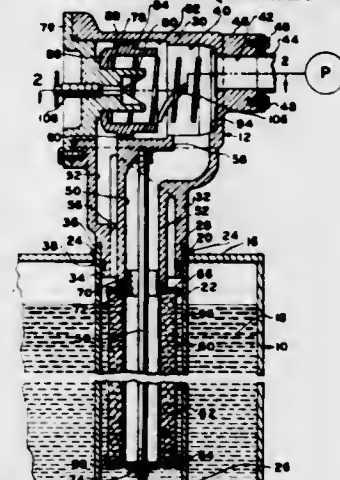
1. In a fluid system having a fluid reservoir a filter device comprising,

- (a) a tubular member having an inlet end and an opposite end and means adjustably mounting said tubular member to said fluid reservoir in a position having said inlet end disposed below the level of fluid in said reservoir, said mounting means comprising a top plate provided for said reservoir, an opening in said top plate, means carried by the top plate around said opening and engaging said tubular member to axially slidably position said tubular member to extend through said top plate into said reservoir,



- (b) an outlet member connected with the opposite end of said tubular member and disposed exteriorly of said reservoir,
- (c) a filter assembly including a filter element carried in said tubular member and including means normally directing fluid flow from said reservoir through said filter element and to said outlet member, and
- (d) means securing said filter assembly to said outlet member to support said filter element within said tubular member.

3,313,418
BAYONET FILTER ASSEMBLY
 Nils O. Rosaen, Bloomfield Hills, Mich., assignor to The Rosaen Filter Company, Hazel Park, Mich., a corporation of Michigan
 Filed June 24, 1966, Ser. No. 563,625
 10 Claims. (Cl. 210—90)



1. A filter device comprising,
 - (a) a tubular member having an open inlet end and an open opposite end,
 - (b) a housing structure including a portion adapted to be inserted in said opposite end of said tubular member,
 - (c) a filter element fixed to said housing structure to prevent relative movement therebetween and extending into the interior of said tubular member,
 - (d) a cylindrical guide surface formed in said housing structure and a pressure responsive valve means carried by said housing structure and normally di-

recting fluid through said filter element, said valve means having an annular flange portion axially slidably engaging said guide surface and having opposite sides exposed to opposite sides of said filter element whereby said pressure responsive valve means is moved along said guide surface in response to changes in the pressure differential across said filter element, and

(e) said pressure responsive means being operable to open a fluid path bypassing said filter element upon the pressure differential across said filter element increasing to a predetermined value.

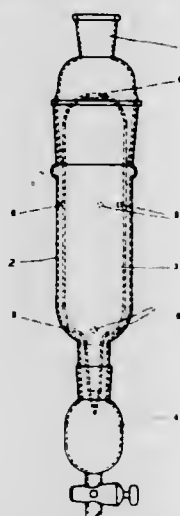
3,313,419

APPARATUS FOR USE IN WASH-THROUGH CHROMATOGRAPHY

Helmut Schlitt, Masnago, Italy, assignor to European Atomic Energy Community—Euratom, Brussels, Belgium

Filed Nov. 4, 1963, Ser. No. 321,266
Claims priority, application Germany, Nov. 23, 1962, E 17,474

3 Claims. (Cl. 210—198)



1. Apparatus for use in wash-through thin-layer chromatography comprising: a cylindrical throughfeed vessel having an inlet and an outlet; a rigid carrier having a surface in the form of an upright cylinder with a domed upper end, said carrier being loosely fitted in said cylindrical throughfeed vessel with an intermediate space being left between said vessel and said carrier; and a thin layer of adsorption material provided on said surface.

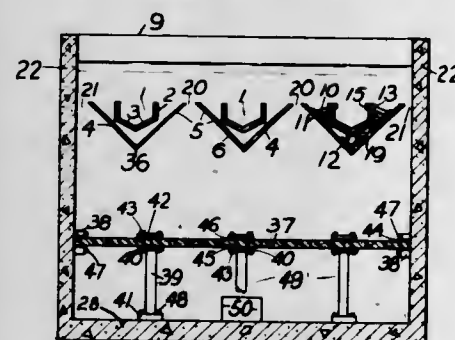
3,313,420

PERFORATED EQUALIZATION BAFFLES FOR BACKWASHING RAPID SAND FILTERS AND PARALLEL APPLICATIONS

A. Adler Hirsch, 141 Norwood St., Shreveport, La. 71105

Filed Oct. 7, 1963, Ser. No. 314,172

10 Claims. (Cl. 210—275)



4. In a filter apparatus cleaned by backwash in reverse flow, a granular bed having a plurality of layers, container means for said bed including a plurality of side walls, a

plurality of wash water troughs above said bed, each trough having overflow lips, a distributive means to apply wash water uniformly underneath said granular bed and expand the top layer thereof, means to furnish said wash water to said distributive means, and upflow equalizing means above said bed to maintain uniform upflow in the wash water emerging from said expanded top layer over its surficial area.

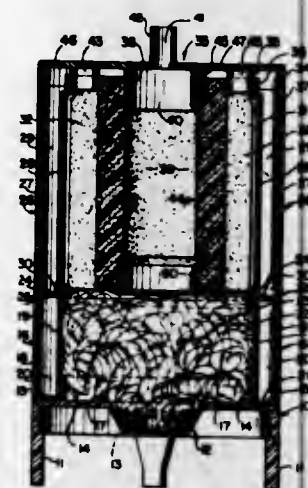
3,313,421

CARTRIDGE FOR FILTERING MEDIUM

Douglas R. Falkenberg, 20977 Westlake Road, Rocky River, Ohio 44116, and Edward L. Sharpe, Elyria, Ohio; said Sharpe assignor to said Falkenberg

Filed Dec. 9, 1963, Ser. No. 329,166

3 Claims. (Cl. 210—314)



1. A filter comprising in combination:

(a) a base including means for permitting fluid flow therethrough;

(b) a pre-filter body including a cylindrical hollow body having an inner cylindrical wall adapted to be secured to said base and an outer cylindrical wall spaced therefrom, means for maintaining said inner and outer pre-filter body walls in spaced relation, and means to secure said pre-filter body to the base;

(c) a removable fibrous pre-filter medium positioned in said pre-filter body;

(d) a hollow main filter body adapted to be secured to said pre-filter body including an inner cylindrical wall defining a filter medium receiving space, and an outer cylindrical wall in spaced relation thereto, and means for maintaining said inner and outer main filter body walls in spaced relation;

(e) means frictionally coating between the inner cylindrical wall of the pre-filter body and the adjacent portion of the inner cylindrical wall of the main filter body to provide a continuous sealed inner chamber coextensive with the pre-filter body and the main filter body, the outer cylindrical walls of said pre-filter body and said main filter body being in abutting and supporting relationship;

(f) a removable physically solid porous filter medium having an axially disposed recess positioned in said main filter body, one end of said recess being adjacent said pre-filter medium, means closing said one end, said solid filter medium being so related to said pre-filter medium that fluid flows successively through said pre-filter medium and said solid filter medium, and into the recess of said solid filter medium;

(g) a removable cover for said main filter body including means frictionally coating with the inner wall of said main filter body to retain said cover in body closing relation, and also including means integral therewith coating with the other end of the recess of said solid filter medium for closing said recess

and frictionally retaining said porous filter medium within said main filter body; and

(h) an opening extending through the cover and communicating with the recess in said solid filter medium through which filtered fluid is removed from said recess.

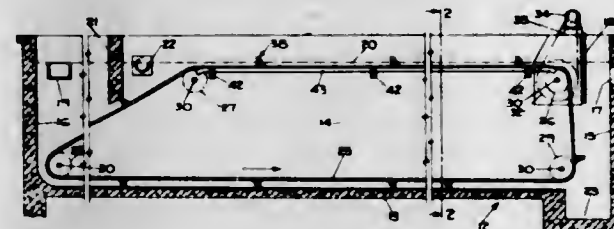
3,313,422

COLLECTOR APPARATUS

Walter R. Swenson, Columbus, Ohio, assignor to Jeffrey Gallon Manufacturing Company, a corporation of Ohio

Filed Oct. 23, 1963, Ser. No. 318,308

2 Claims. (Cl. 210—523)



1. An elongated collector flight for scraping or skimming operation in a body of fluid, a wear shoe releasably secured to the flight for engagement with a track on which the flight is supported and guided, said flight having opposite longitudinally extending flanges and said shoe having opposite lips engaged with the flanges to secure the shoes to the flight, and a rib extending along said flight and having a notch formed in the rib to receive the shoe in said notch with portions of the rib abutting opposite ends of the shoe to maintain it in fixed position on the flight.

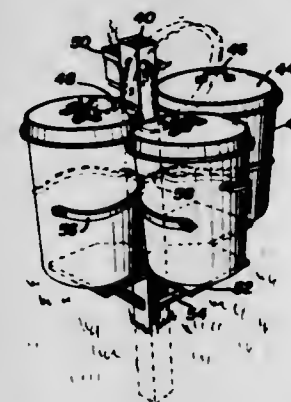
3,313,423

GARBAGE CAN HOLDER

Edwin E. Anders, 150 N. Commercial, Aransas Pass, Tex. 78336

Filed Feb. 23, 1966, Ser. No. 529,377

2 Claims. (Cl. 211—71)



1. A garbage can holder comprising an upright support post, a plurality of horizontal shelves mounted around the side of said post to support a plurality of garbage cans in spaced relation to a ground surface, a means of tethering garbage can lids to said post to prevent loss of said lids, said means comprising a plurality of hooks secured around said post and a chain secured at one end to each of said hooks, the other end of each of said chain being secured to a handle of each of said lids, each of said shelves being secured by a brace between said post and the underside of said shelf, a plurality of spring type gripping arms for supporting and retaining said cans to said holder, each of said spring-type arms having an outwardly flared terminal end portion for grippingly engaging the center portion of a garbage can, and a container for receiving a deodorant therein said container being attached to the upper end of said post where it is in the vicinity of a person's head and nostrils when in the neighborhood

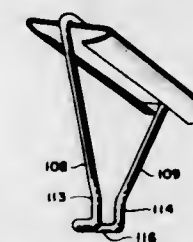
3,313,424

CLOTHES HANGER SUSPENSION DEVICE

Carl E. Gingham, 304-328 Depot St., Scranton, Pa. 18509

Filed Sept. 23, 1966, Ser. No. 581,628

19 Claims. (Cl. 211—113)



1. A clothes hanger suspension device comprising a base member disposed in a substantially horizontal position, means extending downwardly from said base member for defining a V-shaped slot with the apex thereof being rounded and downwardly of said base member with the portion of said slot adjoining said apex having parallel sides, said means being bent at right angles to said V-shaped slot across the portion of the slot having parallel sides to form a short horizontal slot so that a clothes hanger having a suspension member including one of a hook, a T and an enlargement on the end of a stem can be suspended from said horizontal slot.

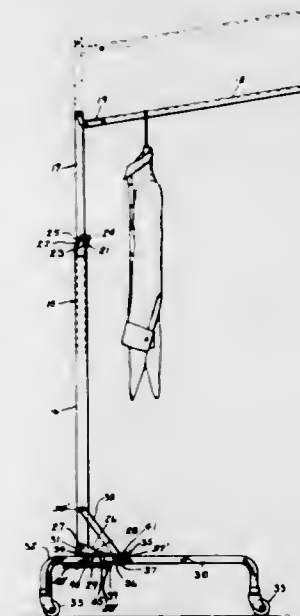
3,313,425

COLLAPSIBLE CLOTHES STAND

Stanley G. Injeski, Milwaukee, Wis., assignor to Worldbest Industries, Inc., Cadash, Wis., a corporation of Wisconsin

Filed May 3, 1965, Ser. No. 452,673

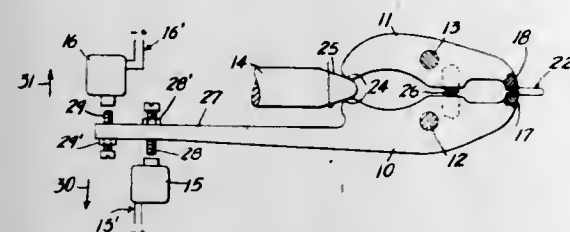
8 Claims. (Cl. 211—178)



1. A collapsible clothes stand comprising: a standard; a hanger receiving beam mounted to project laterally of said standard; three radially spaced legs extending outwardly from the bottom of said standard; bracket means pivotally connecting the bottom of said standard and said legs; a slide disposed about one of said standard and legs and adapted for movement therealong toward and away from said bracket means; a plurality of links each pivotally connected at one end to said slide and at the other end to a respective one of the others of said standard and legs whereby movement of said slide away from said bracket means will collapse said others of said standard and legs against said one of said standard and legs; and means for

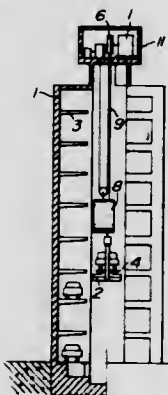
releasably locking said slide in an inward position relative to said bracket means to hold said standard and said legs in an expanded position.

3,313,426
METHOD AND APPARATUS FOR STOPPING DIE CASTING OR MOLDING MACHINES IN EVENT OF MALFUNCTIONING OF AN INSERT ENGAGING AND POSITIONING MECHANISM
Louis H. Morin, Bronx, N.Y., assignor to Coats & Clark Inc., New York, N.Y., a corporation of Delaware
Filed June 9, 1964, Ser. No. 373,818
6 Claims. (Cl. 214-1)



1. An insert engaging and positioning mechanism comprising a pair of pivoted grippers having jaw ends and inwardly contracted rounded opposed ends, a piston rod operatively engaging said rounded ends in movement of the jaw ends toward each other, means normally urging the jaw ends in spaced relationship to each other, adjacent surfaces of the jaw ends being contoured to form sockets for engagement with an insert, one of said grippers having an extending long arm, two oppositely directed adjustable means supported in connection with the free end portion of said arm, a switch positioned adjacent each of said adjustable means, both of said switches operatively controlling a machine to stop the machine through actuation of either of the switches by the adjacent adjustable means, and said adjustable means being adjusted to prevent switch operation in proper engagement of the jaw ends of said grippers with an insert in the operation of said mechanism.

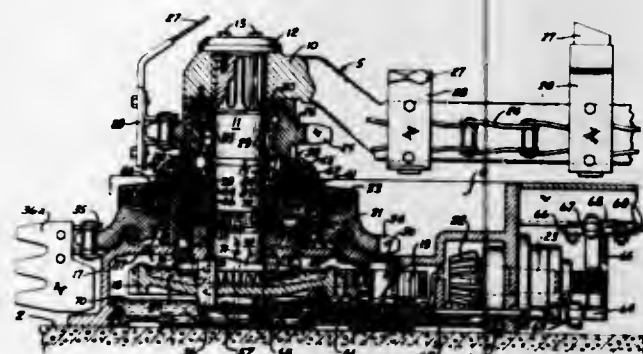
3,313,427
CONTROL SYSTEM WITH VEHICLE DETECTING MEANS FOR PARKING BUILDINGS
Isao Inuzuka, Hideo Miyao, and Takeo Yuminaka, all of Katsuta-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Nov. 27, 1963, Ser. No. 326,471
Claims priority, application Japan, Nov. 27, 1962, 37/52,070, 37/52,071
4 Claims. (Cl. 214-16.1)



1. A fully automatic control system adapted for a parking building comprising an elevator shaft, an elevator cage reciprocally movable in the vertical direction in said elevator shaft for carrying an automotive vehicle placed therein, a plurality of parking spaces disposed in tiered relation adjacent to and on either side of said elevator shaft, said parking spaces including one at a specific story assigned for a vehicle ride-in floor to which a vehicle en-

ters from outside, and means for effecting transference of a vehicle between said elevator cage and each of said parking spaces and between said elevator cage and said vehicle ride-in floor, first detecting means for detecting the presence or absence of a vehicle in each of said parking spaces, second detecting means for detecting the presence or absence of a vehicle on said ride-in floor and an outlet floor, indicating means responsive to said first detecting means and corresponding to each of said parking spaces for indicating the presence of a vehicle in a respective parking space, demanding means corresponding to each of said parking spaces whereby carriage of a vehicle into or out of any selected parking space can be automatically effected, a lifting and lowering sequence means for controlling the lifting and lowering operation of said elevator, vehicle transference sequence means for controlling a mode of operation in said vehicle transference means, and selective means for effecting carriage of a vehicle into or out of said parking spaces for controlling said lifting and lowering sequence means and said vehicle transference sequence means in response to said demanding means and said first and second detecting means.

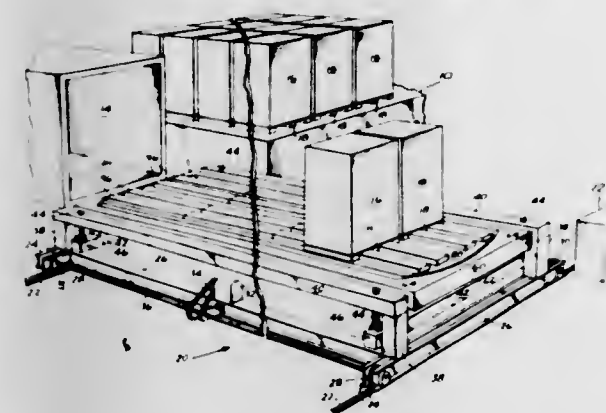
3,313,428
CLUTCH MECHANISM FOR AN UNLOADING APPARATUS
John W. Schaefer, Barrington, Ill., assignor to A. O. Smith Harvestore Products, Inc., Arlington Heights, Ill., a corporation of Delaware
Filed Feb. 23, 1965, Ser. No. 434,420
8 Claims. (Cl. 214-17)



1. In a silo unloader, a vertical sleeve disposed centrally of the silo, a shaft journaled within the sleeve, a cutter arm secured to the upper end of the shaft and disposed to rotate within the silo, first drive means for rotating the shaft to thereby rotate the cutter arm within the silo, a first hub journaled around the axis of said shaft, a first sprocket mounted on said first hub, a cutter chain carried by said first sprocket and disposed to dislodge silage as the cutter arm rotates within the silo and move the silage toward the center of the silo, a second hub journaled on said sleeve, a second sprocket mounted on said second hub, a conveyor chain carried by said second sprocket and disposed to convey dislodged silage from the center of the silo to the exterior, second drive means operably connected to the second hub, a first clutch member carried by the first hub and having a series of teeth, a second clutch member associated with the second hub and having a series of teeth facing toward the teeth on said first member, means for mounting the second clutch member for sliding movement in an axial direction with respect to said second hub, means for biasing the second clutch member in an axial direction away from the first clutch member, means for moving said second clutch member in an axial direction to bring the teeth on the second clutch member into engagement with the teeth on the first clutch member to thereby transmit mo-

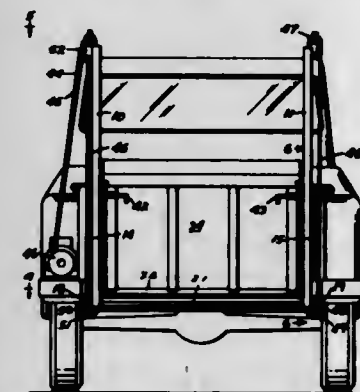
tion from the second hub to the first hub, and operating means connected to the last named means and extending to the exterior of the silo.

3,313,429
VEHICLE LOADING AND UNLOADING APPARATUS
Stanley D. Cole, 8021 S. Fawcett, Tacoma, Wash. 98408
Filed Jan. 18, 1965, Ser. No. 426,149
3 Claims. (Cl. 214-38)



1. Vehicle loading and unloading apparatus comprising:
(a) a support frame adapted to be positioned between a loading station and a vehicle,
(b) a load-carrying tongue reciprocally mounted on the frame and comprising a pair of superimposed tongue components,
(c) reversible load lift means on the tongue and comprising cam means working between the sections for reversibly lifting the overlying component with respect to the underlying component, the cam means including guide means through the underlying component, a cam follower fixed to the overlying component and extending through the guide means, a cam mounted on the underlying component in working relation to the cam follower, and a fluid operated cylinder connected to the cam for moving it in driving relation to the cam follower, and
(d) tongue drive means connected to the tongue for reciprocating it between a retracted position in which it overlies the frame and extended position in which it extends into the vehicle.

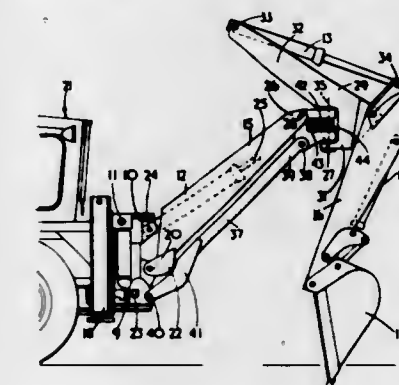
3,313,430
TAILGATE HOIST
James W. Gwinn, P.O. Box 28, Pomeroy, Wash. 99347
Filed Apr. 30, 1965, Ser. No. 452,069
3 Claims. (Cl. 214-75)



1. A tailgate hoist for trucks, etc. comprising:
two spaced apart stationary upright hollow standards open at both ends;
bracket means for attaching said standards to the truck body at the rear ends of the side walls thereof;

a hollow standard slidable up and down within each of said first named standards and having its outwardly facing wall provided with a vertical slot;
a tailgate pivotally mounted on the lower ends of the slidable hollow standards;
latch means on the tailgate and slidable standards to secure the tailgate in upright position to bridge the space between the said standards and thus close the rear end of the body;
means on the tailgate and said slidable standards operable to hold said tailgate in a horizontal rearwardly extended position;
said first named hollow standards having vertical slots in their walls that face each other through which the tailgate is interconnected to said slidable standards, and having sheaves at the top thereof opposite the slots;
a power driven winch supported by the truck body adjacent one of said first named standards;
and flexible members affixed to the slidable standards at their lower ends and extending upwardly therein to the tops of the first named standards, then out through the slots in the slidable standards over the said sheaves to said winch.

3,313,431
EXCAVATORS
Alec J. Kelly, Stramshall, near Utttoxeter, England, assignor to J. C. Bamford (Excavators) Limited, Lakeside, Rochester, England, a British company
Filed Aug. 17, 1965, Ser. No. 480,425
Claims priority, application Great Britain, Aug. 19, 1964, 33,828/64
16 Claims. (Cl. 214-138)

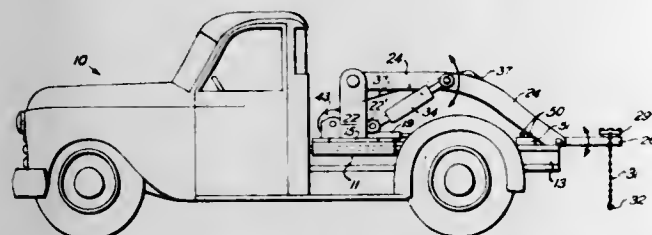


1. An excavator for mounting on a vehicle, including, a rotatable king post assembly, attachment means adapted to be secured to a vehicle and on which attachment means the king post assembly is rotatably mounted about a vertical axis, means for rotating the king post assembly about said vertical axis, a main boom pivotally mounted upon the king post assembly about a horizontal axis for movement of the main boom up and down in a vertical plane, a dipper arm mounting assembly connected to the outer end of the main boom, a dipper arm pivotally mounted upon said mounting assembly about a horizontal axis for movement of the dipper arm up and down in a vertical plane and also pivotally mounted about a vertical axis upon said mounting assembly for movement of the dipper arm relative to the main boom about said vertical axis, link means connected between said dipper arm mounting assembly and the king post assembly for maintaining vertical said vertical axis of pivoting of the dipper arm in all operative positions of the main boom, a tool pivotally mounted upon the dipper arm about a horizontal axis for movement in a vertical plane, lifting and lowering means whereby the main boom is moved up and down in a vertical plane, crowding means for pivoting the dipper arm about its horizontal axis for up and down movement thereof in a vertical plane, traversing means for pivoting

the dipper arm about its vertical axis and further crowding means adapted to rock the tool about the said horizontal axis for movement in a vertical plane.

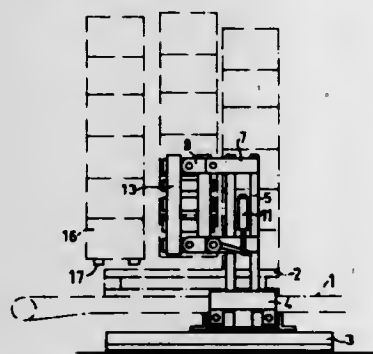
3,313,432 WRECKER TRUCKS

Verner G. Sheldrew, 7110 SE. Reed College Place,
Portland, Oreg. 97202
Filed Apr. 2, 1964, Ser. No. 356,718
14 Claims. (Cl. 214-146.5)



1. In a wrecker truck: a carriage; means tracking said carriage; a turntable pivotally attached to said carriage; a boom; means pivotally attaching said boom to said turntable; lift arms pivotally attached to one end of said boom; pick up and securing means pivotally attached to said lift arms; a winch, provided with a cable and hook, secured to said turntable; means moving said carriage along said means tracking said carriage; second means moving said turntable rotationally clockwise and counterclockwise on said carriage; third means moving said lift arms vertically rotational to said boom; fourth means moving said boom vertically rotational to said turntable; fifth means moving said winch; and controls controlling each of said means moving said carriage, turntable, boom, lift arms and winch.

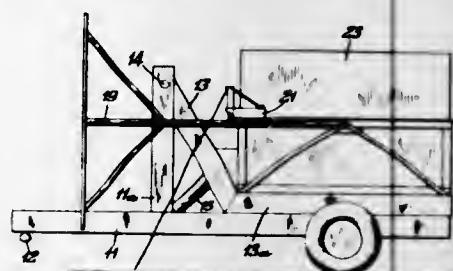
3,313,433
MACHINE FOR UNLOADING ROWS OF PILES OF ARTICLES STANDING ON A PALLET
Nils Ragnar Hallenius, Erik Dahlbergsgatan 17,
Goteborg, Sweden
Filed July 6, 1965, Ser. No. 469,482
2 Claims. (Cl. 214-309)



1. A machine for handling rows of piles of articles comprising a first substantially horizontal, longitudinally extending conveyor adapted to carry said rows of piles of said articles, a second substantially horizontal, longitudinally extending conveyor at an angle to said first conveyor and adapted to receive a row of piles of articles transferred thereto from said first conveyor, a carriage below said first conveyor and movable in the longitudinal direction thereof, means supported on said carriage for gripping a row of piles of articles on said first conveyor and depositing said row of piles of articles on said second conveyor, said gripping means comprising an upright on each side of said carriage adjacent to an edge of said first conveyor, said uprights being movable toward and away from each other, means for moving said uprights toward and away from each other, an article clamping plate pivotally connected to each upright, each article clamping plate being movable forwardly and upwardly

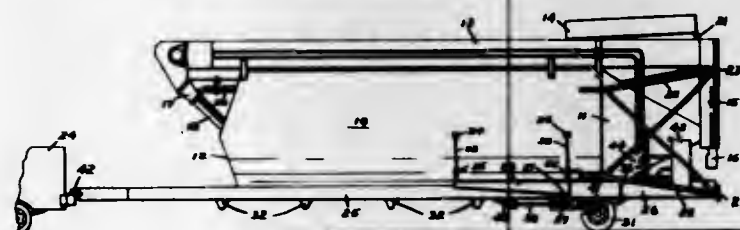
relative to the upright to which it is pivoted, and means for simultaneously moving said clamping plates forwardly and upwardly.

3,313,434
TILT BOX FOR HAULING AND DISPENSING FLOWABLE MATERIAL
Donald L. Bentsen, McAllen, Tex., assignor to Union Carbide Corporation, a corporation of New York
Filed Feb. 25, 1965, Ser. No. 435,304
4 Claims. (Cl. 214-501)



1. Apparatus for hauling and dispensing flowable material comprising in combination, a vehicle body having a carrying surface and a support vertically elevated with respect to said carrying surface, a tilting frame pivotally mounted on said support and extending lengthwise of the vehicle body and capable of being simultaneously elevated and tilted on an axis transverse to the length of the vehicle body and above the carrying surface by jack means mounted on said vehicle body, a cargo box detachably mounted on said tilting frame, said cargo box having two rigid leg supports swingably mounted on the sides of the box intermediate the lateral extremities thereof and free to drop to a vertical position, said leg supports when in a vertical position being long enough to maintain the cargo box in an elevated position to permit withdrawal of the vehicle body with the tilting frame in a lowered position, and said box being capable of standing by itself supported only by said leg supports in a tilted position to act as a gravity-emptying supply of flowable material.

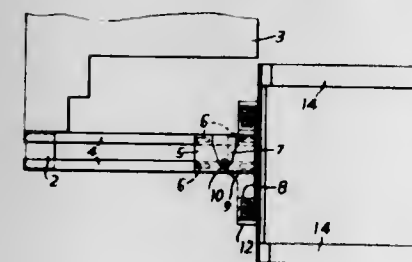
3,313,435
PORTABLE STORAGE LOADING AND UNLOADING BIN
Peter M. Welk, Spokane, Wash., assignor to Welk Brothers Metal Products, Inc., Spokane, Wash., a corporation of Washington
Filed Aug. 9, 1965, Ser. No. 478,107
4 Claims. (Cl. 214-501)



1. In combination with a portable storage tank adapted to be erected in a vertical position with its base resting on a supporting surface:
a mobile longitudinal framework adapted to cradle the tank and support it for travel in a horizontal position extending longitudinally along said framework;
surface engaging wheels mounted on said framework intermediate the longitudinal ends thereof;
said framework comprising front and rear longitudinal sections pivotally connected to one another about a transverse horizontal axis;
means to fixedly secure the tank to said rear section of said framework with the base thereof protruding rearwardly beyond the framework;

and power means on said framework operably connected to said front and rear sections thereof, adapted to selectively bring said sections toward one another by raising said axis relative to the supporting surface.

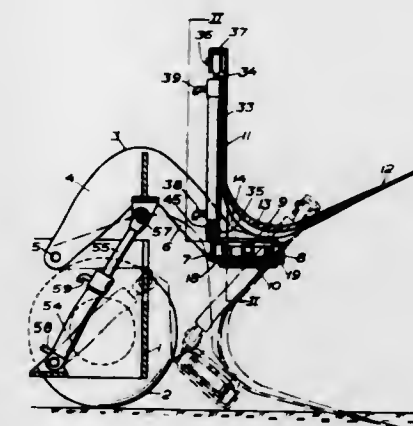
3,313,436
LIFT TRUCK WITH A HORIZONTALLY AND PIVOTALLY MOVABLE MAST ASSEMBLY
Leonard S. Mathew, Kingswood, Surrey, and George W. A. Chapman, Horley, Surrey, England, assignors to Matbro Limited, Horley, Surrey, England, a British company
Filed Apr. 23, 1965, Ser. No. 450,288
Claims priority, application Great Britain, Apr. 29, 1964, 17,894/64
3 Claims. (Cl. 214-672)



1. A lift truck including a frame for front and side loading characterised by a mast assembly which is mounted on a carriage for movement transversely of the machine along a horizontal guide approximately over the axis of the front axle (or the axis of the front wheels, where there is no front axle as such), the mast assembly including a stationary guide, the foot end of which lies above the level of the horizontal mast carriage guide, a moving guide and a carrier frame including forks, means for turning the mast about an axis substantially on the centre line of the mast to move the carrier frame between a forward-facing position and a sideways facing position, the moving guide of the mast and carrier frame being shaped to permit the carrier frame to be lowered down to ground level whilst straddling the horizontal mast carriage guide and front axle and front wheel of the lift truck and the frame of the lift truck being shaped so that there is a recess to the rear of the front axle to permit the carrier frame to be withdrawn laterally of the truck, when in the sideways-facing position, for a sufficient distance to bring the rearward lift fork wholly or substantially wholly within the frame of the lift truck.

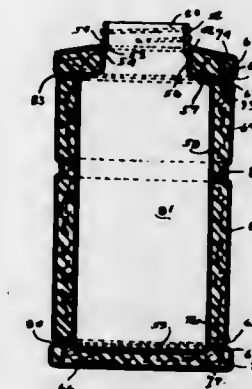
3,313,437
LOADER SHOVELS AND SHOVEL TILTING MEANS
Sven-Erik Nore Eriksson, Adolfsberg, Sweden, assignor to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed Apr. 5, 1965, Ser. No. 445,616
13 Claims. (Cl. 214-768)

1. In a side dumping shovel structure for a front loader, a shovel, a shovel raising structure carrying said shovel, power means for moving said shovel from a low digging position to a raised discharge position, a bracket on said raising structure forming a transverse guideway, two guide members on said shovel spaced apart sideways and arranged to guide said shovel in a transverse movement in said guideway from a neutral position in which side dumping is prevented selectively to a first side position in which the shovel may be dumped to the right side or to a second side position in which the shovel may be dumped to the left side and preventing in all positions front or rear tilt-



ing of the shovel relative to the bracket, power means on the bracket for moving the shovel sideways selectively from said neutral position to said first or second positions, respectively, and power means on said raising structure for dumping said shovel sideways into said first or second position, respectively.

3,313,438
INSULATED CONTAINER
Herbert M. Piker, Wyoming, Ohio, assignor to The Hamilton-Skotch Corporation, Hamilton, Ohio, a corporation of Ohio
Filed Sept. 10, 1964, Ser. No. 395,392
9 Claims. (Cl. 215-13)



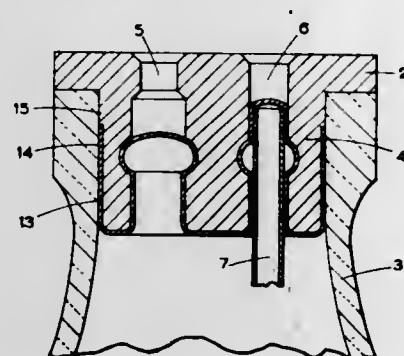
1. In a container of the class described the combination of an inner container, an outer container upper portion, an outer container lower portion, said outer container upper and lower portions each including a wall in a continuous plane with respect to one another and each having an end adjacent the other, said outer container upper and lower portions each including integral means inwardly projecting from its wall at substantially right angles to its wall and in face contact with one another in a plane at substantially right angles to the axis of the said outer container upper and lower portions, said integral means in the plane of projection extending a substantial distance from the walls but short of the inner container, cooperating means on said outer container upper portion and said inner container for suspending said inner container from the outer container upper portion centrally thereof and centrally into said outer container lower portion, and insulative means inwardly of the outer container upper and lower portions being the sole means for securing the outer container upper and lower portions integral right angle face contacting means to one another and securing the said outer container upper and lower portions in operative positions and enclosing the suspended inner container.

3,313,439

CLOSURES FOR CONTAINERS

James Robinson, London, England, assignor to Allen and Hanburys Limited, London, England, a British company
Filed Dec. 17, 1965, Ser. No. 514,590
Claims priority, application Great Britain, Dec. 22, 1964, 52,115/64

4 Claims. (Cl. 215—37)



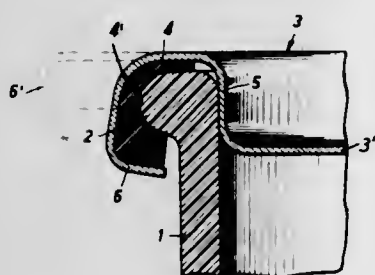
1. A closure for a container which closure comprises a stopper made of resilient material so that it can be tightly seated in a neck of said container and having a passage extending completely through the closure in the axial direction thereof; and a protective cap of inert material fitted on the internal surface of said stopper so as to prevent said stopper coming into contact with the contents of the container, said cap having a pierceable protuberance fitted in, and closing, said passage.

3,313,440

CONTAINER CLOSURE

Paul Nofer, 6 Schoofstrasse, Brunsbuttelkoog, Holstein, Germany
Filed Feb. 18, 1965, Ser. No. 433,567
Claims priority, application Germany, Feb. 24, 1964, N 24,497

1 Claim. (Cl. 215—39)



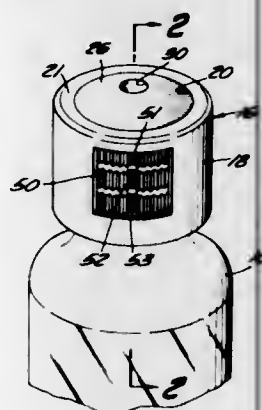
A closure comprising a container having at least the upper portion thereof made of an easily breakable brittle material and having a top opening with an encompassing rim defined around the opening, said rim forming an exterior projecting bead adjacent the top of said container, and a closure lid having a central substantially flat portion closing the container opening, a substantially vertical container reinforcing wall defined around the periphery of said central portion and having an exterior dimension sufficient to cause said reinforcing wall to bear radially outwardly against the container wall to exert an outward pressure thereagainst when said central portion is substantially flat, and a dog element portion engaged around the exterior of said rim and comprising a projection of the top of said reinforcing wall having a downturned outer edge, a gasket connected to the underside of said dog element and extending from said downturned outer edge to the juncture of said dog element with said reinforcing wall and having a cutout portion

adjacent said reinforcing wall engaged by said rim bead, said downturned outer edge of said dog element extending downwardly in a substantially horizontal position below said rim bead, the cutout of said gasket being engaged around the rim bead including a flat portion of said gasket overlying the top of said rim bead.

3,313,441

SAFETY COMBINATION CAP
Jerome H. Fadden, 2618 Teresina Drive, Hacienda Heights, Calif. 91745
Filed Feb. 17, 1966, Ser. No. 328,194

10 Claims. (Cl. 215—76)



1. A safety dispensing closure member for a container comprising a cylindrical cap configured to be received on the neck of the container, such as a bottle, said cap having within it a plurality of disc members closely adjacent to each other and having a diameter substantially the same as the inside diameter of the cap, each of said discs having an aperture therein spaced at similar distances from the central axis of the cap, said cap having an opening in the side wall thereof exposing peripheral portions of said discs so that they can be individually rotated whereby the apertures in the discs can be brought into registry for dispensing materials such as pills from the container.

3,313,442

WOODEN BUNG FOR BEER BARREL
Raymond J. Wurzelbacher, 6311 Edwood Ave., Cincinnati, Ohio 45224
Filed Sept. 22, 1964, Ser. No. 398,300

1 Claim. (Cl. 217—110)



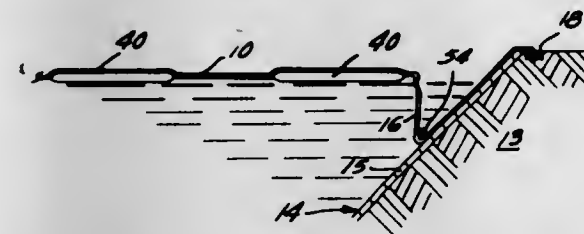
A bung for a liquid-containing barrel comprising a cylindrical wooden plug having its side walls tapered inwardly from its upper surface and a plurality of ridges and grooves extending circumferentially around said side walls in closely spaced parallelism, the entire side walls including the ridges and grooves being formed from a generally planar peripheral surface and being densified by compression of the inward ridges and grooves towards the axis of the bung, said inward compression resulting in the peripheral portion of said bung being of greater density than the center portion thereof and the bottom of said grooves being compressed to a greater extent than the tops of said ridges so that said groove portions of said side walls are of greater density than said ridge portions.

3,313,443

FLOATING COVER FOR A LIQUID STORAGE RESERVOIR

Howard S. Dial and Henry L. Habegger, Placentia, and William B. Kays, Whittier, Calif., assignors to Globe Linings, Inc., Long Beach, Calif., a corporation of California

Filed June 26, 1964, Ser. No. 378,469
5 Claims. (Cl. 220—26)



2. In combination with a liquid storage reservoir wherein the level of the stored liquid varies, a floating cover comprising:

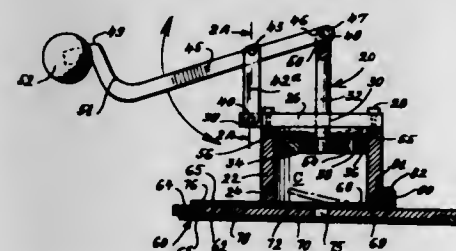
a continuous sheet of flexible material impervious to and adapted to completely overlie said liquid in co-extensive relationship to the reservoir periphery, the area of said sheet being greater than the area of said reservoir at the upper extremity thereof whereby depending folds are formed in said sheet; fastening means for securing the outer periphery of said sheet adjacent the reservoir periphery; a plurality of sets of individually inflatable float units attached to said sheet in spaced relationship across said sheet interiorly of the outer periphery thereof for supporting said sheet upon the surface of the stored liquid whereby said depending folds form adjacent the outer periphery of said sheet and define a sump section, rain water tending to collect in said depending folds each said set of float units defining an unsupported area of said sheet therebetween; and drain lines extending across said sheet and having inlet openings in communication with said sump section and with each said unsupported area, and further having a discharge portion adapted for connection to a pump, said float units being adapted for individual inflation whereby rain water tends to flow away from the more highly inflated ones of said float units and into said unsupported areas adjacent the less inflated ones of said float unit.

3,313,444

COMBINED CONTAINER COVER AND VACUUM PUMP

Abraham Katell, Wantagh, N.Y.
(40 Patroon Place, Loudonville, N.Y. 12211)
Filed Nov. 19, 1964, Ser. No. 412,547

14 Claims. (Cl. 220—44)



1. A device for drawing and maintaining a vacuum in a container having an open end, comprising a cover adapted to overlie the open end of the container, a sealing gasket at one side of the cover for overlaying and sealing said open end of the container, said cover having a first hole therein for admitting air therethrough to the container to relieve a vacuum therein, said cover also having a second hole spaced from the first hole for passing air therethrough out of the container to draw a vacuum

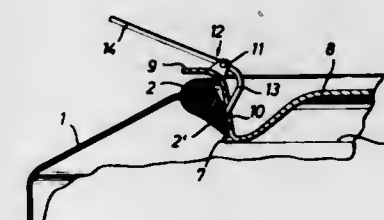
um in the container, a flexible valve member having a portion secured to the other side of the cover, said valve member having a first free flexible portion overlaying and sealing the first hole and manually elevatable to clear said first hole, said valve member having a second free flexible portion overlaying and sealing the second hole and elevatable by pressure of air passing through the second hole to clear the second hole, and a socket structure on said other side of the cover for removably receiving and holding a vacuum pump.

3,313,445

SEALING DEVICE FOR CONTAINERS

Willi Brandl, Schurburgert 12, Zurich, Switzerland
Filed Mar. 8, 1965, Ser. No. 437,949
Claims priority, application Germany, Mar. 10, 1964, B 75,837

5 Claims. (Cl. 220—46)



1. A closure device for tightly sealing a container element having an opening and a cover element for opening and closing said opening, comprising an elastic sealing ring of a rubberlike material and of a cross-sectional shape differing from that of a flat ring and secured to one of said elements so that a deformable part of said ring projects from said element toward the other element, said other element having a projection thereon, said deformable part adapted to engage upon said projection and to secure said elements to each other when pressed against each other.

3,313,446

SELF-OPENING CONTAINER WITH HANDLE

Leo M. Harvey, Los Angeles, Calif.
(19200 S. Western Ave., Torrance, Calif. 90503)
Filed May 15, 1964, Ser. No. 367,658

10 Claims. (Cl. 220—54)

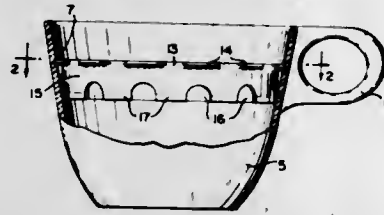


1. A container having a surface with an opening area defined by a prescored line, and comprising:

(a) a lever lying on said container surface and attached to said opening area, whereby raising of said lever will tear said area from the said container surface to establish a pouring opening;
(b) a handle on the lever at a point remote from the point of attachment of the lever to said opening area;
(c) and a hinge attachment between the handle and lever, whereby the handle is operable from a position lying adjacent the said container surface to a manually engageable position projecting from said container surface.

3,313,447 ANTI-SPLASH GUARD FOR DRINKING RECEPTACLE

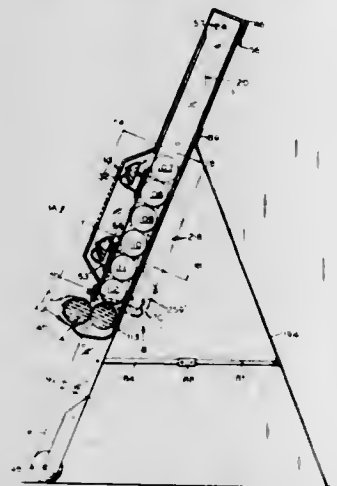
Dean Spencer, Seattle, Wash.
(23615 Marine View Drive, Des Moines, Wash. 98016)
Filed Oct. 19, 1965, Ser. No. 497,890
7 Claims. (Cl. 220-90.4)



1. In combination with a circular receptacle open at the top and used for drinking a liquid contained in the receptacle, a disc fitting in said open end of the receptacle, the disc being formed so as to produce a multiplicity of flow passages distributed in closely spaced relation within an area located between the inner wall of the receptacle and a circle which is spaced a moderate distance inwardly therefrom and has the axis of the receptacle as its center and with the flow passages characterized in that liquid is caused in the course of its traversal of any one passage to intermingle with liquid from a next adjacent passage.

3,313,448 SIGNALLING CAN DISPENSER

Howard Wayne Suttle, 3622 Ong St., Amarillo, Tex. 79110, and Freelin Eugene Suttle, 2700 4th Ave., Canyon, Tex. 79015
Filed July 17, 1964, Ser. No. 383,428
6 Claims. (Cl. 221-3)

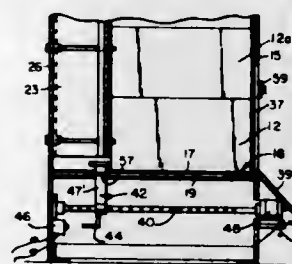


1. A horizontally extending series of like vertically elongated mechanically enclosed neighboring guide chambers each comprising a front wall, a rear wall and side walls, each said chamber providing guide means for opposing sides and ends of each of a plurality of to-be-dispensed containers therein, each said guide chamber having, near its top, a forward-facing inlet opening, each said guide chamber having near its bottom a forward-facing discharge opening, each said guide chamber having a downwardly sloped bottom with an upwardly projecting lip defining said discharge opening, a removable opaque front cover attached to said guide chambers and forming at least a portion of the front walls thereof, two vertically spaced-apart sound-producing signalling means for each of said guide chambers and two of each such sound-producing signalling means attached to and operatively connected to one of said guide chambers, each of said two sound-producing signalling means being located within a portion of the front cover, a baffle between each of said chambers, said portion of said front cover with said baffle acoustically separating one of each of said guide chambers from its neighboring guide chamber, each

said portion of said cover enclosing a space that is connected by an opening into one of said guide chambers, said two vertically spaced apart signalling means for each of said guide chambers comprising an upper and a lower signalling means, one sensing means separately attached to each one of said signalling means and sensitive to the movement of containers through one said guide chamber, said sensing means attached to the upper signalling means and said sensing means attached to the lower signalling means for each of said guide chambers being spaced apart by an integral multiple of the vertical distance through one of said containers and each said sensing means attached to the upper signalling means for each of said guide chambers having the same vertical level on each of said series of guide chambers, and a counter means attached to each of said guide chambers and sensitive to movement of said to-be-dispensed containers therethrough.

3,313,449 ADJUSTABLE WAREHOUSE STORAGE BINS WITH EJECTOR MECHANISM

Lloyd Parks, 4300 S. 35th St., Arlington County, Va. 22207
Filed Mar. 15, 1965, Ser. No. 439,871
4 Claims. (Cl. 221-6)



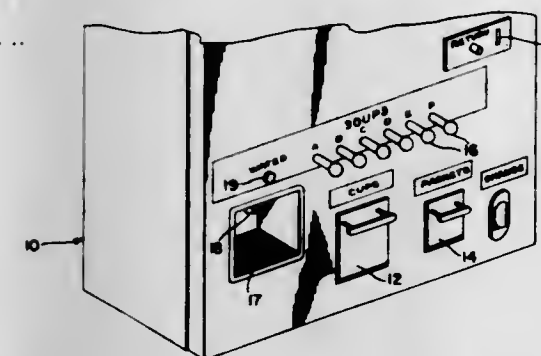
1. A package-dispensing apparatus comprising an upstanding elongated bin having a back wall and a front wall, a floor within and extending along said bin and spaced above the lower ends of said back and front walls and fixed to said back and front walls, said floor comprising a plurality of sections arranged in end-to-end spaced aligned relation, the complementary ends of adjacent sections having opposed grooves formed therein, a first vertically-disposed partition interposed within said bin so that it extends transversely of and between the ends of one of said floor sections with the forward side contiguous to and spaced from said front wall, the rearward side contiguous to said back wall, and the lower end spaced above the floor section, a second vertically-disposed partition interposed within said bin so that it extends transversely of and between the ends of a floor section adjacent the said one floor section with the forward side contiguous to and spaced from said front wall, the rearward side contiguous to said back wall, and the lower end spaced above the last-mentioned floor section, a first means adjustably and fixedly-securing said first and second partitions to said back wall, a third vertically-disposed partition interposed between said first and second partitions so that it extends longitudinally between said first and second partitions and is parallel to and spaced from said back and front walls, said third partition embodying a pair of separable sections having complementary one end portions overlapping and contacting each other, the separable sections being movable relative to each other and toward and away from said back wall to thereby form with said first and second partitions and said front wall an upstanding compartment in which a vertical column of packages in superimposed stacked relation is adapted to be positioned, a second means adjustably and fixedly-securing the separa-

ble sections of said third partition to said first and second partitions, there being a discharge opening formed in said front wall adjacent to and spaced above the one and the adjacent floor sections, a chute exteriorly of said bin and cooperatively-mounted with respect to said discharge opening, an ejector projecting upwardly between the one and the adjacent floor sections and below the lower end of said third partition and slidably-supported in the opposed grooves in said one and the adjacent floor sections and movable between a position behind said third partition and a position adjacent the discharge opening in said front wall to thereby shift the lowermost package from the vertical column and eject same onto to said chute, and means operatively-connected to said ejector for effecting the movement of said ejector between said two positions.

3,313,450 VENDING MACHINE FLUID QUANTITY ACCU- MULATOR AND DISPENSING TIMER

Frederick E. Erickson, Port Byron, Ill., assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware

Filed Feb. 8, 1966, Ser. No. 525,880
7 Claims. (Cl. 221-96)



1. A timer for storage and dispensing of time intervals comprising:

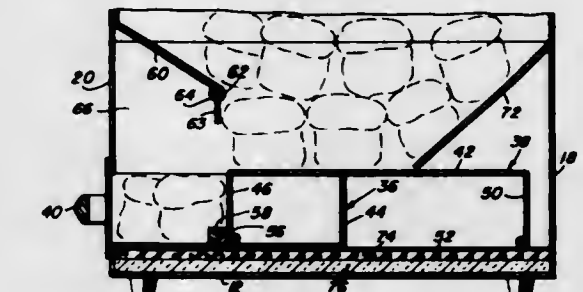
- indexing means responsive to a predetermined condition for which a time interval is required,
- a rotatable differential member including means driven by the indexing means to progressively store the numerical equivalent of time intervals by the proportionate rotational displacement of the differential member in one direction,
- a constant speed drive input to the differential member for rotating it in the opposite direction to dispense time intervals, and
- control means for said drive input including a timing cam effective to interrupt the drive input at increments of rotational displacement of the differential member in dispensing time intervals which coincide in number and duration with the stored time intervals.

3,313,451 ARTICLE DISPENSER WITH YIELDABLE WALL DISCHARGE ASSISTANT

Walter H. Rhindress, Ocean Ridge, Fla.
(121 Hancock St., Braintree, Mass. 02184)
Filed Oct. 5, 1965, Ser. No. 493,175
9 Claims. (Cl. 221-243)

1. In a food warmer, a peripheral wall defining an enlarged interior compartment, drawer means slidably mounted within the lower portion of said compartment and selectively movable outward therefrom through a portion of said peripheral wall, means operably associated with said drawer means for introducing a substantially predetermined amount of food into said drawer means in response to an extension and subsequent retraction of said drawer means relative to said compartment,

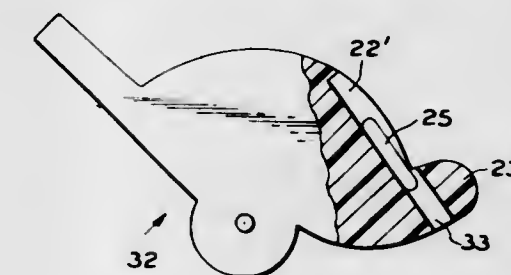
said drawer means including an open top communicating with the interior of said compartment, said means operatively associated with said drawer means including a tray overlying the inner portion of said drawer means, said tray being exposed to the interior of said compartment and constituting in effect a movable support for the contained food whereby a forward movement of the tray, in



response to a movement of the drawer means, results in a forward movement of the food supported thereon, and selectively severable means releasably engaging the tray with the drawer means for an independent outward movement of the drawer means upon the encountering of a resistance to an outward movement of the tray greater than a predetermined resistance.

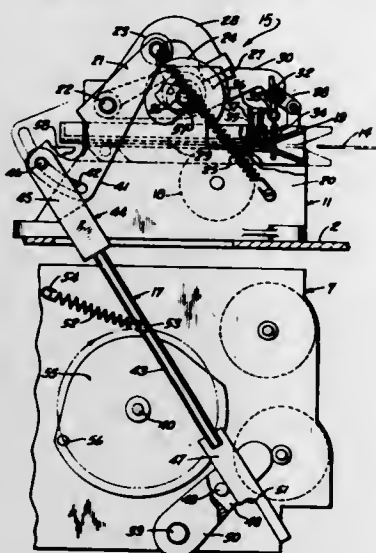
3,313,452 DISPENSING DEVICE HAVING A PIVOTED ARTICLE DELIVERY MEMBER

Jacob Katz, 225 E. 57th St., New York, N.Y. 10022
Filed Oct. 15, 1965, Ser. No. 496,270
1 Claim. (Cl. 221-268)



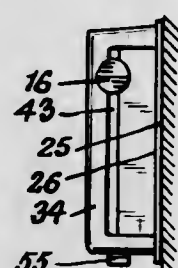
A device for dispensing identical articles one at a time, including a frame, a sector-shaped article dispensing member rotatably mounted on a horizontal axis on the frame, a socket provided in the arcuate surface of said member to hold one of said articles, means on the frame to hold an upright stack of said articles free for downward movement so the bottom article of said stack sits within said socket, cooperating stop means on said frame and said member to limit the movement of said member to a predetermined part of a revolution, from a normal rest position where the socket is positioned directly under the stack to a second position where the socket is positioned away from the stack; the center of gravity of said member being so positioned that said member is biased by the action of gravity to said normal rest position, and an accessible finger-piece extending upwardly from said member for manually moving said member from its normal rest position to said second position; said finger-piece having a slot therethrough communicative with said socket, whereupon on movement of said member from its normal rest position to its second position, any article in the socket will slide through said slot; the arcuate surface of said member being of such length that it supports the stack of articles when the member is in an article dispensing position.

3,313,453
METERING AND RECORDING INTERLOCK UNIT
 Irving A. Johnson, Erie, Pa., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
 Filed Oct. 27, 1964, Ser. No. 406,776
 15 Claims. (Cl. 222-30)



1. A dispensing control mechanical interlock unit between a recording means and a computer means forming a part of a dispensing unit interconnected for simultaneous operation from a reference, said recording means including a rotatable reset shaft and said computer means including an oscillatory reset shaft, a mechanical coupling connected to said recorder reset shaft and to said computer oscillatory reset shaft, a movable actuating member connected to the said rotatable reset shaft to actuate the coupling, and a lost motion device forming a part of the coupling and the interconnection of said reset shafts whereby initial movement of the actuating member actuates said recorder reset shaft and final movement of the actuating member actuates said computer reset shaft.

3,313,454
DISPENSING DEVICE
 James D. Welsh, 84 Sampsondale Ave., and John J. Kresl, 86 Sampsondale Ave., both of West Haverstraw, N.Y. 10993
 Filed July 14, 1965, Ser. No. 471,929
 1 Claim. (Cl. 222-102)



A device for dispensing the contents of a collapsible tube comprising, a casing having a base member provided with a side wall connected to fixed and spaced end walls, a frame consisting of a pair of parallel guide rods connected at their ends by cross plates, the cross plates being flatly disposed against and respectively attached to the end walls, a cover member removably fitted and secured over the base member and forming an enclosure therewith, said cover member having a side wall provided with a cut-away portion defining a slot between one of its edges and an edge of the side wall on the base member in immediate confronting relationship, a roller carriage slidable on the rods, rollers in side-by-side relation and between which a collapsible tube is compressed, one of the rollers having a shaft extending through the slot

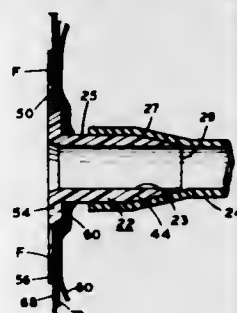
and movable up or down therein, and means extending through one of the end walls of the casing for supporting a collapsible tube in an upright position to enable it to be compressed between the rollers, the carriage being movable down the rods with frictional contact of the rollers against the tube, there being no positive drive means connecting the rollers.

3,313,455
COLLAPSIBLE TUBE SQUEEZING DEVICE
 Nicholas J. Kemmer, 841 Wilson Ave., Novato, Calif. 94947
 Filed June 18, 1965, Ser. No. 465,092
 4 Claims. (Cl. 222-103)



1. An improved tube squeezing device of the character described comprising, an open-ended resilient tubular housing for receiving a conventional collapsible tube of the type having a sealed end and a tapered neck portion at the dispensing end thereof, said resilient tubular housing having a head portion and a tail portion, said head portion being tapered to slidably receive the complementary tapered neck portion of the collapsible tube, a loop member mounted on the tail portion of the resilient tubular housing for clamping the tail portion of the housing in closed position in proximity to the sealed end of the collapsible tube to thereby force the tapered neck portion of the collapsible tube into snug seated engagement against the head portion of the housing, whereby the tube is held within the housing, said loop member being slidable on said tail portion, whereby collapsible tubes of various lengths can be held in clamped position within the housing, and corrugations integrally formed on the tail portion of the housing cooperating with ribs integrally formed on the loop member to thereby provide retaining means for maintaining the loop at the predetermined clamping position on the tail portion of the housing.

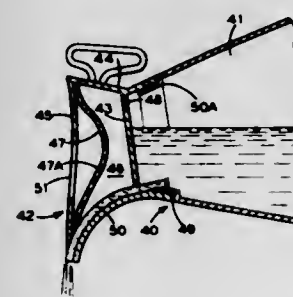
3,313,456
LINER BAGS
 George R. Parish, Indianapolis, and Clyde E. Strahl, Greenfield, Ind., assignors to Inland Container Corporation, Indianapolis, Ind., a corporation of Indiana
 Continuation of application Ser. No. 393,579, Sept. 1, 1964. This application June 27, 1966, Ser. No. 560,983
 6 Claims. (Cl. 222-107)



1. A liner bag of thin thermoplastic sheet material having a flanged fitting heat sealed thereto, said bag comprising a multiply side panel forming an integral part of the bag of thin thermoplastic films, said multiply panel films having aligned apertures therein, a fitting of thermoplastic material having a hollow tubular stem projecting through and closely fitting said apertures, and having an annular attachment flange integral with said stem of a thickness substantially greater than said side panel films,

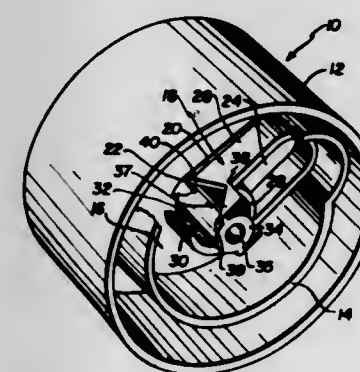
said attachment flange being disposed against one side of the inner ply of said panel, an auxiliary section of thin thermoplastic film having a central aperture therein threaded over the stem of said fitting and having an area at least as great as the area of said flange and disposed on the opposite side of the outer ply of said panel and having its marginal edge free of attachment to the side panel, and an annular heat seal bonding said flange, panel plies and section together, in an homogeneous continuous annulus of thermoplastic extending through the entire thickness of said film section, said panel plies and partially into the thickness of said fitting flange, said annulus being disposed radially inward of the outer edge of said fitting flange, and the marginal edge of the auxiliary section.

3,313,457
METERING DISPENSER
 Jerry R. Mullen, Crestwood, N.Y., assignor of ten percent to Arthur T. Fattibene, Southport, Conn.
 Filed Apr. 9, 1965, Ser. No. 446,827
 8 Claims. (Cl. 222-386.5)



1. A dispensing top adapted for an open-top container adapted to contain a quantity of flowable material comprising:
 a housing,
 said housing having a top wall and a bottom wall and a circumscribing side wall interconnecting said top wall and bottom wall,
 means connected to said housing to define a pouring spout, the inlet to said spout extending below said bottom wall,
 a flexible diaphragm connected in said housing between said top and bottom walls to define with one of said walls an expandable chamber,
 and means to vent said expandable chamber through said bottom wall.

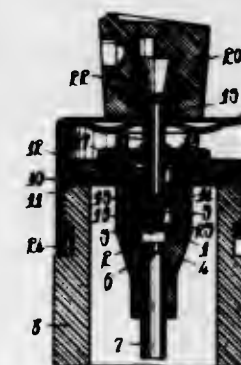
3,313,458
TOGGLE LINK ACTUATOR FOR AXIALLY RECIPROCABLE AEROSOL VALVE
 Arthur R. Bramm, 209 E. Mildred, Cary, Ill. 60013
 Filed Aug. 9, 1965, Ser. No. 478,239
 10 Claims. (Cl. 222-402.13)



1. An actuator for an aerosol valve comprising a structure capable of being mounted upon said aerosol valve, a

valve button adapted to be secured to a valve stem retained within said structure, first lever means having one end fixed to said structure forming a first pivot point, second lever means having one end fixed to said valve button forming a second pivot point, the other ends of said first and second lever means being pivotally secured to one another forming a third pivot point, means for moving said third pivot point whereby said second pivot is moved downward with respect to said first pivot point, to thereby move said valve button downward, and a discharge passage formed in said valve button.

3,313,459
QUANTITATIVE JETTING MEANS FOR A PRESSURED INJECTOR-RESERVOIR
 Ryniehi Mizuguchi, Tokyo, Japan, assignor to Mitani Valve Co., Ltd., Tokyo, Japan
 Filed Oct. 21, 1965, Ser. No. 500,039
 4 Claims. (Cl. 222-402.20)

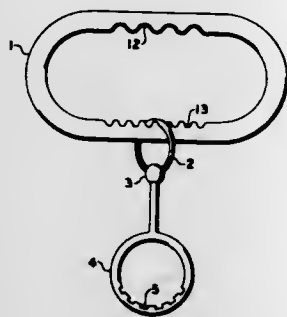


1. A quantitative jetting means for a pressured injector-reservoir, comprising a reservoir adapted to contain a pressured fluid and closed fluid-tightly by a lid, a quantitative chamber formed in the central part of and downwards protruded from said lid, a deformable semi-spherical member made of an elastic material, placed on a single and opened bottom of said quantitative chamber and provided with a central perforation for communicating the interior of said quantitative chamber with said reservoir through a suction pipe, and a jetting member fixed on a tubular valve rod having a bottom end adapted to move vertically inside said quantitative chamber, said tubular valve rod being adapted to be held by said lid fluid-tightly and to communicate said interior of said quantitative chamber with the atmosphere through said tubular valve rod and said jetting member when said tubular valve rod is lowered in said quantitative chamber, and said perforation being adapted to be closed, at the same time, by said bottom end of said lowered tubular valve rod so as to make the quantitative chamber incommunicable from said reservoir.

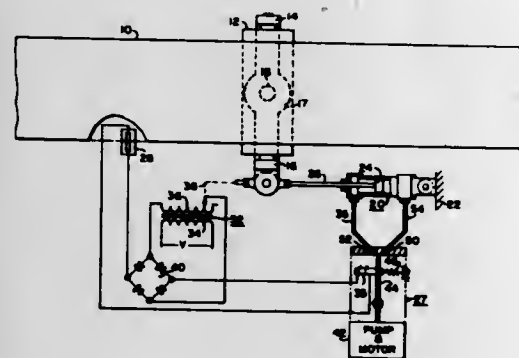
3,313,460
HANGER CARRYING DEVICE
 Roger Wolcott Hooker, 563 Park Ave., New York, N.Y. 10021
 Filed May 13, 1965, Ser. No. 455,450
 1 Claim. (Cl. 224-45)

A device for transporting garments comprised of a handle member, two ring members, and a joining member for connecting said ring members to each other, wherein the handle is an endless rigid member containing finger depressions on its upper inner surface and indentations on its lower surface, thereby providing for a better gripping means and restricting horizontal movement of one of the ring members, one of said ring members is looped within the handle, the other ring member being comprised of indentations on a portion of its inner surface

thereby allowing it to receive garment hangers, and said joining member including a radially extended elongated



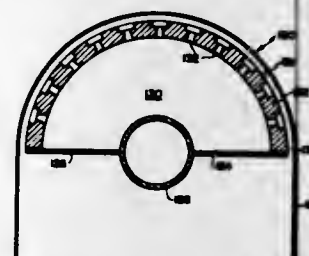
3,313,461
STEERING AND CONTROL DEVICE
Poul Andersen, Wallingford, Conn., assignor to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
Filed Apr. 19, 1966, Ser. No. 549,742
5 Claims. (Cl. 226-20)



1. In a device for maintaining a moving strip of material on a given pass line, which device includes steering means to vector a portion of the force of the moving strip laterally to change the position of the strip, which improvement comprises:

- a photocell signal generating means disposed adjacent an edge of the strip and adapted to modify its control signal proportional to the deviation of the strip from the pass line;
- a transformer having a movable tap for varying the secondary coil thereof, said secondary coil being connected in circuit relation with said control signal generating means to provide an output indicative of the deviation of said strip from the pass line, the primary coil of said transformer being connected to an alternating current power source;
- an electromagnetic device connected in series relationship with said photocell, the series circuit so-formed receiving its power from said secondary coil, the position of said photocell and said movable tap being initially adjusted to prevent operation of the steering means when said strip is on the pass line, said electromagnetic device being adapted to operate the steering means; and
- other means actuated by said steering means and coupled to said movable tap to counteract the control signal change due to the deviation of said strip from the pass line, whereby the steering vector is eliminated when the strip returns to the pass line.

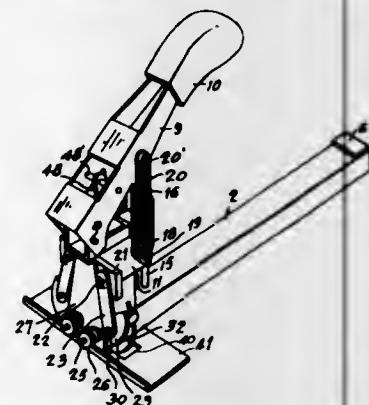
3,313,462
AIR FLOTATION DIRECTION CHANGING ROLL
Horace L. Smith, Jr., Richmond, Va., assignor to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia
Filed June 2, 1966, Ser. No. 554,842
2 Claims. (Cl. 226-97)



1. Apparatus for changing the direction of travel of a web during processing thereof in which the web is supported on a film of air, comprising:

- a single hollow drum having a wall of substantial thickness, said drum being rotatably supportable and being adapted to have the web trained thereover; and
- ports through said wall providing communication between the interior and exterior of the drum, whereby air may be forced from the interior of said drum to the exterior thereof to provide a filmlike cushion of air between the drum and the web, said ports each having an inlet section of relatively small cross-sectional area for metering the flow of air through the ports and an outlet section communicating with said inlet section, said outlet section having a substantially larger cross-sectional area than the inlet section; and
- means for sealing off the perforations through the portion of the drum other than those over which the web is trained comprising:
 - an arcuate shield member within said drum cooperating with the inner surface thereof;
 - support means mounting said shield for free rotational movement about an axis coincident with the axis of rotation of said drum; and
 - seal means extending along opposite edges of said shield and disposed between said shield and said drum for preventing escape of air through perforations underlying the shield.

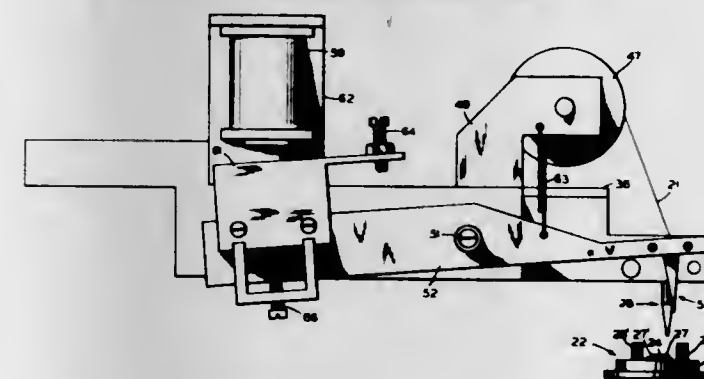
3,313,463
CARPET JOINTING MACHINE
Gerard Boucher, P.O. Box 1926, Station B, Montreal, Quebec, Canada
Filed July 15, 1965, Ser. No. 472,131
5 Claims. (Cl. 227-108)



1. A carpet jointing machine comprising, in combination, a stapling head having a discharge orifice, a staple-ejecting mechanism associated with said head for ejecting staples through said orifice successively upon successive operation of said mechanism, a sole plate secured to said stapling head and extending transversely of said discharge orifice and protruding from both sides of said head, and a pair of curved tools having elongated pointed tips

carried by said stapling head for movement between retracted and operative positions, said sole plate having an elongated slot in register with said orifice and tools and through which the staples are ejected and through which said tools extend in their operative position, said slot disposed transversely of said stapling head and extending outwardly from both sides of said head, the underface of said sole plate being downwardly spaced from the edge of said discharge orifice, means drivingly connecting said tools to said staple-ejecting mechanism, whereby movement of the latter will cause said movement of said tools and bring said tools into said operative position during the ejection of a staple by said staple-ejecting mechanism, said tools disposed substantially in the plane containing the staple to be ejected and on opposite sides thereof, said tools in their retracted position having their tips above the level of the underface of said sole plate, and in operative position having their tips below the level of said staple and across the ejection path of said staple, whereby said tool tips serve in their operative position as abutment surfaces against which said staple is pressed and bent during ejection of said staple, and said tools also engage during their converging movement from retracted to operative position two carpet pieces to be jointed and press the same together at their edges to form a butt joint and also move the same upwardly and within said sole plate slot to be trapped therein.

3,313,464
THERMOCOMPRESSOR BONDING APPARATUS
Michael K. Avedisian, Mohnton, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 7, 1963, Ser. No. 322,176
7 Claims. (Cl. 228-3)



1. In an apparatus for bonding a fine wire to first and second areas on an article;

- a bisectonal tubular needle movably mounted having a first and second section forming a passageway therebetween for receiving said fine wire, said sections being movable with respect to one another upon the application of a transverse force to one of the sections to constrict said passageway;
- a cylindrically shaped bonding tip at a free end of one of said sections over which said wire is laid;
- a bonding element having a wedge-shaped bonding tip at one end thereof, said wedge-shaped bonding tip having a sharp apical edge formed by the intersection of two opposed sides;
- means for pivotally mounting said bonding element on said needle so as to be movable into and out of engagement with said one section to apply a transverse force thereto to constrict said passageway so as to clamp said wire therein, said wedge-shaped bonding tip of said bonding element extending beyond the cylindrical bonding tip of said bonding needle when said bonding element is moved into engagement with said one section;
- means for moving said needle to first and second positions, in said first position said bonding needle and

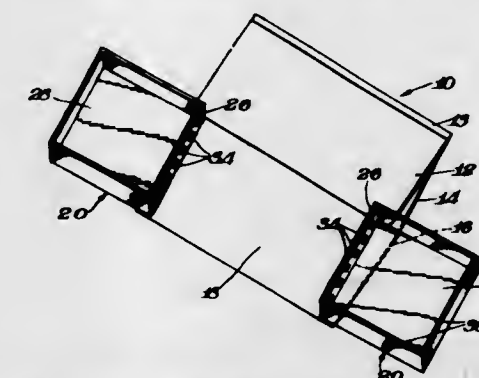
bonding element being above said first area, in said second position, said bonding needle and bonding element being above said second area;

means operable at said first position for moving said needle and bonding element toward said first area to bond the wire thereto with said cylindrically shaped bonding tool;

means operable at said second position for moving said bonding element into engagement with said needle to constrict said passageway to clamp said wire; and

means for moving said bonding element and needle simultaneously toward said second area to bond the wire thereto with the inclined side of said wedge-shaped bonding tip while simultaneously cutting said wire with said sharp apical edge thereof.

3,313,465
CARTONS HAVING MOLDED PULP END WALLS
William Geisler, San Francisco, Calif., assignor to Keyes Fibre Company, Portland, Maine, a corporation of Maine
Filed Nov. 26, 1963, Ser. No. 326,148
5 Claims. (Cl. 229-23)

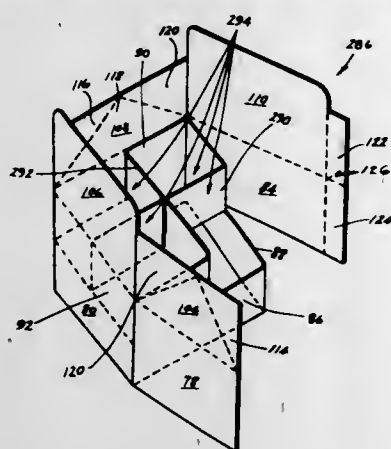


1. A lightweight container comprising plural generally rectangular side walls flexibly joined at their edges to form a tubular structure collapsible to assume a generally flat configuration for storage purposes or expandable to assume an open configuration of polygonal cross-section for container purposes, a pair of similar end wall members of heavy duty molded pulp material, the end wall members being detachable from the side walls so that they may be made of a material different from the side walls, each being shaped to fit telescopically within the open tubular structure for closing the ends thereof, one edge of each end wall member being flexibly attached to a flap on an end of one of the rectangular side walls to swing into the same general plane as the collapsed side walls for storage purposes or into a plane generally normal to the expanded side walls for end closing purposes, each end wall member having flange means at its periphery to afford adequate molded pulp material for fastening with the ends of the remaining rectangular side walls, said flange means flaring outwardly, and intermittent perforations being on at least one of the rectangular side walls for providing side access to the container for emptying the contents thereof.

3,313,466
REINFORCED CONTAINER STRUCTURES
Clifford H. Keith, Cincinnati, Ohio, assignor to The Mead Corporation, Dayton, Ohio, a corporation of Ohio
Original application Dec. 17, 1962, Ser. No. 246,873. Divided and this application Dec. 20, 1965, Ser. No. 514,968
5 Claims. (Cl. 229-27)

1. A container comprising a series of foldably connected outer side wall means each having a top edge and a bottom edge, a first bottom wall having a pair of opposed side edges, said first bottom wall being foldably

connected at one of said side edges thereof to the bottom edge of one of said outer side wall means, a series of foldably connected inner side wall means each having a top edge and a bottom edge, one of said inner side wall means being foldably connected at the bottom edge thereof to the other of said side edges of said first bottom wall, said series of inner side wall means being disposed closely adjacent to at least part of said series of outer wall means,



a plurality of reinforcing bottom walls having opposed side edges and being respectively foldably connected at one of the side edges thereof to the bottom edges of certain of the remaining inner side wall means, said reinforcing bottom walls being superimposed on said first bottom wall in a predetermined stacked relation, and a foldable divider panel foldably connected to and carved out of an adjacent pair of said inner side wall means to compartmentize said container.

3,313,467

CORRUGATED CARTON BOX

Juel U. Anderskov, 1394 Dennis, Des Plaines, Ill. 60016, and Frank S. Lewis, 3832 Lake Drive, Wilmette, Ill. 60091

Filed Apr. 27, 1965, Ser. No. 451,185
5 Claims. (Cl. 229-37)



1. A carton-forming pattern comprising a rectangular piece of cardboard stock divided by longitudinal and transverse scores into four main body sections each with a pair of integrated and oppositely-extending closure flaps separated by slits and foldable along the scores to form a completely enclosed carton to accommodate variable cubic contents, each of the closure flaps along one longitudinal score being of a width transversely of the longitudinal scores greater than one-half the transverse spacing thereof, and having a multiple series of scores formed therein parallel with the longitudinal scores.

3,313,468

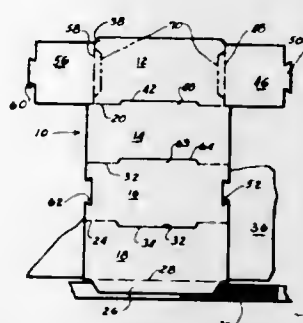
CONTAINER

Donald R. Ross, 126 California Ave., Freeport, N.Y. 11520

Filed Aug. 2, 1965, Ser. No. 476,366
3 Claims. (Cl. 229-37)

1. A container comprising a bottom wall, end walls contiguous to said bottom wall, a first side wall, a top wall and a second side wall blanked from a single sheet of material and having score lines impressed into said material along the desired junctures of said walls, said sec-

ond side wall being provided with an extending flap, said top wall being provided with extending flanges cut from the contiguous side walls and extending in planar relationship with said top wall, said first side wall being provided with an extending flange cut from the contiguous material of said bottom wall, said second side wall being folded along the score line defining the juncture between



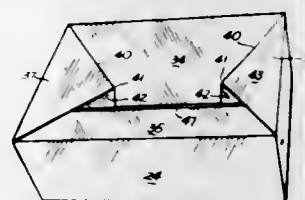
said second side wall and said top wall, said bottom wall being folded along the score line defining the juncture between said bottom wall and said first side wall with the edge thereof in contact with and bonded to said flap extending from said second side wall, each of said end walls being provided with a tongue, each end of said top wall being provided with a dovetail adapted to receive the tongue on a respective end wall.

3,313,469

CLOSURE FOR COLLAPSIBLE CARTON

Harry Drozda, 841 Ash St., Richmond, British Columbia, Canada

Filed Oct. 13, 1965, Ser. No. 495,646
9 Claims. (Cl. 229-38)



1. An end closure for a collapsible carton, the carton having tubularly arranged side and end wall panels with the end closure connected to one end thereof, the end closure including a pair of opposed flaps each foldably connected to a respective side wall panel and with free edges opposite the respective fold connections, said free edges being in overlapping relation, one of said flaps having end edges in foldably connected relation to a pair of bellows fold members which are in turn foldably connected to the adjacent end wall panels, the bellows fold members disposed in flatwise exterior relation to said one flap and including an angular fold line therein terminating at respective free edge points, the second one of said opposed pair of flaps disposed with marginal portions adjacent the free edge intervening the first and second portions of the bellows fold members to secure the bottom closure from outward extension.

3,313,470

CARRYING HANDLE

Gerda Renner, Horst Schneider, and August Schwarzkopf, Lengerich, Germany, assignors to Windmoller & Holscher, Lengerich, Germany

Filed Jan. 4, 1965, Ser. No. 412,986
2 Claims. (Cl. 229-54)

1. A carrying handle of thermoplastic material, suited to mass production methods and efficient stacking, for

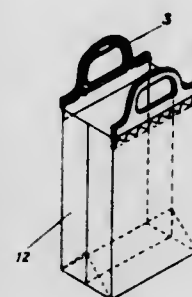
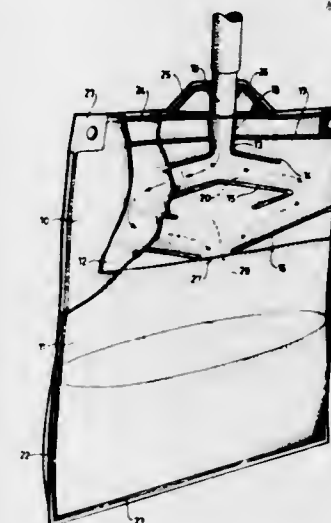
carrying bags which are preferably made from thermoplastic sheeting, said handle comprising two sections which detachably engage each other in use, each of said sections including a grip portion and connecting means adapted to connect said grip portion to an associated bag wall, said connecting means comprising a longitudinal connecting bar having an upper and lower portion, said lower portion being adapted to be welded to said associated bag wall, said upper portion being integrally connected at the central portion of its upper longitudinal edge to said grip portion, said grip portion and the upper portion of said connecting bars each being channel-

the surface of said pressure-sensitive adhesive remote from said heat activated adhesive with both of said adhesives remaining on said package body.

3,313,472

FLEXIBLE BAGS

Stig Tjerneld, Pilosvag 7, Bromma, Sweden, and Olle Höök, Karlbergsvag 30, Stockholm, Sweden
Filed Mar. 3, 1966, Ser. No. 531,401
1 Claim. (Cl. 229-62.5)



shaped in cross-section with the open sides of the channel sections facing each other and forming box-like sections, a plurality of fastener-like connecting elements formed on said sections for detachably engaging said sections together, no portion of the engaged portions of said connecting elements protruding laterally beyond the planes which contain the respective base surface of a channel section, said plurality of fastener-like connecting elements formed on said sections in the upper portion of the connecting bars and two complementary projections and recesses formed integrally in the grip portions of the sections for detachably interconnecting the grip portions of the sections.

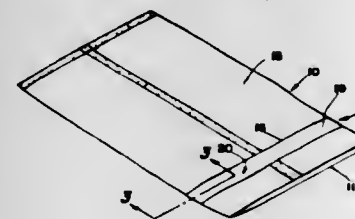
A flexible bag of the kind having an inlet which opens into the bag through a non-return valve, said bag consisting of two walls of a flat foil material, such as plastics, joined by welding or heat sealing, the non-return valve consisting of a single valve flap of a flat foil material which is connected to one wall of the bag, such as by welding, characterized in that the valve flap is welded to one wall of the bag whilst leaving an inlet neck and an inlet passage in communication therewith, said inlet passage being divided into two branches diverging in open V-shape and then again converging in open V-shape, the two V-shaped passage branches forming between them a collecting pocket for any returning small amounts of liquid.

3,313,471

RECLOSABLE OR WALL HANGING CONTAINER

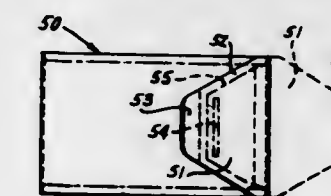
Lester R. Dickard, Painesville, and Robert G. Hamilton, Mentor, Ohio, assignors to Avery Products Corporation, San Marino, Calif., a corporation of California
Original application Aug. 25, 1964, Ser. No. 391,973.
Divided and this application May 14, 1965, Ser. No. 463,430

5 Claims. (Cl. 229-62)



1. A reclosable or wall-hanging package comprising a package body, a heat-activated adhesive bonded directly to said package body, a pressure-sensitive adhesive bonded directly to said heat-activated adhesive, a removable tape or label covering said pressure-sensitive adhesive, the bond between said heat-activated adhesive and both said package body and said pressure-sensitive adhesive being greater than the bond between said tape or label and said pressure-sensitive adhesive, and the cohesion of said pressure-sensitive adhesive being greater than the bond between said pressure-sensitive adhesive and said tape or label whereby removal of said tape or label exposes

1. A disposable dispensing package comprising an elongated strip of metal foil folded along an intermediate transverse line to define a package having a closed end, a long side and a short side, and sealing along the sides thereof to define an open ended dispensing enclosure, the end of the long side being reverted to overlie the short side and define a closure tab, and a line of resealable adhesive extending between the sides and an intermediate transverse portion of the closure tab and the adjacent surface of the short side resealably closing said package with the end of said tab projecting beyond the transverse adhesive line to provide a free finger grasping portion positioned in relatively offset relation to the short side.



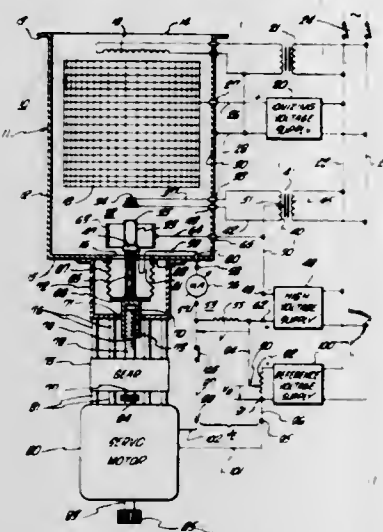
3,313,473
DISPENSING PACKAGE
Lee Roy Wittern, 1401 N. Main Ave., Sidney, Ohio 45365
Filed Apr. 2, 1965, Ser. No. 445,090
9 Claims. (Cl. 229-80)

3,313,474

VAPORIZED MATERIAL SOURCE

Allen R. Hamilton, Rochester, N.Y., assignor to Consolidated Vacuum Corporation, Rochester, N.Y., a corporation of New York

Filed Aug. 4, 1964, Ser. No. 387,410
7 Claims. (Cl. 230-69)



1. In a vacuum pump, a source of vaporized material, comprising:

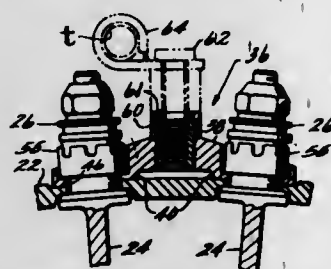
- a rod of material to be vaporized having a free end;
- electron releasing means including a filament, the filament located in vicinity of the free end of the rod;
- means for realizing a predetermined initial spacing between the free end of the rod and the filament;
- an electric circuit including means for positively biasing the rod with respect to the filament for causing electron bombardment of the free end of the rod and vaporization of material therefrom;
- means for producing a voltage being proportional to the current in the electric circuit;
- means for producing a reference voltage;
- means for producing an error signal by comparing said current proportional voltage and said reference voltage; and
- means responsive to said error signal for adjusting the position of the rod with respect to the filament.

3,313,475

MOUNTING OF HARDWARE ON AXIAL FLOW COMPRESSOR CASINGS

Rylance H. Bostock, Jr., Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York

Filed July 29, 1965, Ser. No. 475,768
5 Claims. (Cl. 230-114)



1. A mounting bracket used in combination with an axial flow compressor of the type comprising, a shell-like cylindrical casing, a plurality of stator blades arranged in circumferential rows along the length of the compressor, said casing having holes therethrough and a bushing projected through said holes to provide means for mounting the outboard end of each stator blade, said bracket comprising, a bridge portion terminating at each end in a foot,

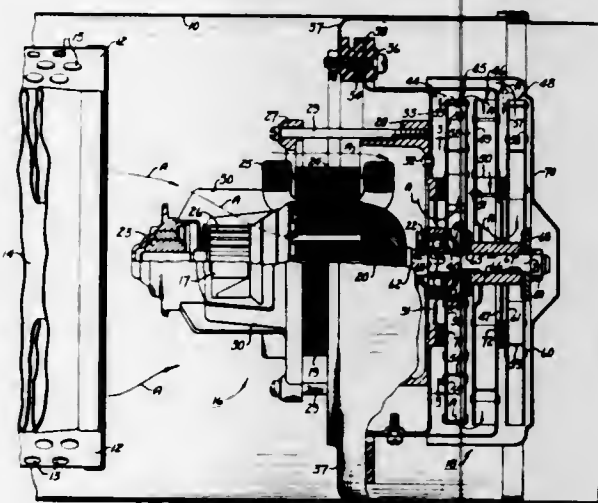
each foot being apertured and telescoped over a stator mounting bushing, common means securing each foot portion and the bushing over which it is telescoped to said casing, and clamping means carried by said bridge portion for the securing of hardware thereto to thus mount the hardware on the casing.

3,313,476

CENTRIFUGAL FAN HAVING SUBSTANTIALLY REDUCED INTERNAL AIR RECIRCULATION

William A. Ross, Darien, Conn., assignor to Electrolux Corporation, Fairfield, Conn., a corporation of Delaware

Filed May 3, 1965, Ser. No. 452,647
4 Claims. (Cl. 230-130)



1. Apparatus comprising a centrifugal fan of light weight low inertia construction having a first impeller, said first impeller comprising a pair of spaced sheet metal discs interconnected by a plurality of sheet metal vanes situated therebetween, a central air inlet in one of said discs, said one disc having an axially projecting edge extending in a direction away from the other of said pair of discs, a stationary fan housing having a wall portion, said wall portion having an opening therein substantially coaxial with said central air inlet of said one disc; the improvement comprising an annular sealing member consisting of a rigid low density friable cellular material, and means for adhering said sealing member to said wall portion between said housing and said impeller, the aperture of said sealing member having an inside diameter less than the outside diameter of said opening in said disc and being coaxial with both said wall portion opening and said disc opening, said sealing member having initially an interference fit with said edge whereby said edge abrades said friable material for unobstructed rotation of said impeller wheel after a number of revolutions of said impeller in use.

3,313,477

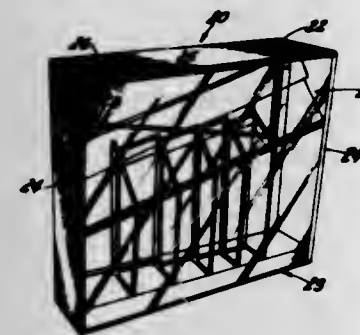
TRANSPARENT BANK CONSTRUCTION HAVING COIN SORTING MEANS

Gustave Brown, Wheaton, Ill., assignor to Harold B. Spector and Raymond B. Spector, a co-partnership doing business as Superior Toy & Mfg. Co.

Filed Feb. 5, 1965, Ser. No. 430,658
7 Claims. (Cl. 232-5)

1. A coin bank comprising an upright housing having at least one transparent side, said housing being provided with a coin infeed opening formed in the upper portion thereof, an element removably mounted exteriorly on the base of said housing for permitting access to the lower interior portion of said housing, and means for locking said element on said housing exterior; the interior of said housing including an inclined first coin guideway means wherein the upper end thereof communicates with said

infeed opening whereby a single coin inserted through said opening is directed to roll downwardly along said guideway means while the axis of roll of the coin remains substantially horizontal, an inclined second coin guideway means having the upper end thereof communicating with the lower end of said guideway means whereby the coin subsequent to leaving said first guideway means rolls in a second direction down said second guideway means while the axis of roll of the coin is disposed at an angle with respect to the horizontal, one wall of said second guideway means, against which the substantially flat side of the coin engages while rolling down said second guideway means, being provided with



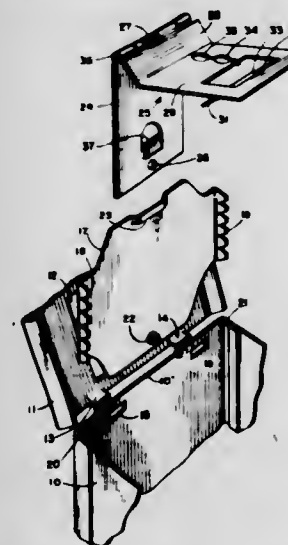
a plurality of longitudinally spaced apertures, the areas of said apertures, starting with the uppermost aperture, progressively increasing in size, the configuration of each aperture being sized to accommodate a coin of a given denomination, and a plurality of coin-receiving means depending from said apertured wall and arranged in side by side relation, the upper end of each said coin-receiving means communicating with a wall aperture whereby the coin while rolling down the second guideway means will fall by gravity into a said coin-receiving means upon reaching the appropriately sized aperture; the lower end of each said coin-receiving means being closed off by said removable element.

3,313,478

ANTI-THEFT DEVICE FOR COIN BOXES

Leroy E. Lattin and Bedrick V. Bliznak, Venice, Calif., assignors to The Universal Products Corporation, a corporation of California

Filed Jan. 19, 1966, Ser. No. 521,582
6 Claims. (Cl. 232-57)



1. An anti-theft device for a coin box comprising: a coin scoop structure including a plate adapted to be secured in said box and a top member hinged to said plate in a position to receive coins dropped into said box and to swing down partially into said box, said member having a coin receiving top surface; means biasing said member in an upward direction, the weight of a given number of coins received on said surface causing said

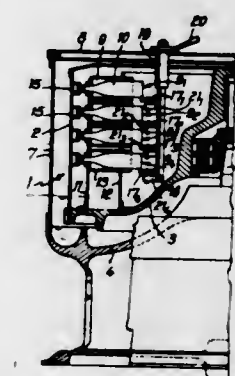
member to swing downwardly so that said coins slide from said surface into said box, said top surface including at least one opening through which coins may pass in addition to coins passing about the edges of said member.

3,313,479

AUTOMATIC DEVICE FOR PLACING IN SUSPENSION THE CRUST OF A LIQUID CONTAINED IN BOTTLES AND PRECIPITATING IT ON TO THE STOPPERS THEREOF

Georges Grauss, 21-21 Blvd. de Port-Royal, Paris, France

Filed Apr. 20, 1965, Ser. No. 449,423
Claims priority, application France, Apr. 21, 1964, 971,627
6 Claims. (Cl. 233-5)



1. Automatic device for placing in suspension the crust of a liquid contained in bottles and precipitating it on to the stoppers thereof, characterised in that it comprises a combination of the following, in a centrifuging basket:

on the one hand, substantially radial cavities, distributed in at least one layer at the rim and intended to accommodate the bottles, allowing them some play, their stoppers being brought to bear against the lateral wall of the basket, on the other hand, at least one notched disc loosely mounted on a fixed but retractable supporting element, so that when this disc is in the operational position its notched peripheral portion is on the circular path described by the corresponding bottoms of the bottles so as to tend to stir them by lifting them, lowering them and turning them, the driving mechanism for the basket having two operational speeds: a slow speed for stirring and a fast speed for centrifuging.

3,313,480

ACCUMULATOR STATE CONTROL POSITIONING MECHANISM

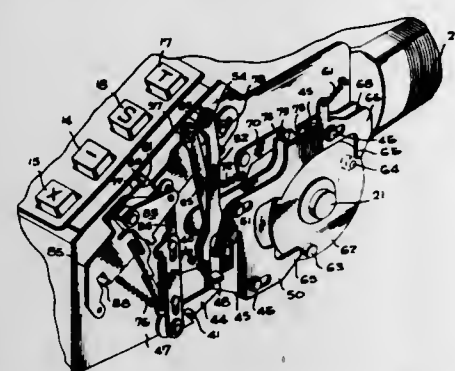
Valia S. Golemon, 14 Araki-cho, Shinjuku-ku, Tokyo, Japan

Filed July 12, 1965, Ser. No. 471,369
16 Claims. (Cl. 235-60)

8. In a calculating machine, the combination comprising:

an accumulator positioning member having at least three positions; linkage means for pivotally positioning said accumulator positioning member; a pair of spaced projections carried by said linkage means; a selector member for actuating said accumulator positioning member; means connected with said selector member for reciprocating said selector member; said selector member having a portion of less width than the space between said projections;

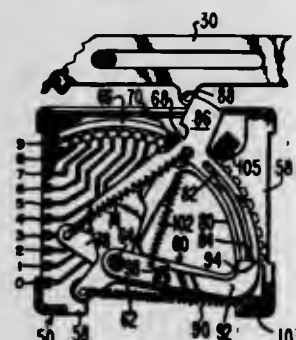
said portion having a pair of outwardly opening notches arranged for selective engagement with one or the other of said pair of projections;
said selector member having an intermediate position in which it is compatible with the central position of the three positions of the accumulator positioning member in which position either of said notches may be selectively engaged with one of said projections;



spring means for normally positioning said selector member so that one of said notches is engaged with one of said projections prior to the initiation of an operating cycle;
means for positioning said selector member including a pair of sliding members wherein one of said sliding members is operably connected to said selector member; and
key means for selectively and detachably connecting said slide members together.

3,313,481 READOUT DEVICE

Nicholas Kondur, Jr., Northville, and Ronald H. Mack, Plymouth, Mich., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 9, 1966, Ser. No. 533,079
2 Claims. (Cl. 235-61)

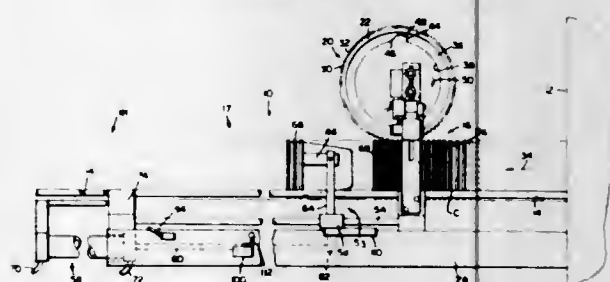


1. A device for storing a number in accordance with the position of a rack movable to any selected one of a number of positions representative respectively of different numbers comprising supporting means, a plurality of electrical contact members mounted on said supporting means and representative respectively of numbers corresponding to the different selectable positions of the rack, a first arm pivotally mounted on said supporting means, a pair of contact members carried by said arm and settable by the pivoting of said arm into contact with any one of said mounted contact members, said arm having a home position, a second arm pivoted on said supporting means coaxially with said first arm and in abutting relation with the rack, said second arm having a home position, a first spring urging said second arm against said rack in a direction to effect a pivoting of said second arm away from home position as the rack moves to a selected one of said positions, an abutment pin on said first arm engaging an abutment on said second arm in a relationship to effect unidirectional movement of said first arm by said

second arm to set said pair of contact members, said second arm returnable to home position by and upon return of said rack, a retractable detent operable to engage and hold said first arm in contact selected position, a second spring urging said first arm and said second arm together and operable to return said first arm to home position following retraction of said detent, and a shock absorber positioned to yieldingly oppose return of said arm to home position prior to engagement of said pin abutment with the abutment on said second arm.

3,313,482 COUNTING DEVICE

Eric L. Midgley, Danvers, and Charles R. Snyder, East Braintree, Mass., assignors to Sweetheart Plastics, Inc., Wilmington, Mass., a corporation of Maryland
Filed Aug. 18, 1965, Ser. No. 480,622
7 Claims. (Cl. 235-98)



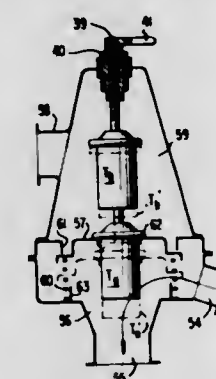
5. In a counter for separating selected numbers of nested rimmed containers,
a pair of parallel rails upon which the nested containers are to be fed rim first,
a gear-like wheel disposed adjacent the rails with its teeth adapted to be engaged by the rims whereby as each container moves by the wheel the wheel turns in place,
a carriage disposed adjacent the rails and movable back and forth parallel to the rails,
a finger carried by the carriage and disposed to engage the rim of each container after each passes the periphery of the wheel, said finger being movable relative to the containers in the direction opposite to the direction of movement of the containers on the rails and carrying all containers with it only when said carriage moves in the direction of movement of the containers on the rails,
counting means responsive to a prescribed number of containers having engaged the wheel for moving the carriage in the direction of movement of the containers,
and an ejector mechanism including a pair of rails into which the containers are moved by the carriage, means for raising one of the rails above the height of the other to roll containers over the other of the rails, and means responsive to the travel of the carriage over a prescribed distance in a particular direction for activating the raising means.

3,313,483 THERMOSTAT

Friedrich K. H. Nallinger, 5 Albrecht-Durer-Weg, Stuttgart, Germany
Filed June 15, 1964, Ser. No. 375,200
Claims priority, application Germany, June 20, 1963, N 23,346
16 Claims. (Cl. 236-34.5)

1. A thermostat structure, especially for controlling the cooling water temperature of motor vehicle internal combustion engines, comprising:
first thermostat means,
second thermostat means,
said first and second thermostat means responding differently to temperature influences,

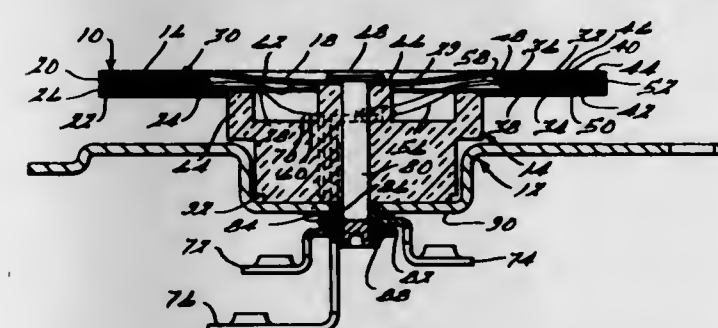
and means operatively combining said first and second thermostat means into a thermostat unit including adjusting means for adjusting said thermostat means in such a manner that with the occurring temperatures either only the one or at least the other of said thermostat means or both thermostat means in combination with one another become effective,
a housing having a fluid inlet and a fluid outlet, valve means for controlling the flow of fluid from said inlet to said outlet, said valve means including a relatively stationary seat and a movable valve member having generally reciprocating movement between an open position and a closed position generally axially of said valve seat, said first and second thermostat means being mounted within said housing and being



connected together for movement relative to said movable valve member between a summer position and a winter position, said first thermostat means moving said movable valve member between its open position and closed position in response to a temperature change within a predetermined desired temperature range when said first thermostat means is in its summer position, said adjusting means jointly moving both of said thermostat means generally axially relative to said movable valve member between said summer position and said winter position, and said adjusting means extending outside of said housing for adjustment from outside of said housing to effectively change the temperature range within which said valve means is operated.

3,313,484 OVEN TEMPERATURE CONTROL WITH SENSER BIASING WINDING

Anthony K. Otto, Ann Arbor, Mich., assignor to King-Seeley Thermos Co., Ann Arbor, Mich., a corporation of Michigan
Original application Sept. 26, 1963, Ser. No. 311,739, now Patent No. 3,265,362, dated Aug. 9, 1966. Divided and this application Jan. 7, 1966, Ser. No. 519,350
15 Claims. (Cl. 236-68)

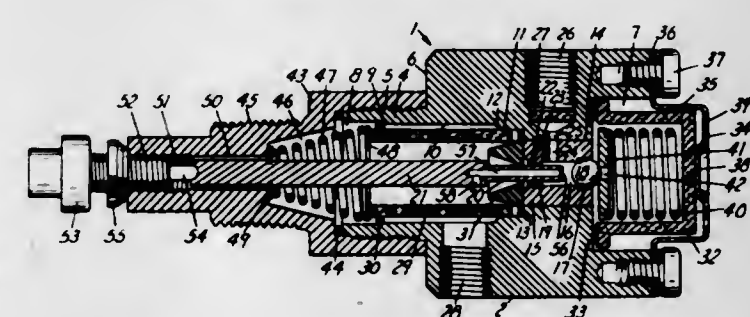


1. In apparatus for controlling the temperature of a mass being heated by a source of heat in an environment including an environmental temperature controller and a heating element controlled thereby, the combination of a support member, a temperature sensing unit including temperature sensing resistance means supported in heat transfer relation with said environment, the environmental

temperature controller including said temperature sensing resistance means for controlling the source of heat in response to the temperature of the environment, a second sensing unit for sensing the temperature of the mass, and a separate heating resistance means thermally associated with said temperature sensing means for changing the temperature condition of said sensing means in response to the sensed temperature of the mass and independently of heat supplied from the heating element except as it varies the temperature of the mass, said temperature sensing means and said separate heating means being spirally wound in a coil in intimate heat transfer relation, one with the other, and plate means for securing said sensing unit to said support member.

3,313,485 TEMPERATURE ACTUATED VALVES

Leon C. Harvey, Cadillac, Mich., assignor to Kysor Industrial Corporation, Cadillac, Mich.
Filed Sept. 20, 1965, Ser. No. 488,361
17 Claims. (Cl. 236-86)



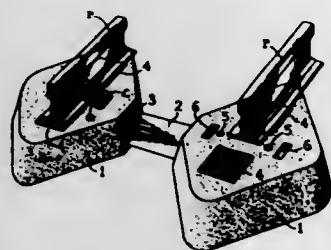
1. A valve for alternatively connecting a delivery passage from a part to be actuated to the atmosphere or to a supply passage in response to temperature change of a temperature responsive element having a push pin comprising,
a main body having an inner filter recess and an outer filter recess formed in opposite ends thereof,
means forming a valve chamber between said recesses with a valve rod passage extending from said chamber to said inner filter recess and with an opening formed by a first valve seat to said outer filter recess, a mounting fitting threadedly engaged with said body and defining an axial passage opening to said inner filter recess,
said temperature responsive element being axially adjustably mounted on the inner end of said fitting with its pin extensible into said axial passage,
a valve rod extending from said pin through said valve rod opening and having an axial bore in its outer end with a second valve seat formed therearound,
a radial passage in said valve rod opening between the bore in the rod and said inner filter recess,
a relatively rigid cylindrical filter positioned in said inner filter recess and around said valve rod in radially spaced relation to the rod and the inside of said inner filter recess,
a first spring compressed between the inner end of said cylindrical filter and a thrust abutment engaged with said rod inwardly of the filter,
said fitting having an internal shoulder limiting inward motion of said rod,
a valve ball adapted to close on said first valve seat and opposed to said second valve seat,
a second cup shaped filter of relatively rigid material positioned in inwardly facing relation in said outer recess,
a cap removably secured to said body in retaining relation to said second filter and defining a vent opening open to the exterior of the second filter,
an abutment plate engaged with said ball,

a second spring compressed between said second filter and said abutment plate,
first seal means engaged between said rod and said valve rod passage,
and second seal means engaged between the exterior of said cylindrical filter and the interior of said inner recess axially inwardly of said supply passage,
said main body and said chamber forming means having said delivery passage formed therethrough to said chamber,
said main body having said supply passage formed therethrough to said inner recess.

3,313,486

RAILWAY TRACK SUPPORT

Roger Paul Sonnevile, 5 Rue Maurice Ravel,
Saint-Cloud, France
Filed Nov. 10, 1964, Ser. No. 410,153
Claims priority, application France, Nov. 14, 1963,
953,717
8 Claims. (Cl. 238—117)

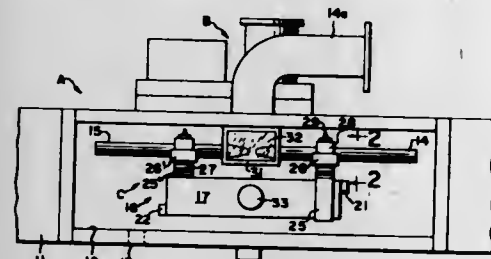


1. Railway track support comprising in combination two rigid concrete blocks and a steel stay having end portions completely embedded in and interconnecting the blocks, wherein each block has in plan approximately the shape of an equal-sided quadrilateral, one of the diagonals of said quadrilateral being in the longitudinal plane of symmetry of the stay and the other diagonal being perpendicular to said one of the diagonals, two bearing means, symmetrically disposed relative to the longitudinal plane of symmetry of the stay on the upper face of each block for the flange of the corresponding rail, each bearing means having a top face upwardly projecting from the upper face of the block.

3,313,487

CLOUD SEEDING APPARATUS

David D. Merrill, 105 Pierce St., Taft, Calif. 93268
Filed Apr. 16, 1965, Ser. No. 448,816
5 Claims. (Cl. 239—14)



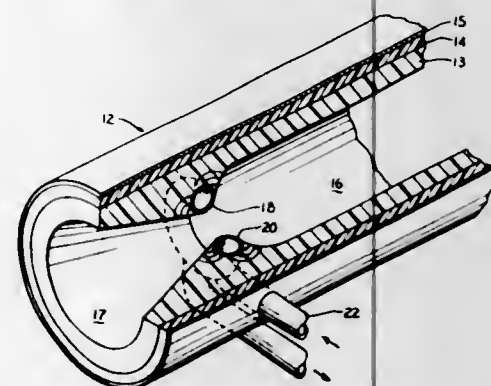
1. Apparatus for producing nucleating agents for nucleating clouds comprising: a housing; a pair of electrodes; means for establishing and maintaining a high temperature arc between said electrodes within said housing, including means for supporting each of said electrodes with an end of said electrode spaced from the end of said other electrode for establishing an arc therebetween and driving at least one of said electrodes toward said other electrode; means for feeding a substance into said arc; means for conveying nucleating agents produced in said arc out of said housing to the region to be nucleated; said support and driving means including a pair of

electrode holding members, a pair of arm members associated with each of said holding members, support means associated with each pair of arm members, each pair of arm members being secured together at their one end in a spring biased manner with the other end of one of said arm members secured to said support means and the other end of the other of said arm members secured to one of said electrode holding members; circuit means for generating an arc between said electrode members, and electrical means associated with said circuit means for controlling the movement of said one of said electrodes for initiation and maintenance of the arc between the ends of said electrodes.

3,313,488

ROCKET THRUST CHAMBER

Joseph J. Lovingham, Madison, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Oct. 2, 1964, Ser. No. 401,026
7 Claims. (Cl. 239—127.1)



1. A rocket motor comprising, in combination, an outer casing defining a thrust chamber and exhaust nozzle including a throat, an inner insulating casing mounted against said outer casing, an ablative liner covering the inner surface of said insulating casing at least in the convergent-divergent section of the nozzle, cooling means comprising a single encircling coolant coil mounted in said ablative liner in said section of said nozzle and defining said throat, the inner face of said coil being exposed to the combustion gases of the motor, and means for supplying sufficient coolant to said coil for preventing degradation of said ablative liner.

3,313,489

ROTATING LAWN SPRAYER NOZZLE HAVING DEPENDENT CYLINDRICAL DEFLECTING SURFACES

John E. Waldrum, Ambler, and Raymond J. Robinson, Fort Washington, Pa., assignors to Amchem Products, Inc., Ambler, Pa., a corporation of Delaware
Filed Mar. 5, 1965, Ser. No. 437,420
7 Claims. (Cl. 239—223)



1. A lawn sprayer nozzle comprising a base with a central point, a plurality of vertically disposed concentric spray walls of varying diameters extending downstream from said base and being disposed about said central point, a plurality of vertically disposed discharge openings formed in said base, said discharge openings being formed closely adjacent to a particular spray wall but being located between said spray wall and said central point closely adjacent to the interior side of said spray wall, means for rotating the nozzle about an axis normal to the plane of the base and means to deliver material to

be dispensed to said nozzle whereby the centrifugal force imparted to said material by virtue of the rotation of said nozzle will cause said material to be impelled against the interior side of a spray wall after passing through said discharge openings whereby a spray pattern is created having a substantially uniform particle size.

3,313,490

YIELDABLE SHEET METAL BURNER SPUD CONTAINING A NON-DEFORMABLE ORIFICE MEMBER

Roger S. Loveland, Torrance, Calif., assignor to Honeywell Inc., a corporation of Delaware
Filed Jan. 6, 1965, Ser. No. 423,786
4 Claims. (Cl. 239—596)



1. The combination comprising: a pilot burner having a burner body with inner and outer walls and a burner head; a thin-wall, open-ended, sheet metal tubular spud having an inlet end and an outlet end and positioned in said burner body; and an orifice member having a supporting wall stronger than the wall of said spud which spud wall would yield during assembly before deformation of the supporting wall, and being selectively positionable and frictionally held in said tubular spud intermediate its ends, said tubular spud having a uniform diameter from the discharge end thereof to a point near said orifice member.

3,313,491

PROCESS FOR THE PREPARATION OF QUINACRIDONE IN THE FORM OF A PIGMENT

Tommaso Lucchini, Cesano Maderno, Milan, and Giacomo Barlaro, Seregno, Milan, Italy, assignors to Aziende Colori Nazionali Affini ACNA S.p.A., Milan, Italy
No Drawing. Filed Nov. 8, 1963, Ser. No. 322,513
Claims priority, application Italy, Nov. 12, 1962,
22,242/62
10 Claims. (Cl. 241—16)

1. A process for preparing quinacridone in the form of a pigment which comprises milling quinacridone in an aqueous medium comprising synthetic resin pellets and at least one polyhydroxy-containing thickening agent, said agent maintaining the viscosity of the aqueous medium within a range of about 2 to 30 centipoises, and continuing said milling until said quinacridone pigment has a particle size of not greater than about 0.5 micron as determined by microscopic examination.

3,313,492

GRINDING METHOD

Daniel A. Jacobs and James B. Duke, Metuchen, N.J., assignors to Minerals & Chemicals Philipp Corporation, Woodbridge, N.J., a corporation of Maryland
No Drawing. Filed Dec. 24, 1964, Ser. No. 421,108
17 Claims. (Cl. 241—21)

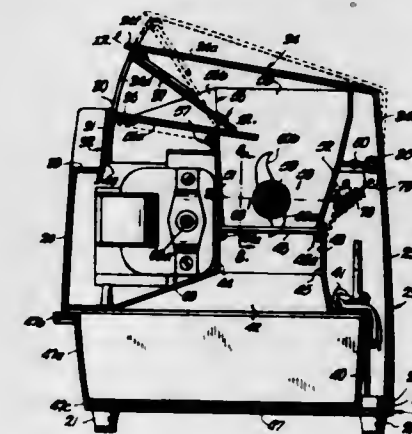
1. A process for reducing the size of micron-sized particles which comprises: partially filling a baffle-free, agitator-free, cylindrical drum having a smooth inner surface with a fluid suspension comprising said micron-sized particles, liquid and particulate grinding medium having a density appreciably greater than the density of said particles and being composed largely of substantially round particles fine enough to pass through a 4 mesh sieve and coarse enough to be retained on a 35 mesh sieve,

said liquid being employed in amount sufficient to form a fluid slip with said micron-sized particles and said particulate grinding medium being present in amount such that the particles thereof are distributed throughout a substantial amount of the total volume of said fluid suspension, and continuously rotating said drum about its horizontal axis at a speed less than critical and such that said suspension within the drum is in the form of an integral body occupying substantially only the lower portion of the drum, the individual particles of grinding medium within the suspension traveling in continuous, generally elliptical paths within the suspension, said rotation being continued until said micron-sized particles are reduced in size.

3,313,493

ELECTRIC ICE CRUSHER

Robert J. Scott, Lake Tapawingo, and William A. Chappell, Raytown, Mo., and Jack E. Briar, Shawnee Mission, Kans., assignors to Rival Manufacturing Company, Kansas City Mo., a corporation of Missouri
Filed Jan. 9, 1964, Ser. No. 336,725
13 Claims. (Cl. 241—36)



1. A domestic ice crusher comprising a throat for passage of ice therethrough, crushing mechanism mounted in said throat, electrically powered drive means for the crushing mechanism, an ice feed chute communicating with said throat, said chute including a movable wall portion, means mounting said movable wall portion for displacement between a first position in which the chute is substantially closed and a second position in which it is open for reception of ice, switch means for said drive means, and means associated with said chute and operable to actuate said switch means in response to movement of said movable wall portion between said first and second positions to energize said drive means when said movable wall portion is in said second position and de-energize said drive means when said movable wall portion is in said first position.

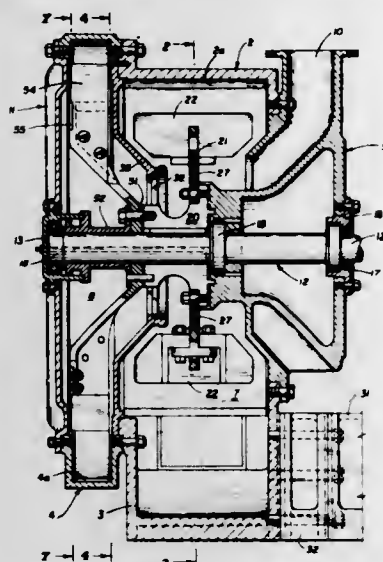
3,313,494

SUCTION-TYPE GRINDING MILL

Carl H. Peterson, Denver, Colo., assignor to Charles F. Shepherd, Denver, Colo.
Filed Apr. 7, 1965, Ser. No. 446,295
6 Claims. (Cl. 241—56)

1. In a grinding mill for reducing a material from a coarser size to a finer size, an upright housing having its interior divided into a grinding chamber and a discharge chamber, said housing having an upper feed inlet for gravitational movement of feed material to the bottom of the grinding chamber and an upper outlet in its discharge chamber, a horizontally disposed shaft extending through the housing and having a portion extending beyond the housing at one end, a rotor mounted on the shaft in the grinding chamber and including a hub portion, a disk-like

connector member mounted on the hub for conjoint rotation therewith, said connector having a circumferentially-spaced series of apertures and blade members carried outwardly of said openings with the outer edges of the blade members distant from the peripheral wall of the grinding chamber, said blade members being shaped to provide a scoop portion on their forward surfaces for imparting centrifugal movement to material in the grinding chamber, a stationary plate and a movable plate disposed in juxtaposed relation in a passage between the grinding cham-



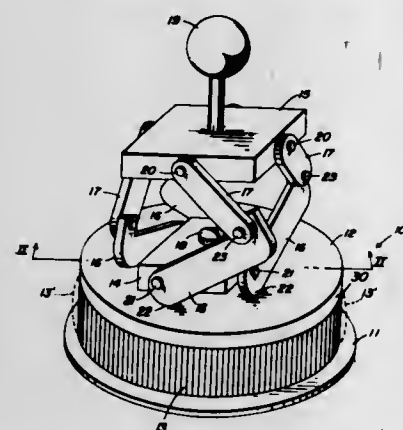
ber and the discharge chamber, said plates having a circumferential arrangement of radially extending slots in general alinement, the movable plate being rotatable to vary the alinement of its slots with the slots of the stationary plate from a fully open to a fully closed relation for controlling the rate of discharge from the grinding chamber, a fan member mounted on the shaft within the discharge chamber and having radially-extending blades inclusive of scoop portions for airborne discharge of finely divided product through the upper outlet, and means exteriorly of the housing for rotating said shaft.

3,313,495

HUB EXPANDING DEVICE

William J. McWilliams, Cement City, Mich., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Aug. 30, 1965, Ser. No. 483,439
5 Claims. (Cl. 242-68.3)



5. An adjustable hub comprising: a first base and a second base, an annular elastic member positioned between said first and second bases to form a right cylinder, a first block adjustably mounted on one end of said cylinder, a second block positioned substantially parallel to said first block and spaced therefrom, a plurality of levers rotatably connected to said second block at equal intervals thereabout, a plurality of cams rotatably attached to said first block at equal intervals thereabout, one each

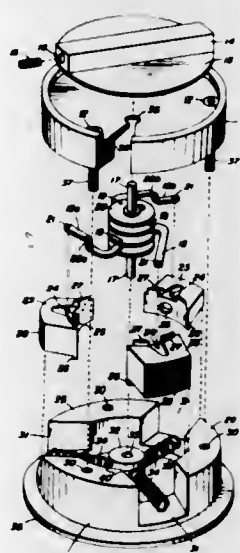
of said levers being rotatably associated with one each of said cams so that said second block is moveable along an axis perpendicular to the plane of said blocks, such movement causing said plurality of cams to act against one of said bases to thereby deform said elastic member.

3,313,496

REEL HUB

Malcolm B. Northrup, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Aug. 30, 1965, Ser. No. 483,496
4 Claims. (Cl. 242-64.3)



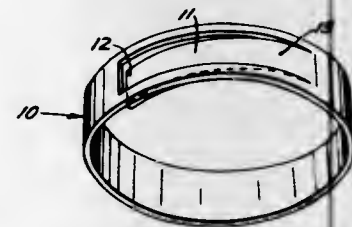
1. An expandable hub comprising: a base and a base cover, guide means associated with said base, a shaft rotatably supported between said base and said base cover, turning means connected to one end of said shaft, a plurality of pressure means associated with said guide means, stop means on said base and said base cover to limit the movement of said pressure means, means for biasing said pressure means outwardly from the center of said base, and a plurality of arms rotatably associated with said pressure means and said shaft for pivotally associating said pressure means with said shaft so that rotation of said shaft causes said pressure means to move in said guide means, the plurality of arms being the same as the plurality of pressure means.

3,313,497

CORE FOR PLIABLE STRIP MATERIAL

Robert L. Keech, White Bear Lake, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed June 1, 1965, Ser. No. 460,442
5 Claims. (Cl. 242-68.5)

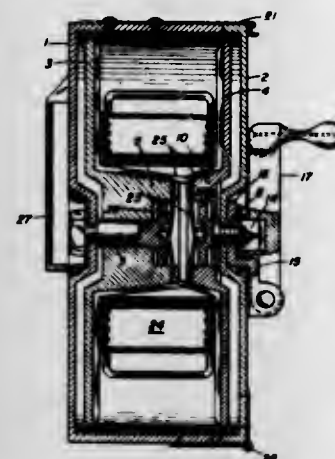


1. A hollow cylindrical core for thick pliable adhesive strips having a radially depressible tab formed by cuts through the thickness thereof, two of said cuts being substantially parallel to the ends of said core, said two cuts being interconnected by a third transverse cut, the tab within the area defined by said cuts being radially depressed to form an indentation adapted to receive the end of an adhesive strip wrapped around said core.

3,313,498

TIE WIRE DISPENSER

Lawrence W. Wasson, 587 Hope St.,
Springdale, Conn. 06879
Filed Nov. 27, 1964, Ser. No. 414,191
5 Claims. (Cl. 242-96)



1. In a cylindrically shaped, tie wire dispensing device comprising two opposing shells, at least one of which is cup shaped, hinged to open and close in a clamshell-like manner, each shell containing an end plate and at least one shell having a sidewall integral therewith, the shells having centrally located openings, a shaft journaled in each opening, an inner plate slideable on each shaft and rotatable therewith, a half hub on each shaft and integral with each of said inner plates and means for connecting the hubs to rotate as one in the closed position of the dispenser, the improvement which comprises resilient means positioned to slide said inner plates toward each other whereby the hubs and inner plates form a reel of variable width and capable of accommodating coils of wire of different widths.

3,313,499

FLARE FOR HIGH SPEED VEHICLES

Lars H. Ohman, Ottawa, Ontario, Canada, assignor to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a Canadian company

Filed May 10, 1965, Ser. No. 454,280
3 Claims. (Cl. 244-3.3)



1. A flare for high speed rocket-type vehicles travelling in a fluid wherein said flare gradually changes in cross-section from circular at the point of attachment of the body of the rocket-type vehicle to the form of a square having generally straight sides at the trailing edge.

3,313,500

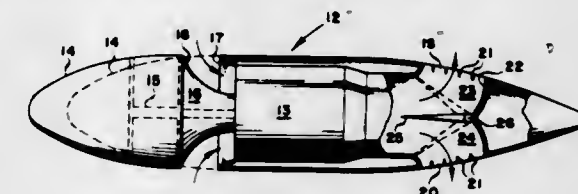
FLIGHT CONTROL MEANS FOR AIRCRAFT

Heinz E. Schmitt, Marietta, Ga., assignor to Lockheed Aircraft Corporation, Los Angeles, Calif.

Filed Apr. 30, 1965, Ser. No. 452,310
5 Claims. (Cl. 244-53)

1. In an aircraft having a main engine for its powered flight, at least one auxiliary engine constituting directional control means during such flight comprising: a thrust generator mounted in a selected position with respect to an axis of rotation of the aircraft;

a bifurcated duct from said generator established by a stationary, transverse end wall and adjacent laterally and symmetrically disposed ducts terminating in exhaust outlets for the flow of exhaust mixture produced by said generator therethrough;

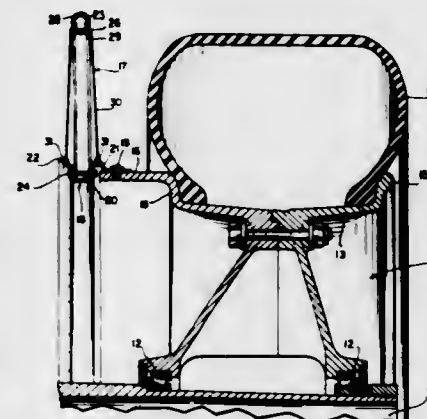


a deflector disposed in the longitudinal center of said bifurcated duct extending at all times in an upstream direction with its opposite sides coacting with the adjacent surface of said transverse wall to define said bifurcated duct and equally divide said exhaust mixture for passage through said outlets; and actuating means adapted to move said deflector toward so as to partially close one of said outlets without affecting the transverse dimension of the other of said outlets and thereby produce an unequal distribution of the exhaust mixture through the outlets and an imbalanced thrust condition on said aircraft.

3,313,501

PROTECTIVE DEVICE FOR TIRES

William W. Williams, Atlanta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Nov. 20, 1964, Ser. No. 412,742
5 Claims. (Cl. 244-103)



1. A protective device for the tire of a vehicle comprising a shield having an effective total diameter at least equal to that of said tire mounted on and projecting from a component of said vehicle in a plane substantially parallel to and spaced from said tire and substantially concentric therewith, said shield being an annulus with its inner radial edge defined by a ring immovably secured to said component against radial movement and its outer radial edge connected to said ring by a plurality of resilient spokes, at least one side of said shield being defined by a sheet of insulating material resistant to effects deleterious to the material of the tire.

3,313,502

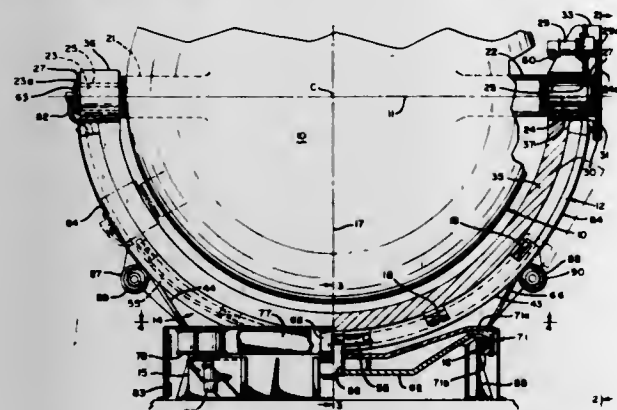
ANTENNA PEDESTAL

Menahem Sultzeanu, Palo Alto, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed May 28, 1965, Ser. No. 459,763
5 Claims. (Cl. 248-45)

1. A three-axis pedestal for supporting an antenna for rotation about three axes comprising a base having a slide bearing ring projecting from the side thereof,

a cradle supported on said ring for rotation about a first axis and comprising
 a lower horizontal frame having a peripheral split collar overlying and supported on said ring for sliding movement thereon, and
 an upper cradle part secured to and extending upwardly from said cradle frame and having a vertical central plane containing said first axis,
 bearing means supported on said upper cradle part on the arc of a circle having a center on a second axis and in said plane,

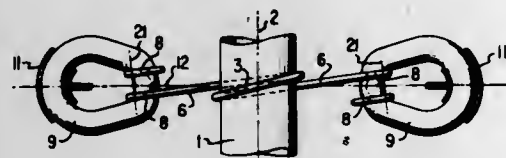


a yoke having an elongated channel-shaped frame supported on said bearing means for rotary movement about the second axis relative to the upper cradle part,
 said yoke having spaced bearings at upper opposite ends thereof aligned along a third axis,
 said antenna being supportable in the bearing of said yoke for rotation about said third axis,
 azimuth drive means engageable with the collar of said cradle for rotating the cradle about the first axis,
 elevation drive means supported on said yoke and engageable with the antenna for rotating same about said third axis, and
 yoke drive means mounted on the upper part of said cradle and engageable with the yoke for rotating the latter relative to the cradle about said second axis.

3,313,503 SUSPENSION FOR PIPES, ESPECIALLY EXHAUST LINES

Günter Mayr, Walldingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Untertürkheim, Germany

Filed Jan. 14, 1966, Ser. No. 520,766
 Claims priority, application Germany, Jan. 19, 1965, D 46,295
 15 Claims. (Cl. 248-60)

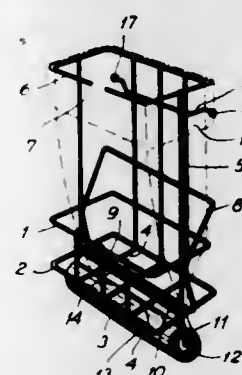


1. An exhaust pipe suspension device for a motor vehicle having an engine exhaust pipe, and first and second support members adapted to be rigidly attached to the frame structure of a vehicle on substantially diametrically opposed sides of an exhaust pipe, comprising: first and second elastomeric loop means for mounting on a corresponding one of the first and second support members, each of said loop means having an outside end for mounting on the corresponding support member and a substantially diametrically opposed inside end; a single wire having a rounded cross section and consisting essentially of a central portion having wire loop means for tightly engaging around the exhaust pipe with a substantially cir-

cumferential line contact, first and second terminal end portions, and first and second intermediate portions respectively integrally between said first terminal end portion and said central portion and integrally between said second terminal end portion and said central portion; and each of said first and second terminal end portions being formed as hook means for securely engaging an inside end of a corresponding one of said first and second elastomeric loop means.

3,313,504 FRAME FOR HOLDING A BAG

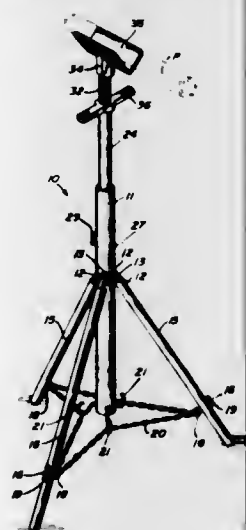
Sven Thorkild Stoltze, Rorsangervej, Denmark, assignor to A/S Extrusion, Copenhagen, Denmark
 Filed Dec. 8, 1964, Ser. No. 415,713
 Claims priority, application Denmark, Feb. 27, 1964, 962/64
 4 Claims. (Cl. 248-99)



1. In combination, a frame for supporting a refuse bag of plastic foil in standing position and a freely rotatable magazine roller carrying a web consisting of a plurality of plastic foil bags that are separated from each other by means of parallel transverse seams and tearing lines, said frame having an upper holder member for supporting the upper open part of a bag and a lower supporting member for supporting the lower closed part of a bag, the freely rotatable magazine roller being mounted below the lower supporting member of the frame, and the lower frame member having a longitudinal opening such that the web of plastic foil bags may be pulled from the magazine roller up through the frame.

3,313,505 COLLAPSIBLE STAND

William E. Petrie, 18711 S. Cicero Ave., Country Club Hills, Ill. 60477
 Filed May 21, 1965, Ser. No. 457,620
 6 Claims. (Cl. 248-165)



1. A collapsible stand comprising, an upright member, at least three legs secured to said upright member above the lower end thereof and extending outwardly

and downwardly therefrom the lower ends of said legs being below the lower end of said upright member, and flexible elongated brace means interconnecting each of said legs and said upright member for bracing said legs with respect to said upright member and each leg with respect to adjacent legs.

3,313,506 ATTACHMENT FOR LADDERS

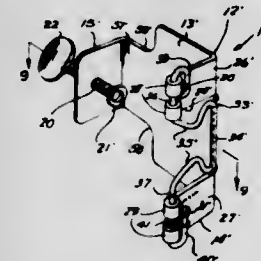
Amable O. Bauchard, 600 W. Valley St., Eastland, Tex. 76448
 Filed June 17, 1965, Ser. No. 464,658
 8 Claims. (Cl. 248-210)



1. An attachment for a ladder having a pair of opposed spaced parallel side rails with steps or rungs interposed and fixed between said rails; said attachment characterized by a readily attachable and detachable bracket comprising: an elongated main arm and a companion auxiliary arm, opposed portions of said arms being connectible in oriented cooperating relationship, the outward end portions of said arms being bent upon themselves and fashioned into and providing a fork-type rail embracing clamp, said clamp being provided with means capable of accommodating and holding a bucket of paint, tools or the like, and means carried by an inward end portion of said main arm and adapted for secure but quick releasable connection with a predetermined portion of a selected one of said steps.

3,313,507 PAINT BUCKET HANGER ATTACHMENT FOR LADDERS

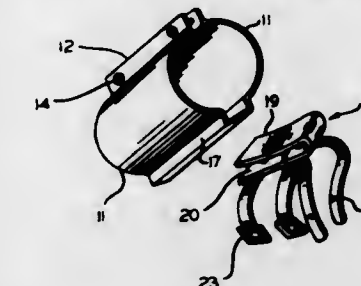
Anselmo J. Belli, 17 Yates St., West Haven, Conn. 06516
 Filed Feb. 15, 1966, Ser. No. 536,504
 6 Claims. (Cl. 248-211)



1. A paint bucket supporting device for use on a ladder comprising a generally C-shaped main body slidably engageable on the leg of a ladder, threaded clamping means on one sidewall of the main body clampingly engageable with the ladder leg, the opposite sidewall of said main body being formed with a generally rectangular open portion having top and bottom edges, vertically-aligned pivot sleeve means on said opposite sidewall respectively adjacent the top and bottom edges of said open portion, a bail-supporting hook element having respectively upwardly and downwardly-projecting pivot shaft elements rotatably-engaged in said pivot sleeve means, said hook element being swingable in and out of said open

3,313,508 BEVERAGE CONTAINER SUPPORT

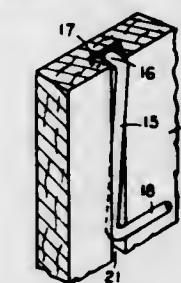
Josephine A. Mancl, 1720 S. 5th St., Wisconsin Rapids, Wis. 54494
 Filed Sept. 26, 1966, Ser. No. 581,956
 5 Claims. (Cl. 248-229)



1. A beverage container support that is removably associated with the handle of a golf cart in order that a beverage container can be transported by said golf cart comprising a clamp that is circumferentially formed to encircle the handle of a golf cart, said clamp being provided with means for forcing the clamp around the periphery of the handle for frictional engagement therewith and a channel extending longitudinally therealong and a resilient engaging member having a top plate and a lower plate spaced apart, said resilient engaging member being received by said channel and for frictionally engaging said handle when said clamp encircles said handle and an engaging member to support a beverage container associated with said clamp.

3,313,509 FIXTURE FOR ATTACHMENT TO A VERTICALLY GROOVED WOODEN WALL

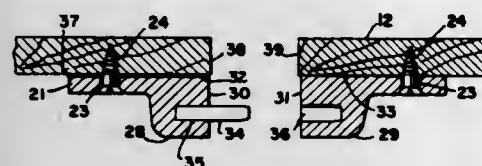
John J. Lockert, 1962 Haxton Way, Bellingham, Wash. 98225
 Filed Dec. 7, 1965, Ser. No. 512,107
 6 Claims. (Cl. 248-244)



1. In wall fixture means the combination with a wooden wall which has at least one normally upright groove of predetermined width; of a shank; a stem rigid with said shank and protruding therefrom; and two anchor arms rigid with the end of the stem which is spaced from the shank, said anchor arm protruding transversely from said stem in opposite directions and being thin and flat and capable of penetrating the wooden wall and said anchor arms lying in a common plane perpendicular to the axis of the stem and the stem being approximately centered relative to the two anchor arms and said stem and anchor arm being of a width less than the predetermined width of the wall groove, whereby they can be inserted into the wall groove when positioned with the anchor arm lengthwise of the groove and can be secured to the wall by rotating the fixture approximately ninety degrees and imbedding the thin flat anchor arm in the wood which forms the side walls of the groove.

3,313,510 DOWEL

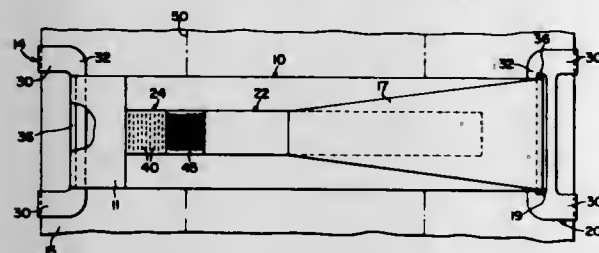
Natale Mudano, 1130 Leland Ave., Bronx, N.Y. 10472
Filed Jan. 20, 1966, Ser. No. 521,953
3 Claims. (Cl. 248-244)



- Means removably connecting abutable panel members together comprising:
 - a bracket member depending from each of said panel members, each of said bracket members having a boss,
 - a dowel extending from the boss on one bracket member beyond the edge of the panel member to which it is attached,
 - a socket provided in the boss on the other bracket member receiving said dowel and fully enclosing the same, said other bracket member being offset from the end of its associated panel member, and
 - means removably securing said bracket members to said panel members.

3,313,511 COMPRESSION BAND

Harry E. Koerner, Catonsville, and Cary H. Haskins, Baltimore, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 16, 1964, Ser. No. 404,418
4 Claims. (Cl. 248-361)



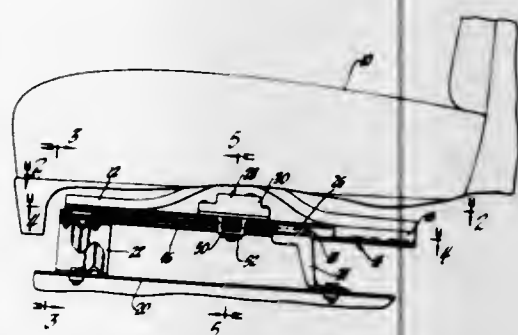
- A compression band assemblage consisting essentially of a pair of hooks for anchoring to opposite respective recessed edges of a substantially flat member, said hooks each having a band-constraint member to extend along the table edge when such hooks are in use, a flexible band having a loop at one end in encirclement of the band-constraint member of one of said hooks, said band extending from said loop as an inner ply to the other of said hooks and upwardly around the respective band-constraint member thereof, and, as an overlapping outer ply, back over such inner ply toward its loop end, and separable pressure-sensitive securing means attached to said band for locking the plies thereof together while said band is in a tensioned state in such two-ply extension between the hooks.

3,313,512 HORIZONTAL DRIVE MEANS FOR POWERED SEAT ADJUSTERS

Albert J. Colautti, Windsor, Ontario, Canada, and Bela Sandor, Detroit, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 3, 1965, Ser. No. 484,917
7 Claims. (Cl. 248-424)

- In a vehicle body having a vehicle seat, a seat adjuster supporting said vehicle seat on said body for fore and aft horizontal adjustment, a horizontal drive means

for said seat adjuster having an upper track secured to and supporting said seat, a lower track secured to said body and engaging said upper track for supporting said upper track and said seat during generally horizontal fore and aft movement, an elongated aperture formed in said lower track having opposed parallel rack sections formed therein, a drive pinion journaled on and secured to said upper track for movement therewith, said drive pinion

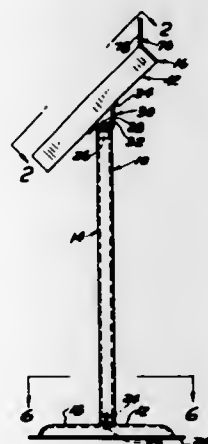


meshingly engaging one of said rack sections, a slave pinion journaled on said upper track for movement therewith and meshingly engaging said drive pinion and said other track section for securing said drive pinion in meshing engagement with said one of said rack sections, reversible power means operably connected to said drive pinion for selectively rotating said drive pinion in opposite directions for moving said pinion longitudinally on said rack whereby said seat is adjusted horizontally fore and aft to selected adjustments.

3,313,513 LITERATURE DISPLAY AND DISPENSING RACK

David S. Howell, Troy, Mich., assignor to Arlington Aluminum Company, Detroit, Mich., a corporation of Michigan

Filed Jan. 4, 1966, Ser. No. 518,681
7 Claims. (Cl. 248-441)



- A literature display and dispensing rack comprising a base, a standard secured to and extending upward from said base, means for securing said standard to said base, a literature container disposed at the upper end of said standard and including literature holders attached thereto, means for connecting said literature container to said standard said literature container being inclined relatively to said standard and having an upwardly and forwardly-inclined top portion,

and a sign panel structure having a mounting portion secured to said inclined top portion and having a sign portion extending upwardly from said mounting portion at an obtuse angle thereto.

3,313,514 MUSIC STAND

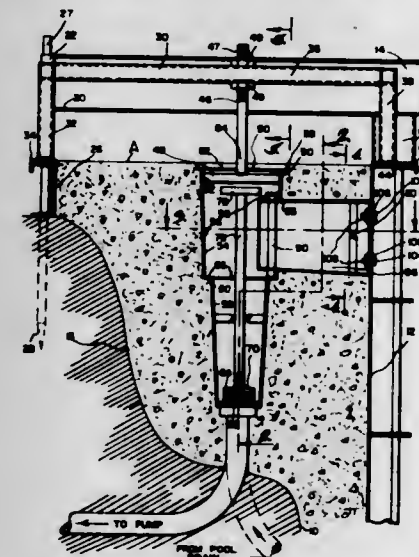
Erwin G. Swett, 462 22nd Ave., Apt. 6, San Francisco, Calif. 94121
Filed Oct. 8, 1965, Ser. No. 494,110
7 Claims. (Cl. 248-457)



- A portable and collapsible floor stand for holding sheet music and the like and comprising a scripthead for supporting material to be viewed, angular adjustment means for selectively sustaining said script holder in one of a plurality of angles of reclination, first vertical adjustment means for selectively sustaining said script holder in one of a plurality of heights with respect to the floor, and support means including second vertical adjustment means comprising vertically stackable panel pieces interlockable with dowel pins for supporting said scripthead, angular adjustment means and first vertical adjustment means.

3,313,515 SKIMMER CAVITY CASTING APPARATUS WITH MEANS FOR HOLDING PLUMBING CONDUIT

Clarence T. Mullen, Jr., 6502 E. Exeter, Scottsdale, Ariz. 85251
Filed Dec. 17, 1962, Ser. No. 245,023
1 Claim. (Cl. 249-145)



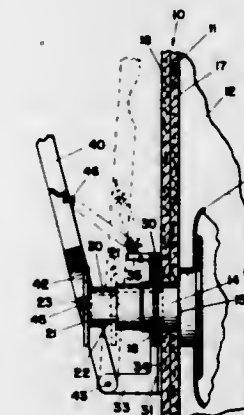
In a means for casting skimmer cavity structure integral with a substantially vertical wall of a swimming

pool the combination of: a substantially vertical wall form member adapted to serve as a support against which a swimming pool side wall may be cast; a first substantially horizontal disposed cavity core member secured thereto; a second substantially vertically disposed cavity core member removably coupled to said first cavity core member; said first cavity core member having external surfaces converging toward said second cavity core member; said second cavity core member having external surfaces converging downwardly; said second cavity core member having a reducing stepped portion disposed to form a horizontal ledge in a cavity cast around said second core member; means in a lower portion of said second core member for holding plumbing conduit means.

3,313,516

SPRING BIASED VALVE OPERATING LEVER
Clarence G. Peterson, Spokane, Wash., assignor of twenty-five percent to Harold G. Anderson, Wesley B. Anderson, Roy H. Nyholm and Harold Anderson, Jr., all of Spokane, Wash.

Filed Jan. 14, 1965, Ser. No. 425,552
7 Claims. (Cl. 251-144)



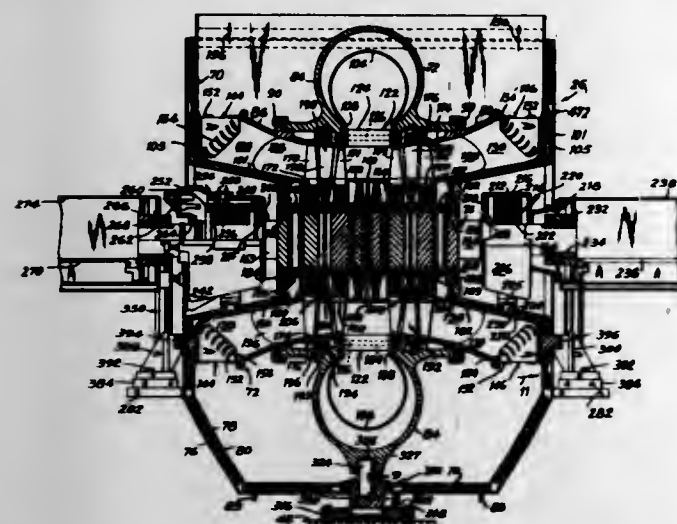
- A valve operating lever, comprising: a base; means for releasably securing said base with respect to a valve; a lever; said lever having a bifurcation at one end defining spaced arms terminating in spaced free ends; the said free ends being pivotally associated with said base for rocking movement of said lever toward and away from said base; means on said arms for attachment to a movable valve operating portion of a valve; and means yieldably urging said lever toward said base.

3,313,517 GAS EXPANDER TURBINES FOR POWER RECOVERY USE WITH JET TYPE, HOT GAS GENERATORS

Albert F. Hanschke, Wellsville, and Daniel J. Aiken, Belmont, N.Y., assignors to Worthington Corporation, Harrison, N.J., a corporation of Delaware
Filed Apr. 1, 1965, Ser. No. 444,665
37 Claims. (Cl. 253-39)

- In a fluid turbine which is supported from fixed base means, outer casing means, inner casing means positioned within said outer casing means, rotor means rotatably positioned within said inner casing means and forming fluid flow passages in cooperation therewith, and support means and guide means for independently supporting and guiding each of said outer casing means and said inner casing means from said fixed base means with

freedom for controlled, relative movement therebetween, said guide means including locating means for positively



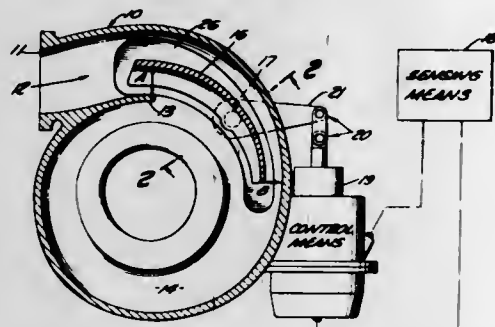
locating said outer and inner casing means at one common, central point.

3,313,518

TURBINE CONTROL

James H. Nancarrow, Torrance, Calif., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California

Filed Feb. 25, 1966, Ser. No. 530,080
7 Claims. (Cl. 253-52)



1. An air reaction type turbomachine comprising:
 - a housing, said housing including an entrance portion and having a flow area in the configuration of a volute;
 - a wheel having blades thereon; inlet means for connecting said entrance portion of said housing to a source of fluid; and
 - means for varying the flow area of said housing, said variable flow areas delivering the total fluid flow of said inlet to said wheel, said means comprising a movable vane means dividing said flow area into two flow areas, said vane means being an arcuate member generally conforming to the arcuate configuration of said housing and having a portion thereof extending into said entrance portion.

3,313,519

TURBINE ROTORS

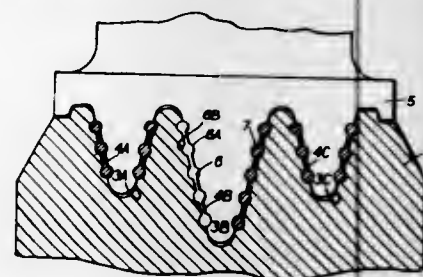
George Jenson, Manchester, England, assignor to Associated Electrical Industries Limited, London, England, a British company

Filed June 8, 1966, Ser. No. 556,175
Claims priority, application Great Britain, June 22, 1965, 26,369/65

16 Claims. (Cl. 253-77)

1. A bladed disc of a rotor of a turbine comprising:
 - (a) a disc;
 - (b) a circumferential row of blades extending radially from the disc;
 - (c) at least one circumferential tongue and a co-operating circumferential groove provided on the pe-

riphery of the disc and the radially inner ends of the blades, the tongue and the groove having cross-sections which permit the tongue to be inserted in the groove by a radial movement into a fitted position; (d) recesses formed in the sides of the groove and in the facing sides of the tongues which are conjoined to provide circumferentially extending channels for receiving members serving to lock the blades to the disc against radial movement;



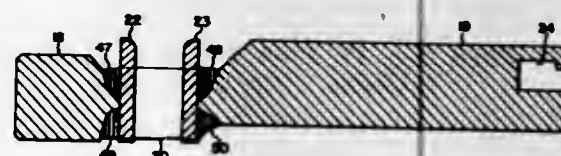
- (e) locking members fitted into each channel constituting a hoop segment to permit insertion of a segment of the hoop after a blade which it is to lock has been inserted radially into its fitted position, the circumferential extent of the blades being such that with all the blades in their fitted positions but at least some of the blades offset circumferentially from their final positions, the final segment of the hoop can be inserted in place; and
- (f) locking means by which the blades, having been adjusted circumferentially to their final positions, can be retained in those positions against circumferential movement, said recesses being substantially semi-circular and conjoined to form said circumferentially extending channels, which channels, in cross-section, consist of substantially circular portions connected together by narrow neck-like portions and which receive the hoop segments which comprise substantially cylindrical ribs connected together by web-like portions.

3,313,520

WELDED VANED DIAPHRAGM STRUCTURE

Ralph J. Ortolano, Saratoga, and Norman Tenneson, Santa Clara, Calif., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

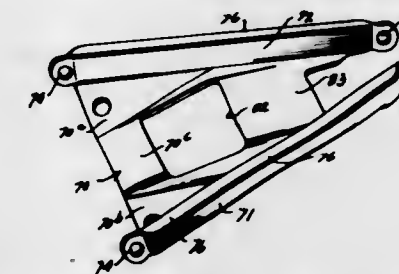
Filed Mar. 15, 1966, Ser. No. 534,339
7 Claims. (Cl. 253-78)



1. A stationary diaphragm structure for an axial-flow machine, comprising
 - an outer ring member,
 - an inner ring member disposed in radially inwardly spaced relation with said outer ring member,
 - an annular array of vane members interposed between said outer and said inner ring members,
 - said outer ring having an annular inwardly radially extending rib keying portion,
 - said inner ring having an annular keying portion,
 - said vanes having outer and inner tip portions,
 - said outer tip portions having groove keying portions mating with the rib keying portion on said outer ring,
 - said inner tip portions having keying portions mating with the keying portion on said inner ring,
 - an annular outer weld joint connecting said vanes to said outer ring adjacent said outer tip portions,
 - an annular inner weld joint connecting said vanes to said inner ring adjacent said inner tip portions,

an annular outer shroud member having its outer surface abutting said rib and having an annular array of openings conforming to the cross-sectional shape of said vanes and having the outer tip portions of said vanes extending through said openings beyond the outer surface, an annular inner shroud member having an annular array of openings conforming to the cross-sectional shape of said vanes and having the inner tip portions of said vanes received therein, said outer shroud member being connected to said outer ring member and the outer tips of the vanes by said outer weld joint, and said inner shroud member being connected to said inner ring member and the inner tips of the vanes of said inner weld joint.

extensions, the bottom portion of the leg being provided with a rack bar receiving opening transversely there-



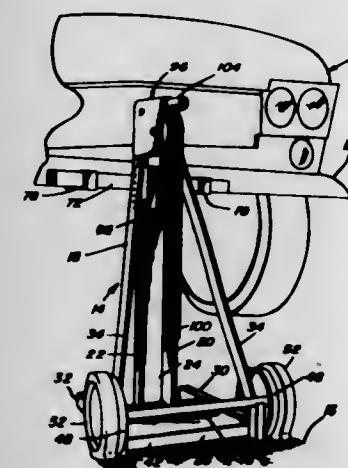
through and adjacent thereto being provided with a beam supporting shelf elevated above the normal level of the said body portion.

3,313,521

PORTABLE CHAIN HOIST

Joseph J. Senka, 77 Swartz St., Elms, N.Y. 14059

Filed July 14, 1965, Ser. No. 471,942
6 Claims. (Cl. 254-4)



1. A portable hoist comprising an upright having supporting foot means at its lower ends, a lift member mounted on said upright for up and down movement therealong, a first fixed upright sprocket wheel carried by an upper portion of said upright, a second drive sprocket wheel journaled for rotation about a horizontal axis from another upper portion of said upright and aligned with said first sprocket wheel, a third sprocket wheel journaled from said lift member for rotation about a horizontal axis and aligned with said first and second sprocket wheels, means for effecting rotation of said second sprocket wheel, and a length of flexible chain entrained over said first and second sprocket wheels and under said third sprocket wheel.

3,313,522

HORIZONTAL TYPE LIFTING JACKS WITH SUPPORTING LEG STRUCTURE

Russell Keith Uhm, Butler, Ind., assignor to Universal Tool & Stamping Company, Inc., Butler, Ind., a corporation of Indiana

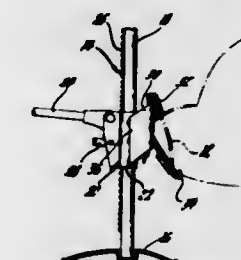
Original application Dec. 26, 1961, Ser. No. 162,087, now Patent No. 3,173,660, dated Mar. 16, 1965. Divided and this application Dec. 3, 1964, Ser. No. 415,726
3 Claims. (Cl. 254-108)

3. As an article of manufacture a force receiving supporting leg for vehicle jacks comprising a body wall of substantially trapezoidal shape having at the sides thereof transversely extending flanges, said flanges at the upper margins thereof having outwardly extending transverse flanges, said transverse flanges connected to the body wall being provided at each end thereof with apertured

3,313,523
BUMPER JACK CONSTRUCTION

Richard L. Reynolds, Rochester, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 20, 1965, Ser. No. 498,226
11 Claims. (Cl. 254-133)



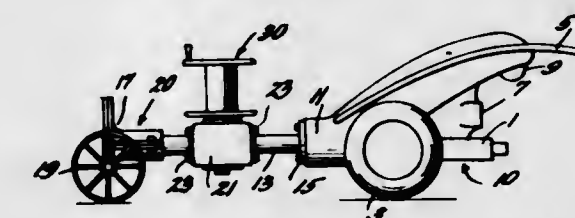
1. In a movable load lifting assembly for a bumper jack or the like, the combination comprising plate means having an outwardly facing surface, substantially horizontal bar means on said plate means spaced from said surface, a flexible strap adjustably secured to said plate by having a first portion overlie said surface, a second contiguous portion looped over said bar means whereby said belt is reversed upon itself so that a third portion of said belt overlies said first portion, means to maintain said first and third belt portions in frictional engagement and said first portion and said surface in frictional engagement, and vehicle hook engaging means carried by said strap.

3,313,524

REELING DEVICE

John F. Burr, Rte. 4, Buckhannon, W. Va. 26201

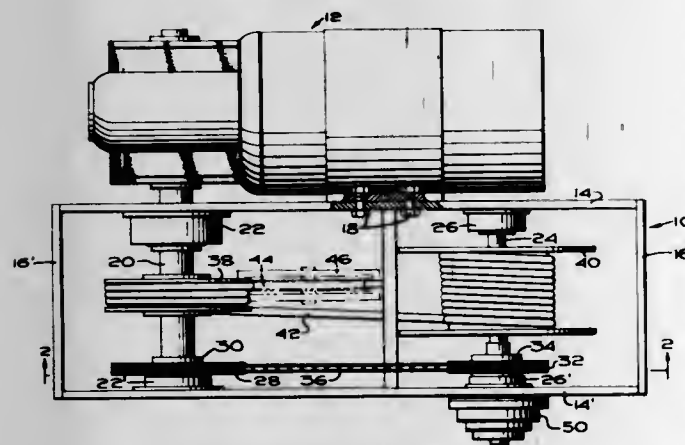
Filed Feb. 23, 1966, Ser. No. 529,389
2 Claims. (Cl. 254-166)



1. For use in combination with a two wheeled, self-powered tractor having a front accessible power take-off; a winding and reeling attachment comprising a ground supported auxiliary frame, said frame having a gear case and gear means within the case driven from the tractor power take-off; said case and said gear means including vertically aligned apertures forming a through passage whereby a shaft may be driven by said gears, the aperture in said gear means being irregularly shaped; a reel device removably mounted on said gear case, said reel device comprising a central shaft having a shape complementary to that of the aperture in said gear and a first flange mounted on one end of the shaft, a second flange

mounted on said shaft approximately midway of its length, a spool member concentric with the shaft and extending between and fixed to the spaced flanges defining therewith a reel, the remainder of said shaft from said second flange to its other end being unobstructed and passing completely through the said passage in said gear case and being in engagement with said gear for rotation by said gear about a vertical axis, the unobstructed end of said shaft extending below the gear case whereby same may be removably fastened in place on said attachment, said end of said shaft comprising the sole connection and support between the frame and said reel.

3,313,525
HOISTING APPARATUS
Alfred G. Vanderbeck, 1845 Fox Hill Lane,
Paoli, Pa. 19301
Filed Feb. 21, 1966, Ser. No. 528,968
1 Claim. (Cl. 254-175.7)

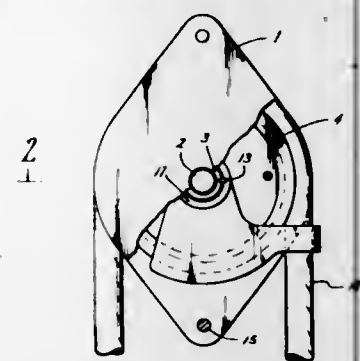


In combination, a drum assembly for a hoisting cable and control apparatus thereof which comprises,

- (a) a frame mounted on an overhead support and having opposed side walls,
- (b) a first transverse shaft and first drum assembly mounted for rotation between said side walls,
- (c) a second transverse shaft and second drum assembly mounted for rotation between said side walls,
- (d) said shaft and drum assemblies being disposed in spaced tandem relation,
- (e) a continuous hoisting cable supporting a hoisting pulley block for vertical movement relative to the frame and having a first winding about the first drum and a second winding interconnected therewith about the second drum,
- (f) means supported by said frame and operatively connected to said first shaft to effect its rotation selectively in one direction or in the opposite direction,
- (g) driving connections between said first and said second shafts which are operative to rotate the second shaft simultaneously with and in accordance with the direction of rotation of the first shaft,
- (h) said first and second shafts being operative during their rotation in said one direction to unwind said second winding and permit lowering of said hoisting pulley block and operative in said other direction to rewind said second winding and raise the hoisting pulley block,
- (i) a unidirectional clutch device on one of said shafts for releasing the driving connections during the rotation of the first and second shafts in said one direction to permit the second winding to unwind in accordance with the rotation of the first shaft,
- (j) a slip clutch assembly comprising a friction disk unit mounted on said second shaft adjacent one side wall and a fixed plate mounted on said side wall in engagement with the friction disk unit and

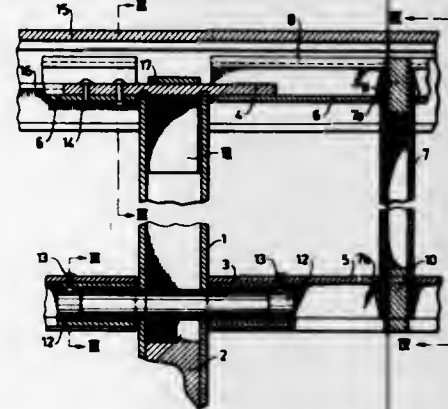
- (k) said slip clutch being operative to permit rotation of the second shaft in said other direction until a predetermined force is applied thereto in order to limit tension on the cable as it is rewound.

3,313,526
SAFETY TACKLE BLOCK
Roy A. Owens, 1002 Bissonnet, Houston, Tex. 77005
Filed June 20, 1963, Ser. No. 289,365
3 Claims. (Cl. 254-191)



1. In a tackle block, a housing, an axle mounted in said housing, a coaxial shaft on said axle, a rope receiving sheave on said shaft, the internal periphery of said sheave being toothed, a pawl mounted on said shaft and secured to said axle and having one longitudinal side margin toothed, an idler support suspended from said shaft and having a freely rotatable gear in mesh with the teeth of said sheave, a line guide bracketing said sheave, the extended end thereof being formed to receive a rope, said guide being keyed to said shaft and said idler movable into contact with said pawl to lock said sheave and line guide in rotatable relation.

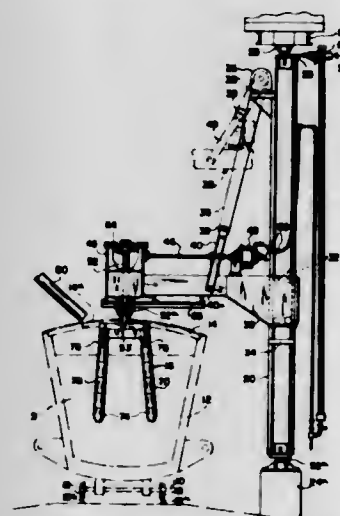
3,313,527
RAILING
Gunnar Torsten Eriksson, Box 3, Storvreta, Sweden
Filed Oct. 16, 1964, Ser. No. 444,372
6 Claims. (Cl. 256-65)



1. A railing comprising a number of posts, a number of railing sections each extending between two adjacent posts and including upper and lower hollow rails, rod-shaped attachment members connected to the posts adjacent the lower ends thereof, the lower rail of each railing section having ends slidably fitted over said rod-shaped attachment members with a slight clearance between at least one end of said rail and the adjacent post, means connecting the upper rail of each railing section to the upper end of the posts to allow the upper rail to move slightly relative to the posts, whereby each railing section can expand and contract longitudinally, a top rail extending over a number of posts and railing sections and being substantially of inverted U section with inwardly directed flanges which rest on the posts, and a connecting member for attaching said top rail to each of the posts, said connecting member including a first portion extending

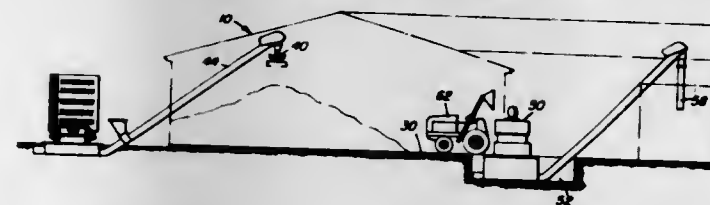
downwardly into each post and secured thereto and a second portion which engages the inwardly directed flanges along the upper surfaces thereof to maintain them in engagement with the post while at the same time allowing the top rail to move longitudinally independent of the railing sections.

3,313,528
METHOD OF MIXING MOLTEN METAL
Robert E. Touzalin, Aurora, and Rudolph R. Patrick, Broadview Heights, Ohio, assignors to Interlake Steel Corporation, a corporation of New York
Filed Nov. 6, 1964, Ser. No. 409,393
14 Claims. (Cl. 259-51)



1. In an apparatus for mixing a large batch of liquid-like material comprising, a support, mixer means mounted on the support, means for moving said mixer means generally vertically from a lowered operative position to a ranged inoperative position and vice versa, said mixer means comprising at least one pair of depending elongated impeller members disposed in laterally spaced relation, means for rotating said impeller members about a generally vertical axis extending between said impeller members, and with respect to said support, said impeller members being formed of a heat resistant material, and each of said impeller members being comprised of a central rod-like member and a heat resistant casing encompassing said rod-like member, said casing being removably connected to the associated rod-like member, and resilient means coacting with said casing to hold the latter in assembled relation with said rod-like member.

3,313,529
BULK BLEND PLANT AND SYSTEM
Walter J. Sackett, Sr., 3700 Echodale Ave.,
Baltimore, Md. 21206
Filed Sept. 25, 1964, Ser. No. 399,227
5 Claims. (Cl. 259-154)



1. A materials handling system, comprising, means positioned below a structure for receiving material dumped from said structure, means for conveying said dumped material to a selected one of a plurality of spaced storing bins, a pivotally mounted weighing self-dumping hopper spaced from said plurality of bins, means for transferring a selected one of said stored materials to said pivotally mounted self dumping weighing hopper, means for weighing said materials in said hopper, means posi-

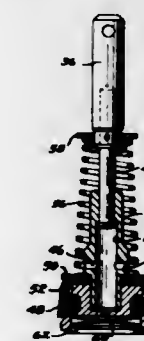
tioned laterally and below said pivotally mounted weighing hopper for gravity mixing the materials dispensed thereto, and means for conveying the gravity mixed materials to a further spaced point for further disposition.

3,313,530
ACCELERATOR PUMP HAVING THERMOSTATIC ELEMENT
James T. Bickhaus and Wenford E. Highley, St. Louis, Mo., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed May 20, 1965, Ser. No. 457,275
7 Claims. (Cl. 261-34)



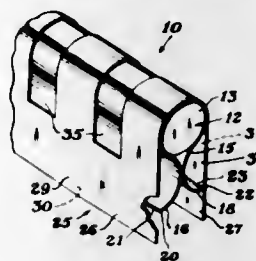
1. In a carburetor, a mixture conduit for supplying a mixture of fuel and air to an engine, a throttle valve in said conduit, a fuel bowl, a fuel system for supplying fuel from said bowl to said mixture conduit, an accelerating pump chamber, a reciprocable movable wall in said cylinder movable in one direction to discharge fuel from said cylinder into said mixture conduit, and movable in the other direction to draw fuel from said fuel bowl into said cylinder, a mechanical linkage interconnecting said throttle valve and said movable wall, said mechanical linkage being adapted to allow the movable wall to discharge fuel through a jet into said conduit when moved in one direction, and to draw fuel into said pump chamber when moved in the opposite direction, a fuel bypass passageway incorporated in said movable wall, and a thermostatic valve means immersed in said fuel for closing said passageway when said movable wall is cold and for opening said bypass passageway when said movable wall is warm.

3,313,531
TEMPERATURE RESPONSIVE ACCELERATOR PUMP
Jerry H. Winkley, St. Louis, and Robert J. Smith, Florissant, Mo., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed May 20, 1965, Ser. No. 457,276
6 Claims. (Cl. 261-34)



1. In a carburetor, a mixture conduit for supplying a mixture of fuel and air to an engine, a throttle valve in said conduit, a fuel bowl, a fuel system for supplying fuel from said bowl to said mixture conduit, an accelerating pump chamber, a reciprocable movable wall in said cylinder movable in one direction to discharge fuel from said

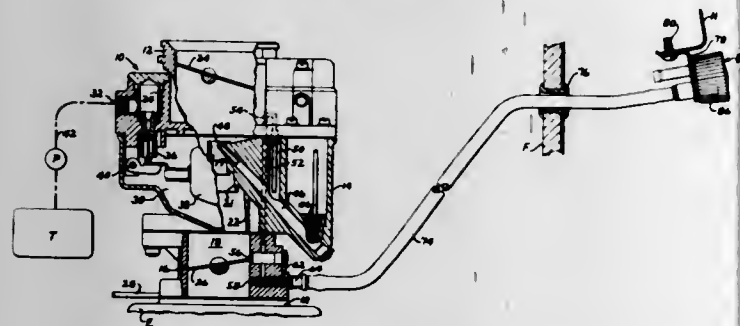
cylinder into said mixture conduit, and movable in the other direction to draw fuel from said fuel bowl into said cylinder, a mechanical linkage interconnecting said throttle valve and said movable wall, said mechanical linkage being adapted to allow the movable wall to discharge fuel through a jet into said conduit when moved in one direction, and to draw fuel into said pump chamber when moved in the opposite direction, a fuel bypass passageway incorporated in said movable wall, and a thermostatic valve comprising an upper arcuate disc having a centrally disposed aperture and a lower arcuate disc having at least one aperture located away from the center of said disc, said valve being positioned to prevent passage of fuel to said passageway when said movable wall is cold and to permit passage of fuel to said passageway when said movable wall is warm.



3,313,532

ANTI-SMOG DEVICE

Harold A. Carlson and James T. Bickhaus, St. Louis County, Mo., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Jan. 22, 1965, Ser. No. 432,050
12 Claims. (Cl. 261-39)



1. A carburetor for an internal combustion engine comprising a mixture conduit having a downstream end portion adapted to be mounted on an engine intake manifold, a throttle valve in said downstream end portion of the mixture conduit, means forming an idle fuel system in said downstream end portion and including an idle port opening into said mixture conduit, an air passageway connecting said idle port to atmosphere, air bleed valve means in said passageway responsive to vacuum at said idle port, said air bleed valve means being opened at a predetermined vacuum at said idle port to permit air to be bled in said idle port for leaning out the air and fuel mixture and being closed upon a decrease in said vacuum to block the flow of air through said passageway, and air bleed control means upstream of said valve means to meter the flow of air bled in said passageway when said valve means is opened, said control means being adjustable to vary selectively the volume of air being bled in said air passageway when said valve means is opened at said predetermined vacuum.

3,313,533

GAS-LIQUID CONTACT APPARATUS HAVING SHEET-LIKE SURFACES

Thomas J. Powers, Chevy Chase, Md., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Sept. 12, 1963, Ser. No. 308,444
4 Claims. (Cl. 261-103)

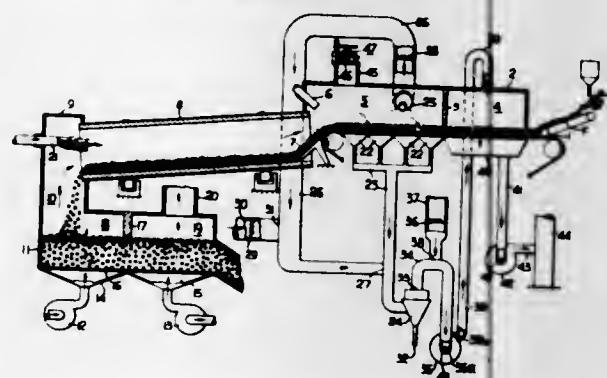
1. In a gas-liquid contact apparatus employing a plurality of supports having sheets dependent therefrom, the improvement which comprises a sheet disposed over a support member wherein a portion of the sheet is dependent on each side of the support member, means defining a path for liquid from an uppermost portion of the sheet to inner faces of dependent portions of the sheet; the sheet defining a plurality of openings adjacent the

support member and the openings being alternately positioned on either side of the support member, and adjacent each opening is disposed a liquid deflecting means to lead entering liquid on the surface opposite the surface in which the opening occurs.

3,313,534

METHOD AND FURNACE FOR HEAT TREATING MINERALS

Robert D. Frans, Brookfield, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed July 21, 1965, Ser. No. 473,776
19 Claims. (Cl. 263-32)



1. In a mineral furnacing apparatus having structures defining at least a chamber for preconditioning material, a chamber for preburning material and a chamber for final heating material, with said chambers being connected together in series flow arrangement to define a material flow stream from said preconditioning chamber to the preburning chamber and then to the final heating chamber, and with means defining a passage for a counterflow of gas from said final heating chamber to said preburning chamber, and gas conveying means connecting said preburning chamber to said preconditioning chamber, said gas conveying means comprising: a fan; first conduit means connecting the inlet of said fan to a first portion of said preburn chamber; second conduit means connecting the outlet of said fan to said preconditioning chamber; a bypass conduit connecting a second portion of said preburn chamber to said first conduit means at a location between said preburning chamber and fan; dust collecting and discharging means in said gas conveying means at a location between said preburning chamber and said fan; and atmospheric air admitting means connected to said gas conveying means at a location between said preburning chamber and said dust collection and discharging means.

3,313,535

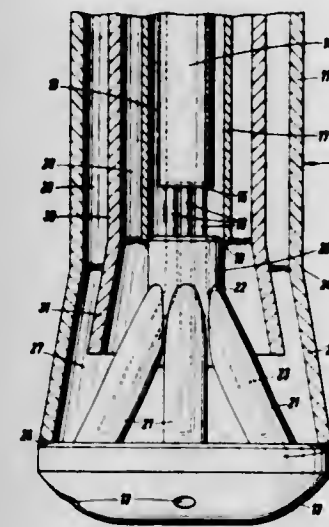
OXYGEN-FUEL LANCE

David K. Hopkins, Port Talbot, Glamorgan, Wales, assignor to The Steel Company of Wales Limited, Glamorgan, Wales

Filed Jan. 25, 1965, Ser. No. 427,590
Claims priority, application Great Britain, Jan. 27, 1964, 3,406/64
3 Claims. (Cl. 266-34)

1. A lance for use in steel refining apparatus, which lance comprises an elongated body member having a fuel supply conduit centrally located therein and an oxygen supply conduit surrounding said fuel supply conduit

gen supply conduit surrounding said fuel supply conduit to provide an annular passageway for the supply of oxygen, wherein the body member is provided with a delivery nozzle at one end thereof formed with a plurality of discharge orifices communicating with said oxygen supply conduit through a plurality of short pipes disposed at an angle to the longitudinal axis of the lance, and wherein

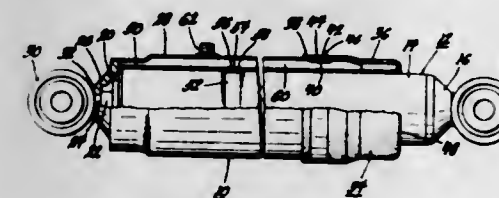


the fuel supply conduit is provided at its lower end with a plurality of fuel supply pipes extending therefrom and each having its end portion situated centrally in a corresponding oxygen supply pipe so that oxygen flowing through the supply pipes to the discharge orifices will flow in an annulus around the end of the corresponding fuel supply pipes whereby fuel will be entrained in the oxygen supplies as discharged from the discharge orifices.

3,313,536

SHOCK ABSORBER

Harold R. Dutton, Dayton, Ohio, and Mark A. Ellers, Bloomfield Hills, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 1, 1965, Ser. No. 429,248
8 Claims. (Cl. 267-64)

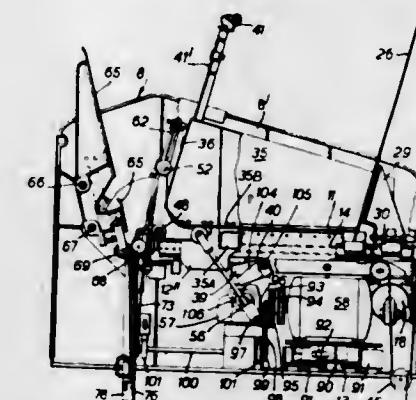


1. In a shock absorber and air spring unit, the combination of, an internally located direct-acting hydraulic shock absorber having a cylindrically-shaped, thin walled member forming a fluid reservoir, a tubular thin walled dust shield member concentrically arranged in spaced surrounding relationship with the cylindrically-shaped thin walled member and a resiliently compressible sleeve with one end fastened over an end of said tubular dust shield member and the other end turned inwardly into surrounding engagement with the reservoir forming member, a continuous clamp ring of substantially continuous uniform cross section compressed into the outer surface of one end of said sleeve and forming a sleeve receiving circumferential depression in said tubular dust shield member, said ring, sleeve end and circumferential depression being formed simultaneously in situ by application of a magnetic field on said ring whereby it is forced radially inwardly of the outer surface of the sleeve and the inner surface of the sleeve is forced radially inwardly against said tubular member to form the depression so that the sleeve end is held tightly between said ring and said tubular dust shield member.

3,313,537

CARTON FORMING MACHINES

Roy Garwood, Rayleigh, Essex, England, assignor to Pembroke Carton and Printing Company Limited, Essex, England, a British company
Filed Feb. 1, 1965, Ser. No. 429,375
Claims priority, application Great Britain, Jan. 31, 1964, 4,349/64
9 Claims. (Cl. 271-30)



1. Carton blank handling apparatus for use in conjunction with carton erecting machinery, comprising:

- a magazine comprising support means to support a pack of carton blanks with the blanks standing on edge, a main pressure plate to engage behind the pack of blanks, means to drive the pressure plate to advance the pack of blanks in a substantially horizontal direction along the support means as blanks are extracted from the front of the pack at a take-off position, abutment means against which the front blank of the pack is urged by the pressure plate and past which the front blank is extracted by a flexing action on the blank, a subsidiary pressure plate which is insertable in front of the main pressure plate and the pack of blanks in the magazine;
- means to extract the front blank from the magazine in a direction substantially normal to the plane of the blank;
- means controlling the pressure plate drive automatically in accordance with the rate of extraction of blanks from the magazine;
- disconnectible coupling means connecting the main pressure plate with the drive means, upon disconnection of which the pressure plate is freed for movement back away from a partially used pack of blanks in the magazine;
- a subsidiary disconnectible coupling means to connect the subsidiary pressure plate with the drive means such that the subsidiary pressure plate can take over the function of the main pressure plate temporarily during reloading of the magazine, and
- conveyor means to receive the blank from the extracting means and convey the blank edgewise downwardly to a desired position ready for erection.

3,313,538

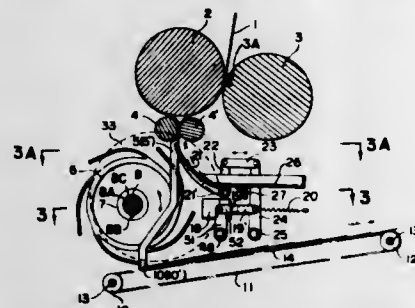
AUTOMATIC GUIDE-OUT FOR PRINTED PAPERS FROM A ROLLING PRESS

Masatosi Ichi, 428 3-chome, Kosugi-machi, Kawasaki, Japan

Filed Oct. 5, 1964, Ser. No. 401,290
5 Claims. (Cl. 271-64)

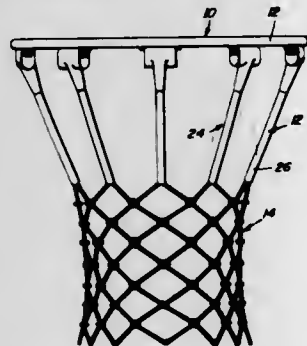
3. An automatic sheet guide out device comprising a frame, a plurality of vane wheels fixed to a shaft rotatably mounted in said frame for receiving sheets, strippers positioned between said vane wheels for engaging said sheets to remove said sheets from said vane wheels, a conveyor for receiving said sheets, a guide out boards supporting rock shaft mounted on said frame, a plurality of guide out boards fixed on said rock shaft and extending toward said vane wheels and adapted to extend between the vanes

of said vane wheels and between said strippers in operative position to remove sheets and movable away from said vane wheels and said strippers to inoperative position to permit sheets to be deposited on said conveyor,



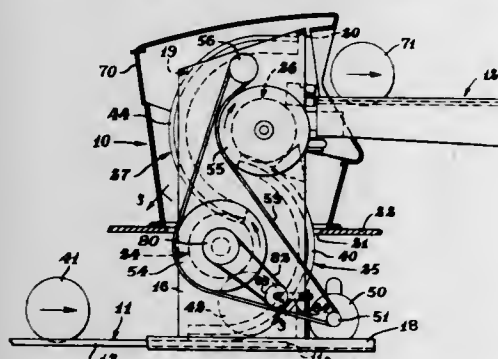
and manually controlled means to cause said guide out boards to move to operative position to guide out a predetermined limited number of sheets only and to then return to inoperative position.

3,313,539
BASKETBALL NET ANTI-WHIP DEVICE
Larry Michael, 229 W. North St., Ada, Ohio 45810
Filed Oct. 19, 1964, Ser. No. 404,587
9 Claims. (Cl. 273-1.5)



6. In combination with a basketball net supporting ring having a conventional generally vertically disposed and cylindrical basketball net of the type including upright vertically elongated and circumferentially spaced legs, the upper ends of said legs being attached to said ring at points spaced circumferentially thereabout, an anti-whip attachment for said net, said attachment including a plurality of flexible but somewhat stiff tubular members telescoped over at least certain of said upright legs and enclosing said certain of said legs throughout at least a major portion of their vertical length.

3,313,540
VARIABLE SPEED BALL LIFT
Miles E. Untiedt, Muskegon, Mich., assignor to Brunswick Corporation, a corporation of Delaware
Filed Aug. 12, 1963, Ser. No. 301,398
9 Claims. (Cl. 273-49)



7. Apparatus for transferring a ball from a ball receiving zone towards a ball discharging zone comprising: a track extending from said receiving zone towards said discharging zone, means for engaging a ball on said track

for propelling the ball along the track from the receiving zone towards the discharging zone, a power source, and means connected between said power source and said engaging means for driving said engaging means at a variable rate including a normally relatively rapid rate when a ball enters the apparatus and a relatively slower rate when the ball is discharged.

3,313,541
GOLF CLUB INCLUDING REINFORCED FIBER GLASS SHAFT
Andrew J. Benkoczy and Lawrence W. Hull, Miami, Fla., assignors to United States Fiberglass Company, Miami, Fla., a corporation of Florida
Filed Oct. 11, 1963, Ser. No. 315,497
4 Claims. (Cl. 273-84)

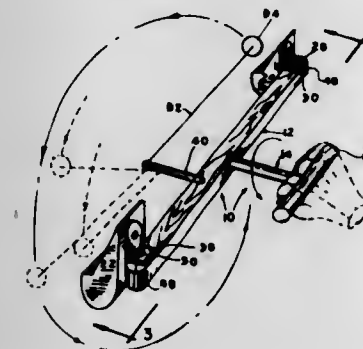


1. A golf club including a tapered shaft having a club head secured to the smaller end thereof and a hand grip secured to the larger end thereof, said shaft consisting essentially of a plurality of parallel longitudinal glass fibers in said shaft each extending substantially axially of said shaft from said grip to said head, a plurality of parallel and generally circumferentially disposed glass fibers interwoven with individual small groups of said longitudinal fibers to increase the hoop strength along the entire length of the shaft and provide resistance against collapsing of said tubular shaft when the club head strikes a golf ball, said circumferential fibers being substantially fewer in number than said longitudinal fibers for maximum longitudinal stiffness, said longitudinal and circumferential glass fibers being disposed in a plurality of layers, said plurality of layers varying in number along the length of said tubular shaft so that the wall thickness of said shaft varies along its length with the greatest thickness being disposed at said smaller end for maximum strength in the portion of the shaft adapted to support the club head, a plurality of reinforcing glass fibers disposed in said smaller end between said layers and at an angle of about 30-45° to said longitudinal fibers to resist torsional stresses which are the greatest at said end when the club head strikes a golf ball, and thermosetting resin binder means for joining said fibers and said layers together in a substantially integral tube capable of resisting the torsional, inter-laminar shear and other forces imposed thereon.

3,313,542
ORBITING BALL GAME
George L. Johnston, Des Plaines, Ill., assignor to Elyn Marie Johnston, Des Plaines, Ill.
Filed Jan. 19, 1965, Ser. No. 426,643
6 Claims. (Cl. 273-97)

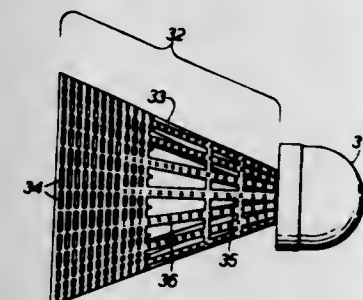
1. In a ball-orbiting game and toy device of the character described, in combination, an elongated supporting bar, a torsion rod projecting laterally from the central region of said bar in one direction and at an angle of 90° to the longitudinal axis of the bar, a peg projecting lat-

erally from a medial region of said bar in a direction opposite to said one direction and at an angle of 90° to the axis of said bar, said peg being positioned closer to one end of the bar than the other end thereof, a flexible tether secured at one end to said peg, an article secured to the free end of said tether, an article-receiving cup mounted on each end of the bar and having an open rim for passage of the article into and out of the cup, the



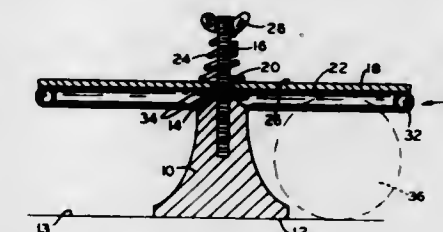
effective length of said tether being no less than the effective distance between the peg and the end of the bar from which it is more remotely positioned, and a handle mounted on the distal end of said torsion bar for manipulation of the device whereby the article, when positioned in one of said cups may be ejected from said latter cup, caused to orbit about the axis of said peg in a diminishing radial path as the tether becomes progressively wound upon the peg, and to enter the other cup.

3,313,543
SHUTTLECOCK WITH BLADE-LIKE STEMS
William C. Carlton, Hill House, Finchfield, England
Filed May 21, 1964, Ser. No. 369,161
Claims priority, application Great Britain, June 25, 1963, 25,135/63
1 Claim. (Cl. 273-106)



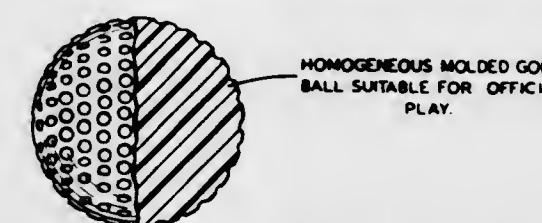
A shuttlecock, consisting of a cap and a flared skirt, the flared skirt incorporating not less than eight nor more than twenty-four stems spaced symmetrically about the axis of the shuttlecock, said stems incorporating for at least 1 centimetre of their length a part having a cross section made up of a blade-like portion and a wing-like portion, the said blade-like portion having its broadest faces within 30° of parallel to a true radius from the axis of the shuttlecock which passes through the blade-like portion and the said wing-like portion having its widest faces within 40° of a line at 90° to the same true radius from the axis of the shuttlecock and the said blade-like portion having a mean thickness not less than .3 millimetre and not more than 1.5 millimetres and being not more than 7 millimetres and not less than 2 millimetres in total breadth and the said wing-like portion being not less than .075 millimetre thick, and the width of the said wing-like portion being not less than 1.5 millimetres.

3,313,544
GOLF PUTTING PRACTICE DEVICE
Edward R. Davis, P.O. Box 568, Sperry, Okla. 74073
Filed Oct. 23, 1964, Ser. No. 406,096
4 Claims. (Cl. 273-177)



1. A golf putting practice device comprising: an upright base member having a flat bottom, the height of the base member being substantially that of a golf ball; a threaded pin extending vertically from the top of the base member; a flat horizontal tiltable plate member supported on the top of the base member having a central opening therein loosely receiving the threaded pin, the plate member having a circumferential downwardly extending lip portion on the bottom surface thereof, the vertical distance between the lower edge of the lip portion and the bottom of the base member being less than the diameter of a golf ball; a coiled spring received by the pin having the lower end in engagement with the top of the plate member; and a nut member threaded onto the pin adjustably compressibly retaining the spring.

3,313,545
UNITARY MOLDED GOLF BALL
James R. Bartch, Lebanon, N.J., assignor to PCR Patent Development Corporation, Princeton, N.J., a corporation of Delaware
Filed Sept. 12, 1963, Ser. No. 308,360
16 Claims. (Cl. 273-218)



1. A homogeneous molded golf ball of high durability and good click having the following specifications:

Weightoz. 1.500-1.620
Specific gravity 1.04-1.12
Hardness (Shore) 75-99c
Compression 40-150
Initial velocity (U.S.G.A.)ft./sec. 200-250
Size: sphere of 1.68-1.69" in diameter.

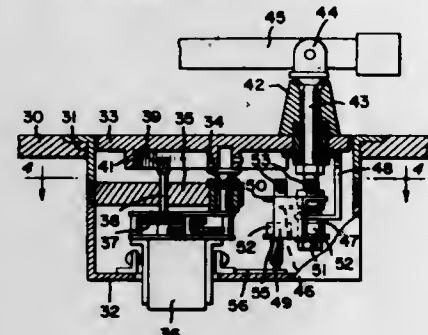
predominately composed of a filled elastomer highly cross-linked into a three dimension network with long, flexible cross links formed from a polymerized cross-linking monomer, said elastomer being one capable of being so cross-linked by said cross-linking monomer.

8. A homogeneous molded golf ball of high durability and good click having a standard spherical shape of a maximum diameter of about 1.69" predominately composed of a diene elastomer highly cross-linked with about 25-90% by weight of a dimethacrylate ester cross-linking monomer into a three dimensional network with long, flexible cross-links and filled with about 25-90% by weight of a finely divided filler, the principal constituent

of which is finely divided silica, said elastomer being one capable of being so cross-linked by said cross-linking monomer.

3,313,546 SUPPORTING DEVICE FOR A PHONOGRAPH PICKUP

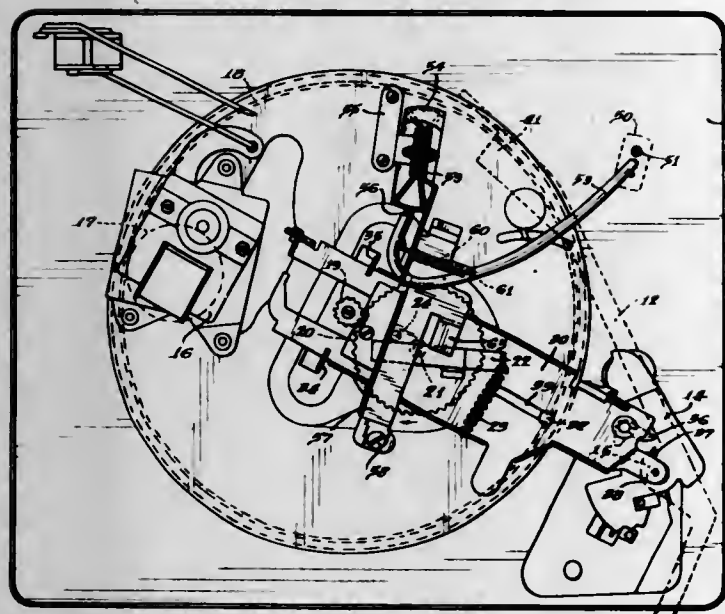
Kinji Yoshikawa, 18 Ohmno, Sakai, Japan
Filed May 28, 1964, Ser. No. 370,821
Claims priority, application Japan, May 30, 1963,
38/28,390
4 Claims. (Cl. 274-23)



1. In a phonograph having a turntable adapted to hold a record having an interior peripheral sound track and an exterior peripheral sound track, a tone arm, and a needle on one end of the tone arm adapted to run in said sound track, the combination of a tone arm pivotal support for pivotally supporting the tone arm at a pivot point, and drive means on which said pivotal support is mounted and driving said pivotal support from a point on an outer imaginary circle which is the locus of all points which are spaced along tangents to points on said exterior peripheral sound track a distance equal to the distance between the point at which said needle contacts the sound track and the pivot point of the tone arm, to a point on an inner imaginary circle which is the locus of all points which are spaced along tangents to points on said interior peripheral sound track a distance equal to the distance between the point at which said needle contacts the sound track and the pivot point of the tone arm.

3,313,547 RECORD CHANGER

Ernest O. P. Tatter, Addison, and Jack Bell, Roselle, Ill.,
assignors to Warwick Electronics Inc., a corporation of
Delaware
Filed Dec. 20, 1963, Ser. No. 332,002
7 Claims. (Cl. 274-47)

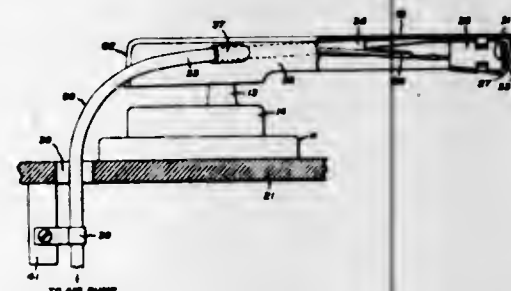


7. In a record changer having a record change cycle mechanism, a motorboard for rotatably supporting a

turntable and a tone arm with stylus movable in response to said record change cycle mechanism between a rest position beyond the turntable and record playing positions overlying the turntable, an air nozzle located at the tone arm rest position for directing air applied thereto toward the tone arm stylus, a bellows connected to said nozzle, and means operable when the tone arm is at the rest position for compressing the bellows to apply a blast of air to the nozzle and operable during movement of the tone arm between the record playing positions and the rest position in response to said record change cycle mechanism for causing the bellows to be filled with air.

3,313,548 PHONOGRAPH WITH AIR HOSE FOR CLEANING RECORDS

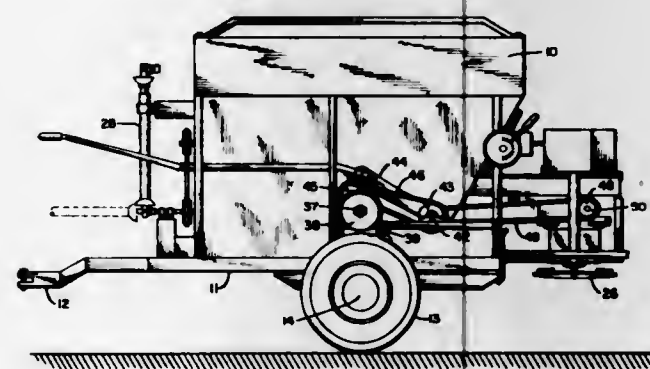
Harwood B. Moore, Sanquok, Yates M. Hoag, Utica, and Daniel C. Osborn, III, Syracuse, N.Y., assignors to General Electric Company, a corporation of New York
Continuation of application Ser. No. 115,440, June 7, 1961. This application July 10, 1964, Ser. No. 382,694
9 Claims. (Cl. 274-47)



1. In a phonograph having a turntable and an elongated tone arm with an air hose arranged in the tone arm for removing dust from a record being played, said tone arm being provided at the front end thereof with a cartridge carrying a stylus, and pivoted so that the stylus can traverse the groove of a disc record carried on the turntable, the improved arrangement comprising means for separating said air hose from contact with said tone arm at a region adjacent to the rear of said tone arm, said separating means directing said air hose rearwardly from said region, and means for supporting said air hose at a location behind and below said region, said air hose extending rearwardly of said region and then downwardly to said supporting means, thereby to provide flexibility of said air hose during movement of said tone arm and reducing drag on said tone arm.

3,313,549 COMPACT SPREADER FOR PARTICULATE

James S. Bell, Willmar, Minn., assignor to Willmar Manufacturing, Willmar, Minn.
Filed Sept. 3, 1965, Ser. No. 484,924
2 Claims. (Cl. 275-8)



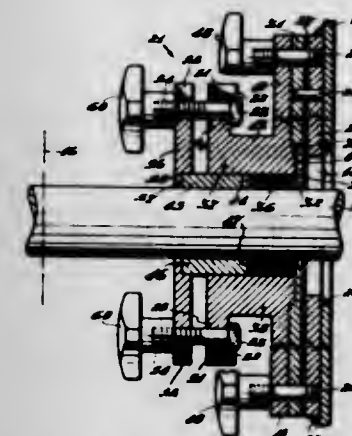
1. A trailer-type spreader for particulate material, comprising: a hopper having inward sloping sides for carrying particulate material, said hopper fixedly mounted

to a rigid supporting frame; a single pair of ground supporting wheels mounted on opposite sides of said frame by an axle which extends across the frame, said axle being slidably adjustable forward and rearward along said frame for positioning the axle to distribute the weight of the hopper load; an endless belt conveyor located at the bottom of the hopper for conveying the particulate to a discharge opening at the rear of the hopper; a first drive shaft parallel to said axle extending from said conveyor to one side of the frame for driving said conveyor; a first sprocket attached to one end of said first drive shaft; a second drive shaft parallel to and located forward of said first drive shaft; means coupling said second drive shaft to one of said mounting wheels for rotating said shaft whenever said mounting wheel rotates; a second sprocket attached to said second drive shaft parallel to and directly in front of said first sprocket; an elongated arm pivotally attached at one end to said first drive shaft being of length to extend beyond said second drive shaft when swung in a forward direction, said arm having a third sprocket rotatably attached at its other end and a drive chain linking said third sprocket to said first sprocket, said chain being brought into engagement with said second sprocket when the arm is swung forward for rotationally driving said first drive shaft and said conveyor by said second drive shaft; rotationally driven, substantially flat distributing discs located below the discharge opening at the rear of the hopper for spreading the particulate discharged by the conveyor as it is driven; said discs having a plurality of upward extending blades attached in an adjustable manner for varying the spread pattern of the particulate; a box located between the discharge opening and the distributing discs for directing the flow of particulate to said discs; and means for slidably adjusting said box forward and rearward for further varying the spread pattern of the particulate.

3,313,550 SANITARY STUFFING BOX

William J. Culman, Cincinnati, Ohio, assignor to The J. H. Day Company, Cincinnati, Ohio, a corporation of Ohio

Filed Apr. 29, 1964, Ser. No. 363,397
5 Claims. (Cl. 277-4)

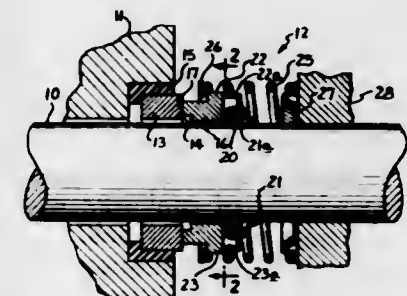


1. In a sanitary seal construction for a mixer of the type having a shaft passing outwardly through an opening in an end wall of said mixer, the shaft being rotatably journaled in a bearing spaced from said end wall, the novel combination which comprises an annular head plate mounted upon said mixer wall surrounding said opening, a first annular retaining plate, a split annular gasket interposed between said annular head plate and said retaining plate, a plurality of studs carried by said head plate extending outwardly from said plate parallel to said shaft, said first retaining plate having openings receiving said studs, a split stuffing box having a radial flange in abutment with said retaining plate and having openings

for receiving said studs, said split stuffing box having a cylindrical central opening surrounding said shaft and spaced therefrom, a plurality of knob members threadably engaging said studs for releasably securing said split stuffing box, a plurality of packing rings surrounding said shaft and being disposed within the cylindrical central opening in said stuffing box, the innermost of said rings being in abutment with said retaining plate, a split sleeve member surrounding said shaft and being at least partially disposed within the opening in said stuffing box, said split sleeve member being in abutment with said packing rings, and means for forcing said sleeve against said rings, said means comprising an end plate having a central opening receiving said shaft, said end plate being in engagement with the end of said split sleeve member, a plurality of elongated bolts carried by said split stuffing box and extending parallel to said agitator shaft, said end plate being configured to receive said bolts, and knob members threadably engaging the ends of said bolts, said knob members being in abutment with said end plate.

3,313,551 ROTARY SEAL

Robert M. Voltik, Evanston, and Kermit D. Yost, Skokie, Ill., assignors to Continental Illinois National Bank and Trust Company of Chicago as trustee
Filed June 24, 1963, Ser. No. 290,034
1 Claim. (Cl. 277-87)

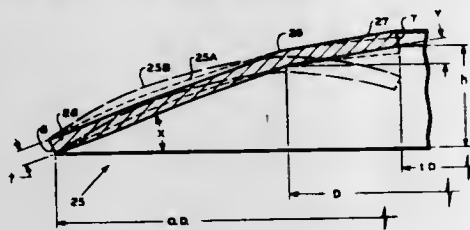


In a rotary seal assembly, the combination which comprises, a stationary annular stator surrounding a rotatable shaft, an annular rotor surrounding the rotatable shaft and having a pair of radial projections, the stator and the rotor having flat radial sealing surfaces in engagement with one another, an annular cup member adapted to surround the shaft and adapted to surround the rotor so as to define an annular opening therebetween, the annular cup having a pair of axial slots for receiving the radial rotor projections so that the rotor is caused to rotate with the cup member, the spacing between said slots permitting said rotor to be tilted and the rotor projections fitted in the slots, an O ring disposed in the opening between the rotor and the cup member, and a spring for urging the rotor and the cup member toward the stator and for securing the O ring between the rotor and the shaft so that a secondary seal is provided and the cup member is caused to rotate with the shaft, said spring having a portion surrounding said slots to preclude displacement of said rotor projections.

3,313,552
BELLEVILLE SPRING AND SEAL RING
Fred H. McElyea and Albert P. Farr, Houston, Tex., assignors to Hughes Tool Company, Houston, Tex., a corporation of Delaware
Filed Oct. 18, 1963, Ser. No. 317,276
10 Claims. (Cl. 277-95)

1. A Belleville spring originally being invertible and having an axis and at least one rounded conical section of large height-to-thickness ratio, said conic section having

an outer surface facing upwardly and outwardly from said axis and an inner surface facing downwardly and inwardly toward said axis, said spring being cold worked on

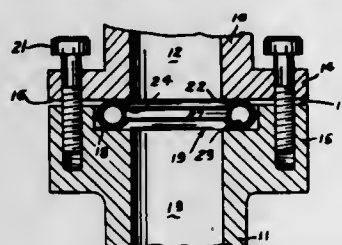


at least a part of said outer surface to render said spring non-invertible and to make said outer surface convex and said inner surface concave.

3,313,553 SEALING RING

Robert L. Gastineau, Dayton, Ohio, assignor to United Aircraft Products, Inc., Dayton, Ohio, a corporation of Ohio

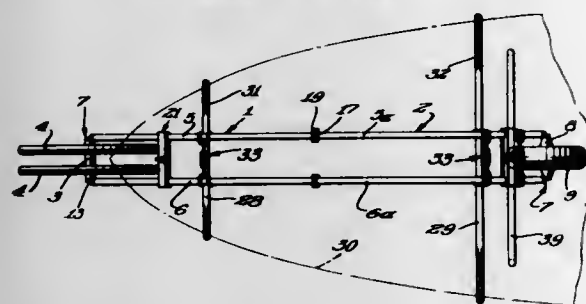
Filed Apr. 17, 1964, Ser. No. 360,512
7 Claims. (Cl. 277-229)



1. An O-ring for static sealing installations, comprising a hollow thin wall metal ring of a compressible resilient construction, said ring being continuous in cross section, and a relatively thicker jacket in enfolding relation to said ring, said jacket being a separable member assuming a C-shape independently of said ring and receiving the ring therein, said ring contacting said jacket at least at opposed points therein representing top and bottom locations in said C configuration and providing resistance and spring back to said jacket, compression loads being applied to upper and lower surfaces of said jacket exteriorly thereof at said locations, the separated ends of said jacket exposing an annular area on a side of said ring, said jacket being placed on said ring to expose a side thereof which in the use of the ring will face the higher pressure.

3,313,554 KNOCK-DOWN BOAT CARRIER

Emery L. Hall, 7725 Drew Ave., Hinsdale, Ill. 60521
Filed Dec. 9, 1964, Ser. No. 417,024
3 Claims. (Cl. 280-35)

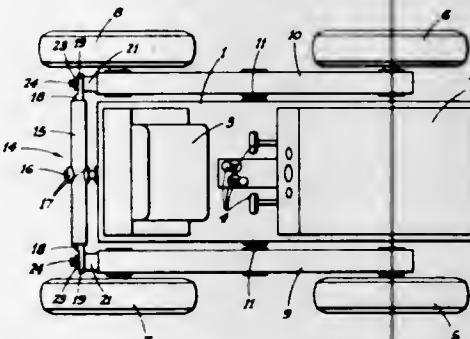


1. In a knock-down boat carrier, front wheel means, rear wheel means, said wheel means being substantially in alignment along the axial vertical plane of the carrier, a pair of parallel frame members removably connected to said wheel means, boat cradling means removably carried by said frame members, and

rigidifying members each comprising complemental half-part bars socketed to receive said frame members therebetween, and manually operable clamping means disposed centrally of said bars to clamp said frame between said half parts.

3,313,555 VEHICLE SUSPENSION SYSTEM

Walter E. Reimer, 16201 Ridgcrest Ave., Monte Sereno, Calif. 95030
Filed July 20, 1964, Ser. No. 383,636
1 Claim. (Cl. 280-104)



A suspension system, for a vehicle having a body and transversely spaced front and rear wheels, comprising a longitudinal rocking beam extending along each side of the body, corresponding front and rear wheels being journaled on the related ends of each rocking beam, means pivotally mounting each rocking beam centrally of its ends on the body for motion about a transverse axis, a motion transmitting cross bar unit spanning between the rocking beams at one end thereof, means pivotally mounting the cross bar unit centrally of its ends on the body for motion about a longitudinal axis, the cross bar unit including extensible end portions, and means pivotally connecting each of said end portions to the adjacent end of the corresponding rocking beam; said unit including a tubular cross bar, and said extensible end portions being elements in part slidably and turnably engaged in such cross bar; said pivotal connecting means for such extensible end portions being a transversely projecting ear on the outer end of each thereof, the ear having a longitudinal axis opening therethrough, and a longitudinal neck on the corresponding rocking beam turnably secured in said ear.

3,313,556 TRAILER VEHICLE CONSTRUCTION

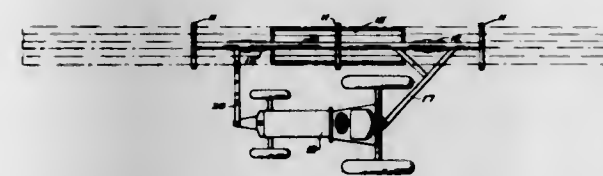
Roy A. Colwell, Saginaw, Mich., assignor to Saginaw Products Corporation, Saginaw, Mich., a corporation of Michigan
Filed Mar. 19, 1964, Ser. No. 353,150
22 Claims. (Cl. 280-445)



5. A trailer vehicle having frame means; wheel means; means mounting said wheel means on said frame means for steering movements; steering means connected to said wheel means; locking means interconnecting said steering means and said frame means for disabling steering movement of said wheel means; towbar means for connecting said vehicle to a towing vehicle; means connecting said towbar means to said steering means; means cooperable with said towbar means and said locking means for adjusting the latter between operative and inoperative positions; and latch means connected to said locking means and cooperable with said connecting means to maintain said locking means in its said inoperative position.

3,313,557 PIPE TRANSPORTING AND STORAGE DEVICE

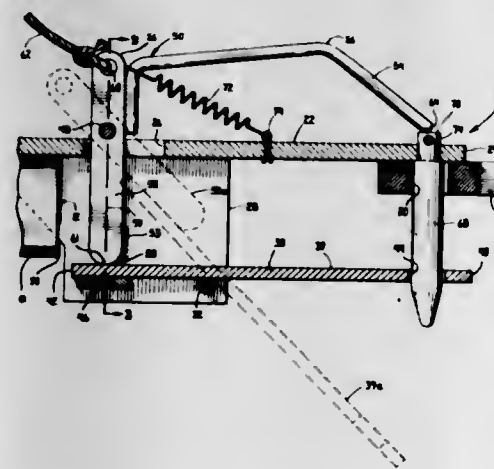
John E. Sheppard, Hood River, Oreg., assignor to R. M. Wade & Co., Portland, Oreg., a corporation of Oregon
Filed July 7, 1965, Ser. No. 470,156
2 Claims. (Cl. 280-473)



1. A device for transporting pipe or other long articles which comprises a long body having wheels, and means to connect the body to the rear end and to the front end of a tractor while it is disposed alongside and parallel to the tractor and in which the body is a single long tubular member with U-shaped brackets supported in spaced alignment thereon.

3,313,558 TRACTOR HITCH

Loren E. Wolfgang, R.R. 1, Fortville, Ind. 46040
Filed Apr. 21, 1965, Ser. No. 449,728
15 Claims. (Cl. 280-515)



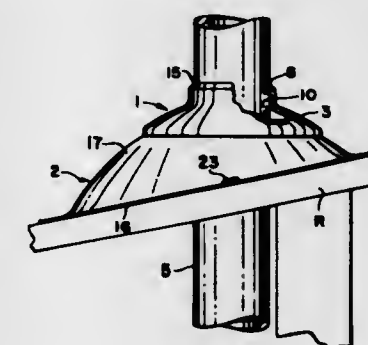
1. A vehicle hitch comprising a vehicle tongue having a distal end, a coupling means supported from said tongue and depending downwardly therefrom, a lever means having an opening therein adjacent one end, said lever means being rockably supported upon an axis intermediate its ends and located beneath said tongue, said lever means being movable from a first position in which said coupling means extends through said opening to a second position in which said one end is spaced downwardly below the nether end of said coupling means, and means engageable with said lever adjacent the other end of said lever and operable to move said lever from said first position to said second position and to lock said lever in said second position.

3,313,559 ROOF FLASHING WITH ELASTOMERIC COLLAR

David E. Kifer, Parma, Ohio, assignor to The L. R. Ontey Company, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 18, 1964, Ser. No. 352,784
4 Claims. (Cl. 285-43)

1. In combination, a roof flashing and elastomeric collar for establishing a weather-proof seal between a roof and an upstanding pipe passing through an opening in such roof, said roof flashing comprising a flat metal plate which is adapted to be secured to such roof, a dome shape portion projecting outwardly from said flat metal plate, said dome shape portion being provided with

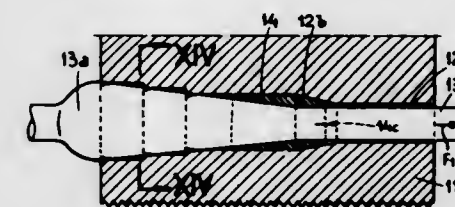
an annular opening the diameter of which is substantially greater than the diameter of such pipe, and means securing said elastomeric collar to said roof flashing adjacent the periphery of said annular opening; said elastomeric collar comprising a thin walled truncated cone of resiliently deformable material, said truncated cone being provided with a central circular aperture in the apex end thereof, said apex end defining a neck portion in which there are provided a plurality of sealing edges, one of said sealing edges being formed by the intersection of said apex end with the inner surface of said truncated cone wall, another of said sealing edges being formed by an annular rib projecting inwardly from said inner sur-



face at a slight distance from said apex end, the diameter of said circular aperture in said truncated cone being substantially less than the diameter of such pipe and the inside diameter of said truncated cone directly below said annular rib being slightly less than the diameter of such pipe, whereby the forcing of said elastomeric collar over such pipe causes substantial stretching of said neck portion to effect high pressure seals between such pipe and said sealing edges, the apex end of said truncated cone being substantially flat in the plane of said cone aperture in defining with the inner wall of said cone said sealing edge, whereby when said elastomeric collar is stretched as aforesaid, said apex end forms a conical surface which slopes downwardly away from such pipe.

3,313,560 PRE-TENSIONING WIRES ANCHORING SYSTEM FOR CONCRETE PRE-COMRESSED STRUCTURES AND THE LIKE

Romualdo Macchi, Via Volturmo 43, Pisa, Italy
Filed June 16, 1964, Ser. No. 376,306
Claims priority, application Italy, Apr. 7, 1961, 646,855; June 17, 1963, 12,598/63
6 Claims. (Cl. 287-20.3)

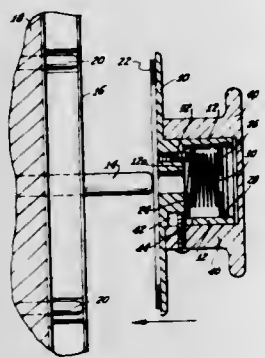


4. In a wire tensioning device, in combination: a wire having a laterally enlarged head portion formed therein, said head portion having an elliptical cross-sectional configuration the major axis of which varies uniformly and continuously throughout its active length, the length of the major axis of any particular cross-section being a linear function of its distance from one end of said active length, whereby said head portion has rectilinear convergent sides; a socket member for tensioning said wire

by engagement with said head portion, said socket member having a tensioning aperture formed therein through which said wire passes, said aperture being defined by a series of axially aligned holes of differing diameters, said wire passing freely through the smallest of said holes, said smallest hole having a frusto-conical bearing surface adjacent thereto which diverges toward the next larger hole, said next larger hole and other adjacent larger ones of said holes being joined by flat annular shoulders, said shoulders defining a series of circular gripping edges which lie on an imaginary frusto-conical surface the angle of convergence of which is the same as the angle of convergence of said rectilinear sides; and a deformable tubular sleeve member on said wire intermediate said head portion and said frusto-conical bearing surface, the relative hardnesses of said head portion and said gripping edges causing deformation of said edges to provide seating zones for said head portion therein when tension is applied to said wire by axial displacement of said socket member, said axial displacement further causing axial compression of said sleeve member by engagement of one end thereof with said head portion and engagement of the other end with said frusto-conical bearing surface, said compression forcing said sleeve member into positive gripping engagement with said wire.

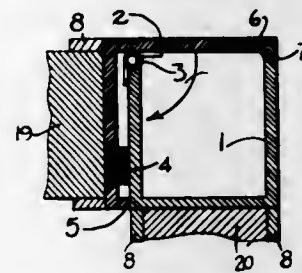
3,313,561

KNOB ASSEMBLY FOR TAPE RECORDER
Albert C. Kirilouckas, Granada Hills, Calif., assignor to Winston Research Corporation, Los Angeles, Calif., a corporation of California
Filed Jan. 4, 1965, Ser. No. 422,922
4 Claims. (Cl. 287—52.07)



1. A hold-down assembly for releasably supporting a reel, or the like, on a shaft, said assembly including: a disc-like base member having a central aperture therein and including a hollow hub portion coaxial with said aperture, said hub portion having at least one longitudinally extending slot formed in the peripheral wall thereof, and said hub portion defining an internal shoulder adjacent said disc-like base member; a hollow knob fitted over said hub portion in coaxial telescopic sliding relationship therewith; at least one retainer disc housed in said hub portion and having a central aperture for receiving said shaft when the base member and hub portion are moved over said shaft; resilient means mounted in said hub portion for resiliently biasing said retainer disc against said shoulder; a first stud extending longitudinally through said base member and through said shoulder normally to engage said retainer disc to cock said retainer disc so as to hold the hub assembly locked on said shaft; and at least one stud extending radially through said knob and through said slot in the peripheral wall of said hub portion to engage and move said retainer disc away from said shoulder and uncock said retainer disc when said knob is moved away from said base member so as to unlock the assembly from the shaft and permit it to be removed from the shaft.

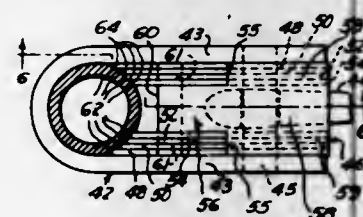
3,313,562
STRUCTURAL PIVOT JOINT
Donald W. Rice, 2230 Fulton St., Toledo, Ohio 43620
Filed Apr. 27, 1964, Ser. No. 362,791
12 Claims. (Cl. 287—189.36)



1. An open channeled pivotal joint comprising a primary leaf member comprising a plurality of planar elements forming an open sided structural channel having flanges, a secondary leaf member comprising first and second planar elements forming first and second legs of an L-shape member, said members being arranged in longitudinal juxtaposition with each other and adapted for relative rotative movement with each other, and pivot means associated with said members having a longitudinal axis parallel to and generally near to the edge of one flange of said channel and generally within the space defined by the legs of said structural L-shape member whereby the first leg of said L-shape member overlies a portion of the open side of said channel at one stage of said rotative movement while the second leg of said L-shape member lies in adjacent proximity to the outer surface of said flange of said primary channel thereby permitting rotative movement of said first leg into said open channel and movement of said second leg away from said flange during rotative movements thereof.

3,313,563
ADJUSTABLE LEVER MOUNT

John E. Hallberg, Hammond, Ind., assignor to W. H. Miner, Inc., Chicago, Ill., a corporation of Delaware
Filed Aug. 4, 1965, Ser. No. 477,113
12 Claims. (Cl. 292—1)

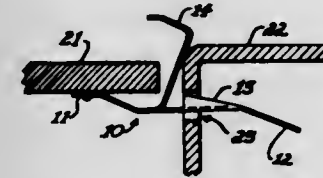


1. An adjustable lever mount for use on a rotary locking bar of a cargo door latch mechanism, comprising, in combination, a U-shaped member adapted to embrace one side of said rotary locking bar, a cam member pivotably mounted on said U-shaped member and adapted to be rotated into tight gripping engagement with the opposite side of said locking bar, and a lever handle pivotably mounted on said U-shaped member and arranged to pivot said cam member into gripping engagement with said locking bar and then for rotating said rotary locking bar to actuate said latch mechanism.

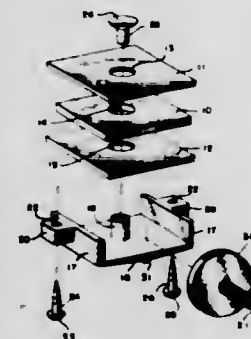
3,313,564
FASTENING APPARATUS
Jack R. Pultz, Shorewood, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Nov. 18, 1964, Ser. No. 412,156
3 Claims. (Cl. 292—87)

1. A fastener comprising: a member having a front portion, a rear portion, and a resilient intermediate portion interconnecting said front and rear portions,

barb means on said intermediate portion extending in a direction away from said intermediate portion, said barb means having a fastening edge which faces the rear portion of said member, and actuating means comprising a resilient elongated tab having an end fixed to said intermediate portion at a point between the fastening edge of said barb

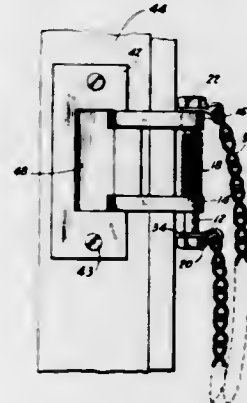


3,313,565
MAGNETIC DOOR CATCH
William J. Brink, Box 218, Bainbridge Island, Wash. 98110
Filed Mar. 31, 1965, Ser. No. 444,141
8 Claims. (Cl. 292—251.5)



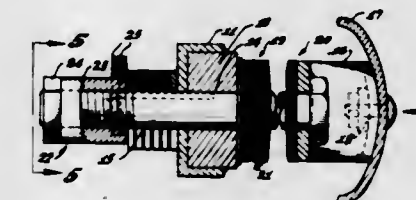
1. In a magnetic catch for holding the swinging door of a cabinet closed, a permanent magnet sandwiched between pole pieces and each formed from plate stock to a rectangular plan configuration, a housing of nonmagnetic material formed to provide an open-front stall in which said sandwich is received with portions of the pole pieces projecting through said front opening and having means for retaining the sandwich in loose relationship with the housing, means for non-adjustably mounting the housing with its retained sandwich upon a wall of the cabinet to have the front edges of said projecting portions of the pole pieces face outwardly proximal to and generally parallel with the inner surface of the closed door, and an armature plate for the magnet carried by the door in a position to strike said front edges of the pole pieces when the door is swung into said closed position, the armature plate being formed as the flat head of a screw having a comparatively long threaded shank of a uniform diameter throughout very nearly its entire length and; composed of a material attracted to the magnet and so threadably mounted upon said door that the act of turning the screw in one direction advances the head toward and in the other direction retracts the head from said inner surface of the door, thus to position the head in a selected position adjusted toward or from said inner surface.

3,313,566
SAFETY CHAIN FOR DOOR KNOBS
Robert E. Sipes, 1801 S. Peoria, Tulsa, Okla. 74120
Filed Feb. 1, 1965, Ser. No. 429,543
7 Claims. (Cl. 292—292)



1. In combination with a door having a door knob and a door jamb in association therewith having a latch receiving recess, a chain latch device comprising a plurality of spaced gripping members, spring means cooperating with the gripping members for urging the gripping members apart into engagement with the side walls of the recess, and chain means connected to said members for disposition around the door knob in order to limit the opening of the door.

3,313,567
BELLEVILLE SPRING BIASED BUMPER
Oded Eddie Sturman, 9854 O'Melveny, Arleta, Calif. 91331
Filed Feb. 23, 1965, Ser. No. 434,565
16 Claims. (Cl. 293—89)



1. A safety bumper device for motor vehicles comprising: a vehicle frame; means supporting a pair of bolts for sliding movement relative to the frame; means supporting a bumper plate in front of said frame on said bolts; and a plurality of Belleville spring washers mounted on said bolts between the frame and the bumper plate and adapted to be stressed upon movement of the bumper plate toward the frame under the impact of a collision, said spring washers being arranged in groups in which a plurality of adjacent washers are facing in a same direction in nested relationship, the washers in one group facing in a direction opposite to those washers in the next adjacent group, the spring washers in each group having large surface area contact within the group to exert large frictional resistance against flexing of the spring washers whereby a considerable portion of the energy of impact will be dissipated without storing as the spring washers flex against the frictional resistance.

6. A safety bumper device for vehicles comprising: a bumper plate mounted on the vehicle in position to receive the impact of a collision; means mounting said bumper plate so that it is movable relative to the vehicle under an impact force; means biasing said bumper plate away from the vehicle so that the energy of impact is absorbed in said biasing means as the bumper plate moves toward the vehicle in a collision; and means automatically progressively operable over substantially the major part

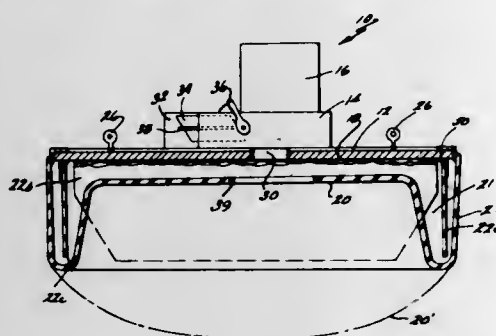
of the range of movement of said bumper plate for retaining the bumper plate in the position closest to the vehicle into which it is driven under an impact force regardless of the point in said range of movement at which said closest position occurs whereby to store the absorbed energy in the biasing means against rebound of the bumper plate.

3,313,568

HEAD FOR PALLETIZER

Daniel A. Fogg, White Cloud, Mich., assignor to The Rapids-Standard Company, Inc., Grand Rapids, Mich., a corporation of Michigan

Filed Oct. 21, 1965, Ser. No. 499,988
6 Claims. (Cl. 294-64)



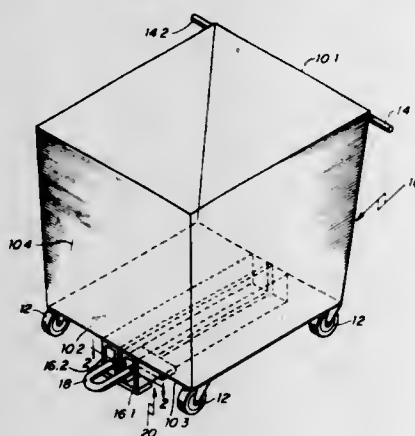
1. A negative pressure hoist comprising: a support platen defining an under surface area for engaging a pattern of articles; peripheral, article gripping and suspending flap means attached to and depending from said platen around said area; a flexible sealing envelope on said platen, across said under surface area, with a first portion along the inside surface of said flap means to seal against articles, and a second portion along the outside surface of said flap means to pull said flap means toward each other for gripping a pattern of articles; said platen including port means into said envelope and adapted for connection to air evacuating means, to cause the said sealing and flap pulling actions upon withdrawal of air from said envelope; and opening means through said envelope between said flap means for evacuation above the articles.

3,313,569

REFUSE CONTAINER

Joseph F. Russell, Lexington, Mass., assignor to Henry B. Russell and Sons, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Oct. 21, 1965, Ser. No. 499,660
5 Claims. (Cl. 294-73)



1. In a tippable industrial refuse container having at least front and rear panels, a pair of side panels, a bottom panel and extension pieces affixed to the front panel to extend beyond the side panels, the improvement comprising:

channel means affixed to the bottom panel to strengthen the container when tipped;

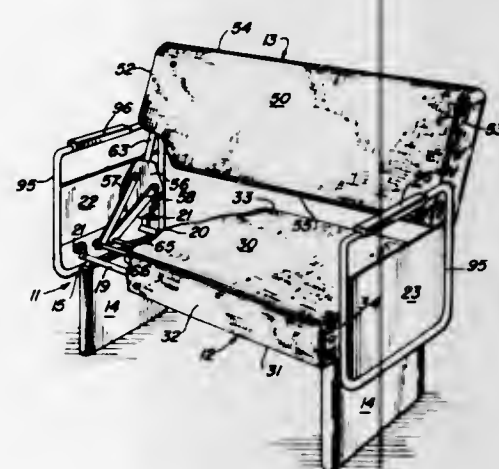
retractable loop means, contained substantially within the confines of the channel means, the loop means retracted into the channel means when not in use and extended when the container is tipped; and cover means bridging the gap across the channel means against which the loop means bears when the container is tipped.

3,313,570

LATCH FOR BACK OF WALK-OVER SEAT

Robert J. McVeigh, Oak Lawn, Ill., assignor to Coach and Car Equipment Corporation, Chicago, Ill., a corporation of Illinois

Filed Feb. 3, 1966, Ser. No. 524,689
7 Claims. (Cl. 297-103)



1. In a walk-over seat comprising: frame means including a pair of spaced frame sides; a seat cushion having a first end and a second end each extending between said frame sides; said frame means including means for supporting said seat cushion in an occupant-accommodating position; a pair of upwardly extending levers each having a lower portion located adjacent one of said frame sides; means mounting the lower portions of each of said levers for pivotal movement about a respective axis extending horizontally between the lower portion of a respective lever and said one frame side; means pivotally connecting together an upper portion of each of said levers, whereby the levers together may be pivotally moved between a first terminal position in which said upper portions are at the first end of said seat cushion and a second terminal position in which the upper portions are at the second end of the seat cushion; and means for preventing removal of the seat cushion from its occupant-accommodating position when the levers are in their first or second position and for permitting removal of the seat cushion when the levers are in a predetermined intermediate position located between said first and second terminal position; the improvement comprising manually operable means for retaining the levers in said predetermined intermediate position, said manually operable retaining means comprising: an element; means connected to said one frame side mounting said element for slidable movement, in the direction of said horizontally extending axes, between one position relatively close to said levers and another position relatively distant from said levers; said element including latch means located to engage one of said levers when the levers are in said intermediate position and said element is in said relatively close position;

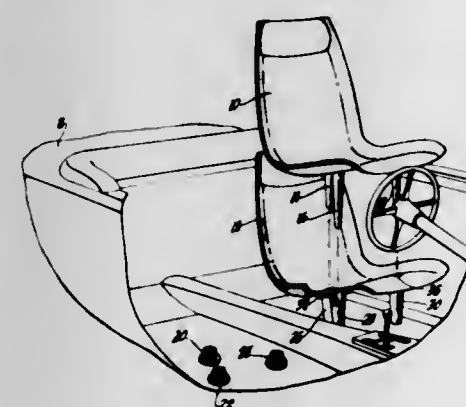
and means normally operable to urge said element to said relatively distant position wherein the latch means occupies a location at which the latch means is incapable of engaging a lever; said one lever including means for holding said element against the urging of said normally operable means, releasable in response to movement of said one lever toward one of said terminal positions, when the one lever engages said latch means.

3,313,571

REMOVABLE AND STACKABLE SEATING ARRANGEMENT

Rudolph A. Ferrara, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 11, 1965, Ser. No. 494,465
5 Claims. (Cl. 297-239)



1. In combination in a motor vehicle body, a seating arrangement having an individual driver's seat and an individual passenger's seat, one of said seats being permanently secured to said body in seat forming position, the other of said seats being releasably secured to said body in seat forming position and being movable therefrom, said permanently secured seat including a plurality of hollow legs, each of said hollow legs having one end secured to said body and the other end secured to said permanently secured seat for supporting said permanently secured seat in said body, a plurality of apertures in said permanently secured seat, each of said apertures being coextensive with the inner diameter of one of said hollow legs, said movable seat having the same number of legs as said permanently secured seat, said legs of the movable seat having one end secured to said movable seat and the other end releasably secured to said body, the outer diameter of said movable seat legs being smaller than the inner diameter of said hollow legs, said permanently secured seat having the contour of the supporting surface compatible with the contour of the back surface of said movable seat for storing said movable seat over said permanently secured seat with said legs thereof extending into said hollow legs of said permanently secured seat.

3,313,572

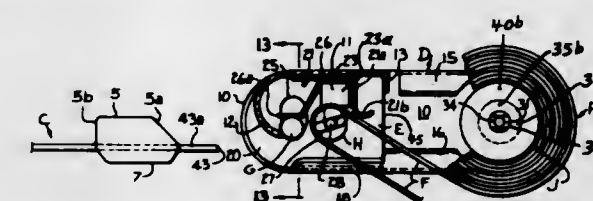
QUICK-RELEASE SAFETY SEAT BELT

William G. Smith, San Lorenzo, Calif., assignor of forty percent to Robert P. Berryman, San Mateo, Calif.

Filed Nov. 9, 1964, Ser. No. 409,695
14 Claims. (Cl. 297-388)

1. In combination: (a) a buckle housing; (b) a spring-biased drum carried by said housing; (c) a main lock body movably carried by said housing and having belt-gripping means; (d) a belt extending through said belt-gripping means and having one end anchored to a vehicle and its other end wound upon said spring-biased drum;

(e) an anchor plate secured to said vehicle and being receivable in said main lock body when said housing and said main lock body are moved toward said anchor plate for coupling said main lock body to said anchor plate, said drum feeding belt therefrom as needed during this movement; (f) means on said anchor plate when said plate is coupled to said main lock body for actuating said belt-gripping means for causing the latter to grip said belt; (g) locking means in said main lock body cooperating with the means on said anchor plate for securing said anchor plate to said lock body;



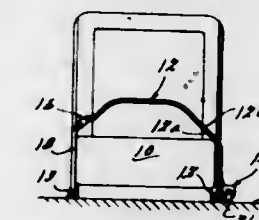
(h) said belt-gripping means including a knurled cylindrical bar rotatably carried by said main lock body; (i) the portion of said belt extending through said belt-gripping means also being passed around said bar; said bar freely rotating and permitting the belt to move around it as said housing and said main lock body are moved toward said anchor plate for connection therewith; and (j) said main lock body and said anchor plate with said knurled bar having means for stopping rotation of said bar when said anchor plate is coupled to said main lock body; said main lock body also having means for pressing the portion of the belt around said bar, down upon said bar for preventing any slipping of said belt around said bar.

3,313,573

LOW FRICTION SEAT BELT RELEASE

Robert H. Smith, Southfield, and John J. Lenoak, Highland Park, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

Filed Mar. 25, 1965, Ser. No. 442,653
8 Claims. (Cl. 297-388)



1. In a safety device, supporting means, a safety belt having a fixed end secured to said supporting means, dispensing means for carrying said belt and for dispensing the same in the direction from said dispensing means toward said fixed end, means for securing said dispensing means to said supporting means, means for subjecting said belt to tension to reduce slack in the portion thereof between said dispensing means and fixed end, including resilient means for yieldingly urging retraction of said belt in the direction toward said dispensing means, a retainer secured to said supporting means, one-way locking means movable with respect to said belt in either direction along said portion thereof and engageable in a locking condition with said belt portion for interlocking therewith against relative movement therealong in the direction from said fixed end toward said dispensing means, buckle means on said retainer and locking means for interlocking upon movement of said locking means in said locking condition into predetermined engagement with said retainer.

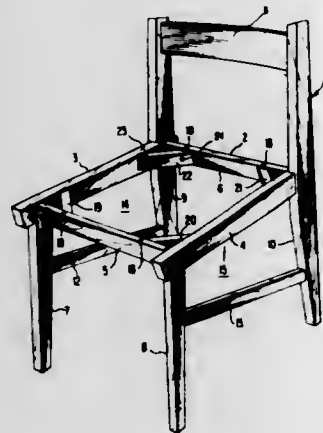
3,313,574
RECEIVER FOR BELT RETRACTORS
 Arthur S. Nicholas, 915 Carrier Creek Blvd.,
 Grand Rapids, Mich. 49503

Original application July 9, 1964, Ser. No. 381,463, now
 Patent No. 3,272,557, dated Sept. 13, 1966. Divided
 and this application Oct. 6, 1965, Ser. No. 510,133
 4 Claims. (Cl. 297-388)



1. In combination with an automotive vehicle having a seat extending from one side of said vehicle to the other, a floor and a personnel retaining safety belt having a portion at the center of said seat, said seat having both a seat and a back cushion, an anchor for said portion of said safety belts comprising: an anchor strap having one end secured to said vehicle floor and the other end extending between said seat and back cushions; a terminal receptacle of flexible semi-rigid material having an open forward end, said terminal receptacle being secured to said anchor strap; one end of said portion of said safety belt being secured to said anchor strap within said terminal receptacle; said terminal receptacle being nestled between said seat and said back cushions with only the open forward end thereof exposed.

3,313,575
CONNECTIONS BETWEEN STRUCTURAL COMPONENTS
 Byron S. Clapp, Siler City, N.C., assignor to Boling Chair Company, Siler City, N.C., a corporation
 Filed Nov. 29, 1965, Ser. No. 510,331
 10 Claims. (Cl. 297-446)



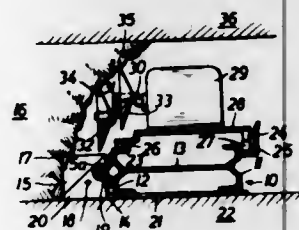
1. In an article of furniture having connected and mutually inclined portions subjectable to forces tending to induce relative convergence or separation thereof, connecting means comprising:
 a plurality of tongues projecting in the same general direction from one component of said article of furniture;
 an opening in another component of said article of furniture disposed between two portions of said other component;
 at least one of said tongues snugly received within said opening;

oppositely disposed portions of said one tongue engaging generally oppositely disposed wall portions of said opening;
 another of said tongues having at least one portion engaging a portion of said other component spaced from said opening; and
 at least one locking member intersecting and extending transversely of said tongues and said opening; and
 at least two of said tongues of said one component and one of said portions of said other component being fully intersected by said locking member and the other of said two portions of said other component being at least partially intersected by said locking member.

3,313,576
MINERAL EXTRACTING APPARATUS HAVING CRANK MOUNTED ROTARY CUTTER

Günter Dommann, Wethmar, near Lunen, Germany, assignor to Gewerkschaft Eisenhütte Westfalia, Wethmar, near Lunen, Westphalia, Germany, a corporation of Germany

Filed Aug. 7, 1964, Ser. No. 388,083
 Claims priority, application Germany, Aug. 16, 1963,
 G 38,485
 11 Claims. (Cl. 299-53)

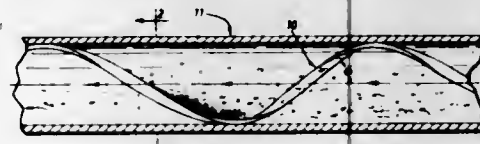


1. Mineral extracting apparatus which comprises a movable base adapted to be displaced back and forth along a mine face, rotatable shaft means mounted on said base and extending outwardly beyond said base on the side thereof adjacent the mine face, a pair of corresponding crank portions located on and integrally connected with the outwardly extending shaft means in axially displaced relation with respect to one another and in opposing rotatable relation for rotation out of phase with one another, and a corresponding pair of disc cutters positioned on said shaft means at said crank portions respectively and adjacent such mine face for engaging extractively the mine face in alternate thrusts during rotation of said shaft means for the removal of mineral from such mine face.

3,313,577
METHOD AND APPARATUS FOR TRANSPORTING SLURRIES

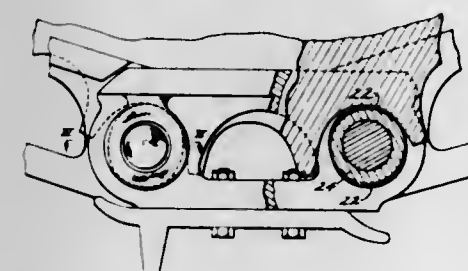
Samuel Edmund Wolfe, R.R. 1, Streetsville, Ontario, Canada

Filed Mar. 15, 1965, Ser. No. 439,573
 6 Claims. (Cl. 302-64)



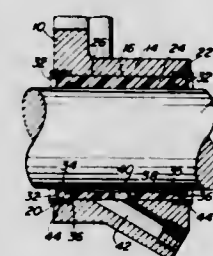
1. An improved pipe for transporting liquid-solid slurries in a pipeline which comprises at least one circumferentially complete helical rib formed in said pipe at

3,313,578
TRACTOR TRACK PIN BUSHINGS
 Dale J. Wright and David S. Gould, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Calif., a corporation of California
 Filed Apr. 5, 1965, Ser. No. 445,453
 1 Claim. (Cl. 305-57)



In a tractor track including pairs of track links articulately connected by track pins and pairs of links having bushings removably connected thereto, said bushings being arranged for engagement between teeth of a track driving sprocket, the improvement which comprises, a thick area on diametrically opposed wall portions of said bushing and a relative thin area on the diametrically opposed wall portions lying normal to the first wall portions wherein the bushing is oval, in cross-sectional throughout the tooth engaging portion thereof with the long diameter thereof lying in a plane extending transversely of said track, whereby the life of the bushing is extended since the walls thereof are thickened where the greatest wear is expected.

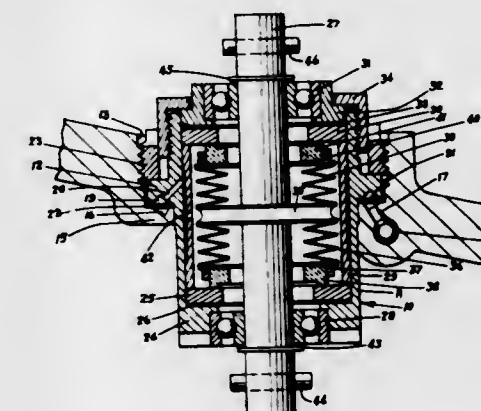
3,313,579
BRAKE CAM SHAFT MOUNTING
 Benjamin A. Seldenfeld, 57 E. 16th St., Chicago, Ill. 60605
 Filed Mar. 12, 1964, Ser. No. 351,457
 3 Claims. (Cl. 308-36.2)



1. A bearing assembly for a brake cam shaft comprising a support having a through-bore provided with counter-bored ends, a bushing having a single substantially resilient elongated main body portion having cylindrical inner and outer surfaces, said outer surface having a diameter throughout substantially that of the through-bore to permit said bushing to be inserted endwise through either of the opposite ends of the support, said inner surface of the bushing having a respective circumferential groove adjacent each of the two opposite ends of said bushing and inwardly of the opposite ends of the bushing, each said two circumferential grooves adapted to each receive a resilient sealing member which is nested within the grooves of the bushing, a sealing ring positioned on

3,313,580
COMBINATION BEARING AND ROTARY MECHANICAL SEAL

Demetrius G. Jelatis, Red Wing, Minn., Robert A. Olsen, Palatine, Ill., and Lester W. Haaker, Red Wing, Minn., assignors to Central Research Laboratories, Inc., Red Wing, Minn., a corporation of Minnesota
 Application Sept. 13, 1963, Ser. No. 308,915, now Patent No. 3,260,530, dated July 12, 1966, which is a division of application Ser. No. 98,372, Mar. 27, 1961, now Patent No. 3,164,267, dated Jan. 5, 1965. Divided and this application June 7, 1965, Ser. No. 461,689
 7 Claims. (Cl. 308-187.2)

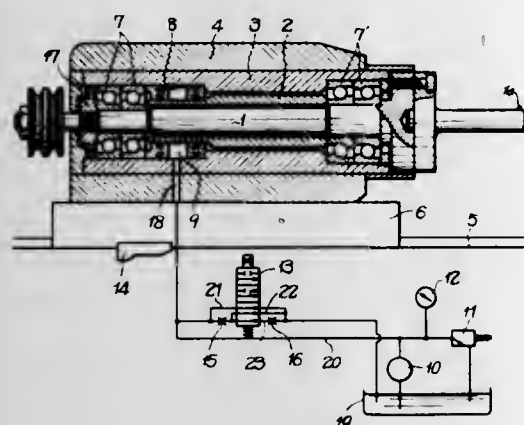


1. A combination bearing support and rotary mechanical seal for a shaft rotatable to transmit rotary motion through a barrier wall having an opening while preventing the transmission of a radio-active and similar dangerous substances comprising:

- (A) a housing including an enclosed chamber defined by a first cup-shaped member having an end wall with an axial opening and a second cup-shaped member having an end wall with an axial opening secured to the first cup-shaped member, one of said cup-shaped members having means for axially positioning said housing in the opening in said barrier wall,
- (B) a shaft extended axially through said first cup-shaped member and said second cup-shaped member,
- (C) bearing means positioned in the end wall openings and mounted on said end walls for rotatably supporting the shaft on said end walls,
- (D) at least one pair of mating seal ring surfaces enclosed within the housing chamber,
 - (i) one of said seal ring surfaces being integral with a first seal ring surrounding said shaft, said seal ring having an inside diameter substantially larger than the diameter of said shaft whereby said first seal ring has limited lateral movement with respect to the adjacent mating seal ring surface,
 - (ii) means for resiliently supporting said first seal ring for longitudinal movement along the axis of the shaft, said means comprising a thin flexible tubular gastight barrier wall surrounding said shaft and secured to said first ring in gastight relationship,
 - (iii) the other of said seal ring surfaces being integral with a second seal ring surrounding the shaft and fixed against movement relative to the housing in a direction along the longitudinal axis of the shaft.

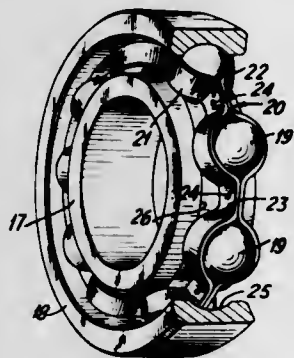
3,313,581 AUTOMATIC CONVERTER FOR THE ACCURACY OF ROTATION

Takeshi Kusakabe, Kariya-shi, Japan, assignor to Toyota Koki Kabushiki Kaisha, Kariya-shi, Japan
Filed July 15, 1964, Ser. No. 382,871
Claims priority, application Japan, July 16, 1963, 38/38,620
1 Claim. (Cl. 308—189)



Means for automatically changing a preload applied to bearings comprising a slideable saddle, roller bearings mounted on said saddle, a tool carrying spindle rotatably supported by said bearings, means providing a chamber adjacent at least one of said bearings, a pushing element slideably positioned in said chamber and capable of pushing against the outer race of said adjacent roller bearing, a fluid circuit connected to said chamber, means for supplying fluid under pressure to said fluid circuit and thus pushing said pushing element against the adjacent bearing outer race to place preloads thereon as required depending upon whether the spindle is to be rotated without a load, stopped or loaded for working the tool thereon, a valve provided in said circuit for controlling the fluid moving therein, and means carried by said saddle for controlling said valve depending on the positions of said spindle.

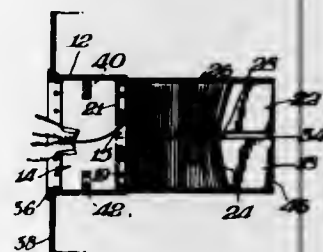
3,313,582
METHOD OF WELDING RETAINER RINGS
Henry Hubbell, Southington, Conn., assignor to The Fafnir Bearing Company, New Britain, Conn., a corporation of Connecticut
Filed Apr. 15, 1965, Ser. No. 448,511
8 Claims. (Cl. 308—201)



1. In the production of a welded anti-friction bearing retainer ring wherein two annular steel retainer rings having pocket sections for receiving rolling elements therein uniformly spaced along the annulus thereof separated by substantially flat faces are placed one against the other with their respective flat faces opposing each other, the improvement which comprises, providing a pair of said retainer rings having a carbon content at least at

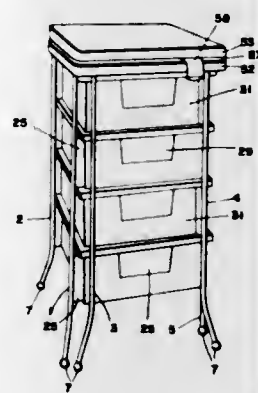
the surface of said flat faces not exceeding 0.06% by weight, contacting said rings together with their respective flat faces abutting each other, and soft welding said rings together simultaneously across each of said flat spaces, whereby a retainer ring assembly of improved strength and ductility is obtained at each of the welds.

3,313,583
TOWEL DISPENSER
William D. Turkington, Princess Anne, and John A. Todd, Salisbury, Md., assignors to Symington Wayne Corporation, Salisbury, Md., a corporation of Maryland
Filed May 19, 1965, Ser. No. 457,072
9 Claims. (Cl. 312—61)



1. A towel dispenser, said contact member being a pusher rod, said resilient means being a coil spring secured to said rod, tracks being provided in said housing for guiding the movement of said rod, opposite sides of said housing being slotted, said slotted sides comprising said tracks, said housing comprising a sleeve open at one end with said dispensing opening in the other end, a U-shaped channel member inserted in said sleeve and extending from said open end, a pair of L-shaped members inserted in said sleeve and extending from said open end, and said U-shaped member being spaced from said L-shaped members to form said slotted sides.

3,313,584
INFANT'S DRESSING TABLE
Elmer Rucker, 3715 Warrensville Road, Shaker Heights, Ohio 44122
Filed Aug. 30, 1965, Ser. No. 483,511
20 Claims. (Cl. 312—201)



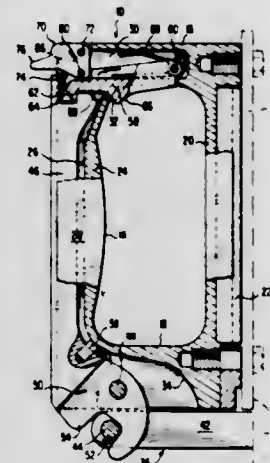
1. In a dressing table of the character described, a pair of end legs, a second pair of end legs, an intermediate rear leg, drawers supported by said first-named legs, said drawers having tubular corner portions, drawers supported by said second pair of legs and pivotally movable about said intermediate rear leg, said second-named drawers being in staggered relationship to said first-named drawers and having tubular extensions fitting into the tubular corner portions of said first-named drawers, said tubular extensions being pivotally movable about the axis of said tubular corner portions of the first-named drawers.

3,313,585
MERCHANDISE DISPLAY DEVICE
Sol J. Berger and John G. Rivenburgh, both of Chicago, Ill., assignors to Berger-Rivenburgh, Inc., Chicago, Ill., a corporation of Delaware
Filed Aug. 9, 1965, Ser. No. 478,237
6 Claims. (Cl. 312—259)



1. A merchandise display device comprising an up-standing supply chute having an opening at its lower part to permit merchandise to gravitate through the supply chute and pass outwardly through the opening, a shelf extending across the chute above said opening, walls joined to two opposite edges of the shelf and extending upwardly therefrom for supporting the shelf, and an additional wall extending between the first mentioned walls and projecting upwardly of the shelf and being adjacent to an edge of the shelf that extends between said two opposite edges and cooperating with said first mentioned walls to retain merchandise supported by the shelf.

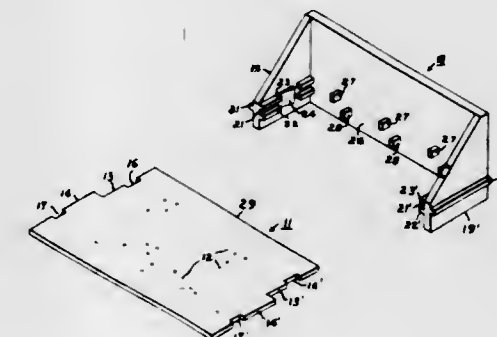
3,313,586
MODULAR DOOR HANDLE
Robert M. McClintock, Canoga Park, Calif., assignor to Aerpat Aktien Gesellschaft, Glarus, Switzerland, a corporation of Switzerland
Filed Aug. 21, 1964, Ser. No. 391,839
12 Claims. (Cl. 312—320)



12. In a handle and latch for facilitating installation and removal of a modular chassis unit from a cabinet, the handle defining an annular grip and having a hooked lever movably associated therewith, the lever engaging a keeper on the cabinet to lock the unit therein, a trigger system for selectively retaining and releasing the lever comprising a trigger mounted on the handle, said trigger being movable with respect to said handle between an engaging configuration adapted to engage and retain said

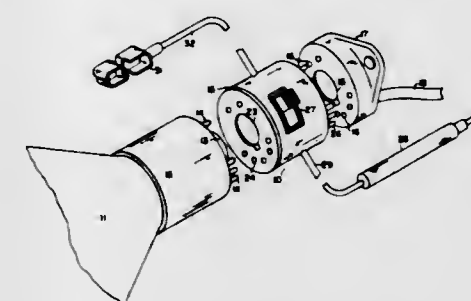
lever in a locked position wherein said trigger projects into the annulus formed by the handle and a releasing configuration adapted to disengage said lever, wherein said trigger conforms to the surfaces defining the handle, and means including a spring to bias said trigger in said engaging position and a lock to releasably lock said trigger in said engaging position.

3,313,587
DIAL ASSEMBLY
William O. Mongesku, Syracuse, and Ralph W. Richter, Whitesboro, N.Y., assignors to General Electric Company, a corporation of New York
Filed Oct. 21, 1965, Ser. No. 500,035
4 Claims. (Cl. 312—333)



1. A dial assembly comprising a dial member provided with a pair of spaced-apart mutually parallel arms and a pair of mutually parallel slots respectively provided on the mutually facing surfaces of said arms, a chassis board having mutually opposite edges adapted to slide into said slots, respectively, and means to lock said chassis board and said dial member together.

3,313,588
DEVICE FOR REACTIVATING CATHODE RAY TUBES
William T. Sada, 151 Nancy St., San Antonio, Tex. 78204
Filed May 28, 1965, Ser. No. 459,777
5 Claims. (Cl. 316—28)



1. A device interposed between a picture tube and a socket therefor to improve low cathode emission of said picture tube comprising a casing having first and second ends, a plurality of female connectors in the first end of said casing, a plurality of male connectors on the second end of said casing, a switch having first and second throw positions mounted in said casing, a probe connected to said switch and a clamp connected to said switch whereby in the first position of the said switch the picture tube is operative and in the second position of the said switch the probe connects to the cathode of said picture tube and the clamp connects to the control grid of the said picture tube.

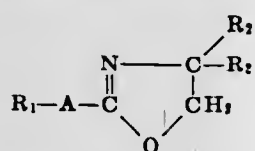
3,313,589

LEVELLING AGENTS FOR DYEING TEXTILE MATERIALS

Franz Landauer and Gerhard Weckler, Frankfurt am Main, and Martin Reuter, Kronberg, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Nov. 2, 1964, Ser. No. 408,418
Claims priority, application Germany, Nov. 2, 1963, F 41,177

7 Claims. (Cl. 8—35)

1. Process for producing even dyeings on nitrogen containing fibers and on cellulose fibers by adding to the dye bath a levelling agent of the formula



wherein R_1 represents an alkyl radical containing 3–20 carbon atoms, A stands for a member selected from the group consisting of the methylene radical, oxygen and sulfur atom, R_2 stands for a member selected from the group consisting of an alkyl group containing 1–4 carbon atoms and a radical $(CH_2)_y-(C_nH_{2n}O)_xH$, wherein n is an integer of 2 to 3, y is an integer of 1 to 3 and x is an integer of 4–100, R_3 represents the radical $(CH_2)_y-(C_nH_{2n}O)_xH$, wherein n , y and x have the meanings given above.

3,313,590

POLYESTER DYEING WITH POLYCHLOROBENZENE-ARYL GLYCOL ETHER DYE SOLUTION AND SAID DYE SOLUTION

Donald J. Delano and Frank J. Dombik, Cheektowaga, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Sept. 17, 1963, Ser. No. 309,385

7 Claims. (Cl. 8—55)

1. A composition for dyeing a synthetic hydrophobic material which comprises at least one acetate dyestuff; at least one aryl glycol ether having the general formula:



wherein R is a member of the group consisting of hydrogen and methyl, Ar is an aromatic hydrocarbon radical of the benzene series and n is an integer of from 1 to 2; and a polychlorobenzene selected from the group consisting of dichlorobenzene and trichlorobenzene.

3,313,591

PROCESS OF GRAFT POLYMERIZING ETHYLENICALLY UNSATURATED MONOMERS TO SOLID, SHAPED POLYCARBONAMIDES EMPLOYING HEAT AS THE SOLE GRAFT INITIATOR

David Tanner, McDaniel Crest, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Nov. 29, 1963, Ser. No. 327,107

5 Claims. (Cl. 8—115.5)

1. A process for modifying a shaped structure of a solid, high molecular weight, synthetic linear condensation polycarbonamide wherein the carbonamide units are linking units in the main polymer chain, while retaining the structural shape, which comprises heating the shaped polycarbonamide while in contact with a liquid containing polymerizable, ethylenically unsaturated monomer of molecular weight greater than 28, at a temperature between about 25° C. and about 100° C. with the proviso that said temperature be sufficient to effect graft-polymerization but below the melting point of said polycarbonamide, said heating constituting the sole means for pro-

ducing free radicals applied to said shaped mass prior to and during the above specified process of heating, and said heating being continued until a predetermined degree of graft-polymerization between said polycarbonamide and said unsaturated monomer has been achieved while retaining the structural shape of said polycarbonamide.

3,313,592

PROCESS OF PARCHMENTIZING CELLULOSE WITH AN AQUEOUS SOLUTION OF BORON TRIFLUORIDE AND A STRONG ACID

James M. Canon, Shaker Heights, and Daniel D. Bell, Fairview Park, Ohio, assignors to The Harshaw Chemical Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed Oct. 21, 1963, Ser. No. 317,783

10 Claims. (Cl. 8—119)

1. A process of modifying and treating a cellulose-containing material comprising bringing said material into contact with a solution comprising boron trifluoride, water and a strong acid and subsequently contacting said treated material with water.

3,313,593

PROCESS FOR THE PRODUCTION OF SODIUM CARBONATE AND HYDROCHLORIC ACID AND/OR CHLORINE

Willem Hendrik Aarts, Johannesburg, Transvaal, Republic of South Africa, assignor to African Explosives and Chemical Industries, Limited, Johannesburg, Transvaal, Republic of South Africa
Filed Aug. 19, 1963, Ser. No. 303,035

Claims priority, application Republic of South Africa, Aug. 23, 1962, 62/3,578
8 Claims. (Cl. 23—63)

1. A process for the production of compounds of the group consisting of sodium carbonate, sodium bicarbonate, and chlorine, which includes the steps of heating sodium chloride in the presence of oxygen gas and vanadium pentoxide at a temperature between 250° C. and 700° C., so as to produce sodium metavanadate and chlorine; forming an aqueous solution of the sodium metavanadate and ammoniating and carbonating the solution so as to form a precipitate of ammonium metavanadate and a mother liquor containing sodium bicarbonate and sodium carbonate; and heating the precipitated ammonium metavanadate so as to recover ammonia and vanadium pentoxide.

5. A process for the production of compounds of the group consisting of sodium carbonate, sodium bicarbonate, and hydrochloric acid, which includes the steps of heating sodium chloride in the presence of steam and vanadium pentoxide at a temperature between 250° C. and 700° C., so as to produce sodium metavanadate and gaseous hydrochloric acid; forming an aqueous solution of the sodium metavanadate and ammoniating and carbonating the solution so as to form a precipitate of ammonium metavanadate and a mother liquor containing sodium bicarbonate and sodium carbonate; and heating the precipitated ammonium metavanadate so as to recover ammonia and vanadium pentoxide.

3,313,594

METHOD FOR PRODUCING CRYSTALLINE ALUMINOSILICATE ZEOLITIC PARTICLES OF UNIFORM SIZE

Robert C. Wilson, Jr., Woodbury, N.J., assignor to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed July 5, 1963, Ser. No. 293,164

15 Claims. (Cl. 23—113)

1. A method for producing crystalline aluminosilicate zeolitic particles of uniform size comprising introducing into the aqueous reaction precursor mixture comprising a soluble silicate and a soluble aluminate of said aluminosilicate, a dispersant stable and soluble therein in an

amount sufficient to control the particle size and digesting the resulting mixture until crystallization of said aluminosilicate is achieved.

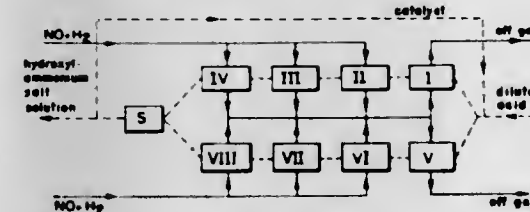
3,313,595

CONTINUOUS PRODUCTION OF HYDROXYLAMMONIUM SALTS

Kurt Jockers, Hermann Meler, Ernst Eberhardt, and Ludwig Taglinger, all of Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
Filed Feb. 14, 1964, Ser. No. 344,929

Claims priority, application Germany, Mar. 8, 1963, B 71,041

9 Claims. (Cl. 23—117)



1. In a process for the continuous production of hydroxylammonium sulfate by catalytic reduction of nitric oxide with hydrogen in contact with a platinum catalyst and dilute sulfuric acid, the improvement which comprises carrying out said reduction in a system of at least two separate successive stages wherein the dilute sulfuric acid is supplied to the first stage and continuously passed through each succeeding stage, a mixture of said hydrogen and nitric oxide is gassed into each separate stage and the resulting hydroxylammonium sulfate solution is withdrawn from the last stage, both the amount of said acid introduced into the first stage and the input gaseous hydrogen and nitric oxide into each stage being adjusted so as to maintain a decreasing acid concentration from stage to stage, the acid concentration in the last stage being such that the pH does not rise above 2.5 and the acid concentration in the first stage being at least about five times higher than the acid concentration in the last stage.

3,313,596

CARBONIZATION OF FIBROUS RAYON

Grady R. Hogg, Jr., James C. Reavis, Jr., and William E. Russell, Morganton, N.C., assignors to Great Lakes Carbon Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed July 26, 1963, Ser. No. 297,954

9 Claims. (Cl. 23—209.1)

1. A process of carbonizing rayon which comprises: heating the rayon under substantially non-oxidizing conditions to a temperature between 325° C. and about 390° C.; interrupting the heating step at a temperature in this range and flexing the rayon by mechanically or manually working the product to make it more supple; and continuing the heating of the rayon under non-oxidizing conditions to a temperature above about 500° C. to further the carbonization thereof.

3,313,597

METHOD FOR CONTINUOUS GRAPHITIZATION OF CARBONACEOUS THREAD

George E. Cranch and Julius S. Shinko, Fostoria, Ohio, assignors to Union Carbide Corporation, a corporation of New York
Filed Jan. 24, 1963, Ser. No. 253,593

8 Claims. (Cl. 23—209.3)

1. A process for continuously graphitizing a carbonaceous thread comprising at least about 90 percent by weight carbon, which process comprises providing a pair

of spaced electrical contacts, passing said thread in the direction of its length across said pair of contacts, and supplying an electric current through said contacts and through said thread in an amount sufficient to raise the temperature of said thread between said contacts as said thread passes over said contacts to graphitization temperature.

3,313,598

METHOD OF CONTROLLED HYDROGEN GENERATION

Martin E. Gluckstein, Farmington, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed June 7, 1965, Ser. No. 462,123

4 Claims. (Cl. 23—211)

1. A method of generating hydrogen at a controlled variable rate less than that resulting from the treatment of sodium aluminum hydride with water, said method comprising reacting sodium aluminum hydride with aqueous methanol having a concentration within the range of from 40 to 90 weight percent methanol.

4. A method of generating hydrogen at a controlled variable rate less than that resulting from the treatment of sodium aluminum hydride with water, said method comprising reacting sodium aluminum hydride with an aqueous solution of 35 weight percent sulfuric acid.

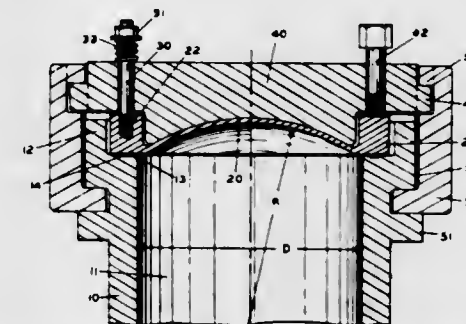
3,313,599

PRESSURE VESSEL AND CLOSURE

George B. Boon, Webster Groves, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed June 5, 1964, Ser. No. 372,953

4 Claims. (Cl. 23—290)

1. A pressure vessel comprising a pressure chamber



having a rounded opening, a radially enlarged shoulder of diameter D at the said opening, an inner seating surface within the said shoulder, a floating head seating against the said seating surface of the shoulder, the said floating head being concave relative to the said pressure chamber, with a radius of curvature R of from 0.7 to 1.3D and in combination therewith a restraining head against which the floating head elastically bears upon the application of pressure.

3,313,600

METHOD FOR PREVENTING CLOGGING OF FIBROUS FILTERS

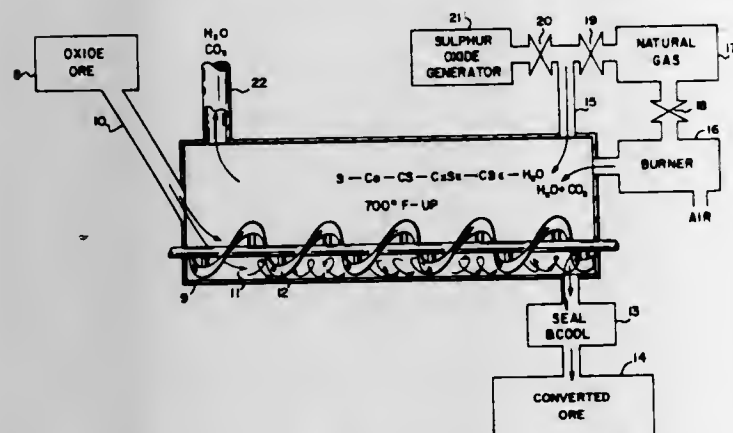
William Cundall Laughlin, Modesto, Calif., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 17, 1964, Ser. No. 338,314

4 Claims. (Cl. 23—312)

4. In the process of recovering barium sulfide values from a crude black ash mixture containing barium sulfide and water insolubles and wherein said mixture is mixed with water and passed through a fibrous filter to remove said insolubles from an aqueous effluent containing barium sulfide, and wherein said fibrous filter is subjected to rapid clogging by insolubles precipitating in situ on said

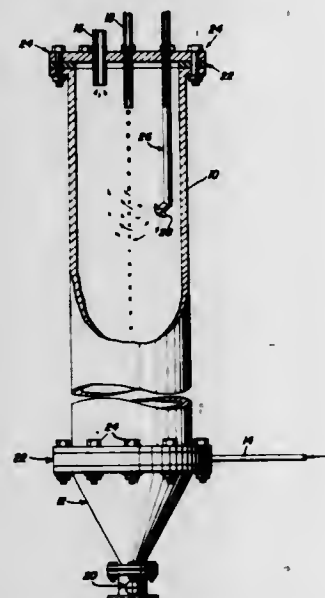
fibrous filter, the improvement which comprises maintaining an adherent, liquid, hydrophobic, oil film on the fibers of said filter thereby preventing in situ precipitated insolubles from rapidly clogging said fibrous filter.

3,313,601
RECOVERY OF METAL VALUES FROM OXYGENATED ORES
 Orrin F. Marvin, 1549 W. Madison, Phoenix, Ariz. 85007
 Filed Oct. 14, 1963, Ser. No. 316,030
 9 Claims. (Cl. 23-319)



1. A method of treating oxide ores containing oxides of metals selected from the group consisting of copper, lead, zinc, cadmium, antimony, tin, bismuth, nickel, cobalt, manganese, silver, germanium, indium, molybdenum, vanadium, gallium, iron, uranium, titanium, tantalum, columbium and chromium to convert said oxides to sulphides which comprises: heating said oxide ores in an atmosphere of a mixture of natural gas and sulphur dioxide in proportion to their combining weights of a low limit of 3 parts sulphur dioxide to 1 part natural gas to a high limit of 2 parts sulphur dioxide to 3 parts natural gas at a temperature of from 800° F. to 1850° F. at about atmospheric pressure.

3,313,602
METHOD FOR MAKING METAL OXIDE MICROSPHERES
 Jean G. Smith, Baltimore, and Herbert P. Flack, Ellicott City, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
 Filed Sept. 23, 1964, Ser. No. 398,670
 5 Claims. (Cl. 23-345)



1. A process for preparing highly regular spherical oxide particles having diameter in the range of 5 to 500 microns comprising the steps of:

- (a) treating an oxide aquasol with from about 2 to 20 mole percent hydrogen peroxide based on the moles of metal oxide in the sol,
- (b) introducing the treated oxide aquasol into the top of a column of counterflowing dehydrating solvent in the form of droplets,
- (c) introducing water into the column in a quantity sufficient to substantially lower the solubility for water of the dehydrating solvent, whereby a solubility gradient in the column is established, and insufficient to saturate the dehydrating solvent at the level in the column where it is introduced, the water being introduced at a point intermediate the top and bottom of the column and in the path of the falling oxide spheroids, and
- (d) removing the spherical particles formed from the bottom of the column.

3,313,603
BORANE COMPOUNDS AND THEIR PREPARATION
 William V. Hough, Gibsonia, and Joseph M. Makhlof, Mars, Pa., assignors to Callery Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania
 No Drawing. Filed May 29, 1964, Ser. No. 371,891
 10 Claims. (Cl. 23-358)

1. A compound of the formula $(R, R', R''NH)_2B_2H_6$, where R, R' and R'' are selected from the group consisting of hydrogen, and lower alkyl having from 1 to 5 carbon atoms in each group.

3,313,604
BRAZED JOINT
 Donald W. Crouch, Newtown Square, Pa., assignor to General Electric Company, a corporation of New York
 Original application Feb. 5, 1964, Ser. No. 342,757. Divided and this application July 12, 1966, Ser. No. 564,566
 2 Claims. (Cl. 29-183)



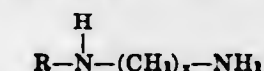
1. A brazed joint comprising:
- (a) a rod,
 - (b) a plate having an opening therein receiving said rod,
 - (c) a first ring positioned at one side of said plate and having protuberances extending radially inward therefrom and firmly engaging said rod,
 - (d) a second ring positioned at the other side of said plate and having protuberances extending radially inward therefrom and firmly engaging said rod,
 - (e) said plate being sandwiched between said rings,
 - (f) brazing metal positioned about the periphery of said rod and the wall of said opening and bonding said plate to said rod.

3,313,605
COMPOSITION INCLUDING A CARBIDE AND A BORIDE AND TOOL MADE THEREOF
 Richard M. Gill, Northampton, England, assignor, by mesne assignments, to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware
 Filed Aug. 7, 1963, Ser. No. 300,605
 Claims priority, application Great Britain, Aug. 13, 1962, 30,911/62
 8 Claims. (Cl. 29-192)

8. A hard, wear-resistant cutting tool composed of titanium carbide, titanium boride, and a metal binder, said binder consisting essentially of approximately equal parts by weight of molybdenum and nickel, said binder

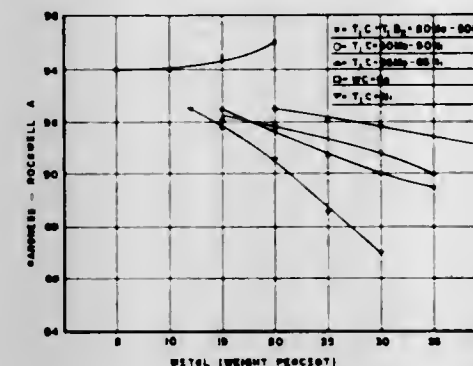
benig present in an amount of from about 5 percent to about 30 percent by weight of the total mass, and the balance consisting essentially of from about 70 percent

atoms per molecule and wherein each of said N-aliphatic substituted polymethylene diamines in (1) and (2) hereof has the general formula:



where R is an aliphatic hydrocarbon radical containing from 8 to 30 carbon atoms and x is a number from 2 to 10.

17. A gasoline motor fuel composition comprising a major amount of gasoline containing up to about 5 cubic centimeters of tetraethyl lead per gallon of gasoline to produce a gasoline fuel composition having a motor octane number of at least about 85 and a research octane number of at least about 95; about 0.003 to about 0.1 percent by weight of methyl diphenyl phosphate, the methyl diphenyl phosphate comprising at least about 0.1 times the theoretical amount required to convert the lead in said tetraethyl lead to lead phosphate; about 0.001 to about 0.01 percent by weight of a reaction product of lecithin and N-coco-trimethylene diamine; about 0.001 to about 0.01 percent by weight of N-tallow-trimethylene diamine naphthenate; and about 0.25 to about 0.75 percent by volume of a light lubricating distillate oil having a viscosity at 100° F. of from about 50 to about 500 Saybolt Universal seconds.



to about 80 percent by weight titanium carbide and from about 20 percent to about 30 percent by weight titanium boride, said tool being shaped by hot pressing.

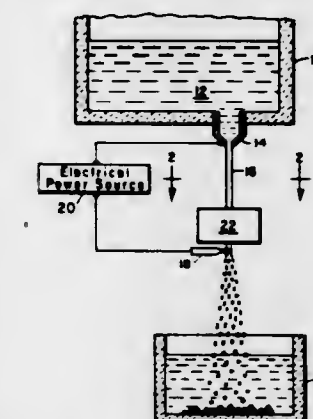
3,313,606
LIQUID HYDROCARBON STORAGE
 Lazzaro Alfredo Greguoli, Milan, Italy, assignor of two-thirds to Renato Donati and Danilo Preti, both of Rome, Italy
 No Drawing. Filed Feb. 14, 1966, Ser. No. 527,094
 Claims priority, application Italy, Oct. 30, 1958, 597,055/58, 598,383/58
 11 Claims. (Cl. 44-7)

1. A solidifiable gasoline mixture consisting essentially of
- (I) a mixture of (a) a resin condensation product of (1) formaldehyde with (2) at least one formaldehyde-condensable member selected from the group consisting of phenol and melamine; (b) a plasticizing compound selected from the group consisting of protein and hexahydric alcohol in an amount of at least 10 parts by weight per 100 parts by weight of said resin condensation product and (c) hardening accelerator in an amount of from about 1 to about 10% based on the weight of resin condensation product; and
 - (II) gasoline homogenized with (I).
2. A solidifiable gasoline mixture consisting essentially of
- (I) a mixture of (a) a resin product of (1) the condensation product of formaldehyde and melamine and (2) linear acrylic polymer; (b) a plasticizing compound selected from the group consisting of protein and hexahydric alcohol in an amount of at least 10 parts by weight per 100 parts by weight of component (a), and (c) hardening accelerator in an amount of from about 1 to about 10% based on the weight of the resin product; and
 - (II) gasoline homogenized with (I).

3,313,607
GASOLINE FUEL COMPOSITION
 Gardner E. Gaston, Tarentum, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
 No Drawing. Filed Aug. 12, 1964, Ser. No. 389,223
 20 Claims. (Cl. 44-58)

1. A gasoline motor fuel composition comprising a major amount of gasoline normally tending to form deposits in the carburetor of a spark ignition engine and a small amount, sufficient to inhibit the formation of said deposits, of a combination of (1) a reaction product of lecithin and an N-aliphatic substituted polymethylene diamine and (2) an oil-soluble hydrocarbon monocarboxylic acid salt of an N-aliphatic polymethylene diamine, wherein said monocarboxylic acid contains at least 8 carbon

3,313,608
METHOD AND APPARATUS FOR MANUFACTURING GLASS BEADS
 Edwin M. Guyer and Joseph E. Nitsche, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
 Filed Dec. 11, 1964, Ser. No. 417,666
 12 Claims. (Cl. 65-21)



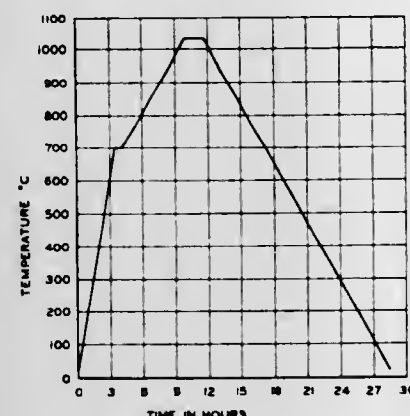
1. The method of agitating a stream of molten glass to facilitate the separation of said stream into particles of molten glass which comprises:

- (a) applying an electrical current through at least a portion of said stream,
 - (b) applying across at least said portion of said stream a magnetic field having lines of force with components perpendicular to the direction of flow of said electrical current and a magnitude sufficient to deflect said stream, and
 - (c) applying at least one of said electrical current and said magnetic field with variations in magnitude sufficient to agitate said portion of said stream.
9. Apparatus for forming glass beads which comprises:
- (a) means for providing a free-falling stream of molten glass,
 - (b) means for passing an electrical current along at least a portion of said stream,
 - (c) means for maintaining across at least a part of said portion of said stream a magnetic field having lines of force with components perpendicular to the path of said current, and
 - (d) means for causing at least one of said electrical current and said magnetic field to alternate.

3,313,609 METHOD OF MAKING HIGH STRENGTH NEPHELINE CRYSTALLINE GLASS

John E. Megles, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed June 18, 1963, Ser. No. 288,788
6 Claims. (Cl. 65-33)



1. A method for manufacturing a glass-ceramic body possessing a modulus of rupture when abraded of at least about 9790 p.s.i. wherein nepheline constitutes the principal crystal phase which comprises melting a batch for a glass composition consisting essentially, by weight on the oxide basis, of 48-51% SiO_2 , 24-27% Al_2O_3 , 15-18% Na_2O , 3-6% TiO_2 , and 1-3% MgO , simultaneously cooling the melt at least below the transformation point of the melt and shaping a glass body therefrom, placing said glass body on supporting means, and thereafter heating said glass body at a rate not exceeding about $10^\circ \text{C./minute}$ to a temperature between about $650^\circ\text{--}850^\circ \text{C.}$, maintaining said glass body within said range of temperatures for at least about $\frac{1}{2}$ -hour, subsequently heating said body at a rate not exceeding about $10^\circ \text{C./minute}$ to a temperature between about $900^\circ\text{--}1050^\circ \text{C.}$, maintaining said body within said range of temperatures for a period of time varying from at least about one hour at the lower extreme of said range to at least about $\frac{1}{2}$ -hour at the upper extreme of said range to attain the crystallization of nepheline, and then cooling said body to room temperature.

3,313,610 METHOD OF TIPPING-OFF EXHAUST TUBING

William E. Wilson, Cedar Grove, and Harold A. Zimmerman, Lake Hiawatha, N.J., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 9, 1964, Ser. No. 381,489
6 Claims. (Cl. 65-34)

1. The method of tipping-off a portion of a vitreous exhaust tubing which opens into and projects from a vitreous envelope, wherein the external pressure surrounding the tubing is greater than the pressure within said envelope, and wherein the portion of the tubing to be tipped-off is laterally surrounded by a portion of said envelope, which method comprises:

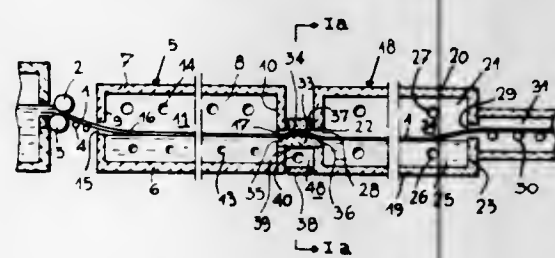
- placing a flame-shielding member about the portion of said tubing to be tipped-off and over the surrounding portion of said envelope;
- applying sealing flames laterally over said flame-shielding member and onto a limited peripheral portion of that part of said exhaust tubing to be tipped-off to heat such tubing portion to its softening temperature and permit such softened tubing portion to suck in toward said envelope in the form of a thin bubble which seals said exhaust tubing and is protected from further appreciable sealing-flame heating;

- permitting the now-protected formed sealing bubble to cool to less than its softening temperature and heating, with said laterally disposed sealing flames, the entire periphery of that portion of said exhaust tubing which is adjacent the formed sealing bubble and positioned away from said envelope with respect to said sealing bubble; and
- causing a separating movement between said envelope and that portion of said exhaust tubing which is now sealed from said envelope to cause the now-softened portion of said exhaust tubing to sever.

3,313,611 APPARATUS FOR MANUFACTURING GLASS RIBBON ON A MOLTEN METAL BATH

Jean De Keersmaecker, Couillet, Belgium, assignor to Glaverbel, Brussels, Belgium

Filed Sept. 26, 1963, Ser. No. 311,723
Claims priority, application Luxembourg, Sept. 28, 1962, 42,435
4 Claims. (Cl. 65-182)



1. Apparatus for manufacturing a glass ribbon comprising means for forming a glass ribbon in a highly plastic state, a tank containing a bath of molten material which is inert to air, the glass ribbon being fed onto the bath of molten material and advanced thereon, means for controlling cooling of the ribbon in said tank between a fire polishing temperature and a temperature above the melting point of the molten material, a second tank adjacent the first tank, said second tank containing a bath of molten material having a lower melting point than the material in the first said tank, said ribbon being fed from the first tank onto the bath of molten material in the second tank, a solid plate inert to glass at the operating temperatures in said tanks, said plate being disposed between the first and second tanks and having an upper surface on which the glass ribbon passes, said upper surface being somewhat above the level of the baths in the tanks, means for controlling the cooling of the ribbon in said second tank such that the ribbon is removed therefrom at a temperature at which the ribbon can be mechanically engaged without being damaged, and mechanical means for engaging the ribbon at its exit from the secondary bath for advancing the ribbon.

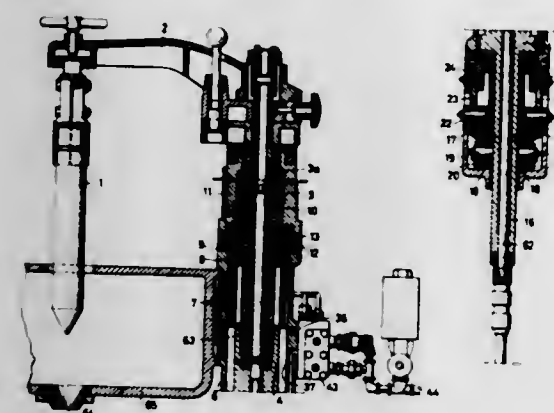
3,313,612 MOTION TRANSMITTING MEANS FOR GLASS FEEDER PLUNGER

Martin Zenker, Hagen, Westphalia, Germany, assignor to H. Putsch & Comp., Hagen, Westphalia, Germany

Filed May 18, 1962, Ser. No. 195,770
7 Claims. (Cl. 65-331)

- A glass feeder arrangement comprising, in combination:
 - a container for holding molten glass and formed with a downwardly open aperture;
 - a plunger arranged in said container for movement toward and away from said aperture;
 - a stationary support;
 - a main motor and auxiliary motor,
 - said motors each having a cylinder member, and a piston member arranged in the cylinder member for reciprocating movement;

- one member of at least one motor being secured against movement relative to said support;
- means directly attaching one of said members of said main motor to said plunger for reciprocating movement of said one member of the main motor relative to the other member of said main motor when said plunger moves toward and away from said aperture;



- motion transmitting means interposed between respective members of said motors and connecting said members for actuating movement of said main motor by said auxiliary motor;
- a source of pressure fluid; and
- control valve means interposed between said source and the cylinder members of said motors for actuating said motors in timed sequence.

3,313,613 SULFUR-COATED UREA FERTILIZER AND METHOD OF MAKING

Albert W. Green, Yazoo City, Miss., assignor to Mississippi Chemical Corporation, Yazoo City, Miss., a corporation of Mississippi

Filed Feb. 27, 1964, Ser. No. 347,794
11 Claims. (Cl. 71-28)

1. A method for combining elemental sulphur with urea to produce a uniform urea-sulfur physical mixture which comprises the step of admixing a minor proportion of solid elemental sulfur particles, moistened with a minor proportion with respect to the sulfur of aqueous formaldehyde, with a major proportion of solid urea particles, to form a uniform stable blend of sulfur particles adhering to the urea particles.

9. Solid urea particles having uniformly distributed on the surface thereof a minor proportion of substantially smaller particles of solid elemental sulfur particles bonded to the urea by a urea-formaldehyde composition, present at the interface between the urea and sulfur particles in a minor proportion with respect to both the urea and the sulfur.

3,313,614 METHOD OF MAKING AMMONIUM PHOSPHATE- CONTAINING FERTILIZER

Kenneth Sharples, Healing, near Grimsby, and Alan George Sinclair, Grimsby, England, assignors to Fisons Fertilizers Limited, Suffolk, England

No Drawing. Filed Feb. 26, 1964, Ser. No. 347,374
Claims priority, application Great Britain, Mar. 5, 1963, 8,661/63
9 Claims. (Cl. 71-34)

1. A process for forming a fertilizer material containing ammonium phosphate which comprises ammoniating a phosphoric acid-containing material selected from the group consisting of phosphoric acid and mixtures consisting of phosphoric acid and sulphuric acid to a pH in the range 5.5 to 6.7 such that a fluid slurry is obtained

containing 5-25% by weight of water and having a temperature in the range $100\text{--}130^\circ \text{C.}$ and mixing the slurry at a temperature in this range with an acidic substance selected from the group consisting of phosphoric acid, triple superphosphate, single superphosphate, sulphuric acid and mixtures of these, the acidic substance containing not more than 38% by weight of water based on the weight of the acid, the slurry being mixed with the acidic substance in such proportions as to give a mixture having a pH of 4.0 to 5.0, said mixture solidifying to give a handleable solid product which contains less than 10% by weight of water based on the weight of the mixture and which can be comminuted.

3,313,615 COATED FERTILIZERS

Richard E. Formaini, Colonial Heights, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Jan. 13, 1964, Ser. No. 337,180
14 Claims. (Cl. 71-64)

1. A waterproof fertilizer composition comprising a fertilizer composition having a Tyler mesh screen size between 8 and 12 coated with a waterproof coating comprising an inner layer of a finely divided water insoluble powder selected from the group consisting of sulfur and talc, the particle size of said powder being small enough to pass through 100 Tyler mesh screen, said inner layer being overlaid with dual coatings of gilsonite modified by applying between said dual coatings a salt of a fatty acid of an element selected from the group consisting of calcium and zinc, said fatty acid having between 12 and 18 carbon atoms.

3,313,616 PURIFICATION OF COPPER POWDER

Melvin E. Tuvell, 3657 St. Bernard, St. Ann, Mo. 63074

No Drawing. Filed May 26, 1965, Ser. No. 459,100
5 Claims. (Cl. 75-5)

1. In a process for the decarbonization of copper powder containing carbon impurities and which has been produced by a hydrometallurgical process wherein organic surface active agents were utilized during the reduction step, the improvement comprising the steps of heating said metallic powder to a temperature in excess of 400°F. but below the sintering temperature thereof, and while maintaining said temperature, contacting said metallic powder with an oxidizing gas for from about 5 to about 60 minutes whereby the carbon impurity therein is oxidized and substantially removed therefrom and whereby such oxidation subsequently promotes, after sintering of said powder, a reduction in the quantities of fines in the copper powder.

3,313,617 IRON-CONTAINING FLUX MATERIAL FOR STEEL-MAKING PROCESS

Thomas E. Ban, Cleveland Heights, Charles D. Thompson, South Euclid, and Carl J. Nelson, Lakewood, Ohio, assignors to McDowell-Wellman Engineering Company, a corporation of Ohio

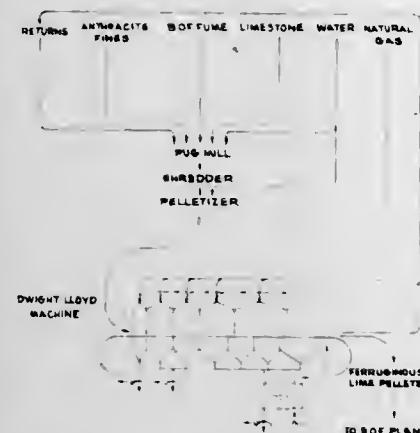
Filed Feb. 6, 1964, Ser. No. 342,892
6 Claims. (Cl. 75-5)

1. A process for making an iron-containing flux material for steel-making processes comprising the steps of:

- intimately mixing dry materials having a particle size finer than about 28 mesh to form a dry mixture having the following general formulation:
 - limestone—from about 60% to about 90%,
 - iron oxide—from about 6% to about 30%,
 - carbon—from about 1.5% to about 10%,
- moistening said dry mixture with water,
- pelletizing said moistened mixture to form sub-

stantially uniform green discrete pellets having a particle size in the range of from about 0.2" to about 0.5",

(d) charging said green pellets to a traveling grate indurating machine to a depth of from 6" to 16" to form a green pellet burden,



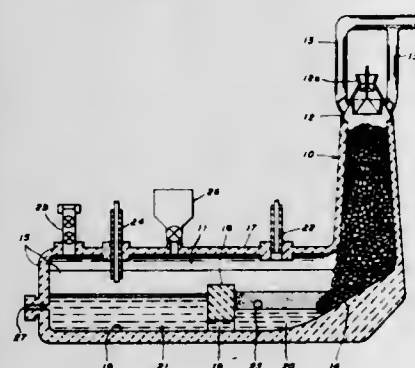
(e) drying said green pellets at a temperature of from about 300° F. to about 800° F., and

(f) indurating said pellets at a bed temperature of at least about 2200° F. for a period of from about 5 to about 18 minutes by passing air through said pellet burden at a rate of from about 175 s.c.f.m./sq. ft. to about 275 s.c.f.m./sq. ft.

3,313,618

METHOD AND APPARATUS FOR MAKING STEEL CONTINUOUSLY

Jerome Feinman, Monroeville Borough, and David A. Muskat, Oakmont, Pa., assignors to United States Steel Corporation, a corporation of Delaware
Filed June 11, 1964, Ser. No. 374,452
1 Claim. (Cl. 75—60)



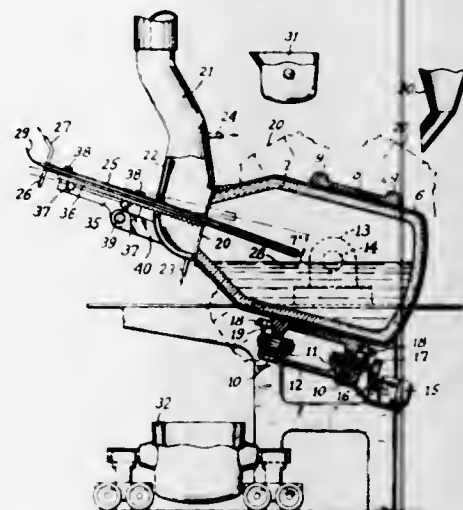
A method of making steel comprising charging iron ore, coal and limestone to the top of a stack in proportions of 200 to 600 pounds of coal and 150 to 500 pounds of limestone per ton of iron to be produced, discharging impure molten iron and slag from the bottom of said stack into one end of a metal-collecting chamber, discharging molten iron from the other end of said metal-collecting chamber into one end of a refining chamber, introducing a stream of oxygen to said refining chamber, partially burning fuel with oxygen in said metal-collecting chamber above the molten iron and slag therein to produce a reducing gas at a temperature of 3400° to 4300° F., mixing off-gas from said refining chamber with products of combustion in said metal-collecting chamber, maintaining gas in both chambers under a positive pressure which forces the gas mixture from said metal-collecting chamber up said stack to reduce the ore and be reduced by carbon in the coal, sealing both chambers to confine discharge of the gas to said stack, and periodically tapping slag from said metal-collecting chamber and steel from said refining chamber.

3,313,619

IRON REFINING PROCESSES

Georges Decamps, Thionville, Moselle, France, assignor to Societe Lorraine de Laminage Continu "Sollac," Paris, France

Filed June 16, 1965, Ser. No. 464,471
Claims priority, application France, Mar. 24, 1961, 856,679
1 Claim. (Cl. 75—60)



In a process for refining pig iron in a rotary furnace having an inclined axis by blowing oxygen into the furnace at a pressure not exceeding 2 kilos per square centimeter through an injecting lance which is arranged in the vertical medial plane of the furnace above the surface of the metal bath and which is movable both angularly to vary the angle of inclination of the lance and axially to vary the length of the lance projecting into the furnace; the steps of

(A) initially, during the firing of the refining process and the elimination of Si and Mn from the bath, axially disposing said lance to project a large length thereof into the furnace and to position the end of the lance from which the oxygen issues at a short distance from the surface of the bath with the axis of the lance being directed substantially at the center of said surface, angularly disposing said lance at the maximum angle of inclination thereof with respect to the horizontal, and delivering oxygen through said lance at a relatively low initial rate;

(B) after the elimination of Si and Mn, and during decarbonization, decreasing the angle of inclination of the lance and axially retracting the latter so that said end of the lance projects only slightly into the furnace and thus is spaced a large distance from said surface, and increasing the rate of delivery of oxygen through said lance to a value approximately 2.5 to 3.0 times said initial rate; and

(C) after the decarbonization, and during dephosphorization of the bath, increasing the projection of the lance into the furnace and also increasing the angle of inclination of the lance to dispose the latter intermediate the positions thereof for the elimination of Si and Mn and for decarbonization, respectively, and decreasing the rate of delivery of oxygen through said lance to a value which is approximately 2 times said initial rate.

3,313,620

STEEL WITH LEAD AND RARE EARTH METALS

Dante Corradini, Pistoia, Italy, assignor to E.I.T.E.R. S.p.A. Elettrochimica Italiana delle Terre Rare, Florence, Italy, an Italian corporate body

Filed Feb. 12, 1964, Ser. No. 344,261
Claims priority, application Italy, Feb. 18, 1963, 3,630/63

10 Claims. (Cl. 75—123)

7. A steel containing conventional elements together

with 0.10% to 0.80% lead and 0.02% to 0.30% of a rare earth metal, the balance consisting essentially of iron and said conventional elements.

3,313,621

METHOD FOR FORMING POROUS SEAMLESS TUBING

Lambert H. Mott 3rd, Hartford, Conn., assignor to Mott Metallurgical Corp., Hartford, Conn., a corporation of Connecticut

Filed June 15, 1965, Ser. No. 464,675
11 Claims. (Cl. 75—212)

1. The method of forming a porous seamless tube from sinterable metal particles, which comprises the steps of coating the particles of metal to be sintered with a thermosetting resin, charging the annular cavity of a mold defined between a tube of refractory material and a central rigid core of such mold, with such coated particles, heating the charged mold to a temperature sufficient to cure the resin but far below the sintering temperature of the metal particles, to form a semi-finished rigid tube in said refractory tube, thereupon after cooling of the mold, removing the core and heating the refractory tube with the semi-finished tube therein in a hydrogen atmosphere to the sintering temperature of the metal particles to burn away the resin thereby leaving a rigid porous metal tube.

7. The method set forth in claim 1 in which the sintered tube is resintered at a temperature approximately 100 to 200 degrees higher than the temperature of the first sintering operation which is between 1500° to 2100° F.

3,313,622

METHOD OF MAKING POROUS METAL TUBES

Pierre Potet, Grenoble, France, assignor to Societe des Poudres Metalliques et des Alliages Speciaux Ugine-Carbone, Paris, France, a corporation of France

No Drawing. Filed Mar. 16, 1964, Ser. No. 352,349
5 Claims. (Cl. 75—222)

1. A method of making thin walled, metal tubes of high porosity, high permeability, high mechanical strength and having substantially uniform sized pores which comprises,

(A) mixing metal powder and an extrusion binder at a temperature at which said binder is liquid to form a paste,

(1) said metal powder being in a tapped density state,

(2) said binder being volatile at the temperature of the sintering temperature of the powder, and

(3) the amount of said binder which is mixed with the metal powder being substantially equal to the volume of pores present in the metal powder when it is in the tapped density state,

(B) cooling said paste to substantially ambient temperature,

(C) extruding said paste to form a tube at substantially ambient temperature,

(D) placing said tube in a bed of powder inert to the metal powder and the binder under the prevailing conditions, and filling said tube with said inert powder, said inert powder having a specific surface such that the internal pore surface of the grains thereof is substantially about 10 to 100 times that of the external surface of said grains,

(E) heating said tube and said inert powder to melt the binder and transfer the binder from the tube to the inert powder by absorption, and

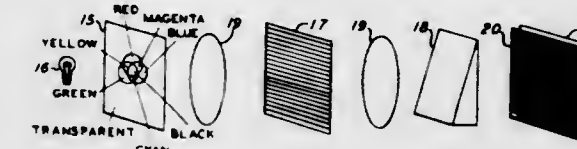
(F) further heating said tube and said inert powder to sinter the metal powder in the tube and volatilize the binder in said inert powder.

3,313,623

LINE SEQUENTIAL COLOR XEROGRAPHY

William E. Bixby, Deerfield, Ill., assignor, by mesne assignments, to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Sept. 5, 1961, Ser. No. 135,986
17 Claims. (Cl. 96—1.2)



1. A method of xerographic color reproduction comprising projecting an illumination pattern of a color image through an opaque line screen and a prism whereby said illumination pattern is dispersed into lines representing the primary spectral components of said illumination pattern; imposing an electrostatic field across a xerographic plate and, while said field is imposed, exposing said xerographic plate to said spectral lines to form a banded latent electrostatic image; and developing said banded latent electrostatic image by applying cyan color developer to bands exposed to red line spectra, magenta colored developer to bands exposed to green line spectra, and yellow colored developer to bands exposed to blue line spectra.

11. A xerographic color imaging system comprising means for converting an illumination pattern from an original to be reproduced into sequential line-segments, means for dispersing said sequential line-segments into sequentially adjacent spectra comprising bands of the three primary color components, a panchromatic xerographic plate, means to impose an electrostatic field across said xerographic plate, said xerographic plate being positioned at about the point in the optical path where the edges of the spectral components of each line-segment coincide with the edges of the spectral components of adjacent line-segments thereby forming a banded latent electrostatic image on said xerographic plate, and means for developing said colored bands in a repeating trichromatic sequence across said xerographic plate.

3,313,624

PHOTOGRAPHIC PRODUCTS AND PROCESSES UTILIZING INORGANIC CHLORATES AS ANTIFOGGANTS

Edwar B. Gutoff, Brookline, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed July 17, 1963, Ser. No. 295,811
7 Claims. (Cl. 96—29)

5. In a diffusion transfer process which comprises the steps of developing an exposed photosensitive element containing a silver halide emulsion to form an imagewise distribution of image-forming components in said photosensitive element, and transferring, at least part of said imagewise distribution, by diffusion, to a superposed image-receiving layer to provide thereon a transfer image, the improvement which comprises conducting said process in the presence of a chlorate salt, wherein the cation of said chlorate salt is selected from the group consisting of ammonium, alkali metals and alkaline earth metals.

3,313,625

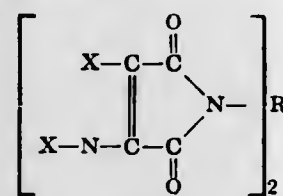
NOVEL PHOTOGRAPHIC PRODUCTS AND PROCESSES

William H. Ryan, Carlisle, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

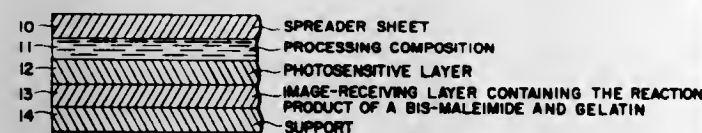
Filed Jan. 9, 1964, Ser. No. 336,785
4 Claims. (Cl. 96—29)

1. A photographic image-receiving element, for use in diffusion transfer processes, which comprises a support

having affixed thereto a layer containing silver precipitation nuclei and the reaction product of gelatin and a bis-maleimide of the formula:



wherein each X is selected from the group consisting of hydrogen and alkyl groups, and at least one X of each

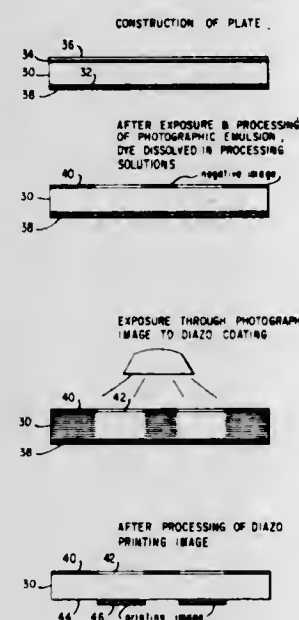


maleimide nucleus is hydrogen; and R is selected from the group consisting of lower alkylene and phenylene groups.

3,313,626 PROCESS OF MAKING A LITHOGRAPHIC PRINTING PLATE

Russell H. Whitney, 23 Romar Drive, Annapolis, Md.

Filed Aug. 1, 1962, Ser. No. 214,068
1 Claim. (Cl. 96-33)



A method of preparing a unitary lithographic printing plate comprising:

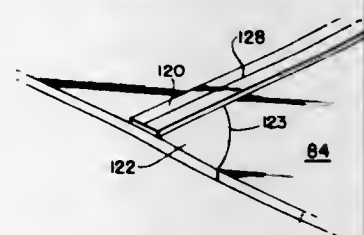
- coating one face of a light permeable plastic base selected from the group consisting of polyester, polystyrene and polycarbonate with a soluble anti-halation dye and a photographic emulsion over the anti-halation coating on one face, said light permeable plastic base having a grained hydrophilic surface on the opposite face;
- applying a light sensitive plate coating comprising a dilute solution of a diazo formaldehyde condensation product to the other face of the base;
- exposing the photographic emulsion to light projected from a design to render portions of the emulsion insoluble;
- applying a developer to said one face to remove the unexposed portions of the emulsion and the anti-halation dye forming the photographic image of the design on said one face;

exposing said other side to light projected through the base from said one side to render portions to the plate coating insoluble and developing the plate coating to remove the unexposed portions of the plate coating and form a reproducible printing image on said other side of the base.

3,313,627 PHOTOGRAPHIC FILM SHEETS WITH GRIPPING MEANS TO FACILITATE TEARING

Donald D. Casavant, Waltham, Nicholas Gold, Arlington, and Arthur J. Sable, Boston, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Dec. 21, 1962, Ser. No. 246,471
8 Claims. (Cl. 96-76)



1. In a composite photographic product including a photosensitive image-recording sheet and a second sheet each having a succession of spaced areas arranged for movement into superposition with one another during treatment with a liquid distributed between said superposed areas of said sheets, laminating said portions of said sheets, including said superposed areas, to each other during said treatment; in combination with said sheets:

means for severing portions of said second sheet each including one of said areas, from other portions of said second sheet intermediate said areas thereof; said means comprising a plurality of elongated strips each attached to the face of said second sheet which is arranged to face said image-recording sheet when said sheets are superposed located adjacent a transverse edge of one of said areas of said second sheet and extending transversely of said second sheet substantially from edge to edge thereof; each of said strips having a greater resistance to rupture and tearing than said second sheet; said second sheet being provided with a plurality of narrow, weakened portions substantially less resistant to tearing than the remainder of said second sheet, each of said weakened portions beginning at an edge of said second sheet at a location spaced from one of said elongated strips and to the side of said one strip opposite said one area of said second sheet with which said one strip is associated and extending inwardly from said edge along a line to a point immediately adjacent said one strip to define a section bounded by said weakened portion, said edge and said one strip for enabling said one elongated strip to be gripped following lamination of said sheets.

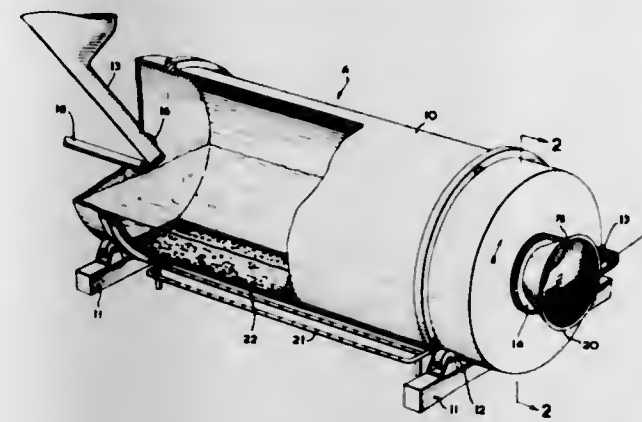
3,313,628 ELIMINATION OF SCALE FORMATION IN CONTINUOUS KETTLE BOILING OF BREWERS' WORT

Orlando O. Schaus and William E. Parker, Toronto, Ontario, Canada, assignors to Canadian Breweries Limited, Toronto, Ontario, Canada

Filed July 1, 1963, Ser. No. 291,615
Claims priority, application Great Britain, Oct. 24, 1962, 40,208/62

- 1 Claim. (Cl. 99-52)
- A process for continuously boiling wort comprising the steps of continuously passing the wort through an elongated vessel having its longitudinal axis substantially horizontal and abrading elements on the bottom thereof, heating the wort by applying heat to portions of the exterior of said vessel, and continually abrading portions

of the interior of said vessel that are opposite the portions of the exterior of said vessel that are heated to prevent a



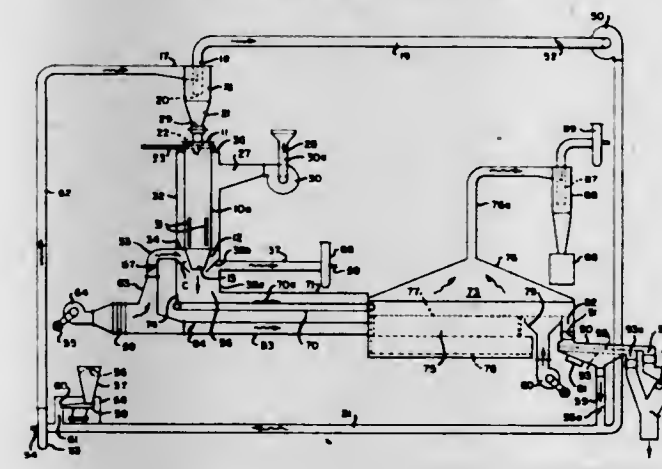
build-up of wort protein thereon by moving said abrading elements thereover, portions of the interior of said vessel being abraded as aforesaid by actuating said vessel.

3,313,629 AGGLOMERATING PROCESS FOR POWDERED FOOD SOLIDS OR THE LIKE

Ellis G. Thompson and Ervin C. Dubbels, Mora, and William Ostrom, Ogilvie, Minn., assignors to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware

Original application Aug. 24, 1962, Ser. No. 219,183.
Divided and this application Aug. 12, 1965, Ser. No. 485,143

3 Claims. (Cl. 99-56)



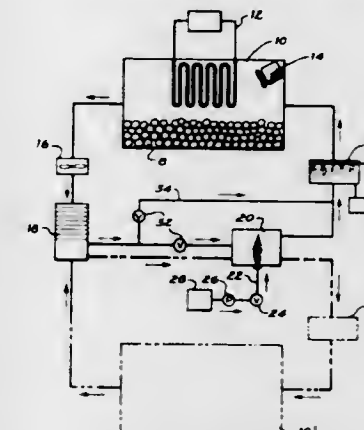
1. In a method of agglomerating powdered food solids and like powdered agglomerable solid materials, in combination, pneumatically conveying said powdered agglomerable solids in a carrier gas to an elevated location, separating substantially all of said powdered agglomerable solids from said carrier gas at said location, discharging said separate agglomerable solids in relatively sheet-like form in an enclosed agglomerating zone, providing a substantially V-shaped trough defined by sheets of steam and positioned so that the apex thereof is generally bisected by said sheet-like fall of powdered agglomerable solids, recycling said carrier gas with relatively fine unseparated powdered agglomerable solids in connection with said conveying, whirling the powdered agglomerable solids in said agglomerating zone to a selected extent around a vertical axis by introducing whirling gas into said zone, increasing the axial velocity component of flow of the powdered agglomerable solids in said agglomerating zone by passage thereof through a gradually constricted opening, discharging agglomerated product from said agglomerating zone by passage thereof through said constricted opening, and selectively introducing heated gas around said constricted opening to control the final moisture content of the solids, all the while maintaining the total

moisture content in the solids during processing below the solubility level for said powdered agglomerable solid.

3,313,630 PROCESS AND APPARATUS FOR PRESERVING ANIMAL AND PLANT MATTER

William T. Harvey, Jr., Alexandria, Va., assignor to Atlantic Research Corporation, Fairfax County, Va., a corporation of Virginia

Filed Aug. 28, 1964, Ser. No. 392,716
8 Claims. (Cl. 99-150)



1. A process for preserving animal and plant matter by retarding the respiration rate of said matter contained within a refrigerated storage chamber, the retardation being effected by controlling the content of oxygen and respiration products in the storage atmosphere as it is continuously circulated through a substantially closed circuit including said chamber, said process comprising the sequential steps of:

- (a) removing a portion of said storage atmosphere from said chamber,
- (b) purifying said atmosphere portion by removing carbon dioxide and other respiration products of said matter from said portion to provide a purified portion consisting essentially of nitrogen and oxygen,
- (c) oxidizing a less-than-stoichiometric quantity of oxygen-combustible fuel in the presence of said purified atmosphere portion to reduce the oxygen content thereof and resulting in a gaseous mixture including nitrogen, oxygen and water vapor, and
- (d) causing said resultant gaseous mixture to flow into said chamber to ultimately provide a storage atmosphere having a predetermined oxygen content lower than that normally found in atmospheric air, said oxygen content being determined by the specific type of matter being preserved in said storage chamber.

3,313,631 APPARATUS FOR PRESERVING ANIMAL AND PLANT MATTER

William Paul Jensen, Springfield, Va., assignor to Atlantic Research Corporation, Fairfax County, Va., a corporation of Virginia

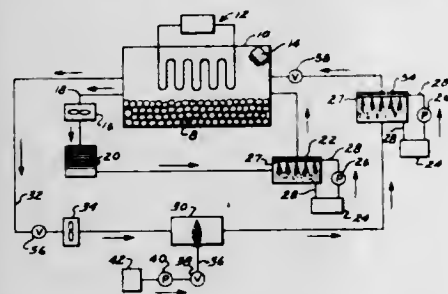
Filed Apr. 30, 1965, Ser. No. 452,235
3 Claims. (Cl. 99-271)

1. Apparatus for retarding the respiration rate of and preserving animal and plant matter, said apparatus, intended for use with a normally closed, refrigerated storage chamber having said matter therein, and including:

- (a) purification means for removing carbon dioxide and other respiration products of said matter from a first portion of the storage atmosphere in which said matter is maintained to provide a purified atmosphere portion consisting essentially of nitrogen and oxygen,
- (b) oxidation means for providing a less-than-stoichiometric quantity of oxygen-combustible fuel to

effect substantially complete combustion of said fuel in the presence of a second portion of said storage atmosphere to thereby reduce the oxygen content of said second atmosphere portion and to provide a gaseous mixture including nitrogen, oxygen and water vapor,

- (c) first closed circuit circulating means connected to said storage chamber and said purification means for causing said first atmosphere portion to sequen-



tially flow from said storage chamber to said purification means and back to said storage chamber, and (d) second closed circuit circulating means connected to said storage chamber and said oxidation means for causing said second atmosphere portion to sequentially flow from said storage chamber to said oxidation means and back to said storage chamber to ultimately provide a storage atmosphere having a predetermined oxygen content lower than that normally found in atmospheric air, said oxygen content being determined by the specific type of matter being stored in said chamber.

3,313,632

GOLD-SILVER COORDINATION COMPOUNDS AND DECORATING COMPOSITIONS CONTAINING SAME

Robert C. Langley, Millington, and Howard M. Fitch, Summit, N.J., assignors to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware
No Drawing. Filed Nov. 27, 1962, Ser. No. 240,426
9 Claims. (Cl. 106—1)

1. A decorating composition comprising a coordination compound of a gold mercaptide with an equimolar proportion of a silver compound selected from the group consisting of silver carboxylates and silver mercaptides, and an organic vehicle therefor.

3,313,633

HIGH TEMPERATURE FLAME SPRAY POWDER

Frank Nicholas Longo, Mineola, N.Y., assignor to Metco, Inc., Westbury, N.Y., a corporation of New Jersey
No Drawing. Filed July 24, 1963, Ser. No. 297,198
11 Claims. (Cl. 106—1)

1. A flame spray powder comprising a mixture of a boron containing nickel or cobalt base self-fluxing alloy powder and about 5-95% by weight, based on the total thereof with said self-fluxing alloy powder, of a powder of at least one metal selected from the group consisting of tungsten, rhenium, tantalum, molybdenum, columbium, and alloys thereof having a melting point about 3500° F. which powder is characterized by forming in its as flame-sprayed condition an adherent coating on a substrate.

3,313,634

CORROSION BARRIER AND INHIBITOR COATING AND METHOD

James W. Kinnavy, Oaklawn, and Earl D. Giggard, Clarendon Hills, Ill., assignors to Continental Can Company, New York, N.Y., a corporation of New York
Filed Apr. 1, 1964, Ser. No. 356,523
18 Claims. (Cl. 106—14)

1. The method of forming a corrosion barrier and inhibitor coating for metal to protect a surface thereof

from corrosion by aqueous substances comprising the steps of forming a mixture of a metal salt having the anion radical thereof selected from the class of naphthenate, tallate and octoate and having a metal cation radical which has a valence state of plus two and a semi-drying oil having an iodine value between 100 to 135 in a volatile inert organic solvent, the proportion of salt to semi-drying oil of said forming step in the range of 75:25 to 70:30 by weight, placing a layer of the mixture on a metal substrate in a thickness sufficient to have a dry coating weight of at least 0.5 mg. per square inch, and baking the layer at a curing temperature for a time sufficient to render the same non-tacky.

3,313,635

PROTECTIVE COATING COMPOSITIONS FOR USE IN AIRLESS SPRAY EQUIPMENT FOR COATING METALLIC UNDERBODIES OF AUTOMOTIVE VEHICLES

Raymond F. Wollek, Palos Heights, and John A. Guerra, Des Plaines, Ill., assignors to Daubert Chemical Company, Oak Brook, Ill., a corporation of Illinois
No Drawing. Filed June 1, 1965, Ser. No. 460,493
22 Claims. (Cl. 106—14)

1. A protective coating composition for use in airless spray equipment for coating metallic underbodies of automotive vehicles comprising a normally non-fluid, sprayable, thixotropic gel-like mixture containing as essential ingredients from 50% to 97%, by weight, of a solution of a substantially water-insoluble resinous coating material and an organic solvent which is a solvent for said material at ambient temperatures (said material constituting from 20% to 50%, by weight, of the thixotropic gel-like mixture), and from 1% to 25%, by weight, of said gel-like mixture of a gelling agent, said gelling agent being selected from a member of the group consisting of: (a) an in situ formed metal salt of a higher molecular weight fatty acid; (b) an in situ formed ammonium salt of a higher molecular weight carboxylic acid; (c) an in situ formed amine salt of a higher molecular weight carboxylic acid; and mixtures thereof, said normally non-fluid, sprayable, thixotropic gel-like mixture when sprayed on the underbody of a motor vehicle forming a firm, dry, impact-, corrosion- and abrasion-resistant coating having sound deadening properties.

3,313,636

FIRE RETARDANT BITUMINOUS COMPOSITIONS

Noel D. Blair, Tonawanda, and Claude Thomas Bean, Jr., Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Dec. 2, 1963, Ser. No. 327,504
14 Claims. (Cl. 106—15)

1. A fire retardant bituminous composition comprising of a bituminous material and a perhalo carbonyl pentadiene selected from the group consisting of perhalopentadienoic acid, haloaryl perhalopentadienoic acid wherein each aryl has from 6 to 12 carbon atoms, perhaloalkyl perhalopentadienoic acid wherein each alkyl has from 1 to 6 carbon atoms, the sodium salt of said perhalopentadienoic acid, the sodium salt of said haloaryl perhalopentadienoic acid, the sodium salt of said perhaloalkyl perhalopentadienoic acid, perhalocoumalin, haloaryl perhalocoumalin wherein each aryl has from 6 to 12 carbon atoms, perhaloalkyl perhalocoumalin wherein each alkyl has from 1 to 6 carbon atoms, di(perhaloethylene) ketone, perhalopentadiene oxide, and wherein each halogen is selected from chlorine, bromine and fluorine, in sufficient proportion to improve the fire retardancy of the bituminous material.

3,313,637

PROCESS FOR PRODUCTION OF LOST MODELS IN PRECISION CASTING OPERATIONS

Hans Schneider, Winterthur, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company
No Drawing. Filed July 30, 1963, Ser. No. 298,787
Claims priority, application Switzerland, Aug. 2, 1962, 9,285/62
9 Claims. (Cl. 106—38.5)

1. A process for the manufacture of a lost model for use in the making of precision castings which comprises mixing a major portion by weight of a finely divided crystalline material, a minor portion by weight of a finely divided organic material and a liquid solvent for said crystalline material to form a flowable pattern mixture for said lost model, said liquid solvent capable of being solvent absorbed by said organic material upon contact therewith to cause swelling of the organic material and being capable of forming a physical bond with said organic material breakable by alternations of pressure and compressing said pattern mixture to cause plastic deformation at a pressure sufficient to at least partially break said physical bond and to remove said absorbed solvent from said organic material whereby the released solvent partially dissolves the crystalline material and serves as lubricant in forming the lost model.

3,313,638

CASTABLE REFRACTORY

Howard Edwin Konrad, Somerville, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed May 17, 1965, Ser. No. 456,530
6 Claims. (Cl. 106—64)

3. A hydraulic setting castable refractory cement having improved working and cohesive properties, consisting essentially of approximately 5 to approximately 25% by weight of hydraulic calcium aluminate cement binder of low lime content, approximately 50 to approximately 85% by weight of calcined clay, 0 to approximately 20% by weight of alumina, and approximately 0.1 to approximately 0.25% by weight of aluminum chloride.

3,313,639

CELLULOSE ACYL ESTER FILM-FORMING COMPOSITION

Frederick M. Ball and John H. Davis, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Aug. 28, 1963, Ser. No. 305,200
3 Claims. (Cl. 106—171)

1. A film having high tensile strength and excellent clarity at low temperatures, consisting essentially of weight of a cellulose ester containing 30-50% acyl radicals of 3-4 carbon atoms, 0-5% acetyl and a viscosity of 0.1 to 20 seconds; 20-60 parts by weight of acyl trialkyl citrate, said acyl groups containing 1-6 carbon atoms and said alkyl groups each containing 1-6 carbon atoms; and, 10-30 parts by weight sucrose acetate isobutyrate.

3,313,640

FLOWABLE STARCHES

Kurt Bauer, Neuchâtel, Switzerland, assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 8, 1963, Ser. No. 300,932
Claims priority, application Switzerland, Aug. 23, 1962, 10,098/62
9 Claims. (Cl. 106—210)

8. Dry, readily flowable starch, characterized by the starch particles being enveloped in a film constituting about 0.1 to 40% of the weight of the starch and consisting of a poly-lower alkylene glycol having an average molecular weight of about 800 to about 50,000.

3,313,641

DISPERSIONS AND PROCESS THEREFOR

Peter Jochen Borchert, Elkhart, Ind., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana
No Drawing. Filed Nov. 18, 1963, Ser. No. 324,203
7 Claims. (Cl. 106—213)

1. A process for preparing stable dispersions of dialdehyde polysaccharides in water which comprises forming a slurry of dialdehyde polysaccharide in substantially metal ion-free water, said slurry containing up to about 30 weight percent solids, contacting said slurry with from about 0.5 to about 2.0 weight percent hydrogen peroxide based on weight of dialdehyde polysaccharide, said contact taking place at a reaction temperature of from about 75° C. to about 95° C. for a period of from about 30 to about 60 minutes, and then cooling the resulting dispersion to room temperature.

3,313,642

PROCESS OF MODIFYING THE SURFACE PROPERTIES OF POLYOLEFIN FILM

Richard D. Waugh, Pointe Claire, Quebec, Canada, assignor to Thomas Bonar & Co. (Canada) Limited, Montreal, Quebec, Canada
Filed Jan. 17, 1964, Ser. No. 338,503
7 Claims. (Cl. 117—11)



1. In a process for producing an article from a polyolefin film which has been subjected to a treatment in the group consisting of a differential heat treatment and an electrical treatment to provide on the surface of said film a modified polyolefin layer receptive to printing ink but of reduced heat sealability property, the step comprising abrading said layer to remove a portion thereof and to substantially restore said heat sealability property.

3,313,643

METHOD OF MAKING PHOSPHOR SCREENS

Phyllis B. Brannin, Lancaster, Pa., assignor to Radio Corporation of America, a corporation of Delaware
No Drawing. Filed June 21, 1966, Ser. No. 559,124
10 Claims. (Cl. 117—33.5)

1. The method of making a plurality of phosphor screens comprising the steps of:

- applying a portion of initial slurry onto a first substrate, said initial slurry including phosphor particles predominantly in the size range of 1 to 20 microns with a minor weight proportion of said particles greater than 10 microns in size, said portion of initial slurry being more than that required to provide a coating of desired thickness on said first substrate,
- spreading said portion of initial slurry over said first substrate to said desired thickness,
- removing from said first substrate the fraction of said portion of initial slurry which is in excess of that required to provide said coating of said desired thickness,
- mixing said removed fraction with makeup slurry to produce a reconstituted slurry, said makeup slurry containing phosphor particles predominantly in the size range of 1 to 20 microns with a larger weight proportion of particles greater than 10 microns in

size than the minor weight proportion in said initial slurry,
(e) and then dispensing a portion of said reconstituted slurry onto a second substrate.

3,313,644

METHOD OF DECORATING SEMICRYSTALLINE BODIES

Joseph W. Morrissey, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

No Drawing. Filed Nov. 19, 1964, Ser. No. 414,051
6 Claims. (Cl. 117-37)

1. A method of coloring or decorating a crystalline or semicrystalline body made by the controlled crystallization by heat treatment of a glass body which comprises applying to a selected portion of the surface of the body a substantially flux-free decorating composition containing at least one coloring agent selected from the class consisting of iron, cobalt, nickel, and compounds thereof, and thereafter heating the body between about 900° C. and about 1175° C. for about 1 to 4 hours to cause said coloring agent to penetrate within and below the surface of said portion and enter into a solid state reaction therewith.

5. A semicrystalline body of the type described having within and below its surface in selected areas a coloration imparted thereto by infusion of at least one coloring agent selected from the class consisting of iron, cobalt, nickel, and compounds thereof, said coloring agent entering into a solid state reaction therewith.

3,313,645

PAPERMAKER'S FABRIC WITH ADHESIVE RESIN ENCASED YARNS

Joseph R. Wagner, Knoxville, Tenn., Tibor F. Matuska, Kentville, Nova Scotia, Canada, and Hugh E. Garrett, Markham, Ontario, Canada, assignors to Huyck Corporation, Stamford, Conn., a corporation of New York

No Drawing. Filed Mar. 29, 1963, Ser. No. 269,136
2 Claims. (Cl. 117-76)

1. An improved papermaker's fabric comprising yarns made from materials selected from the group consisting of polyester resin fibers, siliceous fibers, polyamide fibers, and polyolefin fibers, wherein said yarns have been coated with an adhesive resin selected from the group consisting of epoxy resins and acrylic resins, which firmly adheres to the surfaces of said yarns without any substantial penetration thereof by said resin such that said yarns will be caused to be joined together at their intersections and the diameter and stiffness of said yarns will be increased, wherein said adhesive resin comprises between about 5 to 40% by weight of said fabric, said fabric having improved dimensional stability, abrasion resistance, and stiffness.

3,313,646

METHOD AND AN APPARATUS FOR SUBJECTING A FILM TO A HEAT TREATMENT, AND THE COATED FILM THUS TREATED

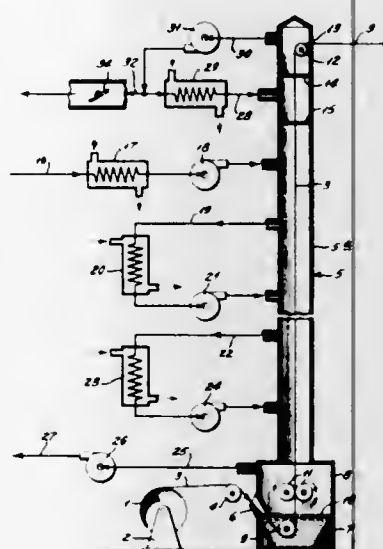
Roelof van Zalinge, Palestro, Pavia, Italy, assignor to Algemene Kunstzede Unie, N.V., Arnhem, Netherlands, a corporation of the Netherlands

Filed May 16, 1963, Ser. No. 280,823
Claims priority, application Netherlands, May 18, 1962, 278,604

8 Claims. (Cl. 117-119.2)

1. In a method for subjecting a coated film bearing a solvent to a heat treatment in which the film is guided vertically upwards through an integral shaft sealed from the ambient at its lower end and through which a heated gas is circulated, the improvement comprising passing said film before it leaves the shaft through a first constriction and then through an adjustable constriction, and passing

cooling gas under elevated pressure into said shaft in a zone between the first and adjustable constrictions and



3,313,647

PRESSURE-SENSITIVE ADHESIVE SHEETS COATED WITH A POLYVINYL ETHER PRESSURE-SENSITIVE ADHESIVE COMPOSITION CONTAINING A TACKY POLY-ACRYLATE

Henry P. Weymann, Bound Brook, N.J., assignor to Johnson & Johnson, a corporation of New Jersey

No Drawing. Filed Oct. 25, 1963, Ser. No. 318,837
13 Claims. (Cl. 117-122)

1. A pressure-sensitive adhesive coated sheet containing on at least one side thereof a polyvinyl ether pressure-sensitive adhesive composition consisting essentially of from about 1.4 parts by weight to about 14.7 parts by weight of a normally tacky polyacrylate per 100 parts by weight of polyvinyl ether, said polyacrylate being a derivative of an aliphatic alcohol containing from 2 to 8 carbon atoms copolymerized with vinyl acetate.

3,313,648

TREATMENT OF GLASS GLAZING VULNERABLE TO IMPACT BY INSECTS

Robert B. Johnson, Wichita, Kans., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware

No Drawing. Filed Apr. 5, 1965, Ser. No. 445,687
3 Claims. (Cl. 117-124)

1. A method of maintaining glass glazing vulnerable to impact by insects comprising the steps of, scrubbing said glass glazing with an abrasive cleaner on a soft absorbent fabric, scrubbing the resulting glazing with a detergent containing alkaline cleaner remover on a soft absorbent fabric, rinsing the resulting glazing with a cleaner remover, drying the resulting glazing, directly applying by rubbing to the resulting clean glazing having reactive hydrogen thereon a paste comprising a mixture of dimethyldichlorosilane and methyltrichlorosilane and colloidal silica and carried on a soft fabric, allowing said paste to remain in contact with said glazing from five to fifteen minutes and reacting said dimethyldichlorosilane and methyltrichlorosilane with said reactive hydrogen on said glass to form a chemically and physically united coating on said glass comprising the residue of said reacting, rubbing off the excess of said paste with a soft fabric, and removing insect residue impacted on said glazing by flood-

ing same with kerosene followed by flooding with a detergent containing methanol solution of an alkaline cleaner.

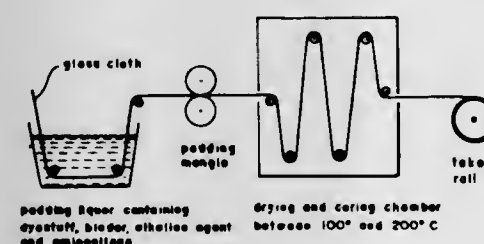
3,313,649

DYED AND PRINTED GLASS FIBERS AND A PROCESS FOR DYEING AND PRINTING GLASS FIBERS

Michele Vesca and Wolfgang Schwindt, Ludwigshafen (Rhine), Werner Dietrich, Mannheim, Ulrich Perkuhn, Ludwigshafen (Rhine), Gerhard Faulhaber, Mannheim, and Hans Wolf and Hans Wilhelm, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

Filed Dec. 9, 1964, Ser. No. 417,230
Claims priority, application Germany, Dec. 14, 1963, B 74,667

8 Claims. (Cl. 117-126)



1. A method of imparting color to glass fibers which comprises: applying to the glass fiber an aqueous dye composition containing

- a pigment dye,
- as a binder, a film-forming water-dispersable addition copolymer bearing side chains which contain a hydrocarbon radical of 3 to 4 carbon atoms in which a hydroxy group and a chlorine atom are substituted on vicinal carbon atoms, and
- 0.1 to 10% by weight with reference to the aqueous dye composition of an aminosilane having a hydrophobic action on the glass fiber and promoting adhesion between the copolymer and the glass surface; and drying and fixing the applied composition by heating it at a temperature above 90° C. in the presence of an alkaline reacting agent.

3,313,650

COATING COMPOSITION AND PROCESS FOR APPLYING THE SAME

Arthur E. Rauber, Greenville, S.C., Edgar A. Verchot, Decatur, Ala., and Stanley E. Mikeski, Augusta, Ga., assignors to Southern Research Institute, a corporation of Alabama

No Drawing. Filed Oct. 21, 1963, Ser. No. 317,765
10 Claims. (Cl. 117-127)

1. The process of coating a metal surface selected from the group consisting of iron, aluminum and alloys thereof comprising:

- applying to said surface a coat of a mixture comprising approximately 10 parts by weight of a metal oxide selected from the group consisting of zinc oxide, magnesium oxide, bismuth oxide and mixtures thereof and from 10 to 14 parts by weight of a dialkyl phosphite selected from the group consisting of dimethyl hydrogen phosphite, diethyl hydrogen phosphite, dipropyl hydrogen phosphite, dibutyl hydrogen phosphite, bis (2-ethylhexyl) hydrogen phosphite and mixtures thereof,
- initially curing said coat in a damp condition for a period of from 90 minutes to 2 hours at ambient temperature, and then
- curing said coat on said surface for a period of 24 to 48 hours at ambient temperature.

ERRATUM

For Class 117-138.8 see:
Patent No. 3,313,796

3,313,651

STYRENE POLYMERS COATED WITH A COMPOSITION COMPRISING POLYVINYL ACETAL, PHENOL-ALDEHYDE RESIN AND POLYMETHYL ETHER OF HEXAMETHYLOL MELAMINE
Richard J. Burns, New Market, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Jan. 23, 1964, Ser. No. 339,609
11 Claims. (Cl. 117-138.8)

1. The method for preparing solvent resistant, gas impermeable coatings on styrene polymer substrates which comprises contacting said styrene polymer substrates with a composition comprising

- about 1 part by weight of a polyvinyl acetal resin prepared from an aliphatic aldehyde having from 1 to 6 carbon atoms
- about 4 to 7 parts by weight of a heat reactive, ethanol soluble phenol-aldehyde condensation product
- about 1.5 to 9 parts by weight of a polymethyl ether of hexamethylol melamine, and air drying and crosslinking said coating composition.

3,313,652

METHOD FOR MAKING AN ELECTROLUMINESCENT DEVICE

Robert J. Blazek, Mendham, and Ivan Buck, Jr., East Orange, N.J., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 3, 1963, Ser. No. 277,943
4 Claims. (Cl. 117-215)



1. In a method of manufacturing an electroluminescent device which incorporates as a component thereof a separate layer principally comprising barium titanate carried on and adhered to a rigid substrate, the improvement which comprises, flame spraying barium titanate as a continuous layer of predetermined thickness onto said substrate.

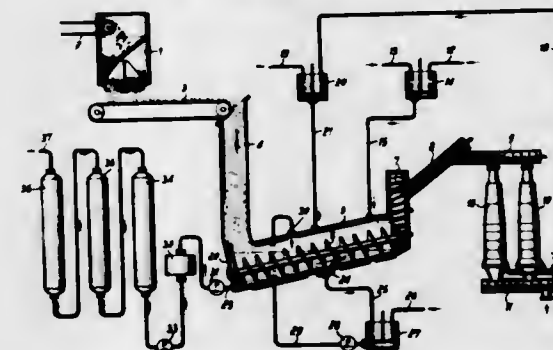
3,313,653

PRODUCTION OF JUICE FROM SUGAR-CONTAINING PLANT MATERIAL

Erland Viktor Jung, Landskrona, Sweden, assignor to Knapsack Aktiengesellschaft, a German corporation

Filed Oct. 6, 1964, Ser. No. 401,918
Claims priority, application Germany, Oct. 11, 1963, J 24,545

10 Claims. (Cl. 127-44)



1. In the process for the production of juice from starting material including a sugar containing plant material comminuted into chips and an acid extracting liquid,

the improvement which comprises adding at least one member selected from the group consisting of polyphosphoric acid and polyphosphoric acid in combination with a dicarboxylic acid to said starting material.

3,313,654

PROCESS FOR RECOVERING AMYLOSE FROM ACID-HYDROLYZED STARCH

David P. Macarus and Paul R. Shildneck, Decatur, Ill., assignors to A. E. Staley Manufacturing Company, Decatur, Ill., a corporation of Delaware
No Drawing. Filed Mar. 27, 1964, Ser. No. 355,420
10 Claims. (Cl. 127-69)

1. The process of recovering amylose from acid-hydrolyzed starch which comprises providing an aqueous solution of acid-hydrolyzed thin-boiling starch, the said solution having a temperature ranging from about 130 to about 200° F., a pH from about 4.0 to about 9.0 and a starch dry substance content of from about 0.25% to about 15% by weight based on the weight of the solution, combining carbon tetrachloride with the solution, the amount of carbon tetrachloride being not less than 10 parts by weight for each 100 parts by weight of starch dry substance, maintaining the temperature of the solution at from about 130 to about 200° F. and the pH of the solution at from about 4.0 to about 9.0 to effect precipitation of the amylose, and separating the precipitated amylose from the solution.

3,313,655

PROCESS FOR DEIONIZING SUGAR SOLUTIONS

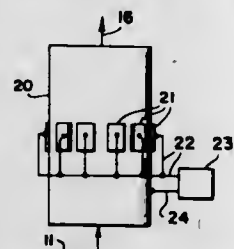
Akimitsu Miyahara, Iruma-gun, Takaaki Oomagari, Sooka, and Hikoji Tsuchiya, Tokyo, Japan, assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Dec. 27, 1963, Ser. No. 331,349
4 Claims. (Cl. 127-46)

1. The method of purifying a dilute sucrose solution containing dissolved salts which comprises the two essential steps of directing the solution first through a bed of strongly acidic cation exchange resin in which the cross-linking agent is present in amounts ranging from about 10.5% to about 50% of the resin copolymer, and subsequently through a bed of strongly acidic cation exchange resin in which the cross-linking agent is present in amounts ranging from about 1% to about 10%, both resins being in the hydrogen form:

3,313,656

METHOD OF OPERATING A FUEL CELL UTILIZING ULTRASONIC MIXING MEANS REMOVED FROM THE FUEL CELL

Erik A. Blomgren, South Pasadena, and Stanislaw J. Szpak, Mountain View, Calif., assignors, by mesne assignments, to Mobil Oil Corporation, a corporation of New York
Filed May 23, 1963, Ser. No. 282,669
13 Claims. (Cl. 136-86)



1. An improved method of operating a fuel cell having a pair of spaced-apart fuel and oxygen electrodes with an electrolyte compartment therebetween and employing fuel and electrolyte in admixture which comprises employing a fuel which is non-reactive with the electrolyte and has an equilibrium solubility therein of less than about 0.005 mole per liter, forming the fuel into a fine

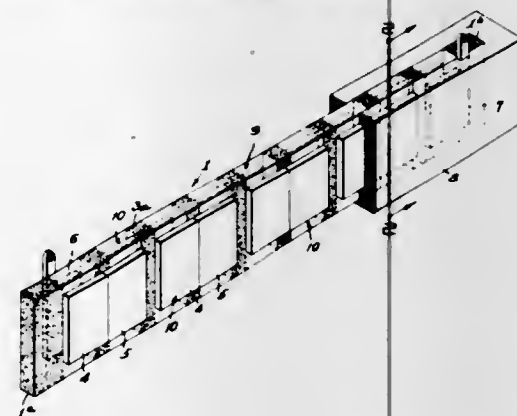
state of subdivision in a zone removed from said fuel cell by impinging ultrasonic waves on the mixture to physically agitate and disrupt the same, thereby to form a fine dispersion of fuel and electrolyte, flowing said dispersion to the fuel electrode, thereby making said fuel available in finely sized finely dispersed form thereto, coincidentally therewith producing a flow of current through the cell which is greater than if the fuel were not finely dispersed in the electrolyte, then flowing the dispersion out of said fuel cell and replenishing the fuel content thereof, subjecting the replenished dispersion to the action of said ultrasonic waves in said zone, and recirculating the dispersion to said fuel electrode.

3. Method of claim 2 wherein said waves emanate from a plane in which lies the interface between the fuel and electrolyte.

3,313,657

COMPACT RESERVE TYPE STRIP BATTERY

Reuben E. Wood, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Army
Filed Nov. 19, 1951, Ser. No. 257,170
5 Claims. (Cl. 136-90)



1. A reserve type battery which is activated by applying an electrolyte thereto, said battery comprising in combination: a separator comprising a long thin strip of porous material and a non-conducting, non-porous electrolyte repellent material impregnated in said strip at spaced intervals so that said separator is divided into porous material sections and electrolyte repellent material sections, said porous material sections serving as receiving sections for said electrolyte; a plurality of plates longitudinally positioned on both sides of said separator, each of said plates being positioned over two porous material sections and an electrolyte repellent material section therebetween, one portion of each of said plates serving as an anode element, and the other portion serving as a cathode element, the plates on one side of said separator being staggered in relation to the plates on the opposite side of said separator so that said anode and cathode elements of the plates on one side are positioned opposite the cathode and anode elements respectively of the corresponding plates on said opposite side to form a strip battery of series connected cells; means for affixing said plates to said separator; and electrolyte repellent material completely coating said separator and said plates except for one edge of said separator, said electrolyte being injected into said porous material sections along said one edge to activate said battery.

3,313,658

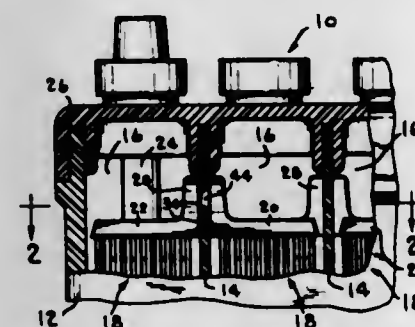
STORAGE BATTERY CONSTRUCTION

Anthony Sabatino, Minneapolis, Minn., and Daniel Orlando, Milwaukee, Wis., assignors to Globe-Union Inc., Milwaukee, Wis., a corporation of Wisconsin
Continuation of application Ser. No. 214,083, Aug. 1, 1962.
This application Sept. 16, 1965, Ser. No. 491,499
3 Claims. (Cl. 136-134)

1. A connector means for electrically connecting the

plates of two battery elements of a storage battery through an aperture in a partition wall of the battery case comprising:

- a first metal strap member electrically connected to the positive plates of one element;
- a second metal strap member electrically connected to the negative plates of the second element;
- an imperforate connector lug formed on each of said strap members, each of said connector lugs having a



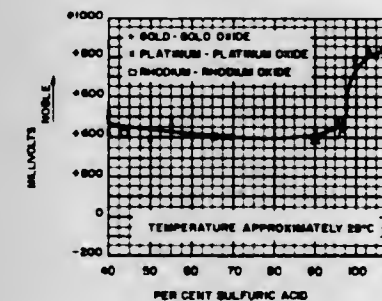
face thereon overlying the aperture on opposite sides of the partition wall; and

- a metal connector portion positioned inside said aperture with its opposite ends connected to said lug faces on said connector lugs, the material of said metal connector portion being in sealing engagement with the wall of said aperture and said connections between the ends of said connector portion and said lug faces being heat fused connections.

3,313,659

OXIDE COATINGS ON METALS

Richard L. Every, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Feb. 10, 1966, Ser. No. 527,381
10 Claims. (Cl. 148-6.11)



1. The method of forming a metal-metal oxide electrode which comprises:

- immersing a metal consisting essentially of a metal selected from the group consisting of platinum, rhodium, tantalum, palladium, hafnium, gold, molybdenum, tungsten, scandium, manganese, and mixtures thereof in a molten bath consisting essentially of a salt selected from the group consisting of alkali metal nitrates and alkali metal chlorates for a period of time sufficient to form an oxide coating.

3,313,660

CUTTING ARTICLES AND STOCK THEREFOR AND METHODS OF MAKING THE SAME

Milton B. Vordahl, Beaver, Pa., assignor to Crucible Steel Company of America, Pittsburgh, Pa., a corporation of New Jersey
No Drawing. Filed July 15, 1963, Ser. No. 295,234
12 Claims. (Cl. 148-11.5)

1. A method of producing flat metal articles for cutting

blades, comprising forming a laminated stock consisting of an inner layer comprising a strong carbide-forming metal and outer layers comprising a mechanically workable, matrix metal having substantial solid solubility for carbon and forming therewith carbides relatively less stable than those formed by the strong carbide-forming metal of the inner layer, heating the laminated stock to diffuse the carbide-forming metal of the inner layer into adjacent portions of the outer layers, carburizing the stock, annealing the carburized stock to effect diffusion of carbon therethrough and to form a centrally disposed, discrete, interior layer of matrix metal containing a substantially homogeneous dispersion of stable carbides, partially decarburizing the stock to substantially eliminate the relatively more unstable carbides and dissolved carbon and to restore the outer layers of matrix metal to a mechanically workable condition, and rolling the stock to a desired, final article thickness.

3,313,661

TREATING OF SURFACES OF SEMICONDUCTOR ELEMENTS

Frederick L. Blake, deceased, late of Scottsdale, Ariz., by Betty Ann Dickson, administratrix, Scottsdale, Ariz., assignor to Dickson Electronics Corporation, Scottsdale, Ariz., a corporation of Delaware
Filed May 14, 1965, Ser. No. 461,583
2 Claims. (Cl. 148-187)



1. The method of forming a planar diode which comprises:

- (a) applying a masking material to a relatively small surface of a wafer comprising a doped monocrystal of a semiconductor material,
- (b) contacting surfaces of said wafer with disperse molecules of a halide of a glass-forming metal selected from Groups III, IV, and V of the periodic table,
- (c) hydrolyzing said metal halide molecules with water vapor to form a glass-like oxide film adherent to said exterior surface including said masked surface,
- (d) removing said masking material and adherent film to form a coating free surface, and
- (e) diffusing a doping material into the wafer at said surface to form a PN junction, the edges of which extend under the said glass-like film.

3,313,662

MARAGING STEEL

Frank A. Malagari, Jr., Freeport, Pa., assignor to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
No Drawing. Filed Aug. 20, 1964, Ser. No. 390,994
5 Claims. (Cl. 148-31)

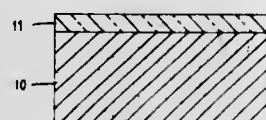
4. An article of manufacture characterized by possessing an aged martensitic microstructure, a tensile strength of about 200 k.p.s.i., good ductility, excellent impact strength and a composition consisting essentially of up to about 0.05% carbon, less than about 0.2% manganese, less than about 0.1% silicon, about 9% nickel, about 7% cobalt, about 5% molybdenum, from 0.10% to 1.0% vanadium, and the balance essentially iron with incidental impurities.

3,313,663

INTERMETALLIC SEMICONDUCTOR BODY AND METHOD OF DIFFUSING AN N-TYPE IMPURITY THEREINTO

Tsu-Hsing Yeh, Poughkeepsie, and Robert M. De Fries, Hyde Park, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Mar. 28, 1963, Ser. No. 268,667
9 Claims. (Cl. 148-187)



1. The method of diffusing an N-type conductivity semiconductor body comprising:

maintaining said body at a temperature below about 400° C. while forming a thin coherent film, having a thickness in the range of 2,000-20,000 angstroms, of silicon monoxide which is ineffective at temperatures for diffusing an impurity therein to react therewith and adversely affect the electrical properties of said body; and

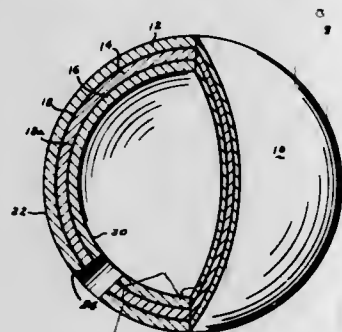
diffusing from a vapor source said impurity through said film into said body to establish a doping level above 10¹⁷ atoms/cubic centimeter, said film preventing the substantial formation of an undesired compound which would otherwise form as the result of a chemical reaction between said impurity and an element of said body and would prevent effective diffusion of said impurity into said body.

3,313,664

METHOD FOR MAKING LAMINATED PRESSURE VESSELS

Theodore J. Reinhart, Jr., 4116 Woodedge Drive, Bellbrook, Ohio 45305

Original application Dec. 4, 1962, Ser. No. 242,335, now Patent No. 3,207,352, dated Sept. 21, 1965. Divided and this application Aug. 12, 1963, Ser. No. 301,682
4 Claims. (Cl. 156-155)



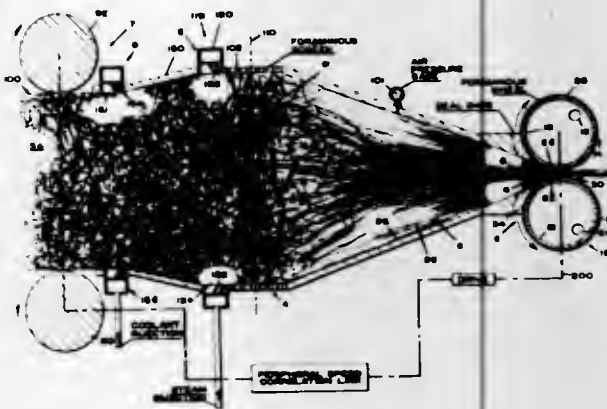
1. The method of forming a filament wound laminated pressure vessel, having at least one opening and at least two contiguous shells, comprising the steps of:

- constructing a first heat-curable shell from a first filament and a bonding material, said first filament being wound onto a preformed mandrel made from a solidified material that is liquefiable; then,
- constructing a succeeding heat-curable shell from a second filament and a bonding material, said second filament being wound onto said first shell, said second filament having a higher modulus of elasticity than said first filament, the vessel formed by said shells being provided with said one opening; then,
- heat curing the shells; and then,
- liquefying said mandrel and pouring said liquid from said vessel through said one opening.

3,313,665

METHOD FOR MAKING FIBROUS BODIES

Richard M. Berger, Richmond, Va., assignor to American Filtrona Corporation, a corporation of New York
Continuation of application Ser. No. 285,293, June 4, 1963. This application June 28, 1966, Ser. No. 561,288
10 Claims. (Cl. 156-180)



1. In a method of making a dimensionally stable article from a body of thermoplastic filaments, the steps of:

- continuously passing said filaments at a predetermined first average linear speed into a first confined area having at least a portion thereof expanding in the direction of travel of said body;
- continuously feeding gas under pressure into said first confined area to separate said filaments;
- continuously passing said filaments into a second confined area contiguous with said first confined area;
- heterogeneously depositing said filaments in said second confined area in adjacent and overlapping relation to one another in generally successive layers extending transverse to the direction of travel of said filaments;
- continuously permitting said gas under pressure to escape from said second confined area;
- continuously passing said generally successive layers into a third confined area contiguous to said second confined area, and injecting hot vaporized liquid therein onto said layers whereby said vaporized liquid passes through said layers and to bond said filaments and layers together as a stable article; and,
- continuously removing said layers from said third confined area at a second average linear speed less than said first predetermined average linear speed.

3,313,666

METHODS OF FORMING TUBULAR BODIES

William R. Battersby, Lexington, Mass., Clarence O. Karl, Hartford, Wis., and John S. Kelley, Wenham, Mass., assignors to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Original application May 31, 1961, Ser. No. 113,912. Divided and this application Dec. 31, 1962, Ser. No. 248,488
4 Claims. (Cl. 156-210)

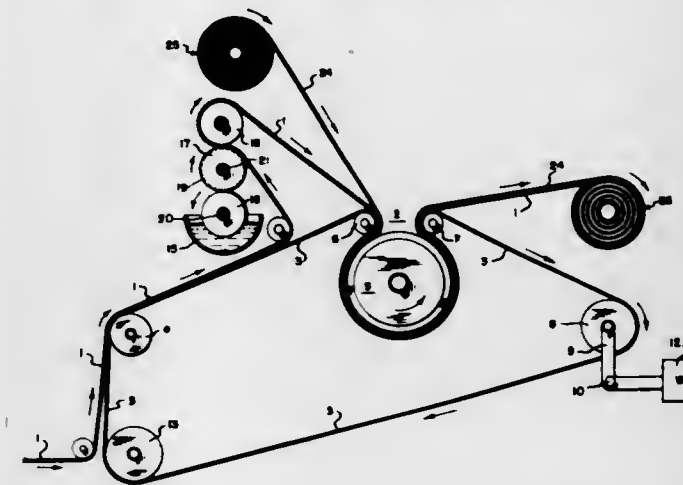
1. The method of forming a tubular body comprising the steps of applying polyethylene base thermoplastic resinous material in heat softened condition as a seal for a side seam interior edge of a fiber core sheet having impervious surface layers on its opposite faces, said resinous material comprising at least about 15% by weight of resinous polyethylene, and said applied resinous material extending in rounded contour from a marginal portion of one impervious layer to a marginal portion of the opposite impervious layer and covering fibrous core material at said

3,313,668

METHOD OF BONDING FABRIC MATERIALS

Edward L. Rouillard, Guilford, Maine, assignor, by mesne assignments, to Coin Sales Corporation, New York, N.Y., a corporation of Delaware

Filed June 17, 1963, Ser. No. 288,207
3 Claims. (Cl. 156-291)



1. The method of bonding materials together with an adhesive comprising the steps of:

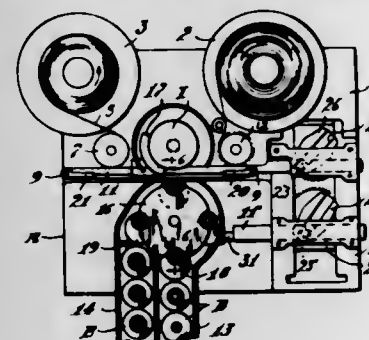
- feeding a first material in one direction along a predetermined path,
- feeding adhesive in the opposite direction along said path and in continuous lengths spaced from each other transversely of said path,
- bringing said first material into contact with said adhesive while said first material and adhesive are moving along said path in opposite directions whereby said adhesive is caused to contract and adhere to said first material on one surface thereof,
- metering the amount of adhesive presented to said first fabric whereby said contraction causes said adhesive to form individual droplets and adhere to said first fabric at spaced locations,
- bringing said one surface of the first material into contact with a second fabric, and
- holding said fabrics together to cause them to adhere to each other at said spaced locations.

3,313,667

PRINTING TAPERED ARTICLES BY HEAT TRANSFER

Carl A. Flood, Framingham, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada

Filed Dec. 11, 1964, Ser. No. 417,571
3 Claims. (Cl. 156-230)



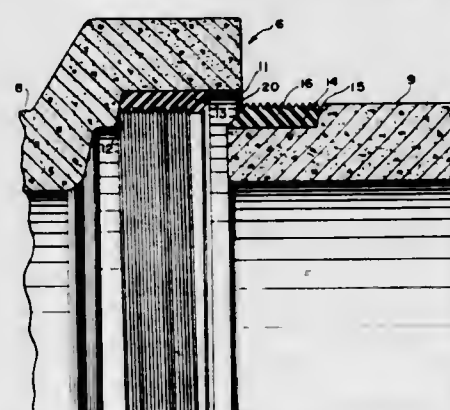
2. In transferring ink to an article having a conical surface from a strip of material having a base coating printed with ink, the method which comprises feeding the strip at a predetermined linear velocity along one side of the article in a direction transverse to the axis of the article, rotating the article about its axis so that said side of the article travels in said direction at a velocity substantially equal to said velocity at the zone of its periphery opposite the longitudinal median line of the strip, with corresponding lesser and greater velocities at the small and large ends of the conical surface, and hot-pressing the strip against the article along a line of tangency during a portion of a revolution of the article, the melting point of said coating being lower than that of the ink so that said hot-pressing softens the coating more than the ink, whereby the ink adheres firmly to the article and the slippage between strip and article at the ends of the article occurs in the coating and not in the ink.

3,313,669

METHOD OF FORMING A FLEXIBLE SEAL BETWEEN TELESCOPICALLY ENGAGEABLE PIPE SECTIONS

Peter Alan Say, Sydney, New South Wales, Australia, assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

Filed Mar. 4, 1964, Ser. No. 349,376
Claims priority, application Australia, Mar. 19, 1963, 28,490/63
6 Claims. (Cl. 156-294)

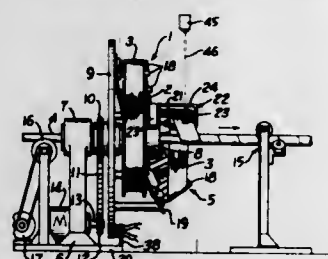


1. A method of forming a flexible seal between a pair of telescopically engageable pipe sections which have their respective mating end portions formed with a bell and spigot, said bell having an inner wall bounded at its inner

end by an abutment wall and said spigot having an outer wall bounded by an abutment shoulder remote from the free end of the spigot, said method including the steps of adhering a resilient outer sealing member of sleeve-like formation to the inner wall of said bell in engagement with said abutment wall, adhering a resilient inner sealing member of sleeve-like formation to the outer wall of the spigot in engagement with said abutment shoulder, the dimensions of said sealing members, said bell and said spigot being predetermined so that the outside diameter of said inner sealing member when adhered to said spigot is greater than the inside diameter of the outer sealing member when adhered to said bell, and finally forcing the spigot with its inner sealing member into the outer sealing member located within the bell to a seated position wherein the outer sealing member surrounds the inner sealing member in such a manner that both sealing members are held under compression between the inner and outer walls of the bell and spigot respectively so as to form an effective flexible seal between the pair of pipe sections.

3,313,670

APPARATUS FOR FABRICATING PLASTIC PIPE
Noble Sherwood, Shorewood, Wis., assignor, by mesne assignments, to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed Jan. 22, 1963, Ser. No. 253,198
14 Claims. (Cl. 156-359)



1. An apparatus for fabricating a reinforced plastic article, comprising a mandrel, a distribution member mounted adjacent the mandrel, means for winding a strip of reinforcing material impregnated with a resin over the distribution member and onto the mandrel in a generally helical pattern, heating means for supplying heat to the distribution member to melt the resin as the strip passes over said member, heat sensing means for sensing the heat of the portion of the strip passing from said distribution member to said mandrel, and means operably connecting said heat sensing means with said heating means to vary the output of said heating means in accordance with the temperature of said strip.

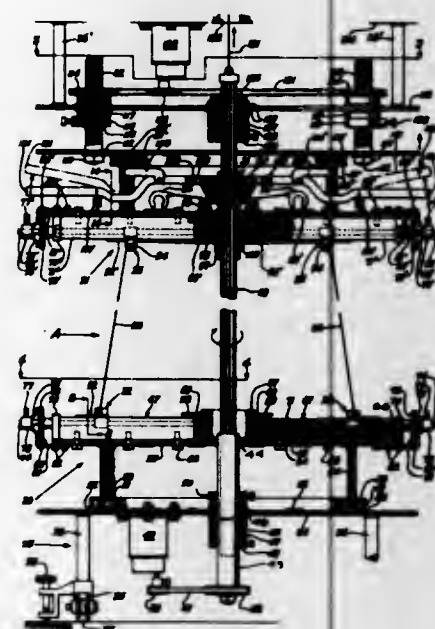
3,313,671

TENSIONED STRAND TYPE DUCT FORMING MECHANISM

Glen Ritchie, 13209 Quito Road,
Saratoga, Calif. 95070
Filed July 22, 1963, Ser. No. 296,647
12 Claims. (Cl. 156-425)

11. A duct forming mechanism comprising:
(a) a pair of rotary strand supporting members mounted in opposed, co-axial, axially spaced relation,
(b) a plurality of spring biased reels on one strand supporting member,
(c) a plurality of radially adjustable strand retaining elements mounted on each strand supporting member,
(d) a strand wound on each reel and passed in guided relation through one strand retaining element on said one strand supporting member,
(e) a ball end on the free end of each strand,
(f) each strand retaining element on the other strand supporting member being formed to receive and releasably retain one of the strand ball ends,

(g) means for simultaneously rotating both strand supporting members about their common axis with the strands extending between the strand supporting member while applying a layer of duct forming material on the form defined by the strands, and

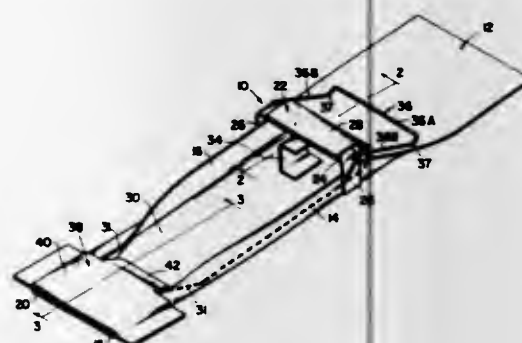


(h) means for removing a completed duct section thus formed from the strands and from the space between the strand supporting members.

3,313,672

APPARATUS FOR FORMING A SINGLE MULTI-LAYERED STRIP OF MATERIAL FROM PLURAL STRIPS

Charles P. Covino, Upper Montclair, N.J., assignor to General Magnaplate Corporation, Belleville, N.J., a corporation of New Jersey
Filed Nov. 1, 1965, Ser. No. 505,941
10 Claims. (Cl. 156-467)

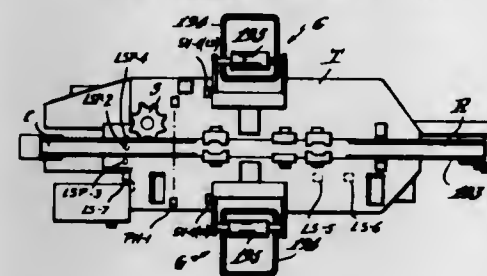


1. A device for forming a single multi-layered strip of material from a plurality of strips of material moving therethrough comprising a base, first and second guide means, said first guide means being mounted on said base, said second guide means longitudinally extending from said first guide means in spaced relation to said base to define an elongated slot therebetween for receiving and guiding a plurality of strips to form the same into a single multi-layer strip of material, and third guide means on said base exerting a force on said second guide means to bias said second guide means toward said base to maintain adjacent ones of a plurality of strips of material in surface-to-surface engagement.

3,313,673

LABELING MACHINE

Sidney T. Carter, Shrewsbury, Mass., assignor to Geo. J. Meyer Manufacturing Co., Cudahy, Wis., a corporation of Wisconsin
Filed June 27, 1963, Ser. No. 291,140
18 Claims. (Cl. 156-566)



1. A labeling machine of the kind wherein bottles to be labeled are advanced uninterruptedly by a conveyor along a substantially rectilinear path into and through a label-receiving zone, and wherein, while the bottle is passing through the label-receiving zone, it is prevented from turning by a hold-down device of the endless band type, and wherein spacer means, acting in exact time, relatively to the motion of the conveyor, disposes bottles in uniformly spaced relation as they approach the label-receiving zone, and wherein a grip-finger, within the label-receiving zone, is operative to take a label from a picker and apply it to the bottle; presser means within the label-receiving zone for pressing the label into firm adhering contact with the bottle, and primary and secondary spotting means operative accurately to orient the bottle just before it is engaged by the hold-down device, characterized in that the primary spotting means comprises endless chains disposed at opposite sides, respectively, of the conveyor path, each of said chains having a run which is parallel to the conveyor path, means for so driving said chains that said runs move in the same direction and at the same linear speed as the conveyor, one of said chains supporting a series of spaced, independently rotatable bottle-contacting rolls, and means for turning said rolls while in contact with the periphery of the bottle thereby to turn the bottle about its own axis, as the bottle is advanced by the conveyor, and the other chain having spaced elements operative, by engagement with a spotting element forming a part of the bottle, to terminate rotation of the bottle while permitting the bottle to continue to advance through the label-receiving zone.

3,313,674

LAMINATE PANEL

Howard G. Mathews, Levittown, N.J., assignor to Foam Products Corporation, Thomasville, Ga., a corporation of Georgia
Filed Oct. 2, 1962, Ser. No. 227,788
2 Claims. (Cl. 161-96)



1. A laminate structural panel having high abrasion-resistant characteristics, comprising a base portion of epoxy resin, a wire cloth secured within said base portion adjacent to and spaced from one outer side thereof, a cloth secured within said base portion adjacent to and spaced from the other side thereof, said last-named cloth being effective to hold said epoxy resin evenly distributed across the width and length of said panel, said base portion at said other side having projecting ribs, and fibre-glass rods embedded in said ribs, said ribs having opposite ends thereof terminating adjacent respective ends of said panel, said last-named cloth extending through said ribs and forming portions thereof.

3,313,675

LAMINATE AND PROCESS OF PREPARING THE SAME

John Christos Petropoulos, Norwalk, Conn., and Auguste Eugene Rimpel, Jr., Pittsburgh, Pa., assignors to Formica Corporation, Cincinnati, Ohio, a corporation of Delaware
No Drawing. Filed June 3, 1963, Ser. No. 284,855
12 Claims. (Cl. 161-184)

6. A consolidated unitary laminate structure comprising as a base member, a cement-asbestos board, a coating of substantially completely cured polyamine bis phenol-epichlorohydrin resin composition on said cement-asbestos board, a substantially thermoset resin-impregnated fibrous sheet, wherein the bis phenol-epichlorohydrin resin as applied has an epoxy equivalent varying between about 180 and about 550 before cure, wherein said polyamine is selected from the group consisting of aliphatic and aromatic primary and secondary polyamines and wherein the coating of the polyamine-epoxy resin is sufficient to provide a film on the surface of said cement-asbestos board without significantly filling the voids and interstices on said surface.

3,313,676

OUTDOOR DECORATIVE LAMINATE

Musa Rasim Kamal, Stamford, and James Sterling Noland, Greenwich, Conn., assignors to Formica Corporation, Cincinnati, Ohio, a corporation of Delaware
No Drawing. Filed Jan. 23, 1964, Ser. No. 339,616
8 Claims. (Cl. 161-189)

1. A unitary, heat- and pressure-consolidated, weather-resistant decorative laminated article which comprises:

(I) a rigidity-imparting base member,
(II) a print sheet member bonded to said base member and coated with a substantially completely cured composition which, in its uncured state, is a curable, adhesive polyester resin comprising the esterification product of

(A) from about 34 to 49 mol percent of a cycloaliphatic dihydric alcohol,
(B) from about 1 to 16 mol percent of an asymmetrical, linear aliphatic dihydric alcohol,
(C) from about 30 to 49 mol percent of an α,β -ethylenically unsaturated dicarboxylic acid selected from the group consisting of fumaric acid and itaconic acid, and
(D) from about 1 to 20 mol percent of a cycloaliphatic dicarboxylic acid, wherein the total mol percent of all components is 100% and
(III) a substantially transparent film of adherable polyvinyl fluoride, an adherable side of which is directly bonded to said print sheet member by means of said adhesive mixture.

3,313,677

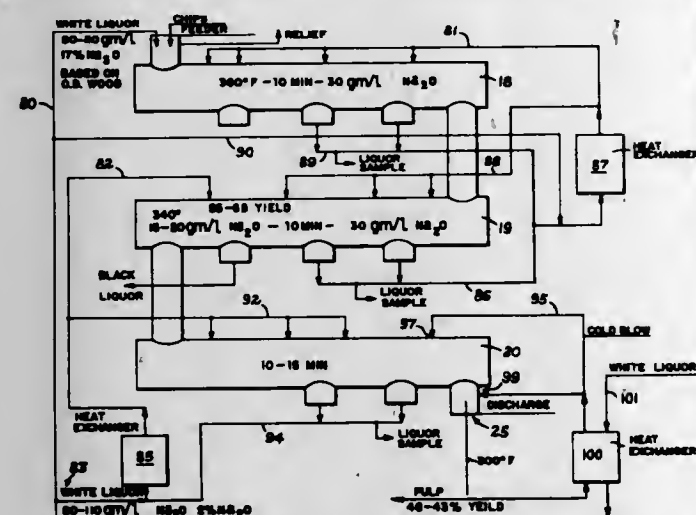
TWO-STAGE CONTINUOUS DIGESTION WITH REMOVAL OF LIQUOR IN FIRST STAGE AND RECIRCULATION OF LIQUOR IN SECOND STAGE

Wayne F. Carr, Hamilton, Ohio, assignor to The Black-Clawson Company, Hamilton, Ohio, a corporation of Ohio

Filed Mar. 30, 1962, Ser. No. 183,785
6 Claims. (Cl. 162-19)

1. A two-stage continuous process for producing relatively high quality kraft pulp from a cellulosic starting material in the form of chips having alkali-soluble lignin component and a cellulose component comprising the steps of first digesting said chips in a first alkali cooking liquor for a period of time sufficient to form a partially cooked chip mass in which a predetermined portion of the alkali-soluble lignin component of said chip mass is dissolved resulting in a substantial increase in the dissolved lignin contained in said first cooking liquor, continuously advancing said chips in a generally horizontal

path while maintaining an elevated temperature and equivalent pressure and providing a vapor phase above said cooking liquor, recirculating said first cooking liquor through said chip mass during said first digesting step to maintain the concentration of said first cooking liquor substantially uniform, removing a substantial portion of said first cooking liquor and the dissolved lignin from said partially cooked chip mass, further digesting said partially cooked chip mass with a second alkali cooking liquor having a relatively low concentration of dissolved lignin therein, continuously advancing said partially



cooked chip mass in a horizontal path through said second alkali cooking liquor while maintaining a vapor phase above said second cooking liquor, recirculating said second cooking liquor through said partially cooked chip mass during said further digesting step to maintain the concentration of said second cooking liquor substantially uniform, completing the digesting operation with said second alkali cooking liquor to remove a portion of undissolved lignin remaining in said partially cooked chip mass, and maintaining the concentration of dissolved lignin during said further digesting below the level at which dissolved lignin will polymerize on said undissolved cellulose.

3,313,678

BLEACHING OF CELLULOSE PULP IN TOWERS IN COMPLETELY FILLED AND CLOSED SYSTEM

Sten O. Rydin, Ostrand, Timra, near Sundsvall, Sweden, assignor to Svenska Cellulose Aktiebolaget, Sundsvall, Sweden

Filed Feb. 13, 1963, Ser. No. 258,322

Claims priority, application Sweden, Feb. 14, 1962, 1,600/62

6 Claims. (Cl. 162-19)

1. In a process for continuously bleaching cellulose stock in a reaction tower by first treating the stock with a bleaching agent and afterwards filtering the bleached stock discharged from the tower, the improved technique which consists in keeping said reaction tower completely filled with stock, bleaching at a consistency greater than 7%, and diluting the stock to a consistency of 1-7% immediately before discharging the same from the tower, and conveying the diluted stock from the tower to a filtering device in a continuous column, all steps being performed in a closed system wherein bleaching agents are confined to the system and air is excluded.

3,313,679

PAPER MACHINE FELT DEWATERING METHOD AND APPARATUS

John C. Hintermaier, Troy, and Dan B. Wicker, Loudonville, N.Y., assignors to Huyck Corporation, Stamford, Conn., a corporation of New York

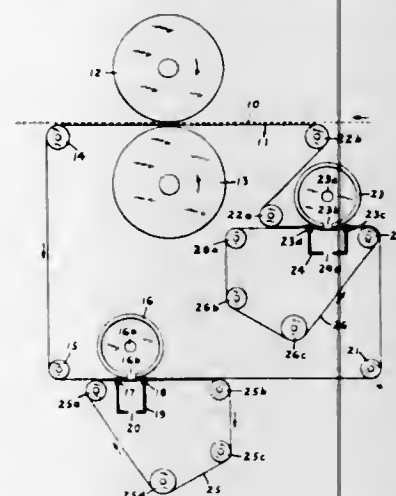
Filed Mar. 18, 1963, Ser. No. 265,827

8 Claims. (Cl. 162-199)

8. A method of drying successive portions of a continuously advancing paper machine felt leaving a pair of

press rolls along with the paper web being formed in the course of operation of the machine as successive portions of the felt travel from the point at which they leave the wet paper web to the point at which they are again brought into contact with another portion of the wet web comprising the steps of:

- holding the felt firmly against a plurality of orifices by temporarily applying a porous carrier to the surface of the felt opposite the orifices,
- advancing the felt and said porous carrier across said orifices,
- blowing air under substantial super-atmospheric pressure through said plurality of orifices as the felt and said porous carrier are advanced thereacross for



a period of time sufficient to reduce the water content of the felt to between 10 and 40% wet basis, substantially all of said air being directed against one surface of the felt and passing through the felt and said porous carrier without any appreciable escape of air laterally from the surface of the felt,

- directing high velocity air through successive portions of said porous carrier as the successive portions of the said porous carrier pass through a region between the point at which they are moved away from the felt, after having been passed with the felt across the orifices, and the point where the successive portions of the said porous carrier are again returned into contact with the felt, said high velocity air removing liquid from said porous carrier.

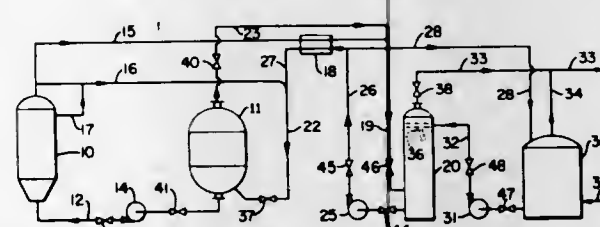
3,313,680

SYSTEM FOR RECOVERING RELIEF GASES FROM A SULPHITE PULP DIGESTER

Francis J. Hoar, % F. J. Hoar Associates, 49½ Maple St., Box 69, Massena, N.Y. 13662

Filed Dec. 4, 1963, Ser. No. 328,035

3 Claims. (Cl. 162-239)



1. In a system for recovering relief gases from a sulphite pulp digester,

- a digester,
- a recovery tower,
- a high pressure storage tank,
- a raw acid storage tank,
- means for conducting high pressure relief gas from said digester to said high pressure storage tank,
- means for conducting relief gases from said high pressure storage tank into said recovery tower adjacent the bottom thereof,

- a heat exchanger,
- means for conducting low pressure relief gas from said digester through said heat exchanger into said recovery tower adjacent the bottom thereof,
- means for conducting acid from the bottom of said recovery tower through said heat exchanger into said high pressure storage tank and into said raw acid storage tank,
- means for conducting relief gas from the top of said recovery tower to an acid manufacturing plant,
- means for adjustably controlling the pressure of the relief gas flowing from said recovery tower to said acid manufacturing plant,
- means for conducting acid from said acid manufacturing plant into said raw acid storage tank, and
- means for conducting acid from said raw acid storage tank into said recovery tower adjacent the top thereof to flow counter to the gas entering said recovery tower.

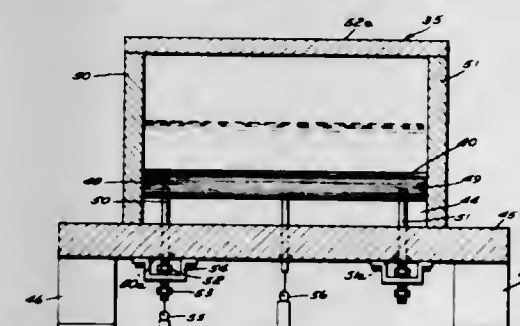
3,313,681

HEADBOX WITH BOTTOM WALL HAVING CONTROLLABLE DEFLECTION

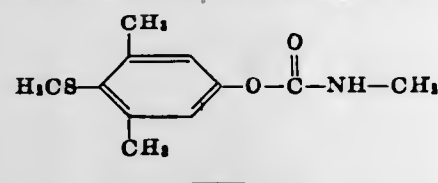
Louis E. Dennis, Clinton, and Louis M. Stuebe and Alvin C. Roecker, Beloit, Wis., assignors to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin

Filed Aug. 27, 1964, Ser. No. 392,460

10 Claims. (Cl. 162-252)



12. The compound of the following formula:



3,313,685

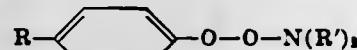
(TERT. ALKYLPHENOXY) ALKYL DIALKYLAMINES AND CONTROL OF CEREAL RUST

John J. D'Amico, Charleston, W. Va., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Original application May 4, 1961, Ser. No. 107,634. Divided and this application Feb. 12, 1964, Ser. No. 351,577

8 Claims. (Cl. 167-30)

1. The method of treating plants to control rust pathogens which comprises treating rust infested living plants with a composition in amount sufficient to provide effective rust eradication without substantial phytotoxic damage containing as an essential active ingredient a compound selected from the class consisting of amines of the formula



where R is tertiary alkyl of 6 to 8 carbon atoms inclusive, A is alkylene of 2 to 3 carbon atoms inclusive and R' is alkyl of 2 to 3 carbon atoms inclusive and quaternary ammonium salts thereof.

3,313,686

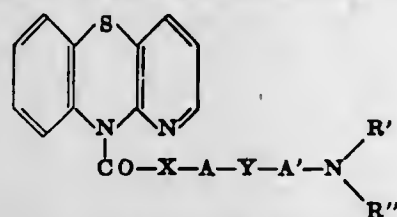
PALATABLE ANTITUSSIVE AGENT-RESIN COMPLEX

Wilbur L. Bryan, Belle Mead, Urs F. Nager, Princeton, and Frederick Y. Wiselogle, North Brunswick, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 24, 1962, Ser. No. 219,134

7 Claims. (Cl. 167-55)

1. A complex of an azaphenothiazine of the formula



wherein X and Y are each selected from the group consisting of oxygen and sulfur, A and A' are each lower alkylene, R and R' are each lower alkyl, and together with the nitrogen to which they are joined R and R' is selected from the group consisting of piperidino, pyrrolidino and piperazino, and a carboxylic acid cation exchange resin.

3,313,687

APPETITE-SUPPRESSING AND WEIGHT REDUCING COMPOSITION

Harm Siemer, Warendorf, Westphalia, Germany, assignor to Andreas J. Rottendorf Chemische Fabrik, Ennigerloh, Westphalia, Germany

No Drawing. Filed Sept. 17, 1962, Ser. No. 224,603

Claims priority, application Germany, Sept. 18, 1961, R 31,127; May 16, 1962, R 32,737; May 19, 1962, R 32,756

5 Claims. (Cl. 167-55)

1. An appetite-suppressing and weight reducing composition containing 10-100 milligrams of a compound selected from the group consisting of 1-p-chlorophenyl-2-ethylamino-propanone(1), the hydrochloride thereof, and the nicotinate hydrochloride thereof together with a pharmaceutical adjuvant.

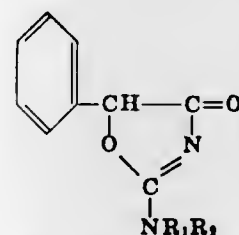
METHOD OF PRODUCING CENTRAL NERVOUS SYSTEM STIMULATION AND ANOREXIA

Robert Allis Hardy, Jr., Ridgewood, N.J., and Charles Frederick Howell, New City, and Nicanor Quinones Quinones, New York, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Mar. 20, 1964, Ser. No. 353,590

12 Claims. (Cl. 167-55)

1. The process of producing therapeutically desirable stimulation of the central nervous system of mammals which comprises administering internally to a mammal in whom a stimulation effect is desired a composition containing between about 25 and 150 milligrams per dosage unit of a compound selected from the group consisting of 5-phenyl-2-dialkylamino-2-oxazolin-4-ones of the formula:



wherein R₁ and R₂ are lower alkyl and the non-toxic acid addition salts thereof and a pharmaceutically acceptable carrier therefor.

3,313,689

COMPOSITIONS AND METHODS FOR TREATING DEPRESSION

Jean-Eugène Thuillier, Paul Rumpf, and Germaine Thuillier, Paris, France, assignors to Centre National de la Recherche Scientifique and Institut National d'Hygiene, Paris, France, jointly, both corporations of France

No Drawing. Filed Mar. 2, 1964, Ser. No. 348,850

926,547

8 Claims. (Cl. 167-65)

4. A method for the treatment of depressive conditions, which comprises administering a compound selected from the group consisting of the 2-diethylaminoethyl amide of parachlorophenylsulfonylethylamide, the 2-diethylaminoethyl amide of paramethoxyphenoxy-acetic acid and the salts thereof with pharmacologically acceptable acids to a human patient in a daily oral dose of from 10 to 300 milligrams.

3,313,690

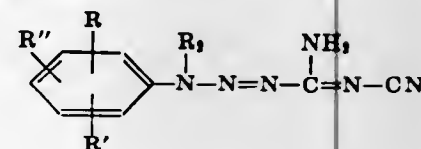
CHEMOTHERAPEUTIC COMPOSITIONS CONTAINING N'-CYANO-PHENYL-TRIAZENECARBOXAMIDINES AND METHOD OF ADMINISTERING THE SAME

Adolph Whitten Vogel, Pearl River, N.Y., and Robert Allis Hardy, Jr., Ridgewood, and Charles Frederick Howell, Upper Saddle River, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed June 11, 1964, Ser. No. 374,271

17 Claims. (Cl. 167-65)

9. A method for treatment of inflammatory and rheumatic condition in animals by administering a composition comprising a pharmaceutical carrier and from about 5 to about 300 milligrams of a compound selected from the group consisting of N'-cyano-aryl-triazene-carboxamides of the formula:



wherein R, R' and R'' are selected from the group consisting of hydrogen, halogen, lower alkoxy, lower alkyl

mercapto, lower alkyl and trifluoromethyl, R₂ is selected from the group consisting of hydrogen and lower alkyl and non-toxic pharmaceutically acceptable salts thereof.

3,313,691

SUBSTANCES BELONGING TO CHROMOMYCIN A GROUP AND THEIR PRODUCTION

Akira Miyake, Nishinomiyama, Komel Mizuno, Osaka, Kōiti Nakazawa, Amagasaki, Yoshitomo Aramaki, Suita, and Kyo Kaziwara, Nishinomiyama, Japan, assignors to Takeda Pharmaceutical Industries, Ltd., Osaka, Japan

No Drawing. Filed Sept. 15, 1958, Ser. No. 760,851

Claims priority, application Japan, Sept. 16, 1957, 32/23,097; Dec. 3, 1957, 32/30,015

12 Claims. (Cl. 167-65)

10. Metabolite obtained by culturing of *Streptomyces griseus* No. 7, and recovering a greenish black and slightly yellow fluorescent powder substance, melts at 140-150° C., is soluble in acetone, shows infrared spectrum having absorptions at 2.31, 2.95, 3.47, 3.70, 5.80, 6.13, 6.36, 6.63, 6.90, 7.30, 7.57, 8.14, 8.38, 8.59, 8.97, 9.15, 9.38, 9.65, 10.64, 11.10, 11.39, 11.83, 12.40, 13.25 and 13.88μ, and which, upon paper chromatography followed by bioautography against Gram-positive bacteria, yields inhibition zones at R_f 0.7 to 0.85, 0.5 to 0.6, 0.35 to 0.45, 0.25 to 0.30 and 0.15 to 0.25, respectively.

3,313,692

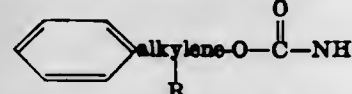
METHOD OF INDUCING CALMING AND MUSCLE RELAXATION WITH CARBAMATES

Charles D. Bossinger, Kankakee, and Kelley G. Taylor, Decatur, Ill., assignors, by mesne assignments, to Armour Pharmaceutical Company, a corporation of Delaware

No Drawing. Filed Apr. 21, 1958, Ser. No. 729,554

3 Claims. (Cl. 167-65)

1. The method of inducing calming and muscle relaxation in a human being which comprises administering a chemical compound having the formula



in which alkylene is a saturated alkylene chain of from 2 to 4 carbon atoms and R is a member selected from the group consisting of hydrogen and alkyl of from 1 to 3 carbon atoms.

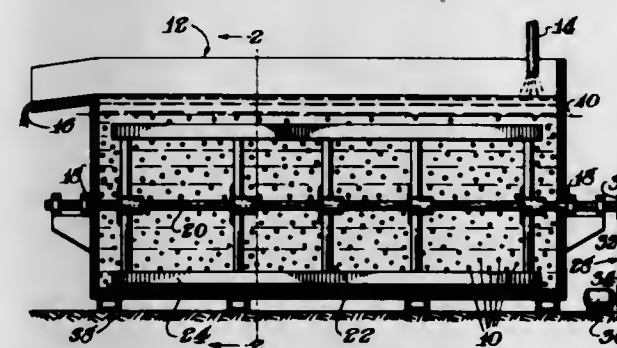
3,313,693

ANTIBIOTICS RECOVERY PROCESS EMPLOYING RESINS AND HORIZONTAL FLOW

Stanley W. Ensminger, Waterford, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

Filed Jan. 16, 1962, Ser. No. 166,502

8 Claims. (Cl. 167-65)



1. A process for adsorbing a basic antibiotic upon a particulate carboxylic acid-type cation-exchange resin which comprises flowing an impure solution of said antibiotic in a substantially horizontal direction through a free suspension of said resin until the adsorption of the

antibiotic content of said solution by said resin substantially ceases and then separating the antibiotic-depleted solution from the resin adsorbate, said resin being present in a proportion of from about 0.1 to about 0.8 volume per volume of solution in the vessel confining said resin.

3,313,694

PROCESS FOR DE-ASHING BASIC ANTIBIOTICS

Robert C. Ayers, Jr., Groton, Conn., and James V. Kehoe, Glendale, N.Y., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 30, 1962, Ser. No. 191,332

10 Claims. (Cl. 167-65)

1. In a process for separating inorganic cations from a basic antibiotic adsorbed on a particulate carboxylic acid-type cation-exchange resin by contacting the resin antibiotic adsorbate with an aqueous solution adjusted to a pH of from about 4.0 to about 7.5, contacting the effluent from said resin antibiotic adsorbate with a second particulate cation-exchange resin in the hydrogen ion form to adsorb inorganic cation impurities, recycling the effluent from said second resin adsorption into contact with said first resin antibiotic adsorbate, and continuing said cycling until the adsorption of said inorganic cations upon said second resin is substantially complete.

3,313,695

LINCOMYCIN HYDROCHLORIDE CRYSTALS

Donald Ralph Van Overloop, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Aug. 30, 1963, Ser. No. 305,816

1 Claim. (Cl. 167-65)

A new polymorphic form of lincomycin hydrochloride, the crystals of which are characterized by the following X-ray diffraction pattern:

Interplanar spacings, Å

14.02 ¹	4.26
10.52	4.13
9.40	4.04
8.53	3.88
6.96	3.67
6.19 ¹	3.50
5.90	3.45
5.55	3.28
5.34	3.02
5.15	2.90
5.01	2.76
4.62 ¹	2.57
4.48	

¹ Major peaks.

3,313,696

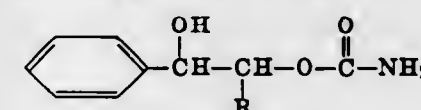
CARBAMATE SEDATIVE COMPOSITIONS AND METHOD OF USE

Charles D. Bossinger, Kankakee, and Kelley G. Taylor, Decatur, Ill., assignors to Armour Pharmaceutical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Original application June 26, 1962, Ser. No. 205,201. Divided and this application Aug. 24, 1964, Ser. No. 391,769

9 Claims. (Cl. 167-65)

4. The method of treating the central nervous system of an animal to obtain a sedative action therein, comprising orally administering to said animal a hydroxy phenyl alkyl carbamate compound containing a secondary alcohol group and having the structural formula



wherein R is alkyl containing from 1 to 2 carbon atoms.

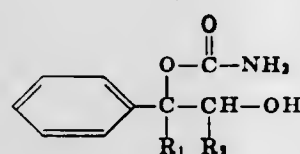
3,313,697

CARBAMATE COMPOSITIONS FOR AND METHODS OF TREATING THE CENTRAL NERVOUS SYSTEM

Charles D. Bossinger, Kankakee, and Kelley G. Taylor, Decatur, Ill., assignors to Armour Pharmaceutical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Original application June 26, 1962, Ser. No. 205,202. Divided and this application Aug. 24, 1964, Ser. No. 391,771

10 Claims. (Cl. 167-65)

4. The method of treating the central nervous system of an animal to obtain tranquilization, sedation, and muscle relaxation, comprising orally administering to said animal a daily dose of from 6 to 2400 milligrams of a phenyl carbamate compound having the structural formula



wherein R₁ is selected from the class consisting of hydrogen and an alkyl group containing from 1 to 3 carbon atoms, and R₂ is selected from the class consisting of hydrogen and an alkyl group containing from 1 to 2 carbon atoms.

3,313,698

20-DI-SUBSTITUTED AMINO-PREGNANES

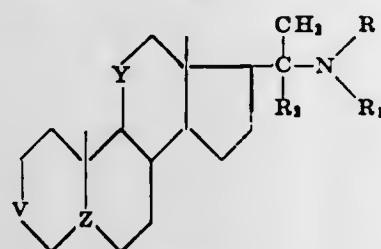
Daniel Bertin, Montrouge, Lucien Nedelec, Clichy-sous-Bois, and Jacques Perronnet, Paris, France, assignors to Roussel-UCLAF, Paris, France, a corporation of France

No Drawing. Filed Apr. 6, 1965, Ser. No. 446,075
Claims priority, application France, Aug. 27, 1962, 907,856; Nov. 27, 1962, 916,749; Patent 2,374M; May 3, 1963, 933,624; Apr. 14, 1964, 970,856; June 3, 1964, 976,906

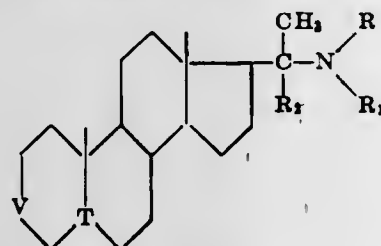
22 Claims. (Cl. 167-65)

1. An amino steroid selected from the group consisting of

(1) compounds of the formula

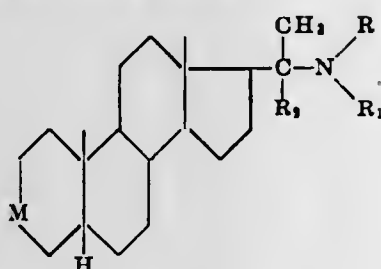


(2) compounds of the formula

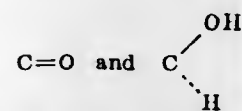


and

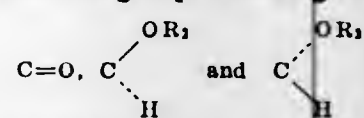
(3) compounds of the formula



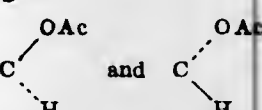
wherein R and R₁ are lower alkyl, R₂ is alkyl having from 1 to 4 carbon atoms, Y is selected from the group consisting of



V is selected from the group consisting of



where R₃ is selected from the group consisting of hydrogen and the acyl of an organic carboxylic acid having from one to eighteen carbon atoms, M is selected from the group consisting of



where Ac represents the acyl of an organic carboxylic acid having from one to eighteen carbon atoms, Z is selected from the group consisting of C-H, C with a double bond to the 6 carbon atom and C with a double bond to the 6 carbon atom, and T is selected from the group consisting of C with a double bond to the 4 carbon atom and C with a double bond to the 6 carbon atom, and salts of the same with pharmacologically compatible acids.

21. Therapeutic compositions comprising 2 to 20 mg. per dose of the amino steroid of claim 1 and a major amount of a pharmacological carrier.

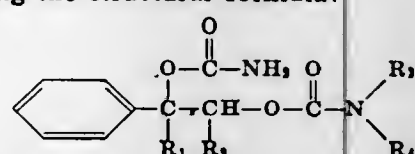
3,313,699

COMPOSITIONS FOR AND METHOD OF TREATING THE CENTRAL NERVOUS SYSTEM

Charles D. Bossinger, Olympia Fields, and Kelley G. Taylor, Decatur, Ill., assignors to Armour Pharmaceutical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Original application June 26, 1962, Ser. No. 205,199, now Patent No. 3,265,727, dated Aug. 9, 1966. Divided and this application June 6, 1966, Ser. No. 555,259

13 Claims. (Cl. 167-65)

6. The method of providing muscle relaxation in an animal comprising orally administering to said animal an effective amount of a phenyl alkyl dicarbamate compound having the structural formula:



wherein R₁ is selected from the class consisting of hydrogen and an alkyl group containing from 1 to 3 carbon atoms, R₂ is selected from the class consisting of hydrogen and an alkyl group containing from 1 to 3 carbon atoms, and R₃ and R₄ are selected from the class consisting of hydrogen and methyl.

3,313,700

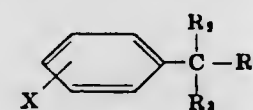
METHOD OF TREATING THE CENTRAL NERVOUS SYSTEM WITH SUBSTITUTED PHENETHYL CARBAMATES AND COMPOSITIONS THEREFOR

Charles D. Bossinger, Olympia Fields, and Kelley G. Taylor, Decatur, Ill., assignors to Armour Pharmaceutical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Original application July 18, 1962, Ser. No. 210,818, now Patent No. 3,265,728, dated Aug. 9, 1966. Divided and this application June 6, 1966, Ser. No. 555,260

13 Claims. (Cl. 167-65)

6. The method of treating the central nervous system of animals to obtain a calming effect therein comprising

orally administering to said animals an effective amount of a substituted phenyl alkyl carbamate compound having the formula



wherein: R₁ is carbamate or methylene carbamate; R₂ is alkyl containing 1 to 2 carbons, hydroxy alkyl containing 1 to 2 carbons, hydroxy or hydrogen; R₃ is hydrogen or alkyl containing 1 to 2 carbons; and X is halogen, methyl, methoxy, phenyl, nitro and amino.

3,313,701

TESTOSTERONE COMPOSITION OF MATTER AND PROCESS

John C. Babcock and J. Allan Campbell, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Aug. 27, 1963, Ser. No. 304,978
4 Claims. (Cl. 167-74)

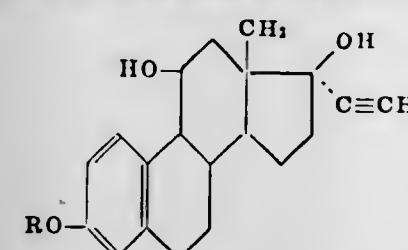
3. A method for inducing anabolic effects in mammals essentially free of accompanying androgenic effects comprising: administering orally 7α,17α-dimethyltestosterone in an amount sufficient to induce anabolic effects but essentially free of accompanying androgenic effects.

3,313,702

ESTROGENIC COMPOSITIONS COMPRISING 17α-ETHYNYL-Δ^{1,3,5(10)}-ESTRADIENE-3,11β,17β-TRIOL

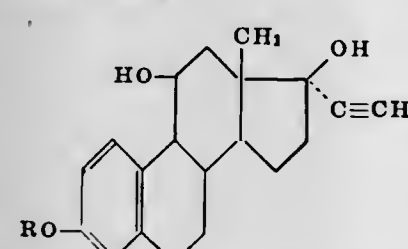
Robert Joly, Montmorency, Julien Warnant, Neuilly-sur-Seine, and Jean Jolly, Clichy-sous-Bois, France, assignors to Roussel-UCLAF, Paris, France, a corporation of France
No Drawing. Filed June 5, 1964, Ser. No. 373,047
Claims priority, application France, June 12, 1963, 937,897; July 10, 1963, 941,005
6 Claims. (Cl. 167-74)

5. A therapeutic composition comprising a minor amount of an 11β-hydroxylated steroid selected from the group consisting of compounds of the formula



wherein R is a member selected from the group consisting of hydrogen, lower alkyl and the acyl radical of an organic carboxylic acid having from 1 to 18 carbon atoms, and a major amount of an inert non-toxic pharmaceutical vehicle.

6. A process for the treatment of estrogenic deficiencies at the situs of the uterus in warm-blooded animals which comprises administering to said warm-blooded animals a daily dose of from 0.3γ/kg. to 75γ/kg. of an 11β-hydroxylated steroid selected from the group consisting of compounds of the formula



wherein R is a member selected from the group consisting of hydrogen, lower alkyl and the acyl radical of an organic carboxylic acid having from 1 to 18 carbon atoms.

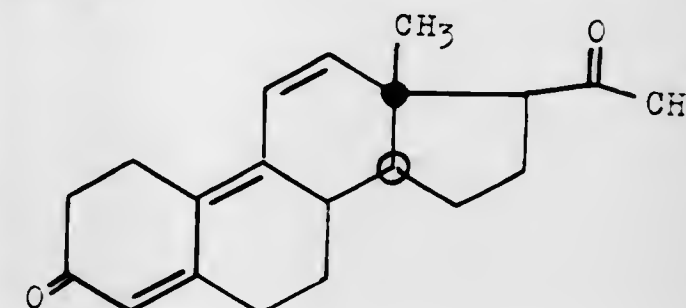
3,313,703

19-NOR-Δ^{4,9,11}-PREGNATRIENE-3,20-DIONE, PROCESS AND INTERMEDIATES

Robert Bucourt, Clichy-sous-Bois, André Pierdet Noisy-le-Sec, and Germain Costerousse, Montrouge, France, assignors to Roussel-Uclaf, Paris, France, a corporation of France
No Drawing. Filed Oct. 5, 1964, Ser. No. 401,657
Claims priority, application France, Oct. 8, 1963, 949,929

19 Claims. (Cl. 167-74)

18. A therapeutic composition comprising a minor amount of 19-nor-Δ^{4,9,11}-pregnatriene-3,20-dione of the formula



and a major amount of an inert pharmaceutical excipient.

3,313,704

PITUITARY EXTRACT

Choh H. Li, Berkeley, Calif., assignor to The Regents of the University of California, Berkeley, Calif., a corporation of California
No Drawing. Filed Nov. 5, 1964, Ser. No. 409,313
2 Claims. (Cl. 167-74)

1. A process of obtaining adrenocorticotropin which comprises:

- (1) extracting mammalian pituitary glands with acidified aqueous acetone and recovering the extract;
- (2) mixing the recovered extract with excess acetone to precipitate an insoluble product;
- (3) preparing an aqueous solution of the insoluble product at about pH 3 and adding salt to saturate the aqueous solution and form a precipitate;
- (4) preparing an aqueous solution of the precipitate and dialyzing the solution against water;
- (5) recovering a preliminary adrenocorticotropin product from the dialyzed solution by volatilizing water therefrom in vacuo;
- (6) dissolving the recovered product in an aqueous solution of ammonium acetate of 0.01 M and pH 4.6 and chromatographing the solution on carboxymethylcellulose;
- (7) fractionally eluting absorbed material from the carboxymethylcellulose with sequential continuous linear gradients to ammonium acetate of 0.1 M, pH 6.7 and 0.2 M, pH 6.7; and
- (8) recovering adrenocorticotropin from combined terminal fractional eluates in the continuous linear gradient to ammonium acetate of 0.2 M and pH 6.7 by volatilizing water and ammonium acetate therefrom in vacuo.

3,313,705

PANCREAS-BASED MEDICAMENT

Michel Constant Gaston Abel Henry, Neuilly-sur-Seine, France, assignor to EURORGA, Villers-par-Saclay, Seine-et-Oise, France, a company of France
No Drawing. Filed Apr. 20, 1964, Ser. No. 361,257
Claims priority, application France, Apr. 25, 1963, 932,693

5 Claims. (Cl. 167-75)

1. Process for the production of a medicament especially suitable for the treatment of chronic pancreatitis,

which comprises separating the pancreas from a pig's carcass at the latest a quarter of an hour after slaughtering, stabilising the pancreas by cooling to a temperature of at most 8° C., grinding the stabilised product, adding to the ground product about 30-100% of its weight of iced water, again grinding the product, and subjecting it to lyophilisation conditions to remove water by sublimation.

3,313,706

DIAGNOSTIC ANTIGEN FOR VIRAL HEPATITIS

Andreas Lembke, Eutin-Stelbeck, and Siegfried Schlecht, Munich, Germany, assignors to Johnson & Johnson, a corporation of New Jersey

No Drawing. Filed June 8, 1965, Ser. No. 462,391

9 Claims. (Cl. 167-78)

1. A preparation useful in the diagnosis of viral hepatitis comprising a physiological suspension of antigenic components of human hepatitis virus, said antigenic components being the residue obtained by extracting human hepatitis virus containing pig kidney cells with an organic solvent selected from the group consisting of ethyl ether and chloroform separating the solvent from the cellular material and subsequently evaporating the organic solvent.

3,313,707

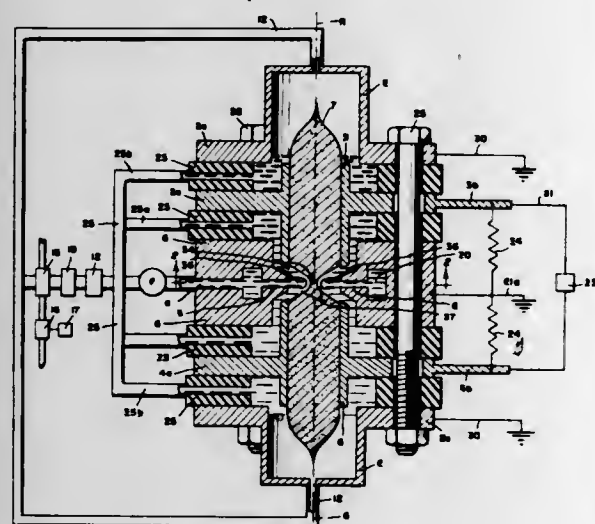
APPARATUS FOR COMPRESSING AND HEATING A PLASMA CONTAINING A FUSIONABLE MATERIAL

Joachim Amsler, 312 Hohenweg, Unterentfelden, Aargau, Switzerland

Filed Apr. 17, 1964, Ser. No. 360,620

Claims priority, application Switzerland, May 4, 1959, 72,862/59; Apr. 6, 1960, 3,868/60

5 Claims. (Cl. 176-8)



1. An apparatus for compressing and heating a plasma, comprising two electrodes spaced from each other along an axis, power supply means coupled to said electrodes for establishing and maintaining an electric arc between said electrodes, an annular member mounted between said electrodes with the axis of the annular member coinciding with the axis between said electrodes and said annular member being perpendicular to said axis and surrounding only a part of the length of said axis between said electrodes, said annular member having an annular inlet opening on the inner periphery thereof opening into the center of said annular member in a radial direction, and means for delivering cool working medium through said inlet opening into the interior of said annular member.

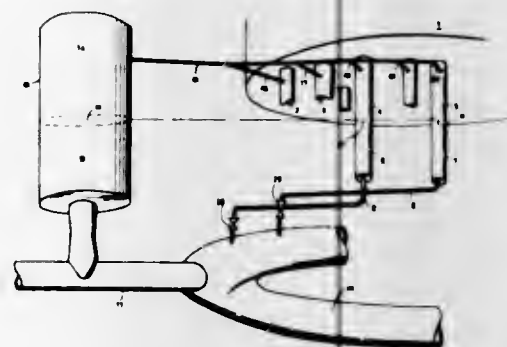
**3,313,708
DEVICE FOR AVOIDING CERTAIN LOSS OF HEAD EFFECTS IN THE CHANNELS OF A NUCLEAR REACTOR TRAVELLED THROUGH BY A LIQUID**

Antonio Angellini and Jacques Dufresne, Varese, Italy, assignors to European Atomic Energy Community—Euratom, Brussels, Belgium

Filed Mar. 25, 1964, Ser. No. 354,710

Claims priority, application Belgium, Apr. 11, 1963, 505,010

6 Claims. (Cl. 176-52)



2. In a nuclear reactor, a combination comprising a pressure tube for containing a flowing cooling liquid, the said tube having a lower outlet immersed into a bath of said liquid, a collector mounted around the outlet of said tube, means for supplying pressurized gas above the level of the liquid in said collector, adapted to reduce the fluctuations in the static head of the liquid in the collector due to variations in the loss of head in the collector outlet upon changes in the rate of flow of the liquid, constriction means around the outlet of the pressure tube, whereby the fluid flowing through the pressure tube outlet produces an ejector effect on the liquid in the collector above the outlet.

3,313,709

PROCESS OF MAKING GLUTAMIC ACID BY FERMENTATION OF KEROSENE

Urbahn A. Phillips, Terre Haute, Ind., assignor to Commercial Solvents Corporation, a corporation of Maryland

No Drawing. Filed Oct. 14, 1963, Ser. No. 316,119

9 Claims. (Cl. 195-28)

1. In the production of L-glutamic acid by cultivating an L-glutamic acid-producing microorganism in an aqueous nutrient fermentation medium containing an energy source and an assimilable nitrogen source, the method which comprises employing kerosene as the energy source and an L-glutamic acid-producing microorganism selected from the group consisting of *Pseudomonas methanica*, *Serratia marcescens*, *Pseudomonas deruginosa*, *Pseudomonas fluorescens*, *Pseudomonas oleovorans*.

3,313,710

PROCESS FOR PRODUCING TRI AND DIPHOSPHATES OF ADENOSINE AND GUANOSINE BY FERMENTATION

Shukuo Kinoshita, Tokyo, Kiyoshi Nakayama, Sagami-hara-shi, Takashi Nara, Tokyo, Zentoku Sato, Machida-shi, and Haruo Tanaka, Tokyo, Japan, assignors to Kyowa Hakko Kogyo Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Oct. 20, 1964, Ser. No. 405,263

Claims priority, application Japan, Oct. 30, 1963, 38/57,520; Nov. 27, 1963, 38/63,229

12 Claims. (Cl. 195-28)

1. A process for the preparation of adenosine di- and tri-phosphates which comprises culturing a bacterium of the *Brevibacterium ammoniagenes* species under aerobic conditions in a nutrient medium containing inorganic phosphate in the presence of a member selected

from the group consisting of adenine and adenosine until there has been an accumulation of said phosphates in said medium, and recovering the thus-accumulated adenosine di- and tri-phosphates.

2. A process for the preparation of guanosine di- and tri-phosphates which comprises culturing a bacterium of the *Brevibacterium ammoniagenes* species under aerobic conditions in a nutrient medium containing inorganic phosphate in the presence of a member selected from the group consisting of guanine and guanosine until there has been an accumulation of said phosphates in said medium, and recovering the thus-accumulated guanosine di- and tri-phosphates.

3,313,711

PREPARATION OF AMINOPEPTIDASE

Pieter G. Celliers, Stellenbosch, Republic of South Africa, and Gerhard Pfleiderer, Frankfurt am Main, Germany; said Pfleiderer assignor to Rohm & Haas G.m.b.H., Darmstadt, Germany

No Drawing. Filed July 13, 1964, Ser. No. 382,354

Claims priority, application Germany, July 18, 1963, R 35,700

10 Claims. (Cl. 195-62)

1. A process for the preparation of amino-peptidase from animal organs which comprises dispersing finely divided animal organs in an aqueous phase, centrifuging said aqueous phase at 10,000 g. to 40,000 g. to remove coarsely dispersed cell fractions therefrom, contacting the remaining finely-dispersed cell fractions, dispersed in an aqueous phase, with a water-immiscible, lipid-dissolving, enzyme inert organic solvent selected from the group consisting of aliphatic and aromatic hydrocarbons, collecting the material separating at the phase boundary between said aqueous phase and said water-immiscible solvent, treating the collected material with a proteolytic enzyme whereby amino-peptidase is freed therefrom, and then recovering said aminopeptidase.

5. Aminopeptidase prepared by the process of claim 1, said aminopeptidase being unaffected by EDTA, being biologically effective in the absence of activating ions, easily cleaving glycopeptides, and having little effect on leucinamide.

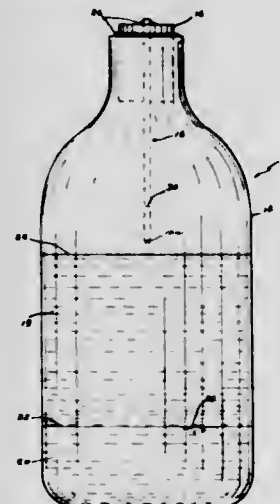
3,313,712

APPARATUS FOR THE DETECTION OF LIVING MICROBIAL CONTAMINANTS IN PETROLEUM PRODUCTS

Marilyn E. George, 1211 Far Hills Ave., Dayton, Ohio 45419

Filed Mar. 25, 1963, Ser. No. 267,866

2 Claims. (Cl. 195-127)



1. An apparatus for detecting the presence of living microbial growth in a liquid petroleum-water mixture and which growth is capable of liberating carbon dioxide as a metabolic by-product comprising

a transparent container for holding said petroleum-water mixture and having an opening therein, removable means closing the opening in said container, a transparent hollow tube open at its upper and lower ends and which is retained by and passes through said closure means

with the lower end of said tube extending downward within said container so as to be above the liquid petroleum-water mixture and

with the upper end of said tube open to the atmosphere,

a colorimetric chemical indicator within said hollow tube and sensitive to the carbon dioxide liberated by said living microbial growth, and

a gas permeable plug inserted in the lower open end of said tube to retain the chemical indicator therein.

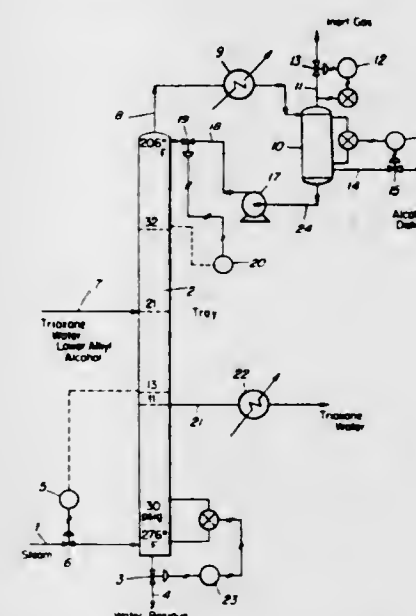
3,313,713

RECOVERY OF A TRIOXANE FROM DILUTE SOLUTIONS

Alfred William Martin, Corpus Christi, Tex., assignor to Celanese Corporation, a corporation of Delaware

Filed Jan. 7, 1963, Ser. No. 249,573

8 Claims. (Cl. 203-92)



1. The method of recovering trioxane from a dilute solution thereof in a lower alkyl alcohol having from 1 to 6 carbon atoms and water which comprises:

(a) continuously heating the said solution to a distillation temperature in a distillation zone having overhead, intermediate and residual points of discharge therefrom;

(b) continuously removing the lower alkyl alcohol from the said zone as an overhead distillate;

(c) continuously removing trioxane and water as a sidestream discharge at a point intermediate the points of overhead and residual discharges from the said zone; and

(d) continuously removing from the said zone a residual discharge comprising mainly water.

3,313,714

TIN PLATE TREATMENT AND PRODUCT

Jack E. Joyce, Chesterton, and Robert Lozano, Griffith, Ind., assignors to Inland Steel Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Nov. 16, 1964, Ser. No. 411,617

7 Claims. (Cl. 204-32)

1. A method of treating tin plate to provide improved stain resistant surface characteristics which comprises, immersing said tin plate in a hot aqueous alkaline cleaning electrolyte while passing an electric current through said

electrolyte and said tin plate to remove substantially all surface oxides and other contamination thereon without removing tin, washing said tin plate with water to rinse away residual alkaline cleaning solution, applying to said tin plate a dilute acid solution having a pH between about pH 2 and 6, passivating the acid conditioned tin plate surface by making said tin plate cathodic while immersing in a hot aqueous hexavalent chromium solution having a pH between about pH 2 and 6 and passing an electric current at a high current density of at least 60 coulombs per ft.² through said tin plate and said chromium containing electrolyte, and thereafter contacting said tin plate with a final acidic treating solution comprising a dilute aqueous non-toxic non-oxidizing acid solution having a pH between about pH 2 and 6; whereby a tin plate with substantially improved stain resistant surface characteristics is provided.

3,313,715

METHOD OF ELECTROPLATING

Benno A. Schwartz, Jr., Cleveland, Ohio, assignor to The Steel Improvement and Forge Company, Cleveland, Ohio, a corporation of Ohio
Original application July 28, 1960, Ser. No. 45,921, now Patent No. 3,183,176, dated May 11, 1965. Divided and this application Mar. 18, 1965, Ser. No. 440,758
8 Claims. (Cl. 204-36)

1. The method of electroplating a metal surface which includes the steps of making the surface the cathode in an electrical circuit, providing an anode, said surface and said anode both being immersed in a plating electrolyte, said anode being spaced from said surface by a distance of the order of one thirty-second of an inch, circulating the electrolyte in contact with said surface and said anode at the rate of from 9 to 18 gallons of electrolyte per minute per square foot of surface being plated, subjecting the surface to a mechanical rubbing action by a porous, non-abrasive, dielectric material disposed between the anode and said surface during the plating operation and supplying an electrolyte to the surface through said porous, dielectric material, the rate of rubbing being of the order of 80 inches per second and the current density being of the order of from 1,000 to 2,000 amperes per square foot.

3,313,716

METHOD FOR MANUFACTURING METAL-COATED GASKETS AND THE LIKE

Karl J. Pschera, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army
No Drawing. Filed Jan. 29, 1964, Ser. No. 341,140
7 Claims. (Cl. 204-38)

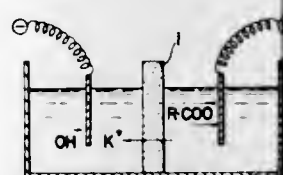
1. A method for applying a soft metal coating on each of the side surfaces of a compressible gasket which gasket comprises a thin metal strip of uniform width wound into a spiral, a layer of heat resistant compressible material interposed between the several convolutions of said spiral, and each of the side surfaces of said spiral and said compressible material lying in a common plane; said method comprising:

- Applying to the side surfaces of said gasket a metal resinate solution of a soft metal;
- Heating said gasket in an oxidizing atmosphere to decompose the resinate and to volatilize the organic material therein whereby a thin base layer of soft metal is deposited on said side surfaces;
- Continuing the heating to stabilize the thin layer of metal;
- Repeating steps (a) through (c) until said thin layer of metal is of sufficient thickness to form a thin base layer of metal for electrodepositing additional soft metal;
- Electrodepositing on said thin base layer of metal additional soft metal.

3,313,717

ELECTROLYTIC METHOD FOR PREPARING DIALKYL DICARBOXYLATES

Tsutomu Kuwata and Sadao Yoshikawa, Tokyo, Japan, assignors to Soda Koryo Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed Dec. 11, 1962, Ser. No. 243,830
Claims priority, application Japan, Sept. 17, 1962, 37/39,951
6 Claims. (Cl. 204-79)

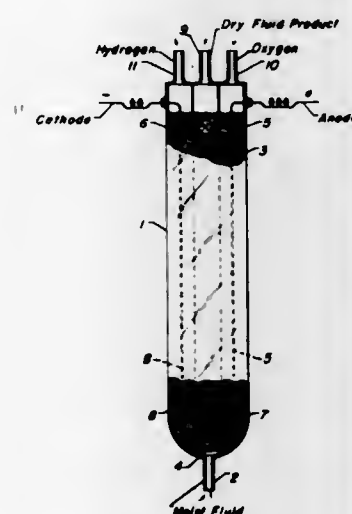


1. A method of preparing a dialkyl dicarboxylate which comprises converting an alkali salt of said dicarboxylate into a diester by means of electrolytic oxidation, in a cell consisting of at least one anodic compartment and one cathodic compartment and a cationic exchange membrane, feeding a solution of said alkali salt of an alkyl hydrogen carboxylate having a pH of 6 to 7 and a concentration of 20 to 40% by weight to said anodic compartment, maintaining said cathodic compartment in an alkaline state and having an alkaline concentration of 0.5 to 3% by weight and passing an electric current through the system to effect electrolytic oxidation.

3,313,718

ELECTROLYTIC PROCESS FOR THE CONTINUOUS DRYING OF MOIST FLUIDS

Herman S. Bloch, Skokie, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Nov. 29, 1962, Ser. No. 240,925
11 Claims. (Cl. 204-131)



1. A process for desiccating a fluid stream having a non-aqueous portion and containing moisture which comprises continuously passing said fluid stream through a mass of solid, particulate desiccant which is electrically conductive when wet and which is essentially inert to the non-aqueous portion of said fluid stream, maintaining oppositely charged, direct current electrodes in said mass of desiccant in electrolytic contact with the desiccant containing moisture removed from said fluid stream, impressing a direct current electrical potential on said electrodes at sufficient electromotive force to cause electrical energy to flow between said electrodes and separately removing from said mass and collecting the desiccated fluid stream and the oxygen and hydrogen formed by the resulting electrolysis, said process being further characterized in that oxygen formed at the anode and

hydrogen formed at the cathode of the electrolytic drying unit are maintained separate and apart from each other and from said desiccated fluid stream by means of a pair of sheets of polymeric material which provide a channel containing said desiccant through which said fluid stream flows, one of said sheets being positioned between the anode and said fluid stream, and the other sheet being positioned between the cathode and said fluid stream, said sheets being ion-permeable and capable of transferring water absorbed by the desiccant in the channel between said pair of sheets.

3,313,719

PROCESS FOR THE PRODUCTION OF PERCHLORINATED OR HIGHLY CHLORINATED 4-ALKYL-1,3-DIOXOLANE-2-ONE

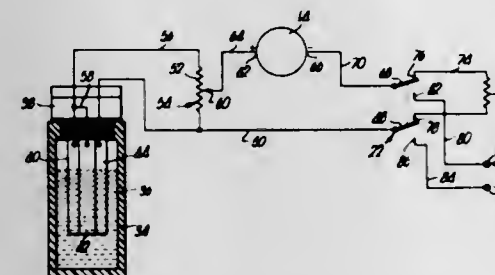
Hermann Springmann and Wilhelm Dietrich, Marl, Germany, assignors to Chemische Werke Huls Aktiengesellschaft, Marl, Germany, a corporation of Germany
No Drawing. Filed Dec. 2, 1963, Ser. No. 327,531
Claims priority, application Germany, Feb. 15, 1963, C 29,168
1 Claim. (Cl. 204-158)

Process for the production of a perchlorinated or highly chlorinated 4-alkyl-1,3-dioxolane-2-one which comprises contacting the 4-alkyl-1,3-dioxolane-2-one with chlorine while irradiating it with actinic light first at a temperature within the range from 50° C. to 80° C. to a substantially constant weight and then continuing the treatment at a temperature within the range from 95° C. to 130° C. to a substantially constant weight.

3,313,720

APPARATUS FOR MEASURING DISSOLVED OXYGEN IN WATER

Richard Hoe Robinson, Kansas City, Mo., assignor to Labconco Corporation, a corporation of Missouri
Filed Apr. 19, 1963, Ser. No. 274,219
9 Claims. (Cl. 204-195)



4. Apparatus for measuring the amount of oxygen in an electrically conductive liquid containing a major proportion of water, said apparatus comprising:

first, second and third electrodes adapted to be immersed in said liquid, said second electrode having a position in the electromotive series between the respective positions of said first and third electrodes and being of a material characterized by its tendency to vary in electromotive potential in response to a variance in the oxygen content of said liquid, there being electrical means consisting of a conductor directly interconnecting and serving as the sole conductive path between said first and third electrodes; and

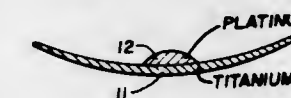
electrically actuated current measuring mechanism coupled electrically in series with and between said second electrode and said electrical means to measure the algebraic sum of the oppositely directed galvanic currents generated between said first and second electrodes and said second and third electrodes during reaction of said second electrode with oxygen and thereby the quantity of oxygen in said liquid.

837 O.G.—21

3,313,721

DISH-SHAPED ANODE

Rodney B. Teel, Wilmington, N.C., assignor, by mesne assignments, to Englehard Industries, Inc., Newark, N.J., a corporation of Delaware
Filed Dec. 31, 1958, Ser. No. 784,273
1 Claim. (Cl. 204-196)

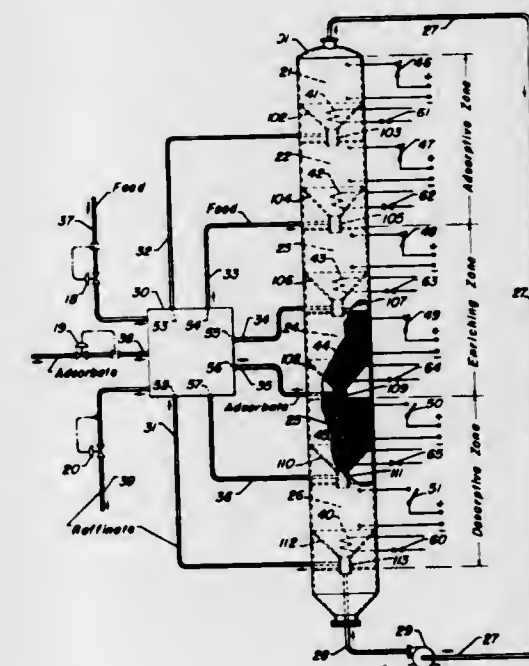


A substantially circular dish-shaped bi-layer anode especially well suited for use in impressed current cathodic protection systems for control of corrosion and capable of being subjected to current densities of up to about 550 amperes per square foot, which comprises a substantially circular dish-shaped non-porous mass of titanium metal, and affixed thereto and bonded in metal-to-metal electrical contact with the dish-shaped titanium metal mass a substantially centrally located electrical current discharging bottom of metal selected from the group consisting of platinum, rhodium, platinum group metal alloys containing at least about 50 percent platinum, platinum group metal alloys containing at least about 50 percent rhodium, and platinum group metal alloys containing at least about 50 percent platinum plus rhodium, the anode being free of a layer of metal intermediate the platinum group metal of the current discharging bottom and the titanium metal mass, and also free of material undergoing substantial consumption when in contact with sea water and during electrical current discharge through the anode.

3,313,722

CONTINUOUS THERMAL DIFFUSION PROCESS EMPLOYING FIXED BEDS OF ADSORBENT AND MOVING INLETS AND OUTLETS

Donald B. Broughton, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Mar. 4, 1964, Ser. No. 349,240
16 Claims. (Cl. 208-310)



1. A process for the adsorptive separation of components of a liquid mixture by thermal diffusion, which comprises supplying said mixture to a porous solid adsorbent which is substantially non-selective for any component of said mixture when both the mixture and the adsorbent are in contact at substantially the same tem-

of (i) a carboxylic acid having 7-39 carbon atoms and (ii) a precursor of said carboxylic acid capable of forming said acid in said reaction, and then reacting said acylated polymer with a compound selected from the group consisting of aldehydes and ketones,

(13) a Schiff base reaction product of an alkylated linear polymer of a 1,2-alkyleneimine, said polymer having a molecular weight of at least 800, each alkylene unit therein having 2-20 carbon atoms, formed by reacting, at a temperature of from about 100° C. to about 250° C., said polymer with a hydrocarbon halide alkylating agent having 1-30 carbon atoms, and then reacting said alkylated polymer with a compound selected from the group consisting of aldehydes and ketones,

(14) an oxyalkylated Schiff base reaction product of a linear polymer of a 1,2-alkyleneimine, said linear polymer having a molecular weight of at least 800, each alkylene unit therein having 2-20 carbon atoms formed by reacting said linear polymer with a compound selected from the group consisting of aldehydes and ketones to form said Schiff base reaction product and then reacting said Schiff base reaction product, at a temperature of from about 80° C. to about 200° C. and a pressure of from about 10 p.s.i. to about 200 p.s.i., with an alkylene oxide having at least 2 carbon atoms,

(15) an acylated, then olefinated linear polymer of a 1,2-alkyleneimine, said polymer having a molecular weight of at least 800, each alkylene unit therein having 2-20 carbon atoms, formed by reacting, at a temperature of from about 120° C. to about 300° C., said linear polymer with an acylating agent selected from the group consisting of (i) a carboxylic acid having 7-39 carbon atoms and (ii) a precursor of said carboxylic acid capable of forming said acid in said reaction, and then reacting said acylated polymer, at a temperature of from about 70° C. to about 100° C., with an olefinating agent selected from the group consisting of acrylonitrile, styrene, butadiene, vinyl ethers and vinyl sulfones, and

(16) an alkylated, then olefinated linear polymer of a 1,2-alkyleneimine, said polymer having a molecular weight of at least 800, each alkylene unit therein having 2-20 carbon atoms, formed by reacting, at a temperature of from about 100° C. to about 250° C., said polymer with a hydrocarbon halide alkylating agent having from 1-30 carbon atoms, and then reacting said alkylated polymer, at a temperature of from about 70° C. to about 100° C., with an olefinating agent selected from the group consisting of acrylonitrile, styrene, butadiene, vinyl ethers and vinyl sulfones.

3,313,737

METHOD OF PREPARING SILICIC ACID SOLS

Kenneth H. Brinsmead, Huntington, and William B. Brown, Jr., Hempstead, N.Y., assignors to Avnet Shaw, Div. of British Industries Corp., Plainview, N.Y., a corporation of New York

No Drawing. Filed Aug. 12, 1963, Ser. No. 301,601

8 Claims. (Cl. 252-309)

1. In a method of preparing a silicic acid sol from an alkyl silicate wherein the alkyl silicate is hydrolyzed by water in the presence of a mutual solvent by the catalytic action of a strong acid, the improvement which comprises initiating and carrying out said hydrolysis at a temperature at which the mixture of the alkyl silicate and the solvent refluxes at atmospheric pressure, thereby to attain an exothermic peak temperature, and continuing to maintain the temperature of the reaction mixture at

about said peak temperature for a period of from one to six hours after completion of the hydrolysis.

3,313,738

METHOD OF TREATING ORE AND PRODUCT

William A. Rinehimer, Las Vegas, Nev., assignor to American Tansul Company, Las Vegas, Nev.

No Drawing. Filed Mar. 26, 1964, Ser. No. 355,054

6 Claims. (Cl. 252-428)

1. An improved method for treating an ore of a swelling, gelling, cation exchangeable clay comprising removing calcite from the ore, slurring the ore, adjusting the pH of the slurry to about 6.5 to 7.0, then adding a humectant selected from the group consisting of water soluble organic polyols and water soluble polysaccharides in an amount sufficient to prevent calcining during drying, and then drying the slurry.

3,313,739

PROCESS FOR THE PREPARATION OF SILICA GEL

Ellsworth G. Acker, 3100 Rueckert Ave., Baltimore, Md. 21214, and Forrest R. Hurley, 9 Font Hill Drive, Ellicott City, Md. 21043

No Drawing. Filed Oct. 15, 1962, Ser. No. 230,726

5 Claims. (Cl. 252-451)

1. A process for preparing silica gel having a water adsorption capacity of at least 8.5% at 10% relative humidity which comprises preparing a silica hydrosol by the reaction of sodium silicate and sulfuric acid, adding 2 to 6% by weight based on the weight of silica in the sol of a salt of a metal selected from a group consisting of the bromides, chlorides, iodides, sulfates, acetates and nitrates of aluminum, cerium, germanium, lead, thorium, tin, titanium and zirconium which is capable of being hydrolyzed to a hydrous oxide to the sol, allowing the mixture to set to a hydrogel, washing the gel with an acidic wash water having a pH of about 2.5 to 3.5 until the resistivity of the effluent is essentially equal to that of the wash water, at about 60° C., drying the washed gel at about 150° C. for 15-20 hours, activating the dried gel by heating at about 200° C. for 3-6 hours and finally, recovering the product.

3,313,740

EPOXIDE POLYMERIZATION CATALYSTS, THEIR PREPARATION AND THEIR USE

Richard R. Durst, Cuyahoga Falls, and Wendell O. Phillips, Stow, Ohio, assignors to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 26, 1962, Ser. No. 226,443

6 Claims. (Cl. 260-2)

1. A process comprising polymerizing under inert conditions (I) at least one polymerizable organic epoxide material having at least one ring of 2 carbon atoms and 1 oxygen atom in the presence of (II) a catalytically significant amount of a polymerization catalyst, characterized in that said catalyst comprises a solid reaction product obtained by heating a mixture of A and B under an inert atmosphere at a temperature of about 100° to about 200° C. to react A and B while withdrawing volatile nonmetallic products from the same and cooling the resulting reaction mixture, the relative mol ratio of A and B being about 0.7:1 to about 10:1, A being at least one essentially anhydrous aluminum compound having the formula $Al(OR)_3$, in which each R is a hydrocarbon radical of from 1 to 20 carbon atoms and is free of aliphatic unsaturation, B being at least one essentially anhydrous metal halide selected from the group consisting of CdX_2 and ZnX_2 in which each X is a halogen atom.

3,313,741

PREPARATION OF STABILIZED POLYMERIZATION CATALYSTS AND THEIR USE

Heinz Uelzmann, Cuyahoga Falls, and David Feld, Akron, Ohio, assignors to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 28, 1962, Ser. No. 227,043

8 Claims. (Cl. 260-2)

8. The method for making a polyether which comprises polymerizing (D) a polymerizable organic cyclic oxide having a ring of from two to three carbon atoms and one oxygen atom in contact with, as a catalyst for the polymerization of said oxide, the reaction product of the complex reaction product of (A) at least one compound of the formula MR_2 in which M is selected from the group consisting of zinc and cadmium and each R is a monovalent hydrocarbon radical, and (B) an organic compound free of active hydrogen and containing at least one atom selected from the group consisting of tertiary nitrogen atoms, etheral oxygen atoms and thioetheral sulfur atoms with (C) a compound of the formula $R''Z$ in which R'' is a substituent selected from the group consisting of monovalent hydrocarbon radicals and the hydrogen atom and Z is a substituent selected from the group consisting of the oxygen atom and the sulfur atom, where the molar ratio of A to B is such that for each molecule of A there is a sufficient amount of B to supply at least two atoms of the aforementioned class of tertiary nitrogen atoms, etheral oxygen atoms, and thioetheral sulfur atoms, where the molar ratio of C to A is from about 0.05 to about 1.5, and where the ratio of D to A and C is from about 10 to 10,000 mols of D per mol of A and C together.

3,313,742

HIGH MOLECULAR WEIGHT α,β -CHLOROHYDRIN ETHER CONDENSATION PRODUCTS AND THEIR PREPARATION

Walter Dürsch, Frankfurt am Main, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Oct. 6, 1964, Ser. No. 401,962

Claims priority, application Germany, Oct. 12, 1963, F 40,973

11 Claims. (Cl. 260-2)

1. A process for preparing a high molecular weight α,β -chlorohydrin ether condensation product containing quaternary basic nitrogen atoms which comprises (A) admixing at a temperature below about 60° C. under anhydrous conditions and in an oxygen-free atmosphere, a hydroxyalkylate of an alkanolamine having at least one tertiary basic nitrogen atom and at least three hydroxyl groups in the molecule with about 0.1 to 3% by weight of a Friedel-Crafts catalyst, (B) adding thereto, at a temperature of about 70 to 140° C., at least three mols epichlorohydrin per mol of hydroxyalkylate, and (C) maintaining the reaction mixture at a temperature in the range of from 90 to 140° C. until the epoxide content thereof has been reduced substantially to zero and the desired degree of condensation is reached.

3,313,743

EPOXIDE POLYMERIZATION IN THE PRESENCE OF A CARBONIUM ION PRECURSOR AS A MOLECULAR WEIGHT CONTROL AGENT

Leo J. Filar, Newark, and Edwin J. Vandenberg, Wilmington, Del., assignors to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Nov. 27, 1964, Ser. No. 414,393

11 Claims. (Cl. 260-2)

1. In the polymerization of an oxirane with a catalyst selected from the group consisting of catalysts formed by reacting an organoaluminum compound containing at least one aluminum-to-carbon bond with a chelating agent

and catalysts formed by reacting an organoaluminum compound containing at least one aluminum-to-carbon bond with water and a chelating agent, in a molar ratio of from about 0.1 to about 1.5, the step which comprises adding to the polymerization reaction as a molecular weight control agent a carbonium ion precursor in an amount such that the molar ratio of said agent to the organoaluminum compound is from about 0.01 to about 200, said carbonium ion precursor being selected from the group consisting of carboxylic acid anhydrides, carboxylic acid halides, sulfonic acid halides, phosgene, allylic halides, phenylated methyl halides, nitrates and sulfates, α -halosubstituted ethers, acetals, thioethers, polysulfides, sulfuryl halides, phosphorus halides, nitrosyl halides, and organoboron compounds having the formula $RR'R''B$ where each of the R's is a hydrocarbon radical free of ethylenic unsaturation.

3,313,744

1,4-BIS(3-DIMETHYLAMINOPROPYL)PIPERAZINE CATALYST FOR POLYURETHANE PREPARATION

Doris M. Rice, Austin, Tex., assignor to Jefferson Chemical Company, Inc., Houston, Tex., a corporation of Delaware

No Drawing. Filed Dec. 3, 1962, Ser. No. 241,476

4 Claims. (Cl. 260-2.5)

1. A method of producing a urethane which comprises reacting an organic polyisocyanate with an organic hydroxy compound in the presence of a catalytic quantity of 1,4-bis(3-dimethylaminopropyl)piperazine, said organic hydroxy compound being selected from the group consisting of polyhydric alcohols and linear polyesters having terminal hydroxyl groups, which polyesters are obtained from the reaction of a polycarboxylic acid with a polyhydric alcohol.

3,313,745

PROCESS FOR PRODUCING FOAM BODIES FROM SULFITE WASTE LIQUOR AND A FOAM PRODUCT PRODUCED ACCORDING TO THE PROCESS

Oluf Walther Henry Klug, Villa Ro, Skogaryd,

Boras, Sweden

No Drawing. Filed Feb. 21, 1963, Ser. No. 260,321

Claims priority, application Sweden, Feb. 22, 1962, 1,948/62

8 Claims. (Cl. 260-2.5)

1. A process for the production of foamed bodies from sulfite waste liquor which comprises preparing a mixture of about 1-3 parts by weight (dry solids) of an evaporated sulfite waste liquor, and 1 part by weight (dry solids) of a melamine modified urea-formaldehyde pre-condensate, with 2-20% by weight of an acid curing agent; based on the weight of urea-formaldehyde pre-condensate, converting the mixture into a foamed condition; and thereafter curing the foamed mixture at about normal room temperature.

3,313,746

EXPANDED, FOAMED POLYVINYL CARBAZOLE

Leo Philipp Ellinger, London, England, assignor to The British Oxygen Company Limited, London, England, a British company

No Drawing. Filed Apr. 15, 1963, Ser. No. 272,859

Claims priority, application Great Britain, May 10, 1962, 17,966/62

5 Claims. (Cl. 260-2.5)

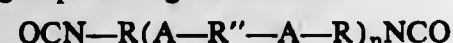
1. A method of making mouldings of expanded foamed polyvinyl carbazole comprising the steps of impregnating granules of polyvinyl carbazole by immersing them in a mixture containing acetone as a diluent and a solvent selected from the group consisting of benzene, dioxan, tetrahydrofuran, dimethyl formamide, pyridine, and mixtures of these substances, heating the impregnated granules at

a temperature sufficient to drive off substantially all said diluent whilst leaving a substantial amount of said solvent and subsequently subjecting the granules to a moulding operation at an elevated temperature sufficient to drive off said residual amount of said solvent.

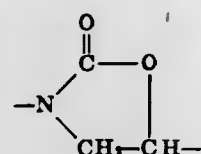
3,313,747 POLYMERS PREPARED FROM ISO-CYANATEOXAZOLIDINONES

Charles H. Schramm, Easton, Pa., assignor to J. T. Baker Chemical Company, Phillipsburg, N.J., a corporation of New Jersey
No Drawing. Filed Oct. 29, 1964, Ser. No. 407,530
8 Claims. (Cl. 260-2.5)

6. A process for preparing a foamed polymer which comprises mixing: (a) water; with (b) a liquid polymerizable composition of a 2-oxazolidinone having at least two substituted 2-oxazolidinone groups and at least two isocyanate groups having the formula



wherein each R represents the organic residue of a diisocyanate after removal of the NCO groups, R' represents the organic residue of a diepoxide after removal of the oxirane groups, each A represents the group



and n is a positive integer representing units of the $(\text{A}-\text{R}'-\text{A}-\text{R})$ group.

7. A foamed polymer prepared by the process of claim 6.

3,313,748 RUBBERY POLYMERS CONTAINING CROSS-LINKED ORGANIC POLYMERS

Oliver W. Burke, Jr., 506 Intracoastal Drive, Fort Lauderdale, Fla. 33304
No Drawing. Filed Aug. 31, 1960, Ser. No. 53,067
2 Claims. (Cl. 260-4)

1. In the production of rubbery polymer reinforced with cross-linked insoluble organic filler material, the process which comprises (I) reducing precoagulum in the filler material by

- (a) emulsifying in water a mixture comprising
 - (i) polymerizable unsaturated monomer material consisting essentially of monomer containing and polymerizable through a plurality of non-conjugated >C=C< groups, and in which any conjugated diene monomer present does not exceed 22% by weight of the monomer material,
 - (ii) a free radical generating catalyst which is water soluble, and
 - (iii) an emulsifying material

- (b) subjecting the so formed mixture to a first polymerization step whereby on the average but one of said plurality of >C=C< groups reacts, thus producing a reaction product comprising essentially an emulsion of individual polymer particles which are
 - (i) essentially non-cross-linked, and
 - (ii) essentially soluble in dimethyl formamide,

- (c) adding to the reaction product of step (b)
 - (i) an additional quantity of polymerizable unsaturated monomer material consisting essentially of monomer containing and polymerizable through a plurality of nonconjugated >C=C< groups, and in which any conjugated diene monomer present does not exceed 22% by weight of the monomer material, and
 - (ii) a second free radical generating catalyst which is monomer soluble, and

(d) subjecting the mixture produced by step (c) to a second polymerization step to form an emulsion of organic filler particles which are

- (i) in the size range of about 5 millimicrons to 0.5 micron average diameter,
- (ii) rigid, and
- (iii) cross-linked to such extent as to be insoluble in dimethylformamide, and (II) incorporating in the rubbery polymer the filler particles produced in step (d).

3,313,749

METHOD OF PRODUCING A MODIFIED PROTEIN-ETHYLENICALLY UNSATURATED MONOMER GRAFT CO-POLYMER

Harold R. Ready, Decatur, Ill., assignor to A. E. Staley Manufacturing Company, Decatur, Ill., a corporation of Delaware
No Drawing. Filed Dec. 15, 1960, Ser. No. 75,922
7 Claims. (Cl. 260-8)

1. The method of producing a chemically modified protein which comprises reacting an ethylenically unsaturated monomer with a halogenated protein to produce a graft copolymer at a temperature of from about 20° C. to about 100° C.

3,313,750

PRODUCTION OF POLYMERS OF ACROLEIN

Karl Heinz Rink, Hanau am Main, and Otto Schweltzer, Königstein, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany
Filed June 4, 1962, Ser. No. 199,902
Claims priority, application Germany, Aug. 25, 1960, D 34,096; June 3, 1961, D 36,249
7 Claims. (Cl. 260-8)

6. A process for the catalytic polymerization of acrolein which comprises contacting acrolein in contact with an alcohol selected from the group consisting of methanol, ethanol, ethylene glycol, glycerol and sugar with an aqueous solution of a polymeric substance selected from the group consisting of polyvinyl carbazole, polyvinyl amine, gelatine, polyvinyl alcohols, polyglycols, cellulose polyethers, polyguanidines, polyacroleins and polyvinyl pyrrolidones containing a bound sulfurous compound selected from the group consisting of sulfur dioxide, alkali metal bisulfites and alkaline earth metal bisulfites as the sole polymerization catalyst to initiate the catalytic polymerization of the acrolein.

3,313,751

THERMOPLASTIC RESINS

Lester A. H. Baum, Carteret, N.J., and Paul F. Bruins, Douglaston, and Francis W. Littler, Mineola, N.Y., assignors to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed June 24, 1963, Ser. No. 290,163
4 Claims. (Cl. 260-17.4)

1. A method for forming a thermoplastic resin which comprises: heating the residue formed during the furfural extractive distillation of hydrocarbon mixtures containing butadiene and comprising a mixture of C_4 and higher boiling hydrocarbons and water to a temperature not higher than about 215° F. to evaporate water therefrom; and thereafter subjecting the thus dehydrated residue to polymerization at a temperature between about 350° F. and about 500° F.

4. Fiberboard comprising exploded wood-fiber containing as a binder the thermoplastic resin produced in accordance with the method of claim 1.

3,313,752 PROCESS FOR THE PREPARATION OF MODIFIED POLYOXYMETHYLENES FROM TRIOXAN WITH POLYAMINOAMIDES

Henri Sack, Creil, France, assignor to Houllieres Du Bassin Du Nord and Du Pas-De-Calais, Douai, Nord, France, a French establishment
No Drawing. Filed Jan. 7, 1964, Ser. No. 336,140
Claims priority, application France, Jan. 10, 1963, 921,043

4 Claims. (Cl. 260-18)

1. A process for the preparation of modified polyoxymethylene which comprises adding to trioxan, at a temperature above its melting point, a polyaminoamide which is the condensation product of a dimer or trimer of an unsaturated fatty acid containing at least 10 carbon atoms with at least the stoichiometric quantity of a diamine or triamine, and which has a solubility in trioxan at 75° C. of more than 0.1%, and, after the addition of said polyaminoamide to the trioxan, subjecting the trioxan, in the solid state, to ionizing radiation.

3,313,753

FLOOR TILE COMPRISING VINYL CHLORIDE-VINYL ACETATE COPOLYMER AND MODIFIED POLYOXYMETHYLENE

William J. Roberts, Charlotte, N.C., and Edward J. Hensch, Park Ridge, N.J., assignors to Celanese Corporation, a corporation of Delaware
No Drawing. Filed Sept. 16, 1965, Ser. No. 487,925
4 Claims. (Cl. 260-23)

1. A polymeric composition exhibiting exceptional gloss and improved hardness which comprises:

- (a) from about 25 to 50 weight percent of a vinyl chloride-vinyl acetate copolymer containing from about 3 to about 13 weight percent of combined vinyl acetate;
- (b) from about 3 to about 28 weight percent of a copolyacetal having primary chains consisting essentially of recurring oxymethylene units interspersed with —OR— units wherein R is a divalent radical containing at least two carbon atoms directly linked to each other and positioned in the chain between the two valences with any substituent in the R radical being inert, said copolyacetal having a number average molecular weight of between about 30,000 and about 80,000; and
- (c) an inorganic filler selected from the group consisting of titanium dioxide, carbon black, chrome green, calcium carbonate, limestone, calcium silicate, silica flour, whiting and clay.

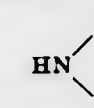
3,313,754

ALLOYS OF POLYOLEFINS AND ROSIN DERIVATIVES

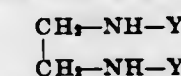
Lawrence J. Logan, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed Dec. 16, 1964, Ser. No. 418,915
12 Claims. (Cl. 260-27)

1. An alloy consisting essentially of (A) a polyolefin selected from the group consisting of crystalline polyethylene and stereoregular homopolymers of α -olefins containing at least 3 carbon atoms and (B) from about 1% to about 60% by weight of said alloy of rosin derivative compatible with said polyolefin and having a drop softening point above about 70° C., said rosin derivative being selected from the group consisting of (1) modified rosins of the group consisting of hydrogenated rosin, disproportionated rosin, polymerized rosin, condensation adducts of rosin and unsaturated carbocyclic hydrocarbons, hydrogenated disproportionated rosin, hydrogenated polymerized rosin, and hydrogenated condensation adducts of rosin and unsaturated carbocyclic hydrocarbons; (2) resin acids of the group consisting of dihydroabietic acid, tetrahydroabietic acid, dehydro-

abietic acid, dihydrodextropimaric acid, tetrahydrodextropimaric acid, dihydroisodextropimaric acid, tetrahydroisodextropimaric acid, and mixtures thereof; (3) esters of the group consisting of esters of the modified rosins as defined in (1) above and hydroabietyl alcohol, and esters of the resin acids as defined in (2) above and hydroabietyl alcohol; (4) di-rosin amine; (5) monoamides of the general formula



in which X is a radical of the group consisting of dihydroabietyl, tetrahydroabietyl, dehydroabietyl, dihydrodextropimaryl, tetrahydrodextropimaryl, dihydroisodextropimaryl and tetrahydroisodextropimaryl radicals, and Y is a radical of the group consisting of dihydroabietate, tetrahydroabietate, dehydroabietate, dihydrodextropimarate, tetrahydrodextropimarate, dihydroisodextropimarate, and tetrahydroisodextropimarate radicals; and (6) diamides of the general formula



in which each Y is a radical as defined in (5) above.

3,313,755

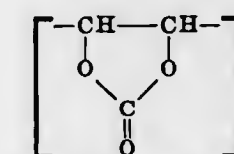
AQUEOUS POLYMER LATICES CONTAINING AN EMULSIFIER OF A PARTIAL ESTER OF A STYRENE-MALEIC ACID ANHYDRIDE COPOLYMER
William P. O'Rourke, Babylon, N.Y., assignor to Knomark, Inc., Brooklyn, N.Y., a corporation of New York
No Drawing. Filed Mar. 9, 1962, Ser. No. 178,584
8 Claims. (Cl. 260-28.5)

5. A latex consisting essentially of finely divided particles of a polyvinylidene polymer suspended in an aqueous fluid with an emulsifier consisting essentially of a partial ester of a styrene-maleic acid anhydride copolymer, said copolymer having a molecular weight between about 1400 and about 2500 and having a molar ratio of styrene to maleic acid anhydride therein between about 1:1 and 3:1, from about 20 percent to about 35 percent of the carboxyl groups of said copolymer being esterified with a monohydric primary aliphatic or cycloaliphatic alcohol having from 18 to 22 carbon atoms, and from about 25 percent to about 50 percent of the carboxyl groups of said copolymer being esterified with a monohydric monoamine free of amide-forming hydrogen atoms and selected from the group consisting of monohydric tertiary monoamines and monohydric secondary monoamines having a sterically hindered amino group.

3,313,756

SOLUTIONS OF POLYVINYLENE CARBONATE
John B. Clements and Carlton C. Summers, Durham, N.C., and William E. Lanier, Danville, Ala., assignors to The Chemstrand Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 23, 1962, Ser. No. 189,259
8 Claims. (Cl. 260-29.6)

1. A composition of matter consisting essentially of from about 5 to 30 percent, based on the total weight of the composition, of polyvinylene carbonate of the formula



wherein n is an integer having a value of at least 10 and a solvent consisting essentially of a mixture of from about 50 to 99 percent, based on the total weight of the solvent, of dimethylsulfoxide and from about 1 to 50

percent, based on the total weight of the solvent, of a compound selected from the group consisting of water and aliphatic monohydroxy compounds having from 1 to 4 carbon atoms and containing only carbon, hydrogen, and oxygen.

3,313,757

VINYLDENE CHLORIDE-METHYL ACRYLATE-METHYL METHACRYLATE-ACRYLONITRILE COPOLYMER LATICES

Alex Trofimow, Brookline, Elizabeth C. Dearborn, Boston, and Norbert K. Mader, Wilmington, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
No Drawing. Filed Mar. 9, 1964, Ser. No. 350,602
9 Claims. (Cl. 260—29.6)

1. A film-forming composition for providing films having high vapor barrier characteristics and flexibility comprising an aqueous dispersion of a copolymer of about 87 to 94 weight percent of vinylidene chloride, about 4 to 7 weight percent of methyl acrylate, about 1.5 to 6 weight percent of methyl methacrylate, and about 1 to 3 weight percent of acrylonitrile.

3,313,758

ACRYLONITRILE POLYMER SPINNING COMPOSITIONS

Charles H. Apperson, Decatur, Ala., and James R. Misenheimer, Charlotte, N.C., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Jan. 5, 1966, Ser. No. 531,321
9 Claims. (Cl. 260—29.6)

1. A process for preparing compositions which can be readily prepared for spinning from acrylonitrile polymers containing at least 80 percent by weight acrylonitrile and prepared by aqueous medium polymerization, which comprises dewatering the aqueous acrylonitrile polymer slurry to form a wet polymer filter cake, washing said filter cake with an organic non-solvent for said acrylonitrile polymer to provide a mixture having a water content of less than about 20 percent by weight, then washing said mixture with an organic solvent for said acrylonitrile polymer to provide a mixture having a non-solvent content of less than about 15 percent by weight and a water content of less than about 10 percent by weight, said washing being conducted at a temperature of less than about 30° C.

3,313,759

PREPARATION OF CONCENTRATED LATICES

Gerardus E. La Heij and Jacques A. Waterman, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed June 12, 1963, Ser. No. 287,208
Claims priority, application Netherlands, Oct. 3, 1962, 283,870
7 Claims. (Cl. 260—29.7)

1. The process for producing a concentrated latex free of creaming agents comprising
(a) stripping an aqueous elastomeric emulsion of essentially all organic solvent at temperatures below the boiling point of water under the pressure conditions present;
(b) said emulsion containing 3 to 15% by weight of synthetic elastomer, less than 15 phr. of an aqueous dispersible carboxylic acid soap emulsifier, 500 to 3500 phr. of organic solvent for the elastomer selected from the group consisting of hydrocarbon solvents and halogen derivatives thereof and 350 to 3500 phr. water; whereby a stable dilute latex is formed;
(c) adding thereto an amount of carboxylic acid soap emulsifying agent sufficient to increase the total emulsifier content to between 20 and 100 phr., whereby an unstable latex is formed;

(d) and phase separating therefrom as a first phase free of creaming agents a stable concentrated latex containing at least about 90% by weight of the total elastomer and 1 to 5 phr. emulsifier and as a second phase an aqueous serum containing less than 10% by weight of the total elastomer and substantially all of the remaining emulsifier;
(e) said concentrated latex having an elastomer content of at least about 35% by weight based on the total concentrated latex;
(f) wherein phr. has the meaning parts per hundred parts elastomer by weight.

3,313,760

VINYL CHLORIDE COATING COMPOSITION

Wendell A. Barnes, Cheswick, and Norman W. Franke, Penn Hills Township, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed June 24, 1963, Ser. No. 290,247
9 Claims. (Cl. 260—31.8)

1. A composition of matter consisting essentially of a major portion of a resinous vinyl chloride polymer; between 1 and 12 weight percent of the polymer of at least one stable hydrogen chloride acceptor metal compound selected from the group consisting of compounds of cadmium, barium, zinc, tin and lead; between 20 and 80 weight percent of the polymer of a neutral branched-chain alkyl ester, having between 6 and 13 carbon atoms per alkyl group, of a polybasic acid; and a biphenol stabilizer selected from the group consisting of p,p'-biphenol and 4,4'-bis(2,6-di-t-butylphenol) wherein the concentration of p,p'-biphenol is between 0.02 and 5 weight percent of the polymer and wherein the concentration of 4,4'-bis(2,6-di-t-butylphenol) is between 0.15 and 5 weight percent of the polymer.

3,313,761

STABILIZED VINYL CHLORIDE POLYMER

Wendell A. Barnes, Cheswick, and Norman W. Franke, Penn Hills Township, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed June 24, 1963, Ser. No. 290,248
9 Claims. (Cl. 260—31.8)

1. A composition of matter consisting essentially of a major portion of a resinous vinyl chloride polymer, between 20 and 80 weight percent of the polymer of a neutral branched-chain alkyl ester, having between 6 and 13 carbon atoms per alkyl group, of a polybasic acid; between 1 and 12 weight percent of the polymer of at least one stable hydrogen chloride acceptor metal compound selected from the group consisting of compounds of cadmium, barium, zinc, tin and lead; and a substituted phenol stabilizer selected from the group consisting of monohydroxy-diphenylethane and 2,6-di-tertiary-butyl-alpha-methoxy-paracresol, wherein the concentration is between 0.08 and 5 weight percent of the polymer when the stabilizer is monohydroxy diphenylethane and the concentration is between 0.05 and 5 weight percent of the polymer when the stabilizer is 2,6-di-tertiary-butyl-alpha-methoxy-paracresol.

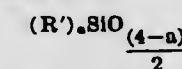
3,313,762

ORGANOPOLYSILOXANE ELASTOMERS CONTAINING PEROXY CARBONATE CURING AGENTS

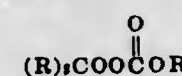
Charles W. Pfeiffer, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Aug. 29, 1963, Ser. No. 305,534
5 Claims. (Cl. 260—37)

1. An organopolysiloxane composition comprising (1) 100 parts of an organopolysiloxane polymer convertible

to the cured, solid, elastic state having a viscosity of at least 100,000 centipoises at 25° C. of the formula,



(2) 10 to 300 parts of filler, and (3) 0.001 to 10 parts of a peroxide having the formula,



where R is a member selected from the class consisting of monovalent hydrocarbon radicals, halogenated monovalent hydrocarbon radicals, and cyanoalkyl radicals, R is a monovalent alkyl radical having up to 8 carbon atoms, and a is equal to 1.95 to 2.01, inclusive.

3. A composition in accordance with claim 1 in which the filler is a silica filler.

3,313,763

FIRE RETARDANT POLYMER COMPOSITIONS HAVING IMPROVED THERMAL PROPERTIES

Stephen M. Creighton, Edmonton, Alberta, Canada, and Edward V. Gouinlock, Jr., Buffalo, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed May 27, 1963, Ser. No. 283,570
38 Claims. (Cl. 260—41)

1. A fire retardant polymer composition comprising (1) a polymer of an unsaturated hydrocarbon, and (2) a compound selected from the group consisting of (a) 1,2-dihydro-3,6-methano-3,4,5,6,7,7-hexachlorophthalimide, (b) tetrachlorophthalimide and mixtures thereof.

3,313,764

RUBBER COMPOSITIONS

Hirokazu Iino, Hyogo-ken, Japan, assignor to Sekaicho Gomu Kabushiki Kaisha, Oyodo-ku, Osaka-shi, Japan
No Drawing. Filed Dec. 24, 1963, Ser. No. 333,211
Claims priority, application Japan, Dec. 29, 1962, 37/59,989
9 Claims. (Cl. 260—41.5)

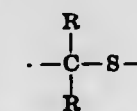
1. Method of preparing a rubber composition, comprising preheating at least one species of fillers at a temperature ranging from 100° C. to the decomposing point of the filler employed until each of the particles of the filler is heated to a temperature substantially equal to the heat applied; and milling a rubber stock in admixture with the resultant filler added while retaining a temperature ranging from 50° C. to the temperature where the rubber content present in the rubber stock starts undergoing conversion in quality due to the heat of the filler added.

3,313,765

POLYMERS CONTAINING OXYMETHYLENE AND THIOMETHYLENE UNITS

William J. Roberts, Bernardsville, N.J., and Burton B. Jacknow, Rochester, N.Y., assignors to Celanese Corporation, a corporation of Delaware
No Drawing. Filed May 10, 1963, Ser. No. 279,603
10 Claims. (Cl. 260—45.8)

1. A normally solid copolymer consisting essentially of (A) oxymethylene units and (B) recurring divalent units of the formula



in which the R substituents on the carbon atom are selected from the group consisting of hydrogen, a lower alkyl having 1-10 carbon atoms, a halogen and phenyl, with the ratio of said (A) units to said (B) units being in the range of about 1:1 to 1000:1.

2. A stabilized composition of the copolymer of claim 1 and a stabilizing amount of a phenolic antioxidant.
3. The stabilized composition of claim 2, also comprising a stabilizing amount of a polyepoxide.

3,313,766

PROCESS FOR IMPROVING THE STABILITY OF PHENOL RESOLS BY ADDING TRIOXANE

Guido Max Rudolf Lorentz, Post Espe, near Butzbach, Helmut Neises, Kelkheim, Taunus, and Rudolf Stroh, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Jan. 21, 1964, Ser. No. 339,114
Claims priority, application Germany, Jan. 22, 1963, F 38,819
3 Claims. (Cl. 260—45.8)

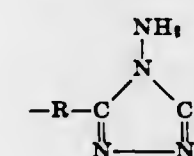
1. Phenol-aldehyde resol containing trioxane as an anti-ageing substance.

3,313,767

AMIDINE COMPOUNDS AS THERMAL STABILIZERS FOR OXYMETHYLENE POLYMERS

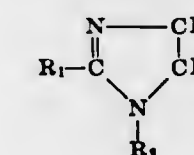
Frank M. Berardinelli, South Orange, Raymond J. Kray, Berkeley Heights, and Thomas J. Dolce, Springfield, N.J., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 24, 1964, Ser. No. 347,028
17 Claims. (Cl. 260—45.8)

1. A polymer composition having enhanced thermal stability comprising
(1) an oxymethylene polymer having a melting point of at least 150° and
(2) a thermal stabilizer therefor comprising a stabilizing amount of at least one amidine compound selected from the group consisting of
(a) compounds selected from the group consisting of cyanoguanidine and cyanoguanidine compounds substituted with inert substituents;
(b) polyaminotriazoles containing structural units of the formula



wherein R is a divalent organic radical containing only inert groups therein;

(c) amine substituted derivatives of symmetrical triazines containing only inert substituents
(d) compounds having an imidazoline nucleus and having the formula



wherein R₁ is a long chain aliphatic radical containing at least eleven carbon atoms and R₂ is a short chain aliphatic radical containing one to ten carbon atoms.

7. A polymer composition comprising (1) an oxymethylene polymer having a melting point of at least 150° C.,

(2) from about .01 to about 0.2 weight percent, based upon the polymer, of an amine substituted triazine compound, (3) from about .05 to about 1.0 weight percent, based upon the polymer of a cyanoguanidine compound, and (4) from about 0.3 to about 1.0 weight percent, based upon the polymer of an alkylene bisphenol.

3,313,768

STABILIZED ACRYLONITRILE POLYMER COMPOSITIONS CONTAINING DIBUTYLTIN OXIDE AND OXALIC ACID

Thomas M. Veazey, Wayne R. Eberhardt, and Ronald I. Christensen, Decatur, Ala., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Sept. 6, 1963, Ser. No. 307,002
8 Claims. (Cl. 260-45.75)

1. A composition comprising a polymer composition blended with from about 0.05 to about 0.5 percent of oxalic acid and from about 0.05 to about 0.5 to about 0.5 percent by weight of dibutyltin oxide, said polymer composition being selected from the group consisting of acrylonitrile polymers blended with halogen containing addition polymers and acrylonitrile polymers having interpolymerized therewith halogen containing ethylenically unsaturated monomers.

3,313,769

STABILIZED SYNTHETIC LINEAR POLYCARBONAMIDE CONTAINING A COPPER COMPOUND AND A HALOLACTAM

Paul Maabe, Bad Dürkheim, Hans-Georg Matthies and Fritz Wenger, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Aug. 11, 1964, Ser. No. 388,948
Claims priority, application Germany, Sept. 14, 1963, B 73,521

7 Claims. (Cl. 260-45.75)

1. A composition of matter comprising a synthetic linear polycarbonamide having recurring intralinear carbonamide groups as an integral part of the main polymer chain and a mixture of from 0.01 to 0.1% by weight of a soluble copper salt and from 0.01 to 0.1% by weight of a halolactam containing from 4 to 16 carbon atoms and from 1 to 2 halogen atoms selected from the group consisting of chlorine, bromine and iodine, percentages with reference to said polycarbonamide.

3,313,770

POLYETHYLENE AND POLYPROPYLENE COMPOSITIONS CONTAINING NICKEL AMINE COMPLEXES OF BIS-PHENOL SULFIDES AS LIGHT STABILIZERS

Harold Marvin Foster, Middlesex, N.J., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Original application Dec. 11, 1961, Ser. No. 158,576, now Patent No. 3,215,717, dated Nov. 2, 1965. Divided and this application Dec. 2, 1964, Ser. No. 415,491

5 Claims. (Cl. 260-45.75)

1. A polymeric composition of matter stabilized against deterioration from ultraviolet radiation comprising a polymer of a mono-olefin and from 0.01% to 5% of a nickel amine complex of 2,2'-thiobis(p-alkylphenol) wherein the complex-forming amine is a member selected from the group consisting of ammonia, primary aliphatic amines, primary aromatic amines and cyclic secondary amines, and said alkyl group has up to eighteen carbon atoms, said complex being characterized by a single nitrogen-to-nickel coordinate bond and a single nickel-to-sulfur coordinate bond, for each nickel atom in the complex molecule.

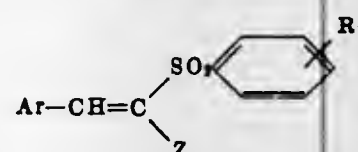
3,313,771

ALPHA-PHENYLSULFONYL CINNAMATES AND CINNAMONITRILES AS ULTRAVIOLET LIGHT STABILIZERS FOR PLASTIC MATERIALS

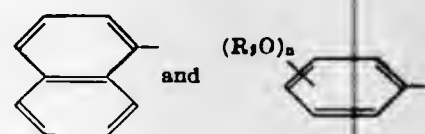
Hans Dressler, Pitcairn, and Kenneth G. Reabe, Delmont, Pa., assignors to Koppers Company, Inc., a corporation of Delaware

No Drawing. Filed Feb. 16, 1965, Ser. No. 433,216
9 Claims. (Cl. 260-45.85)

1. A polymeric composition stabilized against ultraviolet degradation comprising a polymer selected from the group consisting of polyethylene, polypropylene, polystyrene, polyvinyl acetate, polyvinyl chloride, copolymers of vinylidene chloride and vinyl chloride, nitrocellulose, ethylcellulose, cellulose acetate and polyester resins and containing a stabilizer having the formula:



wherein R_1 is a member selected from the group consisting of hydrogen and alkyl radicals having from 1-4 carbon atoms; Z is a member selected from the group consisting of cyano and $-COOR_2$, wherein R_2 is an alkyl radical having from 1-18 carbon atoms; Ar is a member selected from the group consisting of:



wherein R_3 is an alkyl radical having from 1-4 carbon atoms and n is an integer having a value of 1-2, the value of n being 1 when Z is cyano.

2. A polystyrene composition stabilized against degradation on exposure to ultraviolet radiation comprising polystyrene having dispersed therein a stabilizing amount of lower alkyl (alpha-phenylsulfonyl)-p-alkoxycinnamate.

3,313,772

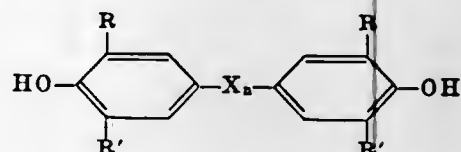
POLYOLEFINS STABILIZED WITH (A) A CYCLOALKYL SUBSTITUTED BENZOPHENONE, BIPHENOL, OR OXYDIPHENOL AND OPTIONALLY (B) A DIALKYL THIODIALKANOATE

Rodney D. Moss, Indianapolis, Ind., David A. Gordon, Scarsdale, N.Y., and John M. Corbett, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Original application May 17, 1962, Ser. No. 195,391, now Patent No. 3,234,285, dated Feb. 8, 1966. Divided and this application Sept. 9, 1965, Ser. No. 486,188

7 Claims. (Cl. 260-45.85)

1. A thermoplastic polymerized alpha-olefin composition having incorporated therein a small but stabilizing quantity of a compound having the structure



wherein R is cycloalkyl of 4-8 carbon atoms, R' is hydrogen, lower alkyl, or cycloalkyl of 4-8 carbon atoms, X is oxygen or carbonyl, and n is an integer from zero to one.

2. A composition as described in claim 1 wherein there is additionally incorporated a stabilizing quantity of a higher alkyl diester of a thiodialkanoic acid.

3,313,773

PLATINUM ADDITION CATALYST SYSTEM

Harry F. Lamoreaux, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Dec. 3, 1965, Ser. No. 511,348
8 Claims. (Cl. 260-46.5)

1. A catalyzed composition for the production of organosilicon compounds containing silicon-carbon bonds which comprises (A) a silicon compound containing at least one hydrogen atom attached to silicon per molecule, there being not more than two hydrogen atoms attached to any one silicon atom, (B) a compound containing aliphatic carbon atoms linked by multiple bonds and (C) a platinum compound selected from the class consisting of trimethylplatinum iodide and hexamethyldiplatinum.

3,313,774

COMPOSITIONS OF PHOSPHONITRILIC HALIDE-POLYHYDRIC PHENOL COPOLYMERS WITH CROSSLINKING AGENTS

Rip G. Rice, San Diego, and Philip D. Faurote and Buell H. Gelb, Canoga Park, Calif., assignors to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware

No Drawing. Filed Sept. 4, 1962, Ser. No. 221,935
4 Claims. (Cl. 260-47)

1. A polymeric product consisting essentially of a condensation product in the form of a mixture of compounds, which mixture corresponds to a constitutional formula



where B is a divalent aromatic radical, x is in the range of 3 to about 11, n has a value of at least 2, m ranges from 0 to about 60, p is at least 1, and q is related to n , m and p such that

$$q = nx - \frac{1}{2}(m + p)$$

said mixture having a very strong infrared absorption in the region of about 11 to about 11.5 microns wave length, characteristic of the PN ring absorption region in the infrared absorption spectrum of trimeric polyphosphonitrilic chloride, reacted with a cross-linking agent of dibutyl tin dichloride.

3,313,775

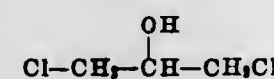
PROCESS FOR MANUFACTURING GLYCIDYL ETHERS OF POLYHYDRIC PHENOLS

Helmut J. Fränkel, Kelkheim, near Frankfurt, Germany, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 16, 1963, Ser. No. 302,738
Claims priority, application Germany, Aug. 23, 1962, S 81,071

9 Claims. (Cl. 260-47)

1. A process for preparing solid glycidyl ethers of polyhydric phenols having very light color which comprises forming an aqueous slurry of the polyhydric phenol and a halohydrin of the group consisting of epihalohydrin and a glycerol halohydrin of the formula



adding an aqueous alkali hydroxide solution to the slurry in sufficient amount to effect a removal of substantially all of the organically bound chlorine from the product and make the reaction mixture substantially neutral, at least 0.1 mol but not more than 1.75 moles of halohydrin being present per mol of the polyhydric phenol, and at the conclusion of the reaction removing the aqueous layer, washing and drying the remaining solid glycidyl ether.

3,313,776

PROCESS FOR INCREASING THE MOLECULAR WEIGHT OF A POLYPHENYLENE ETHER

Willem F. H. Borman, Dalton, Mass., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Mar. 13, 1964, Ser. No. 351,820
5 Claims. (Cl. 260-47)

1. In a process for forming a polyphenylene ether by oxidatively coupling a monovalent phenol in the presence of oxygen and an oxygen carrying copper amine catalyst solution formed from a copper salt and an amine selected from the group consisting of primary, secondary and tertiary amines free of aryl substituents directly bonded to the amine nitrogen, the improvement which consists of extending the degree of polymerization of the polyphenylene ether by making additions of a strong oxidizing agent to the reaction mixture at those points in the polymerization reaction when the rate of polymerization decreases and the degree of polymerization tends to become constant.

3,313,777

LINEAR POLYESTERS AND POLYESTER-AMIDES FROM 2,2,4,4-TETRAALKYL-1,3-CYCLOBUTANE-DIOLS

Edward U. Elam, James C. Martin, and Russell Gilkey, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 18, 1959, Ser. No. 860,375
37 Claims. (Cl. 260-47)

1. A linear high molecular weight resinous condensation polymer of (A) at least one bifunctional carboxylic acid and (B) at least one bifunctional compound selected from the group consisting of (a) 2,2,4,4-tetraalkyl-1,3-cyclobutanediols and (b) a mixture composed of 2,2,4,4-tetraalkyl-1,3-cyclobutanediols and up to 50 mole percent of said mixture of a compound selected from the group consisting of a different bifunctional dihydroxy compound, a bifunctional amino-alcohol, and a bifunctional aliphatic diamine, said 2,2,4,4-tetraalkyl-1,3-cyclobutanediols being selected from the group consisting of the cis- and trans-isomers thereof and wherein each alkyl group contains from 1 to 4 carbon atoms, the relative proportions of (A) and (B) constituents being such as to constitute a polymer selected from the group consisting of polyesters and polyesteramides.

3,313,778

SULFONIC ACID ESTER MODIFIED POLYESTERS

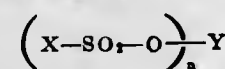
Ryoichi Sakurai and Takeo Shima, Yamaguchi-ken, Japan, assignors to Tokoku Jinzo Kenshi Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed Mar. 28, 1961, Ser. No. 98,786
Claims priority, application Japan, Mar. 31, 1960, 35/11,133

1 Claim. (Cl. 260-49)

A modified polyester, prepared from polyester-forming combination selected from the group consisting of (A) aliphatic dicarboxylic acids, aromatic dicarboxylic acids and the functional derivatives of said dicarboxylic acids with at least one glycol selected from the group consisting of aliphatic and cycloaliphatic glycols, (B) self-condensing oxycarboxylic acids selected from the group consisting of aliphatic and aromatic oxycarboxylic acids, (C) at least one compound selected from the group consisting of aliphatic glycols and divalent phenols with at least one carbonic acid derivative selected from the group consisting of phosgene and carbonic acid esters, which has linked to its main polymeric chain through a

carboxyl ester group the residue of at least one organic sulfonic acid ester having the formula:



wherein n is an integer from 1 to 4; X is an organic radical having no ester-forming functional group and being selected from the class consisting of alkyl groups each containing from 1 to 12 carbon atoms, phenyl group, tolyl groups and chlorophenyl groups; Y is an organic radical selected from the group consisting of lower alkyl groups, phenyl group, lower-alkyl phenyl groups and diphenyl group, each having from one to two ester-forming functional groups selected from the class consisting of hydroxy group, carboxyl group, alkoxy carbonyl group and phenoxy carbonyl group; the amount of said organic sulfonic acid ester being linked to said polyester chain being in the range of from about 0.1 to about 20 mol percent based on the amount of the acid component in said polyester.

3,313,779 RESIN CARRYING ALDEHYDE BOUND CHELATOR

Le Roy A. White, Root Road, Somers, Conn. 06071
No Drawing. Filed Apr. 6, 1964, Ser. No. 357,811
20 Claims. (Cl. 260-59)

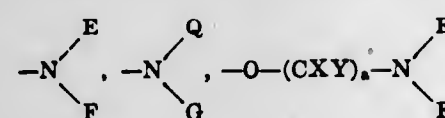
1. A chelating resin comprising the reaction product of (A) an aldehyde compound having no more than 54 carbon atoms; (B) an aldehyde-reactive sequestering agent containing at least one of the groups $>\text{NH}$, $-\text{CH}(\text{COOH})_2$, and



and having the formula



wherein J is selected from the group consisting of



$-\text{O}-\text{M}$, and $-\text{O}-\text{T}$

wherein X is selected from the group consisting of

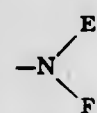
$-\text{H}$ and $-(\text{CH}_2)_6\text{COOH}$;

wherein Y is selected from the group consisting of

$-\text{H}$, $-\text{COOH}$, and $-\text{OH}$;

wherein a , b , and c are integers of from 0 to 1;

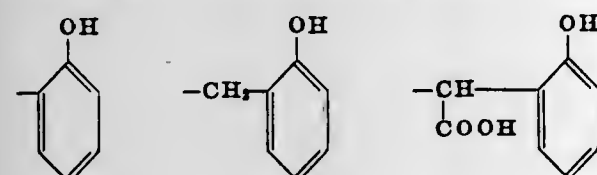
wherein K is selected from the same group as J, but is a different member and wherein



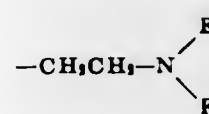
and $-\text{O}-\text{M}$ are never in the same compound together;

wherein E, F, and G are selected from the group consisting of $-\text{H}$, $-\text{CH}_2\text{COOH}$, $-\text{CH}(\text{COOH})_2$,

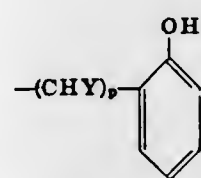
$-\text{CH}_2\text{CH}_2\text{OH}$, $-\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OH}$,



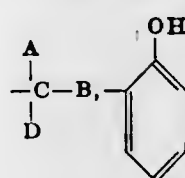
$(\text{CH}_2)_p\text{SO}_3\text{H}$, $-(\text{CH}_2)_p\text{PO}_3\text{H}_2$, and not more than one unit of



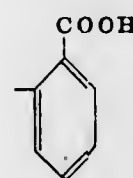
per sequestering agent molecule;
wherein Q is selected from the group consisting of $-\text{H}$ and



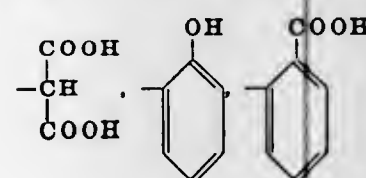
wherein p is an integer of from 0 to 2;
wherein M is selected from the group consisting of



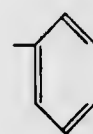
and



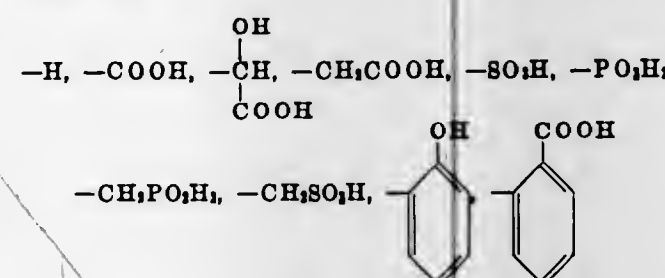
wherein T is selected from the group consisting of



and



and wherein A, B and D are selected from the group consisting of

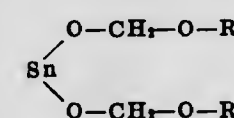


and not more than one unit per sequestering molecule of $-(\text{CH}_2)_p\text{O}-\text{M}$ among A, B and D; and (C) an aldehyde-reactive water-insolubilizable resin containing a plurality of groupings of the members selected from the group consisting of phenolic, imino, amino and hydroxyl, said aldehyde compound forming a linkage between said resin and said sequestering agent, the sequestering component of the resultant chelating resin being pendant as side chains from said resin.

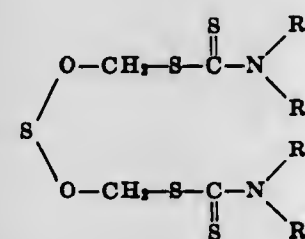
3,313,780
PROCESS FOR THE PRODUCTION OF HIGH
MOLECULAR WEIGHT POLYOXYMETH-
YLENES
Kuno Wagner and Ernst-Ulrich Köcher, Leverkusen, Ger-
many, assignors to Farbenfabriken Bayer Aktiengesell-
schaft, Leverkusen, Germany, a corporation of
Germany
No Drawing. Filed Sept. 25, 1963, Ser. No. 311,296
Claims priority, application Germany, Oct. 13, 1962,
F 38,026

4 Claims. (Cl. 260-67)

1. A process for the production of high molecular weight polyoxymethylene which comprises polymerizing monomeric gaseous formaldehyde containing from 0.5 to 3% by weight of water in the presence of a catalytic amount of a compound selected from the group consist-
ing of



and



wherein R' represents the acyl radical of an acid selected from the group consisting of alkanic acids containing up to 18 carbon atoms and substituted and unsubstituted benzoic, phenylacetic and cyclohexanoic acids, the substituents of said substituted acids being selected from the group consisting of halogen, nitro, hydroxy, etherified hydroxy and alkyl and each R'' is selected from the group consisting of alkyl and phenyl, at temperatures of from about -20 to 120°C . and recovering resulting high molecular weight polyoxymethylene.

3,313,781
HIGH MOLECULAR WEIGHT POLYESTER SUIT-
ABLE FOR USE AS ELECTRICALLY INSULAT-
ING MATERIAL, AND METHOD OF MAKING
THE SAME

Hans J. Beck, Hamburg, and Karl Schmidt, Hamburg-
Uhlenhorst, Germany, assignors to Dr. Beck & Co.
G.m.b.H., Hamburg, Germany
No Drawing. Filed Apr. 26, 1963, Ser. No. 276,089
14 Claims. (Cl. 260-75)

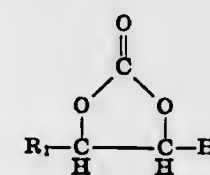
14. A method of producing an interesterified, esterified, polycondensed and cross-linked high molecular weight polyester, comprising the steps of subjecting terephthalic acid-dimethyl-ester to interesterification with a mixture of glycol and glycerol in an amount such that the hydroxyl groups of said glycol and glycerol are in excess of the amount of carboxyl reactive groups of the dimethyl terephthalate, the ratio of hydroxyl groups of said glycol to hydroxyl groups of said glycerol being between 1:0.9 and 1:1.1, and in the presence of an interesterification catalyst which is soluble in said mixture, thereby obtaining an interesterified reaction product; esterifying the thus obtained interesterified reaction product with terephthalic acid, the ratio of equivalents of said terephthalic acid-dimethyl-ester to said terephthalic acid being between 2:0.2 and 2:0.4 and the ratio of total carboxyl groups of said terephthalic acid-dimethyl-ester and of said terephthalic acid to the hydroxyl groups of said glycol and glycerol being between 2.1:3 and 2.4:3, thereby obtaining an esterification reaction product; subjecting the thus obtained esterification reaction product to poly-

condensation, thereby obtaining a high molecular weight polyester lacquer base; and heating the thus obtained polycondensed high molecular weight polyester in the presence of cresol as a solvent and of 1-2% of butyl titanate and of between about 0.2-0.7% of p-toluol-sulfonic acid calculated on the solid body content so as to cross-link said polyester and bind o-titanic acid in the molecules thereof, thereby forming a cured polyester of high suitability for electrical insulation.

3,313,782
PRODUCTION OF LINEAR POLYCARBONATES BY
THE REACTION OF A 1,3-DIOXOLANONE-2
WITH A DIHYDROXY COMPOUND
Hermann Springmann and Wilhelm Dietrich, Marl, Ger-
many, assignors to Chemische Werke Hüls Aktiengesell-
schaft, Recklinghausen, Germany
No Drawing. Filed Apr. 30, 1964, Ser. No. 363,991
Claims priority, application Germany, May 9, 1963,
C 29,891

8 Claims. (Cl. 260-77.5)

1. A process for the production of linear, high molecular weight polycarbonates, which process comprises polymerizing a 1,3-dioxolanone-2 of the formula



wherein R_1 is selected from the group consisting of hydrogen and alkyl of 1-2 carbon atoms, with a dihydroxy compound of the formula

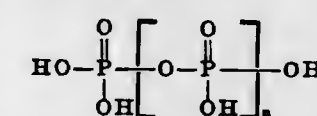


wherein R is selected from the group of radicals consisting of aliphatic, non-aromatic cycloaliphatic and araliphatic, and simultaneously removing formed glycol by-products, said polymerizing being conducted in contact with a basic polymerization catalyst capable of catalyzing ester interchange reactions, there being a stoichiometric molar excess of 1,3-dioxolanone-2 over the dihydroxy compound.

3,313,783
PROCESS FOR PREPARATION OF
POLYBENZIMIDAZOLES
Yoshio Iwakura, Suginami-ku, Kikuchi Uno, Kitatama-
gun, and Yoshio Imai, Suginami-ku, Tokyo, Japan, as-
signors to Teijin Limited, Osaka, Japan, a corporation
of Japan
No Drawing. Filed June 11, 1963, Ser. No. 286,946
Claims priority, application Japan, July 20, 1962,
37/29,861

5 Claims. (Cl. 260-78)

1. Process for preparation of polybenzimidazoles which comprises heating at least one acid salt of an aromatic tetra-primary amine wherein two groups each of primary amines are present at the ortho-position of the aromatic nucleus and all of the said amines are combined with an inorganic acid or acids to form their salt, together with at least one dicarboxylic acid or its functional derivative in polyphosphoric acid of the formula:



wherein n is, as an average value, a positive integer greater than 0 but not more than 6 at a temperature of 100°C .- 250°C . until the polycondensation reaction is completed.

3,313,784

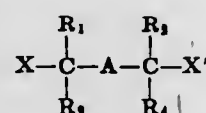
HARDENING OF POLYMERS CONTAINING CARBOXYL GROUPS

Marcel Nicolas Vrancken, Berchem-Antwerp, Jozef Frans Willems, Wilrijk-Antwerp, August Jean Van Paesschen, Hove, and José Thérèse Lemmerling, Edegem, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgium company

No Drawing. Filed July 9, 1962, Ser. No. 208,561
Claims priority, application Belgium, May 7, 1962, 41,626

4 Claims. (Cl. 260—78.4)

1. The method of hardening a polymer containing carboxyl groups, which method comprises contacting said polymer with a compound having the formula



wherein:

each of X and X' represents a halogen atom selected from the group consisting of chlorine and bromine, each of R₁, R₂, R₃ and R₄ represents a member selected from the group consisting of a hydrogen atom and an alkyl group, and

A represents a member selected from the group consisting of

- an arylene group,
- a —CO—O-alkylene—O—CO— group,
- a —CO—O-arylene—O—CO— group,
- a —CO—NH—CO—NH—CO— group,
- a —CO—NH—CO—CO—NH—CO— group,
- a —CO—NH—CO-alkylene—CO—NH—CO— group,
- a —CO—NH—CO-arylene—CO—NH—CO— group,
- a —CO—NH—SO₂-alkylene—SO₂-NH—CO— group,
- a —CO—NH—CO— group,
- a —CO—N(alkyl)—CO— group,
- a —CO—NH—NH—CO— group,
- a —CO—N(alkyl)—NH—CO group,
- a —CO—N(alkyl)—N(alkyl)—CO— group,
- a —CO—NH-alkylene—NH—CO— group,
- a —CO—N(alkyl)-alkylene—NH—CO— group,
- a —CO—N(alkyl)-alkylene-N(alkyl)—CO— group,
- a —CO—NH-arylene—NH—CO— group,
- a —CO—N(alkyl)-arylene—NH—CO— group and
- a —CO—N(alkyl)-arylene-N(alkyl)—CO— group.

3,313,785

POLYSULFONES AND METHOD FOR THEIR PRODUCTION

Nathan L. Zutty, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 11, 1963, Ser. No. 286,957

32 Claims. (Cl. 260—79.3)

1. The polymerization process for producing a polysulfone resin, said process being induced by a non-external source of free radicals, which comprises contacting sulfur dioxide with a mono-olefinically unsaturated compound containing the bicyclo[2.2.1]hept-2-ene nucleus and having no substituents on the carbon atom forming the double bond of said nucleus, there being no source of free radicals other than those formed by said sulfur dioxide and said compound, said sulfur dioxide and said compound being contacted at a temperature of from —40° C. to 100° C. for a period of time sufficient to produce a polysulfone resin.

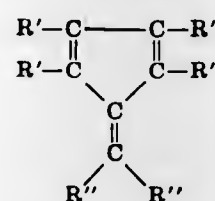
**3,313,786
POLYMERS OF 1-MONOOLEFINS AND FULVENES**

Gerald R. Kahle and Ollie G. Buck, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Mar. 12, 1964, Ser. No. 351,525

6 Claims. (Cl. 260—79.5)

1. A linear amorphous vulcanizable copolymer consisting essentially of at least 20 weight percent ethylene, at least 20 weight percent of one other higher 1-monoolefin of the formula CH₂=CHR where R is an alkyl radical having 1 to 6 carbon atoms, and up to 15 weight percent of a fulvene of the formula



where R' and R'' are hydrogen or hydrocarbon radicals selected from the group consisting of alkyl, alkenyl, cycloalkyl, aryl and aralkyl radicals containing from 1 to 8 carbon atoms and two R'' groups together can form a bi-valent hydrocarbon radical.

3,313,787

UNSATURATED HYDROCARBON COPOLYMERS COMPRISING AT LEAST ONE ALPHA-OLEFIN AND AN ALKENYL SUBSTITUTED ACETYLENE AND PROCESS FOR PREPARING SAME

Alberto Valvassori, Guido Sartori, and Vittorio Turba, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Filed Apr. 29, 1964, Ser. No. 363,590

Claims priority, application Italy, Apr. 30, 1963, 8,949/63

38 Claims. (Cl. 260—79.5)

1. A substantially linear, amorphous, unsaturated high-molecular weight copolymer of at least one acetylenic monomer and at least one monomer selected from the group consisting of ethylene and an aliphatic alphaolefin having the general formula R—CH=CH₂, wherein R is an alkyl group of 1 to 6 carbon atoms; said acetylenic monomer characterized by the formula R'—C≡C—R'' wherein R' is either an alkyl, cycloalkyl, alkylcycloalkyl, aryl, or alkylaryl group having at least one terminal vinyl group or an aliphatic, cycloaliphatic or alkylcycloaliphatic group having at least one terminal vinyl group and R'' being the same as R' or an alkyl, cycloalkyl, alkylcycloalkyl, aryl or alkylaryl group; said copolymers consisting of macromolecules having unsaturations and comprising monomer units derived from each of the monomers.

37. An elastomer obtained by vulcanizing the copolymers of claim 1.

3,313,788

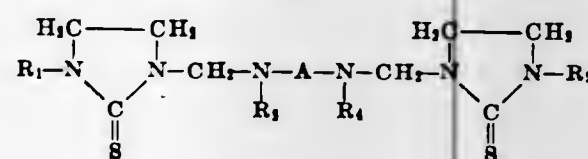
IMIDAZOLIDINE-2-THIONE DERIVATIVES
Lucien Convert, Thiais, and Raymond Fabre, Vincennes, France, assignors to Rhone-Poulenc S.A., Paris, France, a French corporation

No Drawing. Filed Dec. 31, 1964, Ser. No. 422,527

Claims priority, application France, July 18, 1964, 982,205

7 Claims. (Cl. 260—79.5)

6. A vulcanizable mix comprising a polychloroprene or chloroprene copolymer and, as vulcanization accelerator, at least one compound of the formula

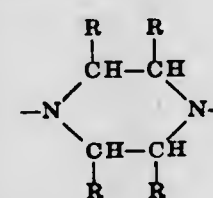


APRIL 11, 1967

where R₁ and R₂ are each selected from the class consisting of hydrogen, lower alkyl, cycloalkyl and hydroxymethyl, A represents a saturated hydrocarbon residue, and R₃ and R₄ are each selected from the class consisting of hydrogen, lower alkyl, and cycloalkyl, and



may additionally represent



where the R radicals are each selected from the class consisting of hydrogen and methyl.

3,313,789

PRODUCTION OF ETHYLENE VINYL TERTIARY ALCOHOL COPOLYMERS

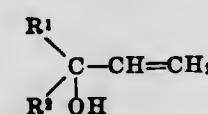
Herbert Naarmann, Ludwigshafen (Rhine), and Ernst-Guenther Kastning, Assenheim, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Germany

No Drawing. Filed July 15, 1963, Ser. No. 295,206

Claims priority, application Germany, July 20, 1962, B 68,113

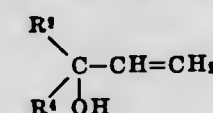
4 Claims. (Cl. 260—80.5)

1. A process for the production of copolymers of ethylene containing hydroxy groups wherein ethylene is copolymerized with 1 to 50% by weight of an ethylenically unsaturated alcohol at a pressure between 10 and 3000 atmospheres at a temperature between 30 and 300° C. using a free radical forming polymerization catalyst, said unsaturated alcohol having the general formula



in which R¹ and R² stand for hydrocarbon radicals having together 2 to 20 carbon atoms, said hydrocarbon radicals being selected from the group consisting of alkyl, alkenyl, cycloalkyl, cycloalkenyl, aralkyl, and aryl and where R¹ and R² may together form a carbocyclic ring containing 5 to 10 carbon atoms.

4. A process as claimed in claim 1, wherein 50 to 99 parts by weight of ethylene are copolymerized with 1 to 49 parts by weight of an ethylenically unsaturated alcohol and 49 to 2 parts by weight of an ethylenically unsaturated compound at a pressure between 80 and 3000 atmospheres and a temperature between 50 and 240° C. using a free radical forming polymerization catalyst, said unsaturated alcohol having the general formula



in which R³ stands for a substituent selected from the group consisting of straight chain and branched monovalent alkyl groups containing from 1 to 7 carbon atoms, a cyclohexyl group and a phenyl group, and R⁴ stands for a substituent selected from the group consisting of straight chain and branched monovalent alkyl groups containing from 1 to 7 carbon atoms, and in which R³ and R⁴ together can also be a pentamethylene group, and said ethylenically unsaturated compound being selected from the group consisting of vinyl esters of saturated aliphatic

carboxylic acids containing 2 to 4 carbon atoms, acrylic acid and methacrylic acid and esters of acrylic and methacrylic acids with alkanols containing 1 to 4 carbon atoms.

3,313,790

NOVEL INTERPOLYMERS

Massimo Baer, Longmeadow, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Nov. 26, 1963, Ser. No. 326,234

8 Claims. (Cl. 260—80.5)

1. A random interpolymer of (a) from about 25 to 50 weight percent of a nitrile selected from the class consisting of acrylonitrile and methacrylonitrile, (b) from about 15 to 35 weight percent of N-tertiary-butylacrylamide, and (c) from about 25 to 50 weight percent of a vinylidene aromatic compound selected from the class consisting of styrene, alphasubstituted styrenes, aryl-substituted halo and lower alkyl styrenes, and mixtures thereof; the total of (a), (b) and (c) being 100% by weight; said interpolymer having a glass temperature (T_g) substantially higher than that predicted by the Lashae-Fox equation.

3,313,791

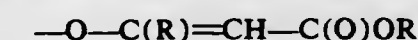
OLEFIN POLYMERIZATION IN THE PRESENCE OF A CATALYST COMPRISING TICl₃, RAlX₃, AND A CHELATE OF AN ALUMINUM COMPOUND

John A. Price, Swarthmore, Pa., and William R. Watt, Newark, Del., assignors to Avison Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Mar. 24, 1964, Ser. No. 354,425

8 Claims. (Cl. 260—93.7)

1. A polymerization process which comprises contacting, in an inert solvent, an alpha olefin having no branching in the 2 position with a catalyst consisting essentially of the product obtained by mixing, in an inert solvent, titanium trichloride, an alkyl aluminum dihalide, and an alkoxy aluminum compound having the generic formula: RO—C(O)—CH=CH(R)—O—Al(OR)₂ wherein R is a lower alkyl radical, and R' is selected from the group consisting of lower alkoxy radicals and



wherein the mol ratio of alkyl aluminum dihalide to titanium trichloride is from about 0.5:1 to about 10:1, and the mol ratio of alkyl aluminum dihalide to alkoxy oxygen in the alkoxy aluminum compound is from about 2:1 to about 1:1.5.

3,313,792

PROCESS FOR POLYMERIZING CONJUGATED DIENES WITH A CATALYST COMPRISING AN ALUMINUM HALIDE, A SALT OF COBALT OR NICKEL, AND A COMPOUND OF THE FORMULA SiH₂Y (4-x)

Edward W. Duck, Hythe, England, and Jacques A. Waterman, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 25, 1963, Ser. No. 260,855

Claims priority, application Netherlands, Mar. 16, 1962, 276,019

7 Claims. (Cl. 260—94.3)

4. A process comprising polymerizing a conjugated diene at a temperature between about —20° C. and 150° C. in the presence of a catalyst comprising the reaction product of an aluminum halide of a halogen having an atomic number between 17 and 35, a hydrocarbon-soluble salt of a carboxylic acid having 8–24 carbon atoms per

molecule and a metal having an atomic number of 27-28, and a silicon compound having the general configuration



wherein x is an integer between 1 and 3, and Y is a radical selected from the group consisting of hydrocarbyl radicals and radicals having the configuration



wherein R is a hydrocarbon radical and z is an integer of between 0 and 3.

3,313,793

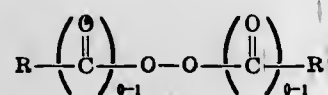
PROCESS FOR MOLECULAR WEIGHT REDUCTION OF DIENE POLYMERS

Harold E. De LaMare, El Cerrito, Calif., and David B. Todd, Park Ridge, Ill., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 16, 1964, Ser. No. 383,217
10 Claims. (Cl. 260-94.7)

1. In the process for the reduction in average molecular weight of a diene polymer having an intrinsic viscosity between about 3 and 16 dl./g. in toluene at 25° C., the steps comprising:

- (1) forming a solution of the diene polymer in a non-hydrogen-donating hydrocarbon solvent;
- (2) admixing therewith 0.1-5% by weight each, based on the diene polymer, of a peroxide having the general configuration



wherein R is a hydrocarbon radical and R' is a radical of the group consisting of hydrogen and hydrocarbyl, and copper, the copper being a copper source of the group consisting of copper metal, copper halides, copper carboxylates and mixtures thereof; the molar ratio of peroxide to copper source being between about 2 and 50;

- (3) heating the mixture so formed for 1-24 hours at 25-100° C. in the substantial absence of oxygen;
- (4) and recovering a diene polymer product having a substantially reduced intrinsic viscosity, the stereo-configuration of the product being essentially the same as that of the diene polymer prior to treatment.

3,313,794

PROCESS FOR PRODUCTION OF POLYETHYLENE

James W. Cleary, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Oct. 18, 1963, Ser. No. 317,147
8 Claims. (Cl. 260-94.9)

1. A method for producing a high density polyethylene having a density of at least 0.97 which comprises contacting ethylene in the presence of hydrogen and under polymerization conditions with a catalytic amount of a catalyst which forms on admixing components comprising (1) an organometal compound having the formula $\text{R}_n\text{AlX}_{3-n}$, wherein each R is selected from the group consisting of saturated acyclic hydrocarbon radicals, saturated cyclic hydrocarbon radicals, and aromatic radicals, each R containing from 1 to 10 carbon atoms, X is a halogen, and n is an integer selected from the group consisting of 1 and 2, and (2) a vanadium compound having the formula $\text{VO}(\text{OR}')_3$, wherein each R' is selected from the group consisting of alkyl, cycloalkyl, alkylcycloalkyl, and cycloalkylalkyl radicals containing from 1 to 20 carbon atoms, and recovering from the

resulting polymerization reaction effluent a polyethylene having a density of at least 0.97 and in a yield greater than would be obtained by conducting said step of contacting in the absence of said hydrogen.

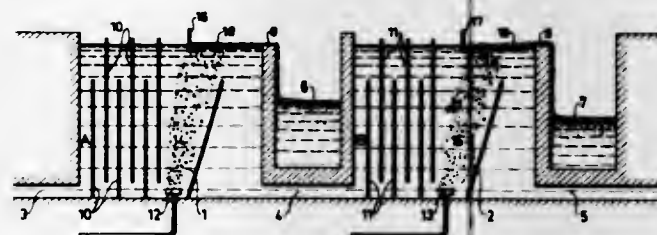
3,313,795

METHOD OF TREATING A LIQUID CONTAINING DISSOLVED PROTEINACEOUS CONSTITUENTS

Ernst Arne Rubin, Lund, Sweden, assignor to AB Purac, Lund, Sweden, a Swedish company

Filed Mar. 1, 1965, Ser. No. 436,724
2 Claims. (Cl. 260-112)

1. A method of treating a weakly acid liquid containing a dissolved proteinaceous material which comprises adding a strongly cationic material which precipitates a part of said proteinaceous material to said liquid, introducing air bubbles into the resulting mixture and thereby floating the precipitated proteinaceous material to the surface of the liquid, mechanically separating the resulting floated material from the liquid, adding a basic substance to the liquid in quantity sufficient to raise its pH value



to above 7, adding a neutral salt which precipitates both protein and proteides to the liquid, introducing air bubbles into said liquid and thereby floating the precipitated protein and proteides to the surface of the liquid and mechanically separating the floated material from said liquid.

3,313,796

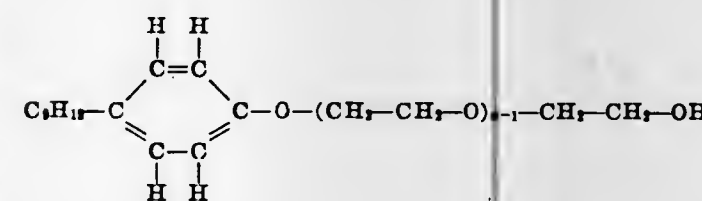
PROCESS FOR IMPROVING THE ANTISTATIC PROPERTIES OF SYNTHETIC ARTICLES

Bertie Joseph Reuben, Julian J. Hirschfeld, Byron A. Sample, Jr., and David C. T. Yao, Decatur, Ala., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Feb. 24, 1964, Ser. No. 347,050
8 Claims. (Cl. 117-138.8)

1. A process of applying a durable, antistatic finish to a synthetic article comprising applying to the article an aqueous mixture consisting essentially of

- (1) a polyepoxide,
- (2) a nonylphenoxypoly (ethyleneoxy) ethanol of the formula



wherein n is a whole integer no greater than about 10, (3) an epoxide curing catalyst, and (4) a dispersing agent, and thereafter reacting the polyepoxide and the nonylphenoxypoly (ethyleneoxy) ethanol together.

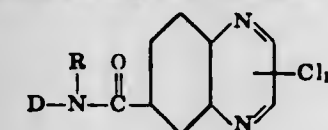
3,313,797

STABILIZED FIBER-REACTIVE DYES

Erik Kissa, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 17, 1963, Ser. No. 252,056
11 Claims. (Cl. 260-146)

1. A fiber-reactive dye composition comprising fiber-reactive dye solids having the formula



where D is a water-soluble dye chromophore selected from the group consisting of azo, metallized azo, anthraquinone, and phthalocyanine dye chromophores which is attached to the N -atom by cyclic substitution, and R is selected from the group consisting of hydrogen, lower alkyl, 2-hydroxyethyl, 2-cyanoethyl, and 2-sulfoethyl,

and as a stabilizer against hydrolysis of said dye solids a sulfate salt selected from the group consisting of alkali metal and ammonium sulfates in an amount sufficient to provide at least 3% of sulfate ions based on the weight of dye solids.

3,313,798

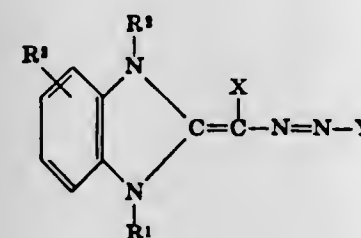
ARYLIMIDAZOLINE CONTAINING MONO AZO DYES

Johannes Dehnert and Guenter Hansen, both of Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Dec. 10, 1963, Ser. No. 329,380
Claims priority, application Germany, Dec. 15, 1962, B 69,987

6 Claims. (Cl. 260-157)

1. A dye of the formula:



wherein

R^1 represents a member selected from the class consisting of hydrogen, alkyl with 1 to 4 carbon atoms and phenyl,

R^2 represents a member selected from the class consisting of hydrogen and alkyl with 1 to 4 carbon atoms, R^3 represents a member selected from the class consisting of hydrogen, methyl and methoxy,

Y represents the radical of o -nitrophenyl, substituted by a member selected from the class consisting of hydrogen, methyl, methoxy, chloro, acetamino and diethylamino, and

X represents a member selected from the class consisting of cyano, carbamoyl and carboxy.

3,313,799

WATER-SOLUBLE DISAZO-DYESTUFFS

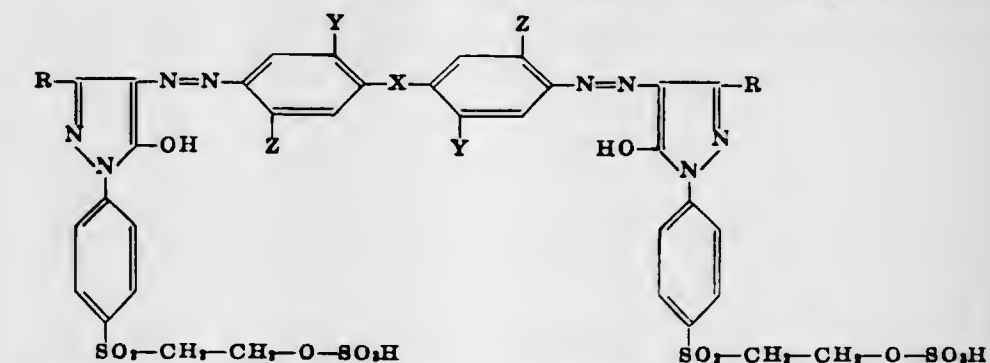
Walter Noll, Bad Soden, Taunus, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Oct. 15, 1963, Ser. No. 316,432

Claims priority, application Germany, Oct. 19, 1962, F 38,093

6 Claims. (Cl. 260-160)

1. The water-soluble disazodyestuffs having the formula



in which X represents a member of the group consisting of direct linkage, ---O--- , ---S--- , $\text{---SO}_2\text{---}$ and ---CH=CH--- , Z represents a member of the group consisting of hydrogen, lower alkyl and lower alkoxy, Y represents a member of the group consisting of $\text{---SO}_3\text{H}$ and ---COOH , and R represents a member of the group consisting of methyl, carboxyl and lower alkoxy carbonyl group.

3,313,800

PRODUCT AND PROCESS FOR PREPARING DISPERSIBLE GUMS

Gerald James Jackson, Jr., Bardonia, and Irwin Samuel Butensky, Spring Valley, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed June 9, 1965, Ser. No. 462,741

4 Claims. (Cl. 260-209)

1. A process of modifying gum guar which comprises adding the gum to a hydroalcoholic solution of gelatin at moderately elevated temperatures, cooling the mixture while agitating, and adding an alcoholic solution of formaldehyde to the resultant mixture to precipitate the gelatin gum mixture, filtering and drying the precipitated material.

3,313,801

PROCESS FOR INHIBITING N-ALKYLATION OF PYRROLIDINES AND SUBSTITUTED PYRROLIDINES BY MICROORGANISMS, AND PRODUCTS PRODUCED THEREBY

Alexander D. Argoudelis, Kalamazoo, Le Roy E. Johnson, Kalamazoo Township, Kalamazoo County, and Thomas R. Pyke, Prairie Ronde Township, Kalamazoo County, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Oct. 18, 1965, Ser. No. 497,438

10 Claims. (Cl. 260-210)

9. N-demethylcelesticetin.

10. N-demethylsalicetin.

3,313,802

PROCESS OF LIQUEFYING GELLED CELLULOSE ESTER ACID DOPES

Wayne G. Case, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 15, 1964, Ser. No. 360,091

4 Claims. (Cl. 260-230)

1. A method of liquefying cellulose ester hydrolysis dope in an at least partially gelled condition which com-

prises subjecting said dope to treatment with low pressure steam, until a readily flowable condition is assumed.

3,313,803

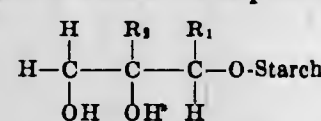
HYDROXYALKYL STARCH ETHER PRODUCTS

Hugh J. Roberts, La Grange, Ill., and John T. Saatkamp, Brecksville, Ohio, assignors to Corn Products Company, New York, N.Y., a corporation of Delaware

No Drawing. Original application Oct. 24, 1962, Ser. No. 232,864, now Patent No. 3,112,214, dated Nov. 26, 1963. Divided and this application Aug. 29, 1963, Ser. No. 305,531

4 Claims. (Cl. 260-233.3)

4. Composition of matter corresponding to the formula



wherein R_1 and R_2 are selected from the group consisting of H, methyl, and hydroxymethyl, and R_1 and R_2 are not identical having a degree of substitution between about 0.01 and 3.0.

3,313,804

RIFAMYCIN B DERIVATIVES AND METHOD OF PRODUCING SAME

Piero Sensi and Nicola Maggi, Milan, Italy, assignors to Lepetit S.p.A., Milan, Italy

No Drawing. Filed May 8, 1963, Ser. No. 279,003

Claims priority, application Great Britain, May 25, 1962, 20,255/62

11 Claims. (Cl. 260-239.3)

5. A rifamycin B amide selected from the class consisting of rifamycin B amide of ammonia, and primary and secondary amines.

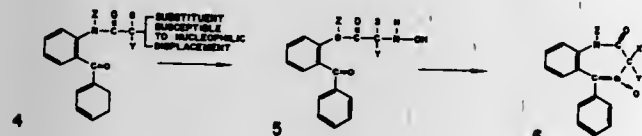
3,313,805

PROCESS FOR PREPARING 1,3-DIHYDRO-5-ARYL-2H-1,4-BENZODIAZEPIN-2-ONE 4-OXIDES

Stanley C. Bell, Penn Valley, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

Original application Aug. 13, 1963, Ser. No. 301,873. Divided and this application June 21, 1966, Ser. No. 559,275

4 Claims. (Cl. 260-239.3)



1. The process for preparing 1,3-dihydro-2H-1,4-benzodiazepin-2-one 4-oxide comprising: converting the 2-haloacetamido radical, which is attached in the 2-position of the benzophenone nucleus, to the 2-hydroxyaminoacetamido radical by treatment of the benzophenone compound with hydroxylamine; and cyclizing said 2-(2-hydroxyaminoacetamido)benzophenone.

3,313,806
SULFANILYLAMINOPYRIDAZINONE DERIVATIVES AND METHOD FOR THEIR PRODUCTION

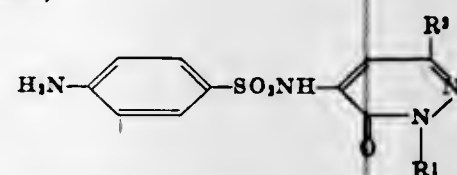
Takenari Nakagome, Nishinomiya, and Toshiaki Komatsu, Toyonaka, Japan, assignors to Sumitomo Chemical Co., Ltd., Osaka, Japan

No Drawing. Filed June 29, 1964, Ser. No. 379,014

Claims priority, application Japan, July 1, 1963, 38/34,746; July 3, 1963, 38/34,975

4 Claims. (Cl. 260-239.7)

1. A 4-sulfanilylamino-3(2H)pyridazinone derivative of the formula,



wherein R^1 represents a member selected from the group consisting of hydrogen atom and lower alkyl radicals and R^2 represents a member selected from the group consisting of halogen atoms and lower alkoxy radicals.

3,313,807
5'-SUBSTITUTED STEROIDAL ISOXAZOLES OF THE PREGNANE SERIES

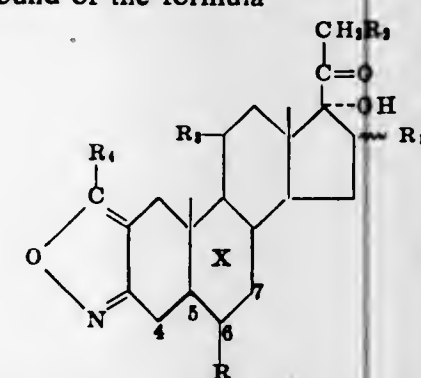
Pietro De Ruggieri, Carmelo Gandolfi, and Umberto Guzzi, Milan, Italy, assignors to Ormonoterapia Richter S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Filed Jan. 28, 1965, Ser. No. 428,863

Claims priority, application Italy, Feb. 1, 1964, 2,246/64

1 Claim. (Cl. 260-239.55)

A compound of the formula



wherein R is a member selected from the group consisting of hydrogen, methyl, chloro and fluoro; R_1 is a member selected from the group consisting of hydrogen, α -methyl and β -methyl; R_2 is a member selected from the group consisting of hydrogen, hydroxy and acyloxy in which the acyl radical is derived from a carboxylic acid of from 1 to 10 carbon atoms; R_4 is a member selected from the group consisting of amino, lower alkylamino, benzylamino, lower acylamino, hydroxy, acyloxy in which the acyl radical is derived from a carboxylic acid of from 2 to 10 carbon atoms, and alkoxy of from 1 to 4 carbon atoms; X is a member selected from the group consisting of hydrogen and fluoro and the bonds between the 4, 5- and 6, 7-carbon atoms are selected from the group consisting of a single bond and a double bond.

3,313,808
ESTRA-2,5(10)-DIENE-3-ENOL-TETRAHYDRO-PYRANYLETHERS

Pietro de Ruggieri and Carmelo Gandolfi, Milan, Italy, assignors to Ormonoterapia Richter S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Filed Feb. 8, 1965, Ser. No. 431,207

Claims priority, application Italy, May 12, 1962, 9,516/62

2 Claims. (Cl. 260-239.55)

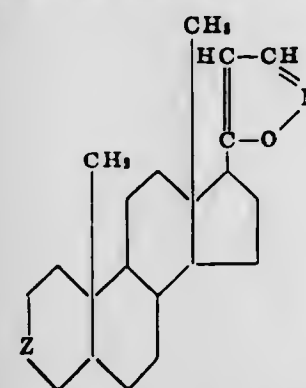
1. 3 - (2' - tetrahydropyranyloxy) - 17 α - ethinyl-estra-2,5(10)-dien-17 β -ol.

3,313,809
STEROID[21,20-d]ISOXAZOLES
Raymond O. Clinton, East Greenbush, and Andrew John Manson, North Greenbush, N.Y., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 5, 1965, Ser. No. 437,584

3 Claims. (Cl. 260-239.55)

1. A compound selected from the group consisting of (A) compounds of the formula



wherein Z is a member of the group consisting of $\text{CH}(\text{OH})$, $\text{CH}(\text{Oacyl})$ and $\text{C}=\text{O}$; (B) compounds of the above formula having a double bond in the 4,5-position, Z being $\text{C}=\text{O}$; and (C) compounds of the above formula having a double bond in the 5,6-position, Z being $\text{CH}(\text{OH})$ or $\text{CH}(\text{Oacyl})$; acyl in each instance being carboxylic acyl having from one to ten carbon atoms.

3,313,810
PHENOTHIAZINE DERIVATIVES
Michio Nakanishi and Chikashi Tashiro, Nakatsu, Japan, assignors to Yoshitomi Pharmaceutical Industries, Ltd., Osaka, Japan

No Drawing. Filed Nov. 12, 1963, Ser. No. 323,104

Claims priority, application Japan, Nov. 15, 1962, 37/51,393, 37/51,394

22 Claims. (Cl. 260-243)

1. 3 - chloro - 10 - {3-(4-pyrrolidinopiperidino)propyl}phenothiazine.

3,313,811
CYCLIC N,N'-DIMETHYLUREA DISULFONIMIDES

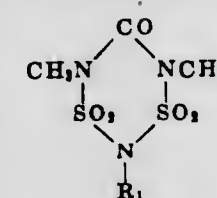
Margot Becke, Heidelberg, Germany, assignor to Olin Mathieson Chemical Corporation

No Drawing. Filed Mar. 19, 1964, Ser. No. 353,254

Claims priority, application Germany, Oct. 25, 1963, B 74,015

5 Claims. (Cl. 260-243)

1. A compound having the formula



in which R_1 is selected from the group consisting of H, NH_4 Ag and CH_3 .

3,313,812
PREPARATION OF TRIS-HYDROXYALKYL-ISOCYANURATES
John W. Churchill, Mount Carmel, and Robert C. East, Hamden, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Oct. 28, 1963, Ser. No. 319,588

6 Claims. (Cl. 260-248)

1. A method for the preparation of a tris-hydroxyalkyl-isocyanurate which consists of heating together

cyanuric acid and an alkylene oxide selected from the group consisting of ethylene oxide, propylene oxide and butylene oxide while the reactants are in admixture with the tris-hydroxyalkyl-isocyanurate.

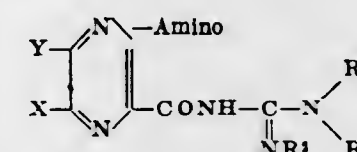
3,313,813
(3-AMINO-5,6-DISUBSTITUTED-PYRAZINOYL) GUANIDINES

Edward J. Cragoe, Jr., Lansdale, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

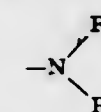
No Drawing. Filed Oct. 7, 1963, Ser. No. 313,315

31 Claims. (Cl. 260-250)

1. A compound selected from the group consisting of a product having the structural formula

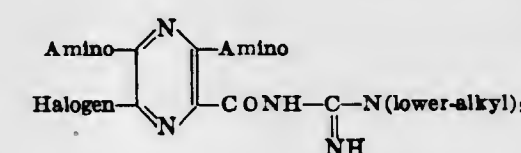


and pharmaceutically acceptable salts thereof wherein X is selected from the group consisting of chlorine, bromine and iodine, lower-alkyl, lower-cycloalkyl having from 3 to 7 carbons, phenyl, chloro-phenyl, bromine-phenyl, Z -thio and Z -sulfonyl wherein Z is selected from the group consisting of lower alkyl and phenyl-lower alkyl; Y is selected from the group consisting of hydroxyl, mercapto, lower-alkoxy, lower-alkylthio, chloro, lower-alkyl, lower-cycloalkyl having from 3 to 6 carbons, phenyl, amino having the structure



wherein

R is selected from the group consisting of hydrogen, amino, amidino, lower-cycloalkyl having 3 to 6 carbon atoms, lower-alkyl, hydroxy-lower alkyl, halo-lower-alkyl, lower-(cycloalkylalkyl) having 3 to 6 carbons in the ring, phenyl-lower-alkyl, lower-(alkylphenalkyl), halophenyl-lower-alkyl, furyl-lower-alkyl, pyridyl-lower-alkyl, lower-(alkylaminoalkyl), lower-alkenyl, phenyl, halophenyl, and lower-alkylphenyl; R^1 is selected from the group consisting of hydrogen, lower-alkyl, lower-alkenyl, and additionally R and R^1 can be joined to form a lower alkylene; R^2 is selected from the group consisting of hydrogen, and lower-alkyl; R^3 and R^4 respectively is selected from the group consisting of hydrogen, lower-alkyl, hydroxy-lower-alkyl, phenyl-lower-alkyl, (halo-phenyl)-lower-alkyl, lower-(alkylphenalkyl), (lower-alkoxyphenyl)-lower-alkyl, naphthyl-lower-alkyl, (octahydro-1-azocinyl)-lower-alkyl, pyridyl-lower-alkyl, and lower-alkyl radicals linked to produce with the nitrogen atom to which they are attached a 1-pyrrolidinyl, piperadino, morpholino, and a 4-lower-alkyl-piperazinyl group, and phenyl.



wherein the 6-position halogen is selected from chlorine bromine and iodine.

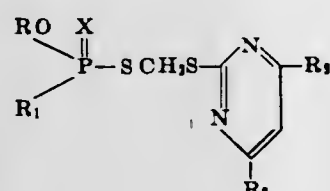
3,313,814

PHOSPHORUS-CONTAINING ESTERS OF 2-THIO-METHYL MERCAPTO PYRIMIDINES

Arthur C. Thompson, San Antonio, Tex., and Karoly Szabo, Orinda, Mervin E. Brokke, Richmond, and Julius J. Menn, San Jose, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 14, 1965, Ser. No. 473,277
5 Claims. (Cl. 260—251)

1. A compound of the formula



wherein R is lower alkyl, R₁ is selected from the group consisting of lower alkyl and lower alkoxy, R₂ and R₃ are selected from the group consisting of hydrogen and lower alkyl, and X is selected from the group consisting of sulfur and oxygen.

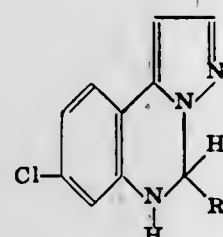
3,313,815

8-CHLOROPYRAZOLO[1,5-c]QUINAZOLINE DERIVATIVES AND METHODS OF PREPARING SAME

Roger T. Wolfe, North Greenbush, and Alexander R. Surrey, Albany, N.Y., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 4, 1964, Ser. No. 364,782
15 Claims. (Cl. 260—256.4)

1. A compound of the formula



wherein R is a member of the group consisting of H, phenyl, pyridyl, thienyl, furyl, carboxy and COOR', wherein R' is alkyl of from one to ten carbon atoms.

3. 8-chloro-5-(2-hydroxyphenyl)-5,6-dihydropyrazolo[1,5-c]quinazoline.

3,313,816

PROCESSES OF PRODUCING 4-AMINO-6-HYDROXYPYRIMIDINE

Yasuo Fujimoto and Yasuki Mori, Tokyo, Japan, assignors to Kyowa Hakko Kogyo K.K. (Kyowa Fermentation Industry Co. Ltd.), Tokyo-to, Japan, a corporation of Japan

No Drawing. Filed July 14, 1965, Ser. No. 472,016
Claims priority, application Japan, July 20, 1964, 39/40,399

11 Claims. (Cl. 260—256.4)

1. In the process of producing 4-amino-6-hydroxypyrimidine, the steps comprising reacting a member selected from the class consisting of lower alkyl esters of β-amino-β-lower alkoxyacrylic acid and mineral acid salts thereof with ammonia to form malonamidine and condens-

ing said malonamidine without isolation with formamide in the presence of an alkali metal lower alkoxide to form 4-amino-6-hydroxypyrimidine, the lower alkyl group of said esters having not more than 5 carbon atoms.

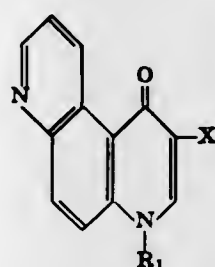
3,313,817

4-ALKYL (AND ALKENYL)-1-OXO-1,4-DIHYDRO-4,7-PHENANTHROLINE-2-CARBOXYLIC ACID DERIVATIVES

George Y. Leshner, Schodack, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 27, 1964, Ser. No. 340,494
22 Claims. (Cl. 260—287)

1. A compound of the formula



where X is a member selected from the group consisting of carboxy and lower-carbalkoxy, and R₁ is a member selected from the group consisting of lower-alkyl and lower-alkenyl.

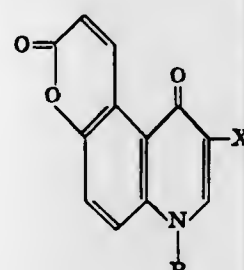
3,313,818

7,10-DIHYDRO-3,10-DIOXO-7-(LOWER-ALKYL)-3H-PYRANO[3,2-f]QUINOLINE-3-CARBOXYLIC ACID DERIVATIVES

George Y. Leshner, Schodack, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 14, 1965, Ser. No. 447,954
8 Claims. (Cl. 260—287)

2. A compound of the formula



where X is lower-carbalkoxy and R is lower-alkyl.

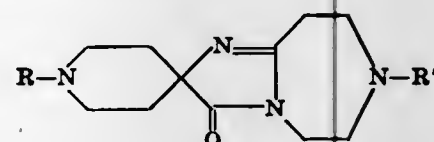
3,313,819

9-SPIRO-(1'-SUBSTITUTED PIPERIDYL-4')-4-SUBSTITUTED-1,4,8-TRIAZABICYCLO[5,3,0]DECANE-Δ^{7,8}-10-ONES

Rudolf G. Griot, Florham Park, N.J., assignor to Sandoz Inc., Hanover, N.J.

No Drawing. Filed May 27, 1964, Ser. No. 370,679
9 Claims. (Cl. 260—294)

1. A member selected from the group consisting of a compound of the formula



wherein each of R and R' is a member selected from the group consisting of a hydrogen atom and lower alkyl, and acid addition salts thereof.

3,313,820

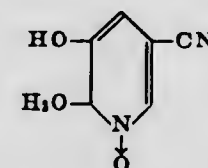
2-METHYL-3-HYDROXY-5-CYANOPYRIDINE-1-OXIDE AND CORRESPONDING 1-ALKOXY PYRIDINIUM ALKYL SULFATE SALT

Takeo Naito, Ichikawa-shi, Toru Yoshikawa, Urawa-shi, and Fumiyoshi Ishikawa, Ichikawa-shi, Japan, assignors to Daiichi Selyaku Company, Limited, Chuo-ku, Tokyo, Japan

No Drawing. Filed Mar. 12, 1965, Ser. No. 439,474
Claims priority, application Japan, Mar. 12, 1964, 39/13,714

2 Claims. (Cl. 260—294.8)

1. 2-methyl-3-hydroxy-5-cyanopyridine-1-oxide having the formula:



3,313,821

PROCESS FOR PREPARING PYRIDINE CARBOXYLIC ACIDS FROM COMPOUNDS HAVING A PYRIDINE NUCLEUS

Robert D. Lekberg, Worth, Raymond A. Jensen, Alsip, and William Butler, Oak Lawn, Ill., assignors to Chemlek Laboratories, Inc., Alsip, Ill., a corporation of Illinois

No Drawing. Filed Aug. 3, 1964, Ser. No. 387,175
6 Claims. (Cl. 260—295.5)

1. A process for oxidizing a heterocyclic nitrogen compound containing in its structure a pyridine nucleus having at least one oxidizable organic group attached to said nucleus by at least one carbon-to-carbon linkage selected from the group comprising beta-picoline, methyl ethyl pyridine, and quinoline to a pyridine carboxylic acid product consisting of the steps of reacting said compound with at least one stoichiometric equivalent of a non-oxidizable acid to form a quaternary amine salt with the nitrogen atom of said pyridine nucleus, reacting said formed salt with an aqueous solution of a stoichiometric equivalent of a hexavalent chromium oxidizing compound selected from the group comprising sodium dichromate and sodium chromate at a pH value of not less than 5.5 and at a temperature of at least about 300° F. and under superatmospheric pressure equivalent to at least the generated pressure of the reacting mixture at the temperature employed until the reaction is substantially complete, filtering the reaction mass thus obtained, acidifying the resulting filtrate and removing the said pyridine carboxylic acid product from said acidified filtrate.

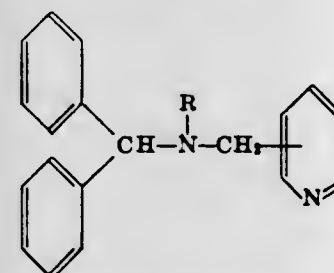
3,313,822

DIPHENYL SUBSTITUTED AMINOALKYL PYRIDINES

Robert I. Meltzer, Rockaway, N.J., assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed July 14, 1965, Ser. No. 472,053
7 Claims. (Cl. 260—296)

1. A compound selected from the group consisting of the free base of the formula:



wherein R is a member of the group consisting of hydrogen or lower alkyl and the acid addition salts thereof.

3,313,823

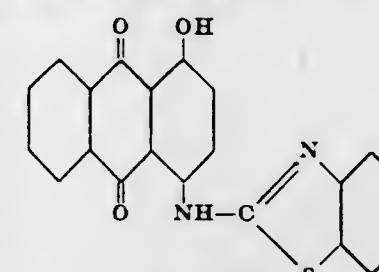
1-HYDROXY-4-BENZOTHAZOLYLAMINO ANTHRAQUINONE

André Albert Paul Simonnet, Creil, Oise, and Louis Antoine Cabut, Nogent-sur-Oise, Oise, France, assignors to Etablissements Kuhlmann, Paris, France

No Drawing. Filed Oct. 1, 1963, Ser. No. 312,853
Claims priority, application France, Oct. 3, 1962, 911,162

1 Claim. (Cl. 260—303)

The dyestuff of the formula:



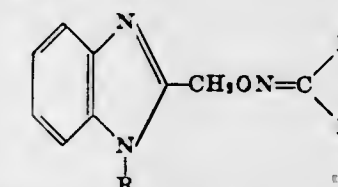
3,313,824

1-SUBSTITUTED-2-(AMINOXYMETHYL) BENZIMIDAZOLES AND THE CORRESPONDING 2-ALKYLIDENEAMINOXYMETHYL INTERMEDIATES THEREFOR

Leo A. Paquette, Columbus, Ohio, assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

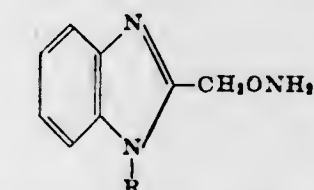
No Drawing. Filed Mar. 13, 1964, Ser. No. 351,835
9 Claims. (Cl. 260—309.2)

1. A compound selected from the group consisting of (1) a 1-substituted-2-(alkylideneaminooxymethyl)benzimidazole of the formula



wherein R is selected from the group consisting of lower alkyl and phenyl, R' is lower alkyl and R² is selected from the group consisting of lower alkyl and hydrogen, and (2) an acid addition salt thereof.

5. A compound selected from the group consisting of (1) a 1-substituted-2-(aminooxymethyl)benzimidazole of the formula



wherein R is selected from the group consisting of lower alkyl and phenyl, and (2) an acid addition salt thereof.

3,313,825

CERTAIN IMIDAZOLINE SALTS

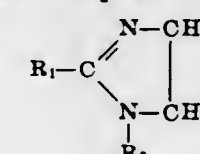
Milton Rosenberg, Yonkers, Hyman W. Zussman, Scarsdale, and Robert Beaudoin, Mount Vernon, N.Y., assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware

No Drawing. Original application July 25, 1961, Ser. No. 126,490, now Patent No. 3,210,312, dated Oct. 5, 1965. Divided and this application July 7, 1965, Ser. No. 478,786

8 Claims. (Cl. 260—309.6)

1. A salt of a member selected from the group consisting of:

(i) the imidazoline compound of the formula:



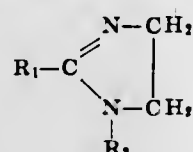
wherein:

R₁ is a member selected from the group consisting of an alkyl of 7 to 17 carbon atoms, and alkenyl of 7 to 17 carbon atoms, and
R₂ is hydroxy (lower) alkyl, and

(ii) adipic acid.

2. A salt of a member selected from the group consisting of:

(i) the imidazoline compound of the formula:



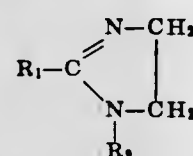
wherein:

R₁ is a member selected from the group consisting of an alkyl of 7 to 17 carbon atoms, and alkenyl of 7 to 17 carbon atoms, and
R₂ is hydroxy (lower) alkyl, and

(ii) isophthalic acid.

3. A salt of a member selected from the group consisting of:

(i) the imidazoline compound of the formula:



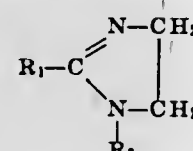
wherein:

R₁ is a member selected from the group consisting of an alkyl of 7 to 17 carbon atoms, and alkenyl of 7 to 17 carbon atoms, and
R₂ is hydroxy (lower) alkyl, and

(ii) mercaptosuccinic acid.

4. A salt of a member selected from the group consisting of:

(i) the imidazoline compound of the formula:



wherein:

R₁ is a member selected from the group consisting of an alkyl of 7 to 17 carbon atoms, and alkenyl of 7 to 17 carbon atoms, and
R₂ is hydroxy (lower) alkyl, and

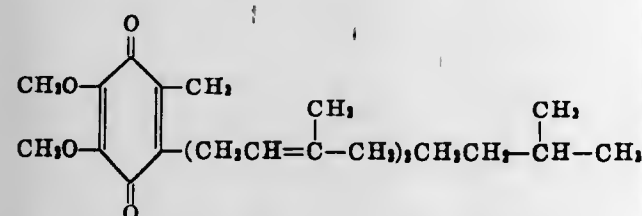
(ii) maleic acid.

3,313,826

COENZYME Q₁₀(H-10) AND THE CORRESPONDING 6-CHROMENOL AND 6-CHROMANOL DERIVATIVES

Paul H. Gale, Clark, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Mar. 15, 1963, Ser. No. 265,344
4 Claims. (Cl. 260-345.2)

1. A coenzyme Q compound from the group consisting of a quinone of the formula



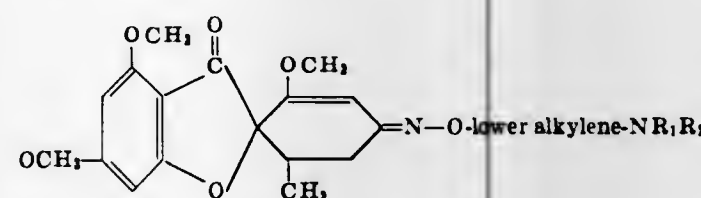
and the corresponding 6-chromenol and 6-chromanol derivatives thereof.

3,313,827 AMINO ALKYL ETHERS OF GRISEOFULVIN OXIME

Frank J. Villani, West Caldwell, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed Dec. 29, 1964, Ser. No. 421,997
7 Claims. (Cl. 260-346.2)

1. A member of the group consisting of amino compounds of the formula:



and the non-toxic pharmaceutically acceptable acid addition and quaternary salts thereof wherein R₁ and R₂ are members of the group consisting of lower alkyl and when taken together with the nitrogen atom to which they are attached form a member of the group consisting of pyrrolidino, piperidino, morpholino and piperazino.

3,313,828

PROCESS FOR THE PRODUCTION OF LITHIUM SOAPS OF EPOXIDIZED FATTY ACIDS

Alfred Szczepanek, Duren-Rolsdorf, Germany, assignor to Chemische Fabrik Hoesch K.G., Duren, Rhineland, Germany, a corporation of Germany
No Drawing. Filed Sept. 3, 1964, Ser. No. 394,318
Claims priority, application Germany, Oct. 3, 1960, C 22,461

11 Claims. (Cl. 260-348)

1. The process for the production of solid lithium soap of epoxidized fatty acid which comprises forming an aqueous slurry wherein a material selected from the group consisting of epoxidized fatty acid having about 12-24 carbon atoms and esters of epoxidized fatty acid the fatty acid moiety of which has about 12-24 carbon atoms, in solid state is dispersed in water, and slowly adding to said slurry an aqueous solution of lithium hydroxide, maintaining the slurry with lithium hydroxide present therein at a temperature and for a time sufficient for formation of a slurry of lithium soap, having a solids content of about 30-90%, and drying the slurry of lithium soap, whereby the lithium soap is formed while destruction of the epoxy groups under the conditions of the reaction is suppressed.

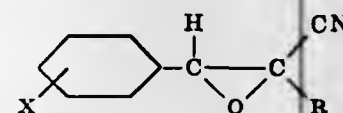
3,313,829

PROCESS FOR MAKING EPOXIDES FROM ETHYLENIC COMPOUNDS WITH ELECTRON-WITHDRAWING GROUPS

David H. Rosenblatt, Baltimore, Md., and Gordon H. Broome, Gastonia, N.C., assignors to the United States of America as represented by the Secretary of the Army
No Drawing. Original application June 5, 1962, Ser. No. 200,288, now Patent No. 3,183,250, dated May 11, 1965. Divided and this application Feb. 17, 1965, Ser. No. 444,096

3 Claims. (Cl. 260-348)

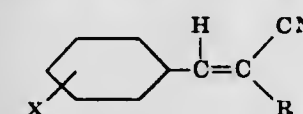
1. The method of producing a compound from the group of compounds represented by the formula,



wherein X is a member of the group consisting of hydrogen, fluorine, chlorine and bromine, and R is a member

of the group consisting of —CN and —CO—NH₂, which comprises:

reacting in an inert solvent the compound,



wherein X is the same as above and R is —CN with an amount of a hypochlorite ion-generating material sufficient to form said compound, said reaction being conducted at a pH range of 3-9, and recovering said compound with ether from the reaction solution.

3,313,830

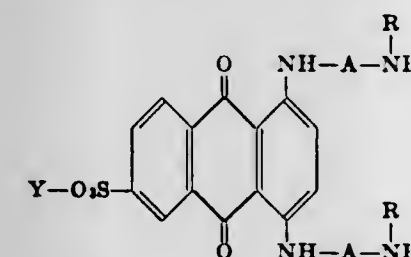
DERIVATIVES OF 1,4-DIARYLAMINOANTHRAQUINONE-6-SULFONIC ACID

Willy Braun, Heidelberg, and Manfred Ruske, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed June 4, 1963, Ser. No. 285,209
Claims priority, application Germany, June 6, 1962, B 67,575

3 Claims. (Cl. 260-374)

1. A compound having the formula:



where A represents a member selected from the class consisting of sulfophenylene, sulfotolylene, disulfophenylene, disulfodiphenylene, dimethyldisulfodiphenylene, dimethoxydisulfodiphenylene and the divalent radical of disulfostilbene, R represents a member selected from the class consisting of hydrogen and alkyl having one to four carbon atoms, and Y represents a member selected from the class consisting of hydrogen, sodium, potassium and ammonium.

3,313,831

PREPARATION OF COENZYME Q₁₀(H-10) FROM GIBBERELLA

Paul H. Gale, Clark, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Original application Mar. 15, 1963, Ser. No. 265,344. Divided and this application June 29, 1965, Ser. No. 478,006

3 Claims. (Cl. 260-396)

1. The process for producing coenzyme Q₁₀(H-10) which comprises saponifying cells of a coenzyme Q₁₀(H-10) producing strain of Gibberella, and recovering said coenzyme Q₁₀(H-10) from the resulting saponified product.

3,313,832

6-ALKYL-STERIODS

Cornelis Maurits Slegmann and Stefan Antoni Szpilfogel, Oss, Netherlands, assignors to Organon Inc., West Orange, N.J., a corporation of New Jersey
No Drawing. Filed Feb. 15, 1963, Ser. No. 258,924
Claims priority, application Netherlands, Feb. 21, 1962, 275,090

4 Claims. (Cl. 260-397.3)

1. Δ⁴-6α-methyl-20-keto-19-nor-pregnene.

3,313,833

PROCESS FOR 5α-ANDROSTANE 1α,17β-DIOL-3-ONE

Rudolf Wiechert and Friedmund Neumann, Berlin, Germany, assignors to Schering Aktiengesellschaft, Berlin, Germany

No Drawing. Filed Jan. 29, 1965, Ser. No. 429,109
Claims priority, application Germany, Mar. 19, 1964, Sch 34,827

6 Claims. (Cl. 260-397.4)

1. Method which comprises ketalizing the 17-ester of 5α-androstane-1α,17β-diol-3-one so as to protect the keto group thereof; subjecting the thus ketalized compound to saponification in alkaline medium; and splitting the ketal ring so as to form the corresponding 5α-androstane-1α,17β-diol-3-one.

3,313,834

PROCESS FOR THE MANUFACTURE OF FATTY ACID ESTERS

Robert R. Allen and Robert L. Campbell, Jr., Sherman, Tex., assignors to Anderson, Clayton & Co., Houston, Tex., a corporation of Delaware

Filed Mar. 17, 1964, Ser. No. 352,513

9 Claims. (Cl. 260-410.6)

1. A process for the manufacture of fatty acid esters comprising:

- (a) maintaining in a portion of a reaction vessel a mixture of fat, polyhydric alcohol, and alkaline ester-interchange catalyst, and a monoester resulting from the reaction of the fat and polyhydric alcohol in the presence of the catalyst all at equilibrium at a temperature above about 350° F.,
- (b) continuously introducing more of the fat, polyhydric alcohol, and alkaline ester-interchange catalyst into the reaction vessel,
- (c) continuously withdrawing from the reaction vessel a portion of the mixture at equilibrium at the temperature in the reaction vessel and at the same rate that material of step (b) is added to the reaction vessel,
- (d) vacuum film distilling the alcohol from the portion of the mixture withdrawn at a pressure between about 3 and 50 mm. Hg and at a temperature above that of the boiling point of the alcohol and below the boiling point of the esters in the mixture,
- (e) cooling residue from step (d) below approximately 350° F. within approximately 10 minutes from the time that portion of the mixture left the reaction vessel,
- (f) adding sufficient acid to the residue resulting from step (d) to substantially neutralize the catalyst and form a salt of the catalyst and acid, and
- (g) separation of the salt formed in step (f) by filtration.

3,313,835

METALLOCENYL SUBSTITUTED ORGANOSILICON MATERIALS AND A METHOD FOR MAKING THEM

Edward V. Wilkus, Albany, and Abe Berger, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

No Drawing. Filed May 27, 1963, Ser. No. 283,531

5 Claims. (Cl. 260-439)

1. Bis-(silylmetallocene) organic materials of the formula,



where R is a divalent radical having from 2 to 7 carbon atoms selected from the class consisting of alkylene radicals and arylene radicals, A is a member selected from the class consisting of R and methylene, R' is a member selected from the class consisting of monovalent hydrocarbon radicals, halogenated monovalent hydrocarbon radi-

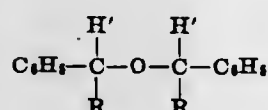
cals, cyanoalkyl radicals, fluoroalkyl radicals, and halogen radicals, Y and Y' are members selected from the class consisting of carbonyl, carbinol, carbamino, carbazido, and methylene, Z is a divalent radical of a metallocene selected from the class consisting of ferrocene, osmocene, and ruthenocene substituted with radicals selected from the class consisting of hydrogen, aryl radicals, alkyl radicals and mixtures thereof.

3,313,836

PREPARATION OF DIALKYLALUMINUM ARALKOXIDE BY DECOMPOSITION OF ETHERATES
Wolf R. Kroll, Linden, N.J., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

No Drawing. Filed Nov. 13, 1961, Ser. No. 152,023
4 Claims. (Cl. 260-448)

1. A process for the preparation of a dialkylaluminum aralkoxide which comprises heat-cleaving an etherate obtained by reacting an aluminum trialkyl having alkyl groups containing from 1 to 6 carbon atoms with an ether corresponding to the following general formula:



wherein R is a member selected from the group consisting of alkyl, aryl and aralkyl.

3,313,837

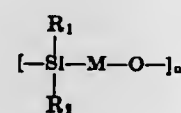
ORGANOSILICON COMPOUNDS

Gerd Rossmay, Altendorf (Ruhr), and Götz Koerner, Mulheim (Ruhr), Germany, assignors to Th. Goldschmidt A.-G., Essen, Germany

No Drawing. Filed May 3, 1963, Ser. No. 277,681
Claims priority, application Germany, May 5, 1962, G 34,905

The portion of the term of the patent subsequent to July 6, 1982, has been disclaimed
21 Claims. (Cl. 260-448.8)

1. Organosilicon compounds of the formula



wherein

$n \geq 1$,

R_1 is selected from the group consisting of alkyl, aryl and halogen

R_2 is halogen, and M stands for alkylene, linking Si and O through 3-4 carbon atoms.

10. A process of preparing 1,1-siloxaalkanes which comprises reacting a silane (A) of the general formula



with a silane (B) of the general formula



wherein R stands for an aliphatically saturated hydrocarbon group, X is selected from the group consisting of halogen and alkoxy, a has a numerical value of from 0 to 3 and b has a numerical value of from 0 to 2, said reaction being carried out in the presence of a catalyst capable of causing addition of olefinically unsaturated compounds to Si-H groups.

3,313,838

REACTION OF CHLOROSULFONIC ACID WITH ALKOXYLATED ALKYL PHENOLS

Marcellus C. Rozzi, Colonia, N.J., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

Filed July 1, 1963, Ser. No. 291,643

4 Claims. (Cl. 260-458)

1. A process which comprises energetically mixing chlorosulfonic acid and an alkoxyated alkyl phenol under a pressure of about 5-50 p.s.i.g. and with a power input of at least 2.5 watts per gram per minute while reacting said material and agent for a reaction time of about 1 to 10 minutes, controlling the reaction temperature to keep it below about 60° C., then passing the mixture into a separation zone, allowing the reaction to subside while removing vaporous and gaseous HCl therefrom and recovering a substantially unchanged and non-discolored sulfonated alkoxyated alkyl phenol.

3,313,839

PREPARATION OF SULFATE ESTERS BY THE REACTION OF CHLOROSULFONIC ACID WITH ALKOXYLATED ALKYL PHENOLS

Marcellus C. Rozzi, Colonia, N.J., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

Filed July 1, 1963, Ser. No. 291,722

6 Claims. (Cl. 260-458)

1. In a process for producing neutral sulfated alkoxyated alkyl phenols which consists essentially of reacting liquid chlorosulfonic acid with a liquid alkoxyated alkyl phenol and subsequently neutralizing, the improvement which comprises, in combination, the steps of subjecting the said liquid materials to centrifugal force at super-atmospheric pressure in a zone of energetic shearing for quickly and intimately mixing said liquids with an energy of at least 2.5 watts per gram per minute and for a time period not exceeding 1 second, forcing the mixture promptly from the shearing zone into a relatively unpressured reaction zone to produce a liquid reaction product and a gaseous by-product, venting the gaseous by-product and recovering a substantially degasified liquid sulfated alkoxyated alkyl phenol.

3,313,840

PROCESS FOR THE PRODUCTION OF THE DINITRILES OF FUMARIC ACID AND MALEIC ACID

Christian Kosel, Grossauhelm, and Theodor Lüssling, Hanau am Main, Germany, assignors to Deutsche Gold- und Silber-Schmelzeanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Dec. 7, 1964, Ser. No. 416,621

Claims priority, application Germany, Dec. 11, 1963, D 43,133

9 Claims. (Cl. 260-465.8)

1. In a method of producing a mixture of fumaric acid dinitrile and maleic acid dinitrile by dehydrogenation of succinic acid dinitrile the steps of passing a mixture of succinic acid dinitrile with an inert gas containing 2 to 10% of elemental oxygen over a catalyst essentially consisting of at least one oxide selected from the group consisting of vanadium pentoxide, molybdenum trioxide and chromium (III) oxide as active catalyst component in a heated reaction zone maintained at a temperature between 270 and 600° C., the molar ratio of said succinic acid dinitrile to said oxygen being between about 1:0.25 and about 1:1, the time the reaction mixture remains in the heated reaction zone being up to 15 seconds, and rendering the reaction gases leaving the heated reaction zone neutral to weakly acid.

3,313,841

2-PROPYNYL ESTER OF (p-[DI-PROPYNYLAMINO]PHENYL MERCAPTO) ACETIC ACID

Chester E. Pawloski, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,700

1 Claim. (Cl. 260-470)

2-propynyl(p-[di-2-propynylamino]phenyl mercapto) acetate.

3,313,842

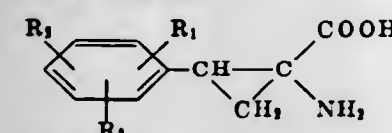
PHENYLCYCLOPROPANE CARBOXYLIC ACIDS AND ESTERS

Carl Kaiser, Haddon Heights, N.J., and Charles L. Zirkle, Berwyn, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed May 16, 1963, Ser. No. 281,037

6 Claims. (Cl. 260-471)

1. A compound selected from the group consisting of amino acids of the formula:



wherein each of R_1 , R_2 and R_3 is a member selected from the group consisting of hydrogen, hydroxy, methyl, methoxy, ethoxy, chloro, bromo, fluoro, trifluoromethyl and benzyloxy and the pharmaceutically acceptable acid addition and alkali salts thereof.

3,313,843

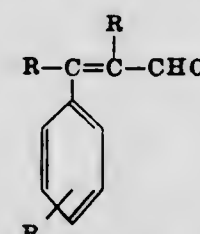
PREPARATION OF CINNAMATE ESTERS

William J. Houlihan, Colonia, N.J., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Nov. 5, 1962, Ser. No. 235,912

13 Claims. (Cl. 260-473)

1. A process for the preparation of a cinnamate ester which comprises reacting a cinnamic aldehyde of the formula



in which R is selected from the group consisting of hydrogen, alkyl, aryl, halo and alkoxy radicals, with an alcohol of 1 to 3 carbon atoms in the presence of a nickel peroxide catalyst, and recovering the desired ester.

3,313,844

PROCESS FOR PREPARATION OF BIS-(β-HYDROXYETHYL) TEREPHTHALATE

Seikichi Matsubara, Numazu-shi, Shizuoka-ken, and Yoshio Miyama and Tadao Tsutsumi, Mishima-shi, Shizuoka-ken, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Sept. 17, 1963, Ser. No. 309,389

Claims priority, application Japan, Sept. 24, 1962, 37/41,827; Oct. 19, 1962, 37/46,311

10 Claims. (Cl. 260-475)

1. Process for preparation of bis-(β-hydroxyethyl) terephthalate which comprises reacting terephthalonitrile, ethylene glycol and water in the presence of an esterification catalyst, at a temperature of 100-300° C., with addition to the reaction system and co-presence therein of at least one coloration inhibiting agent selected from the group consisting of phosphoric acid, phosphorus acid, inorganic phosphates, inorganic phosphites, lower alkyl and phenyl esters of phosphoric acid, lower alkyl esters of phosphorous acid, sulphur, inorganic sulphides, organic

sulphides selected from the group consisting of benzyl sulphide, tetramethylthiuram disulphide, β-naphthyl disulphide, thioanisole, ethyl sulphide, diphenyl sulphide and methyl sulphide, inorganic sulphites, mercaptans selected from the group consisting of lower alkyl mercaptans, thiophenol and benzylmercaptan, and thio-organic acids selected from thiosalicylic acid, thiobenzoic acids, and thioacetic acid.

3,313,845

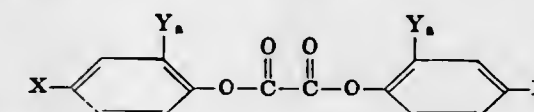
BIS (4-SUBSTITUTED PHENYL) OXALATES

Aubert Yancher Coran, Charleston, W. Va., and Constantine Emmanuel Anagnostopoulos, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed June 19, 1963, Ser. No. 288,889

7 Claims. (Cl. 260-479)

1. A compound of the formula,



wherein:

a is an integer from 0 to 1;

X is selected from the group consisting of alkyl of 4 to 18 carbon atoms and α -cumyl; and

Y is alkyl of 1 to 4 carbon atoms.

3,313,846

POLYETHERS AND METHOD OF MAKING SAME

Manuel Slovinsky, Corpus Christi, Tex., assignor to Celanese Corporation, a corporation of Delaware

No Drawing. Filed Aug. 9, 1960, Ser. No. 48,367

1 Claim. (Cl. 260-484)

The method of forming polymers having terminal carboxylate groups from olefinic oxides containing less than 5 carbon atoms which comprises (1) adding to said olefinic oxide up to about 1 weight percent of water and about 0.2 to 10 weight percent of a catalyst consisting essentially of a combination of a zinc salt of a carboxylic acid selected from the group consisting of formic acid, acetic acid and glycolic acid and a second compound which is aluminum isopropylate, and (2) heating this mixture of said olefinic oxide, water and said catalyst to about 60-140° C.

3,313,847

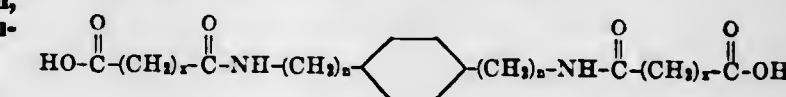
PROCESS OF PREPARING MONOMERIC DICARBOXYLIC ACIDS CONTAINING AMIDE LINKAGES

Clifton W. Tate and Nicholas R. Congiundi, Cary, N.C., assignors to Monsanto Company, a corporation of Delaware

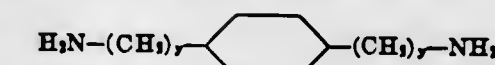
No Drawing. Filed Jan. 9, 1964, Ser. No. 336,613

4 Claims. (Cl. 260-518)

1. A method for the production of a monomeric dicarboxylic acid compound of the formula



wherein x represents an integer of from 5 to 10 and n represents an integer of from 1 to 4, which comprises introducing into an aqueous reaction medium a molar proportion of a diamine of the general formula



wherein y is an integer of from 1 to 4, and thereafter adding a saturated diacid of the general formula



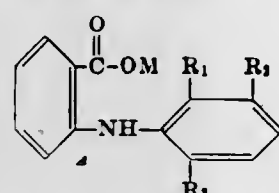
wherein x is an integer of from 5 to 10 until a pH in the range of from about 7.4 to 4.5 has been obtained in the reaction mixture resulting in the precipitation of a salt from solution, recovering the precipitated salt after which said salt is dried and purified by recrystallization, thereafter causing water to be eliminated from said purified salt by subjecting said salt to conditions of elevated temperature and reduced pressure and thereby effecting the formation of intra-molecular amide groups.

3,313,848

ANTHRANILIC ACIDS AND DERIVATIVES

Robert A. Scherrer and Franklin W. Short, Ann Arbor, Mich., assignors to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan
No Drawing. Filed June 18, 1964, Ser. No. 376,201
7 Claims. (Cl. 260-518)

1. A compound of the formula

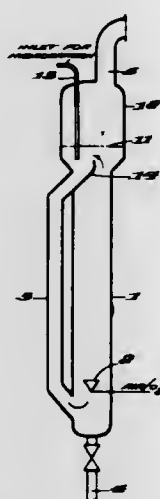


where R_1 is a member of the class consisting of halogen and methyl; R_2 is a member of the class consisting of halogen, methyl, ethyl, lower alkoxy, benzyloxy and β,β -trifluoroethoxy, at least one of said R_1 and R_2 being halogen; R_3 is a member of the class consisting of hydrogen, halogen, and methyl; and M is a member of the class consisting of hydrogen, pharmaceutically-acceptable cations, and lower alkyl; the halogen herein being selected from the class consisting of fluorine, chlorine, and bromine.

3,313,849

METHOD FOR THE CATALYTIC OXIDATION OF HYDROCARBONS

Ferdinand List, Günther Strauss, and Rudolf Ströbele, Marl, Germany, assignors to Chemische Werke Huls Aktiengesellschaft, Marl, Germany, a corporation of Germany
Filed Aug. 26, 1963, Ser. No. 304,390
Claims priority, application Germany, Oct. 6, 1962, C 28,111
1 Claim. (Cl. 260-524)



Method for catalytic oxidation of p-xylene in the presence of a solvent selected from the group consisting of acetic acid and propionic acid and a suspended catalyst by means of an oxygen containing gas in an upright reaction vessel at 5 to 15 atmospheres pressure, said reaction vessel being provided with a circulating system, the

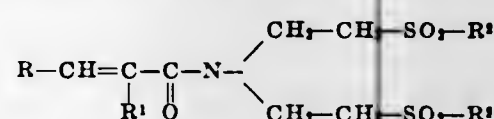
cross-section of the reaction vessel having a ratio in relation to that of the circulating system of from 4:1 to 1:1, and removing the heat of the reaction from the mixture substantially completely in the form of heat of vaporization.

3,313,850

UNSATURATED ACID AMIDES CONTAINING SULPHONIC GROUPS AND METHOD OF PREPARATION

Ulrich Bahr, Edgar Segel and Günther Nischk, all of Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed Feb. 6, 1964, Ser. No. 343,102
Claims priority, application Germany, Mar. 6, 1963, F 39,175
12 Claims. (Cl. 260-561)

1. A compound of the formula



wherein R is a member of the group consisting of hydrogen, methyl, phenyl, naphthyl, chlorophenyl and lower alkylphenyl, R^1 is a member of the group consisting of hydrogen and methyl, R^2 is a member of the group consisting of C_1 to C_8 alkyl, cyclohexyl, phenyl, lower alkylphenyl and chlorophenyl.

3,313,851

RECOVERY OF CYCLOHEXYLAMINE

Vipin D. Shah, Waukegan, Ill., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois
No Drawing. Filed Feb. 6, 1964, Ser. No. 343,120
3 Claims. (Cl. 260-563)

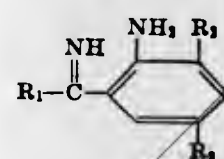
1. The method of recovering cyclohexylamine from an aqueous solution of cyclohexylamine sulfate consisting essentially of the steps
adding sodium hydroxide to said aqueous solution in such an amount that the separating aqueous phase contains at least 9.5% by weight of sodium hydroxide, and
withdrawing said aqueous phase from the formed two-phase system whereby the top layer contains at least 95% of the cyclohexylamine initially present in the form of cyclohexylamine sulfate.

3,313,852

TRIFLUOROMETHYL SUBSTITUTED o-AMINO-PHENYL KETIMINES

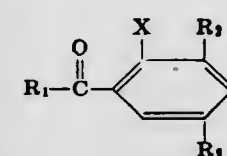
Irwin J. Pachter, Erdenheim, and James W. Wilson, Wayne, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed June 3, 1960, Ser. No. 33,620
3 Claims. (Cl. 260-566)

1. The method of preparing trifluoromethyl-o-amino-phenyl ketone imine having the following formula:



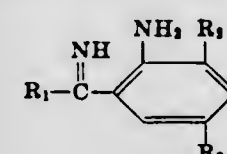
in which R_1 is a member selected from the group consisting of phenyl, fluorophenyl, chlorophenyl, bromophenyl, trifluoromethylphenyl, lower alkoxyphenyl, lower alkylphenyl, lower alkyl, cycloalkyl having 3 to 6 carbon atoms, benzyl, phenethyl, thienyl, pyrrolyl, pyridyl, furyl and indolyl; and R_2 and R_3 are members selected from the group consisting of hydrogen and trifluoromethyl at

least one of said members being trifluoromethyl which comprises treating a trifluoromethyl-o-halophenyl ketone having the following formula:



in which X is halogen and R_1 , R_2 and R_3 are as defined above with ammonia at about 135-150° C. for about 6-10 hours.

2. A chemical compound having the following formula:



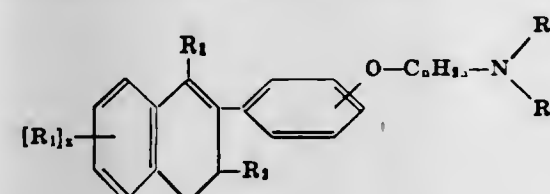
in which R_1 is a member selected from the group consisting of phenyl, fluorophenyl, chlorophenyl, bromophenyl, trifluoromethylphenyl, lower alkoxyphenyl, lower alkylphenyl, lower alkyl, cycloalkyl having 3 to 6 carbon atoms, benzyl, phenethyl, thienyl, pyrrolyl, pyridyl, furyl and indolyl; and R_2 and R_3 are members selected from the group consisting of hydrogen and trifluoromethyl at least one of said members being trifluoromethyl.

3,313,853

2 - (TERTIARYAMINOALKOXYPHENYL)-3,4-DIHYDRO-NAPHTHALENES AND 2 - (TERTIARYAMINOALKOXYPHENYL) - 3,4 - DIHYDRO - 1(2H)-NAPHTHALENONES

Daniel Lednicher, Portage Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Oct. 16, 1963, Ser. No. 316,549
11 Claims. (Cl. 260-570.7)

1. A compound selected from the class consisting of (a) compounds having the formula:



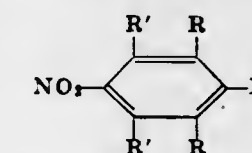
wherein R_1 is selected from the class consisting of lower-alkyl, halogen, trifluoromethyl, and lower-alkylenedioxy, R_2 is selected from the class consisting of phenyl and phenyl substituted by a radical selected from the class consisting of lower-alkyl and halogen, R_3 is selected from the class consisting of hydrogen and lower-alkyl, C_nH_{2n} is an alkylene radical containing from 2 to 6 carbon atoms, inclusive, R_4 and R_5 are selected from the class consisting of lower-alkyl and lower-alkyl linked together to form, with the attached nitrogen atom, a heterocyclic radical selected from the class consisting of pyrrolidino, lower-alkylpyrrolidino, piperazino, lower-alkylpiperazino, piperidino, lower-alkylpiperidino, morpholino, hexamethylenimino, homopiperazino, and homomorpholino, and x is an integer from zero to 2, inclusive;
(b) the pharmacologically acceptable acid addition salts thereof; and
(c) the quaternary ammonium salts of the compounds of the above formula wherein the anion of the quaternary salt is that of a pharmacologically acceptable acid.

3,313,854

PREPARATION OF PARA-NITRODIPHENYLAMINES UTILIZING A COPPER OXIDE CATALYST

Joseph Levy, Paramus, N.J., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Apr. 23, 1965, Ser. No. 450,535
6 Claims. (Cl. 260-576)

1. A process for the preparation of a p-nitrodiphenylamine which comprises condensing a p-halonitrobenzene of the formula:



in which X is chlorine or bromine, R is hydrogen, alkyl of from 1 to 5 carbon atoms, chlorine or bromine, and R' is hydrogen or alkyl of from 1 to 5 carbon atoms, with an aromatic amine of the formula:



in which R is hydrogen, lower alkyl, methoxy, ethoxy, chlorine or bromine and n is an integer of from 1 to 2, in the presence of potassium carbonate and a copper oxide catalyst at a temperature of from about 150° C. to 250° C. while removing the water formed during the condensation, and recovering the product.

3,313,855

TRIMETHYLAMINE-IMINE DI(TERT.)BUTANOL AND PROCESS OF PREPARATION

Rolf Appel, Bonn, Germany, assignor to Olin Mathieson Chemical Corporation
No Drawing. Filed Jan. 28, 1964, Ser. No. 340,816
Claims priority, application Germany, July 3, 1963, O 9,522
2 Claims. (Cl. 260-583)

1. Trimethylamine-imine di(tert.)butanol.

3,313,856

PREPARATION OF ACROLEIN OR METHACROLEIN

Bernard Phielix, Sittard, and Jentje Bonnema, Geleen, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands
No Drawing. Filed Oct. 15, 1962, Ser. No. 230,700
Claims priority, application Netherlands, Mar. 6, 1961, 262,006; Jan. 12, 1962, 273,489; July 6, 1962, 280,678
9 Claims. (Cl. 260-604)

1. In a process for preparing a member of the group consisting of acrolein and methacrolein by the gas phase oxidation of an alkene selected from the group consisting of propene and isobutene, with oxygen at elevated temperature and in the presence of an antimony catalyst, the step which comprises utilizing as the catalyst, one selected from the group consisting of mixtures and compounds comprising antimony and vanadium oxides, the atomic ratio between the antimony and vanadium being at least 0.5 but no greater than 1.5.

3,313,857

PROCESS FOR PREPARATION OF CHLORO-BROMOCARBONS

Samuel Gelfand, Niagara Falls, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Nov. 21, 1963, Ser. No. 325,488
7 Claims. (Cl. 260-648)

1. A process for the preparation of a cyclochlorobromocarbon comprising reacting hexachlorocyclo-

tadiene with bromine at a temperature of from about 0 to about 235 degrees centigrade in the presence of an aluminum halide selected from the group consisting of aluminum chloride and aluminum bromide.

3,313,858

ISOMERIZATION OF NON-TERMINAL OLEFINS

Alfred Clark, Benedict H. Ashe, Jr., and Jack N. Finch, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Feb. 12, 1965, Ser. No. 432,414
5 Claims. (Cl. 260-666)

1. A process for isomerizing a hydrocarbon feed selected from the group consisting of cyclic olefins in which the double bond is between two C's, at least one of which is a ring C of 5 to 10 carbon atoms, which comprises contacting said feed under isomerizing conditions including a temperature in the range of 100 to 300° C. and a pressure in the range of 0 to 2000 p.s.i.g. with a silica-alumina composite in which the silica is in the range of 20 to 95 weight percent and which contains at least one oxide of a metal selected from the group consisting of erize said feed by shifting the double bond, and recovering resulting isomer.

3,313,859

PROCESS FOR HYDROGENATING AROMATIC HYDROCARBONS

Elliott P. Doane, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Oct. 19, 1964, Ser. No. 404,912
11 Claims. (Cl. 260-667)

1. A process for hydrogenating an aromatic hydrocarbon feed which comprises the steps of:
(a) contacting said feed in a hydrogenating zone with a catalyst consisting essentially of a porous support selected from the group consisting of silica, alumina, magnesia, thoria, zirconia, and combinations thereof impregnated with a hydrogenating component selected from the group consisting of the oxides and sulfides of the metals of Group VI-B, the metals, oxides, and sulfides of the Group VIII ferrous metals, and combinations thereof, in admixture with hydrogen under hydrogenating conditions including a temperature not more than about 700° F. which avoids substantial cracking of the feed;
(b) incorporating in the reaction mixture in the hydrogenating zone of step (a) a nitrogen compound which supplies ammonia therein at an N concentration in the range of 0.05 to 3.0 weight percent based upon the weight of said feed;
(c) recovering a hydrogenated effluent from the zone of step (a).

3,313,860

PRODUCING PARA- AND META-TERTIARY-BUTYL TOLUENES

James L. Willis, Jr., Beaumont, Tex., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Mar. 6, 1964, Ser. No. 350,090
6 Claims. (Cl. 260-671)

1. The process of producing tertiary-butyl alkyl benzenes which comprises contacting an isobutylene reactant and an alkylbenzene having between one and 4 carbon atoms in the alkyl radical with a natural clay selected from the group of chemically basic and neutral clays which have not been subjected to chemical treatment, at temperatures of between about 300° F. and about 600° F. and at pressures of between about 200 p.s.i.g. and about 400 p.s.i.g.

3,313,861

PROCESS FOR THE SEQUENTIAL REACTION OF A COMPLEX AROMATIC CARBOXYLIC ACID, AN EPOXY MONOMER, AND A LINEAR POLYAMIDE

Theodore H. Szawlowski, Wonder Lake, and Walter E. Kramer, Niles, Ill., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Nov. 16, 1962, Ser. No. 238,287
3 Claims. (Cl. 260-830)

1. A polymerized epoxy resin composition consisting essentially of the sequential reaction product of
(1) complex polynuclear aromatic carboxylic acids obtained by metalation of solvent extracts obtained in the solvent extraction of mineral lubricating oils using a solvent selective for aromatic compounds, to form the alkali metal adduct, carbonation of said adduct to form the corresponding alkali metal salts of the carboxylic acids, and acidification of said salts to form a mixture of free carboxylic acids containing 1 to 7 carboxyl groups per molecule,
(2) a curable epoxy monomer having at least 1 terminal epoxide group and
(3) a linear polyamide prepared by the condensation of said mixture of acids defined in (1) and a polyfunctional amine having at least one hydrogen atom on each amino nitrogen and containing 2 to 70 carbon atoms wherein said complex acid and said linear polyamide comprise about 15% to about 85% by wt. based on the final product.

3,313,862

MODIFICATION OF POLYETHYLENE TEREPHTHALATE WITH POLYCARBONATE

Erhard Siggel, Laudenbach am Main, and Hilmar Roedel, Eisenfeld, Germany, assignors to Vereinigte Glanzstoff-Fabriken AG, Wuppertal-Elberfeld, Germany

No Drawing. Filed Mar. 8, 1963, Ser. No. 263,728
Claims priority, application Germany, Mar. 9, 1962, V 22,146

6 Claims. (Cl. 260-860)

1. A process for the production of a modified high molecular weight fiber-forming polyester which comprises: co-polycondensing diethylene glycol terephthalate with about 0.5 to 6% by weight of a polycarbonic acid ester of 4,4'-dihydroxydiphenyl-2,2-propane, said polycarbonic acid ester having a mean molecular weight of at least about 15,000 up to about 80,000.

3,313,863

1,2-SUBSTITUTED ETHANES AS CATALYSTS FOR UNSATURATED POLYESTERS

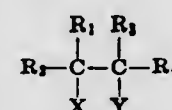
Hermann Schnell, Krefeld-Urdingen, and Klaus Prater and Hans Rudolph, Krefeld-Bockum, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Feb. 24, 1964, Ser. No. 347,025
Claims priority, application Germany, Feb. 25, 1963, F 39,105

6 Claims. (Cl. 260-864)

1. Catalyst - containing, heat hardenable, polyester masses storable at room temperatures, which comprise mixtures of unsaturated polyester polymeric condensation reaction products of α,β -unsaturated dicarboxylic acids with polyols and copolymerizable monomeric compounds with a catalytic amount of at least one 1,2-substituted ethane selected from the group consisting of 1,2-di-(3-pyridyl)-1,2-diphenyl-ethane-1,2-diol, xanthopinacone, fluorenonepinacone, 1,2-diphenyl-cyclobutane-1,2-diol, the cyclic carbonate of benzpinacone, the cyclic sulfite

of acetophenonepinacone, benzpinacone-dibenzoate and 1,2-substituted ethanes of the formula:



wherein R_1 and R_2 are selected from the group consisting of phenyl and substituted phenyl, the substituents of said substituted phenyl being selected from the group consisting of halogen, methyl, ethyl, methoxy and phenyl; R_3 and R_4 are selected from the group consisting of hydrogen, methyl, ethyl, propyl, halomethyl, benzyl, phenyl and substituted phenyl, the substituents of said substituted phenyl being selected from the group consisting of halogen, methyl, methoxy and phenyl and X and Y are selected from the group consisting of halogen, hydroxyl, methoxy, ethoxy, phenoxy and amino.

3,313,864

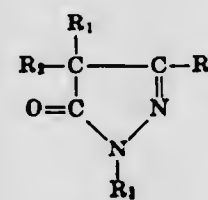
PROCESS FOR THE STEPWISE PRODUCTION OF MOULDED ARTICLES FROM MOULDING MASSES BASED ON UNSATURATED POLYESTERS AND COPOLYMERISABLE MONOMERIC COMPOUNDS

Hans Rudolph and Karl-Heinz Rullmann, Krefeld-Bockum, Hermann Schnell, Krefeld-Urdingen, and Klaus Prater and Karl Raichle, Krefeld-Bockum, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed July 6, 1965, Ser. No. 469,844
Claims priority, application Germany, Aug. 12, 1964, F 43,726

13 Claims. (Cl. 260-864)

1. In a process wherein an unsaturated polyester polymeric condensation reaction product of an α,β -unsaturated dicarboxylic acid and a polyalcohol is copolymerized with a vinyl monomer to form a pre-polymer gel suitable for moulding, the improvement comprising employing as a gelling catalyst in the polymerization system a compound of the formula



wherein R_1 and R_2 are each selected from the group consisting of hydrogen and an alkyl radical, R_3 is an aryl radical, and R_4 is an alkyl radical.

3,313,865

ALPHA-PINENE POLYMERIZATION

Fred Vohwinkel, Toledo, Ohio, assignor to Schenectady Chemicals, Inc., Schenectady, N.Y., a corporation of New York

No Drawing. Filed Dec. 10, 1964, Ser. No. 417,478

16 Claims. (Cl. 260-878)

1. A process of preparing a resin from alpha-pinene containing up to 30% of beta-pinene comprising carrying out the reaction in the presence of a mixture of 0.5 to 3 mol percent of aluminum bromide and 2 to 10 mol percent of aluminum chloride based on the total terpenes present.

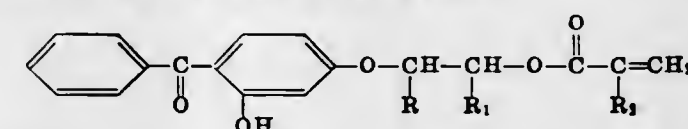
3,313,866

LIGHT-STABILIZED COMPOSITION OF RESIN AND 2-HYDROXY-4-ACRYLOXYETHOXY-BENZOPHENONES AND HOMOPOLYMERS THEREOF

Robert Louis Horton, Warren Township, Somerset County, and Houston George Brooks, Jr., Somerset, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Oct. 11, 1965, Ser. No. 494,922
8 Claims. (Cl. 260-880)

1. A light-stabilized composition comprising a resin selected from the group consisting of polyvinyl halides, polyacrylates, polystyrene, polyvinylidene halides, polycarbonates and acrylonitrile-butadiene-styrene terpolymers and 0.1 to 5.0% by weight of a homopolymer derived from a monomer of the formula:



wherein R and R_1 are each hydrogen or methyl, no more than one being methyl; and R_2 is hydrogen or methyl.

3,313,867

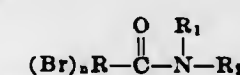
MODIFIED ACRYLONITRILE POLYMERS

William A. Blackburn, Chapel Hill, N.C., and Charles H. Apperson, Decatur, Ala., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Oct. 6, 1964, Ser. No. 402,010

26 Claims. (Cl. 260-895)

1. A fiber-forming composition of matter comprising an acrylonitrile polymer containing at least 70 percent by weight of acrylonitrile and a member selected from the group consisting of (1) a brominated N,N-dialkylamide having the formula



wherein R represents an alkyl radical containing from 2 to 21 carbon atoms, n is an integer of from 2 to 10 inclusive, and R_1 and R_2 represent lower alkyl groups, and (2) mixtures of said brominated N,N-dialkylamides.

3,313,868

ETHYLENE-PROPYLENE RUBBERS CONTAINING VINYL AROMATIC HYDROCARBON-ALKYL ACRYLATE COPOLYMER

George B. Freda, Belpre, Ohio, assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Oct. 23, 1961, Ser. No. 147,045

6 Claims. (Cl. 260-897)

1. A composition comprising from about 95 to about 70 parts by weight of (a) an ethylene-propylene rubber and correspondingly from about 5 to about 30 parts by weight of (b) a copolymer of (1) a vinyl aromatic hydrocarbon and (2) an alkyl ester of acrylic acid in which the alkyl chain contains 2 to 10 carbon atoms.

3,313,869

METHOD OF MAKING CLAY AGGREGATE FROM RAW CLAY

Aaron J. Cohen, 3607 S. Braeswood, Houston, Tex. 77025

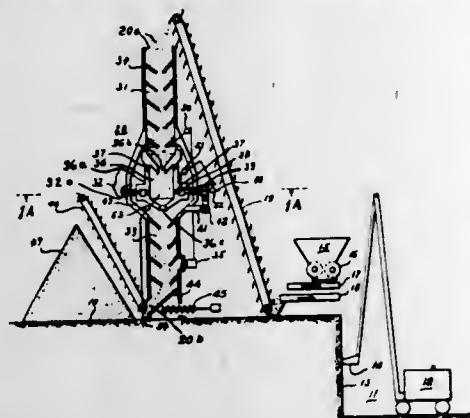
Filed Aug. 7, 1963, Ser. No. 300,594

15 Claims. (Cl. 263-52)

13. A method of producing aggregate from raw clay found at a proposed roadway site and treated in a portable vertical shaft-type kiln, said method comprising the steps of:

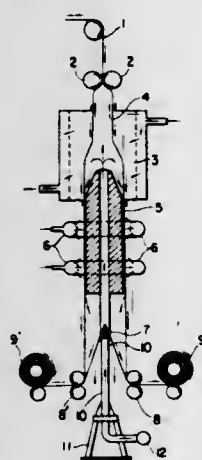
- erecting said kiln at a first location along a proposed roadway in close proximity to a supply of raw clay;
- mining raw clay having a moisture content of less than 25% from a clay pit;

(c) delivering selected bits of the mined clay having a size range between one-fourth inch and one and one-half inches to the top of said kiln while at least substantially maintaining the moisture content thereof and discharging said clay bits into said kiln;



(d) progressively drying, burning and cooling said clay bits in respective areas of said kiln; and
(e) separating and individually collecting the dried, burnt, and cooled clay bits and the fines formed therefrom during the drying, burning and cooling thereof.

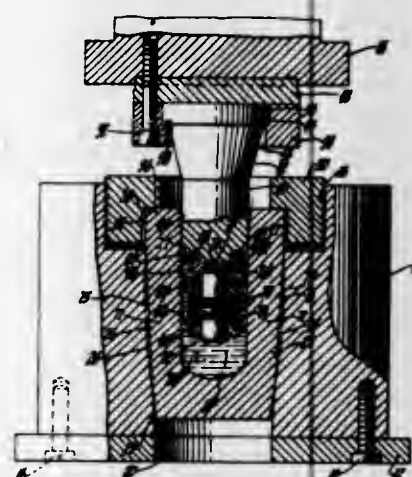
3,313,870
PROCESS AND APPARATUS FOR TWO-DIMENSIONAL STRETCHING OF THERMOPLASTIC FILM, PLATE AND PIPE
Masahide Yazawa, 102 Higashi-ku, Kunitachi-cho, Kitatama-gun, Tokyo, Japan
Filed May 2, 1963, Ser. No. 277,629
Claims priority, application Japan, May 8, 1962, 37/17,843
8 Claims. (Cl. 264-95)



1. A device for increasing the strength and impact resistance of thermoplastic tubular film which has been previously produced by extrusion comprising: first pinch roller means controlling the forward speed of said film and substantially preventing fluid inside of the tubular film from leaking past said first pinch rollers, cylindrical mandrel means spaced from said pinch roller means, and having an outer diameter greater than the inside diameter of the film passing thereover, means to inject a heated fluid under pressure inside said tubular film at a point intermediate said first pinch roller means and said mandrel means thereby to heat, soften, stretch and bulge the film, said fluid confined within the tubular film flowing outwardly to the atmosphere through an annulus formed between the periphery of the mandrel means and the inside surface of the tubular film, said mandrel means having a diameter and adequate length sized with respect to the fluid pressure within the annulus to provide a fluid pressure drop sufficient to maintain a cushion of fluid between the film and the mandrel means and keep them substantially out of contact, means to cool and harden the hot

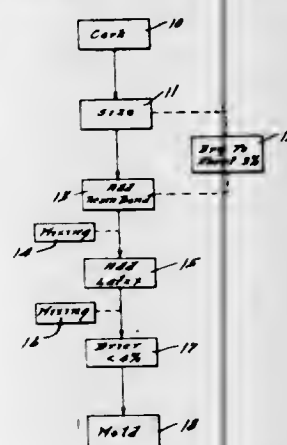
stretched film, cutting means to longitudinally cut the hardened film into two portions, two second pinch roller means, one for contacting each of said portions and having a faster peripheral speed than said first pinch roller means thereby to longitudinally stretch the film, and take up roller means upon which to wind the film portions.

3,313,871
METHOD AND APPARATUS FOR HYDROSTATICALLY COMPACTING METAL POWDERS
Roger R. Vogel, Lathrup Village, and Donald S. Mills, Berkley, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Michigan
Filed Dec. 29, 1964, Ser. No. 421,764
7 Claims. (Cl. 264-111)



1. A method for hydrostatically compacting metal powder comprising positioning said metal powder within a flexible container in a desired shape, suspending said container in a cylindrical pressure chamber defined by walls in a receptacle having a generally conical outer wall, driving a cylindrical piston into said chamber to exert a sufficient pressure on said fluid to compact said metal powder within said container, and simultaneously exerting a pressure on said outer conical wall of said receptacle by wedging said receptacle down into a conical bore of a retaining block by the force of said piston so that the pressures on said outer conical wall of said receptacle and said chamber defining walls of said receptacle are offset whereby deformation of said receptacle is substantially prevented and a fluid-tight seal is maintained between said piston and said pressure chamber.

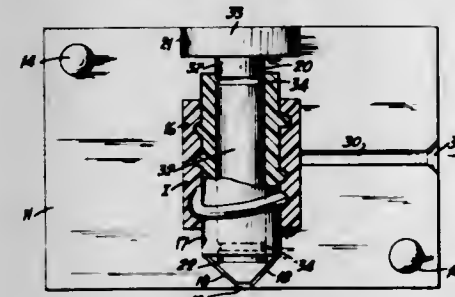
3,313,872
METHOD OF PRODUCING CORK GASKETS
Richard H. Hawkes and Marvin M. Spruill, Norfolk, Va., assignors to Sheller Manufacturing Corporation, Detroit, Mich., a corporation of Indiana
Filed Dec. 10, 1964, Ser. No. 417,357
5 Claims. (Cl. 264-118)



1. The method of producing a cork gasket from a granulated cork of commercially usable granular size

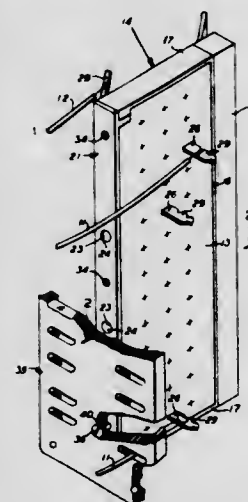
which includes the steps of: mixing a binder composed of 16.5-26.3% of a thermosetting resin containing glycerine as a plasticizer, thoroughly mixing the binder with 69.5-76% by weight of cork granules and adding to the mixture 3.9-5.8% of a blocking agent, continuing the mixing of said mixture and thereafter placing said mixture in a mold where said mixture is heated to approximately 300° F. for a substantial length of time.

3,313,873
PROCESS FOR MAKING MOLDED ARTICLES WITH UNDERCUTS
Stanley F. Dembiak, 46 Miller St., Wallington, N.J. 07055
Filed Feb. 11, 1965, Ser. No. 431,872
7 Claims. (Cl. 264-134)



1. A method of making a tubular molded article having an internal peripherally continuous surface formed with an undercut at its internal surface, terminating short of the ends of said surface, comprising placing in a mold a master of said article, and an axial pin spaced from the internal surface of said master, injecting into the space in the mold between said pin and master molding material to form an insert having an external male surface corresponding to the internal female surface of said master, then opening the mold, removing the pin and stripping the insert from said master, then coating said male surface of the insert with a heat resisting material, replacing the insert on said pin, reinserting the pin with the insert thereon into the mold, and injecting hot molding material into the space in the mold formerly occupied by the master to mold said tubular article.

3,313,874
METHODS OF MAKING PLASTIC TERMINAL BLOCKS
Warren E. Bleinberger, Towson, and Horace Lehnels, Catonsville, Md., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 11, 1963, Ser. No. 308,257
3 Claims. (Cl. 264-250)

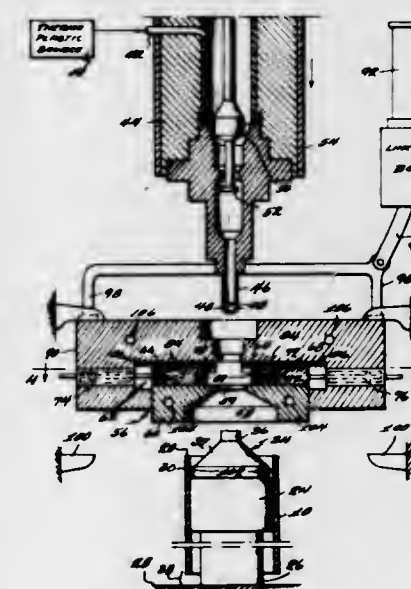


3. The method of making a plastic terminal block comprising the steps of:

837 O.G.-22

forming a styrene copolymer plastic material into a shell having a rectangular parallelepiped configuration and having an open side and an open top adjacent said open side, positioning the open side of the shell against a metallic supporting plate, mounting a plurality of electrically conductive terminals at predetermined positions through the shell and through the supporting plate, pouring through the open top of the shell a free-flowing thermosetting polyester resin molding material curable at a temperature lower than the melting temperature of the shell to fill the entire shell with such material, forming a styrene copolymer plastic material into a covering having a plurality of apertures tapered inwardly from the upper surface of the cover to the lower surface thereof, positioning the cover over the open top of the shell to force a portion of the molding material up through the apertures in the cover, moving a straight edged wiper across the upper surface of the cover to remove any excess molding material from such upper surface and to form a smooth surface of molding material in the apertures of the cover flush with the upper surface thereof, setting the molding material in the shell and apertures of the cover to autogenously bond the shell to the molding material to form an integral unit, and removing the supporting plate from the shell and the set-molding material.

3,313,875
PLASTIC FORMING PROCESS AND APPARATUS
Karl Magerle, Im Vorderen Erb 1, Kusnacht, Switzerland
Filed Apr. 21, 1966, Ser. No. 552,360
Claims priority, application Switzerland, Apr. 19, 1961, 4,536/61; June 15, 1961, 6,994/61
46 Claims. (Cl. 264-267)



1. A plastic forming process comprising the steps of placing extruder means within an open female mold and disposing simultaneously a plurality of hot strands of cohesive thermoplastic material spacedly around the inside surface of the open female mold, said strands being extruded in a substantial acute angle to the vertical into the space within said female mold by a vertically disposed extruder extending into said space by way of an upper opening in said mold, moving said mold toward a male die to remove said strands from the extruder as the extruder exits from the mold by way of said opening to effect the disposition of the strands around said mold, closing said opening, and closing said mold with the

aid of the male die to compress said strands into a molded article.

7. Apparatus for molding and welding a head to a tubular body to produce thermoplastic containers comprising a female mold having an access aperture at its upper end, a male die vertically disposed for receiving said tubular body, said mold being vertically positioned spacedly above said die and movable downwardly onto the die by moving means, means for spacedly disposing hot strands of cohesive thermoplastic material longitudinally on the inside surface of said female mold with outer ends of the strands being out of contact with the mold, said outer ends of said strands being the ends most remote from said hot strand disposing means, said dispos-

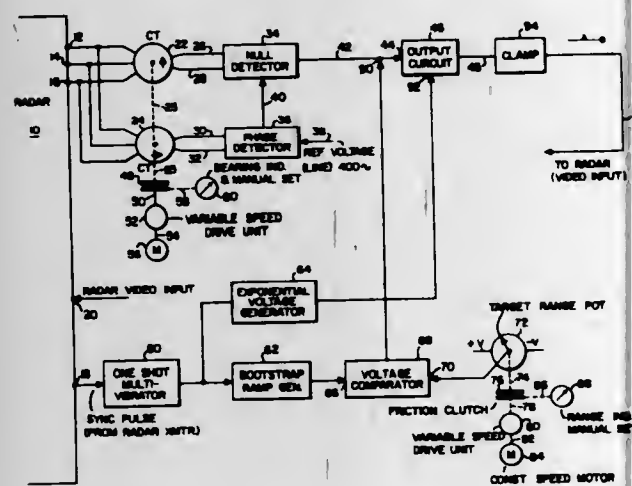
ing means further comprising a vertically depending nozzle having a ring of discrete orifices at its lower end, said nozzle being movable vertically through said aperture for causing said strands to exude and separately hang from said orifices in the space in the mold, and including means for effectively separating said nozzle from said mold through said aperture, means for disjoining said strands from said orifices as the nozzle and mold separate, means for substantially closing said access aperture as the said nozzle is separated from the mold, and means for moving said die and said mold relatively toward each other to cause said outer ends of the strands to heat said tubular body and to weld thereto a head formed from said strands by the die and the mold moved together.

ELECTRICAL

3,313,876 RADAR TARGET SIGNAL GENERATING APPARATUS

John C. Freeborn, West Covina, Calif., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Feb. 24, 1965, Ser. No. 434,879
5 Claims. (Cl. 35-10.4)



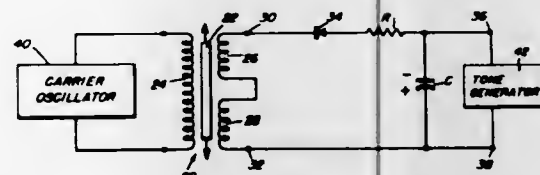
4. A radar target generator, for use with a radar device having transmitter pulses, an antenna and a video section, comprising in combination:
means for producing a target pulse continuously variable in time between the radar transmitter pulses;
means for producing a first signal variable with the rotation of the antenna;
means for producing a second signal pulse corresponding to the summation of said target pulse and the first signal;
means for increasingly attenuating the second signal pulse during the time between radar transmitter pulses; and,
means for connecting said second signal pulse to the radar video section.

3,313,877 ELECTRONIC ORGAN KEYING DEVICE

Robert A. Boenning, Timonium, Md., assignor of fifty percent to Walter G. Finch, Baltimore, Md.
Filed July 10, 1964, Ser. No. 381,700
8 Claims. (Cl. 84-1.01)

4. A keying arrangement for actuating the tone generator of an electric organ, comprising transformer means including a pair of output windings connected in series opposition and in circuit with said tone generator and an input winding, said transformer means having a movable

core element for inducing, voltage from said input winding to said pair of output windings in accordance with the

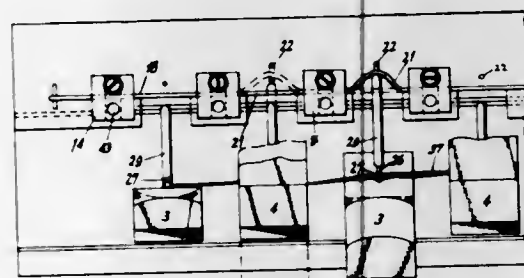


position of said core element relative to said pair of output windings, and means including a key for moving said core element to the position desired.

3,313,878 SWITCHING ASSEMBLY FOR AN ELECTRICAL MUSICAL INSTRUMENT AND PERCUSSIVE SYSTEM THEREFOR

William L. Fritz, Chatsworth, Calif., assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio

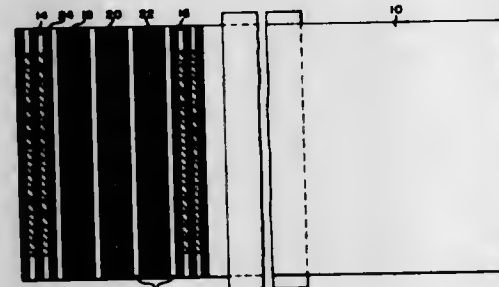
Continuation of application Ser. No. 355,621, Mar. 30, 1964. This application July 26, 1966, Ser. No. 573,438
15 Claims. (Cl. 84-1.01)



1. In combination with a clavier having playing keys with body portions and portions arranged for actuation, an insulative panel extending in a direction transverse the bodies of the playing keys, a series of perforated blocks supported on said insulative panel, a strand-like element extending through the perforations of said blocks and having a sliding fit therein, means anchoring the said strand-like element at its ends, said blocks being spaced respectively on either side of the median lines of the bodies of said keys, and means on said key bodies for engaging and deflecting the said strand-like element between adjacent blocks, the said strand-like element being difficultly extensible and difficultly compressible in the axial direction, and of such length between said anchoring means that when deflected between adjacent blocks by the actuation of a key the said strand-like element will remain in the deflected position notwithstanding release of said last mentioned key until it is deflected at another point by the actuation of another key.

3,313,879 TREATED CELLULOSIC MATERIAL AND ELECTRICAL APPARATUS EMBODYING THE SAME

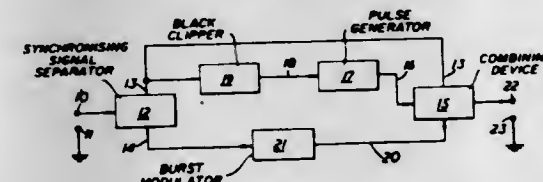
James G. Ford, Hickory Township, Sharpville, and Anthony J. Palumbo, Hickory Township, Sharon, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 28, 1963, Ser. No. 319,387
4 Claims. (Cl. 174-17)



1. An improved sheet cellulosic product having increased stability and resistance to thermal deterioration and particularly adapted for use in electrical apparatus in combination with a fluid dielectric impregnant in contact with the cellulosic product, the cellulosic product comprising cellulosic fibers in sheet form, the sheet having uniformly distributed therethrough from about 0.02% to about 10% by weight, based on the weight of the cellulosic fibers, of at least one stabilizing compound selected from the group consisting of 1-naphthylisocyanate, acetanilide, p-aminoacetanilide, benzamide, carbanilide, dimethylacetamide, malonamide, N,N'-methylene-bis-acrylamide, N-t-butylacrylamide, N-methylolacrylamide, N-octylacrylamide, 1-cyanoacetamide, and benzanilide.

3,313,880 SECURITY TELEVISION SYSTEM WITH FALSE SYNCHRONIZING SIGNALS

Patrick Bass, London, England, assignor to R. & R. Research Limited
Filed Aug. 26, 1963, Ser. No. 304,587
Claims priority, application Great Britain, Aug. 30, 1962, 33,385/62
7 Claims. (Cl. 178-5.1)

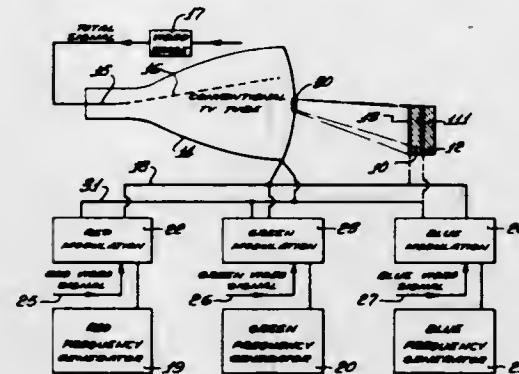


1. In a television system, in combination, transmitter means including a source of a video signal including a picture signal component representing an image and synchronizing signals of predetermined nature and timing; signal altering means operable to replace said synchronizing signals by modified synchronizing signals having the timing of said synchronizing signals and having a nature different from that of said synchronizing signals to develop an altered video signal; decoy signal insertion means operable to add to said altered video signal decoy signals having the nature of said synchronizing signals and having a timing different from that of said synchronizing signals to develop a modified video signal; means for transmitting said modified video signal to each of a plurality of receiving positions; apparatus at a said receiving position including a picture reproducing device operable by picture signals and synchronizing signals to reproduce said image; means for deriving a picture signal from said modified video signal; means for applying said picture signal to said picture reproducing device; synchronizing signal reconstituting means responsive to said modified video signal

to derive therefrom reconstituted synchronizing signals having said predetermined nature and timing; and means for applying said reconstituted synchronizing signals to control the operation of said picture reproducing device; said synchronizing signal reconstituting means being insensitive to said decoy signals.

3,313,881 FREQUENCY-DEPENDENT COLOR TELEVISION DISPLAY

Rex P. Dannebaum, 45-071 Towne Ave.,
Indio, Calif. 92201
Filed Apr. 22, 1963, Ser. No. 274,765
12 Claims. (Cl. 178-5.4)



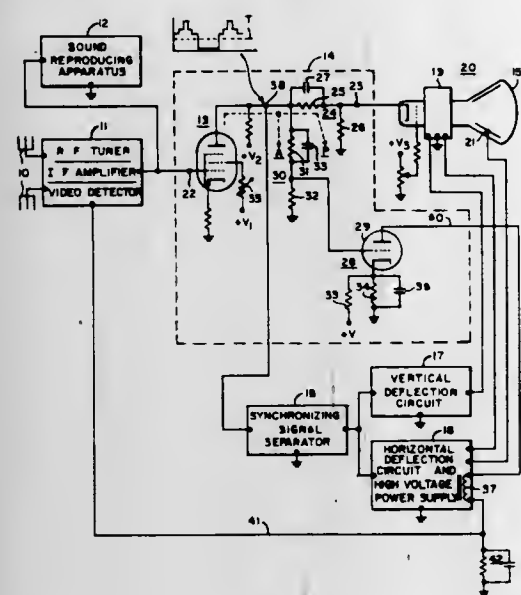
1. Apparatus including a cathode ray tube for producing a colored picture pattern on the screen of said tube, said screen including phosphors fluorescent in different colors in response to application thereto of different electrical signal frequencies, said tube including means generating a scanning electron beam incident on said screen and means applying uniformly and throughout all areal portions of the screen on which the scanning beam is incident a signal frequency pattern varying in accordance with the picture color pattern to be produced on said screen, said last named means including a continuous layer of an electrical conductor applied to the electron beam side of the screen phosphor, the operation of both said means being characterized in that said beam incidence and signal application are necessary to produce visible screen phosphor fluorescence.

3,313,882 BLACK LEVEL CONTROL CIRCUIT FOR A TELEVISION RECEIVER UTILIZING A KEYED A.G.C.

Bernard D. Loughlin, Huntington, N.Y., assignor to Hazeltine Research, Inc., a corporation of Illinois
Filed Oct. 3, 1963, Ser. No. 313,471
12 Claims. (Cl. 178-7.5)

1. A black level control circuit for a television receiver which utilizes a cathode-ray tube for purposes of image reproduction comprising:
means for supplying a video signal having a D.-C. component representative of average scene brightness which may vary from scene to scene, and having a synchronizing pulse level, a blanking level, and a black level intended to correspond to black in the reproduced image, said supply means including control means for varying the magnitude of said supplied video signal;
means, including a video signal amplifier, for translating said supplied video signal to said cathode-ray tube at a first A.-C./D.-C. transmission ratio and to the input of a keyed automatic-gain-control circuit at a second A.-C./D.-C. transmission ratio, wherein said first and second ratios bear a predetermined relationship to one another and are each greater than unity;

a keyed automatic-gain-control circuit responsive to a selected level of the video signal translated thereto at said second A.-C./D.-C. transmission ratio for developing an output signal jointly representative of variations in received signal intensity and of variations in average scene brightness;

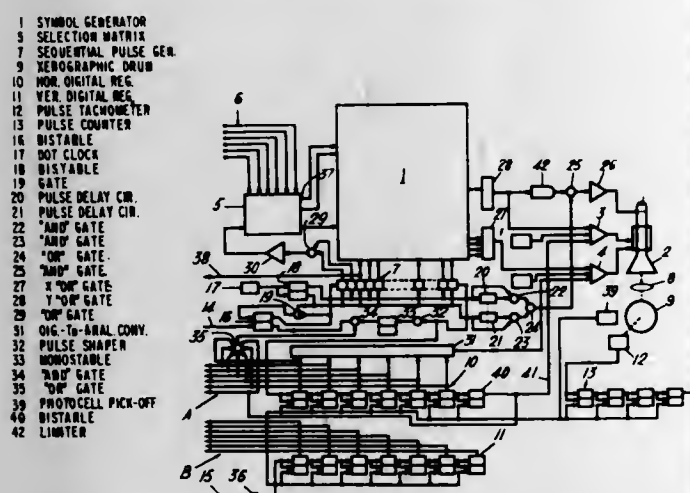


and means for coupling said output signal to said control means for varying the magnitude of said supplied video signal to stabilize said selected level at the input of said automatic-gain-control circuit, thereby stabilizing black level at said cathode-ray tube and limiting the amount of beam current flowing in said cathode-ray tube on scenes of high average brightness.

3,313,883 RECORDING OF DATA

Keith Gordon Huntley, Alexandria, Va., assignor to The Rank Organisation Ltd., London, England, a British company

Continuation of application Ser. No. 803,210, Mar. 31, 1959. This application June 3, 1963, Ser. No. 286,440
10 Claims. (Cl. 178—15)



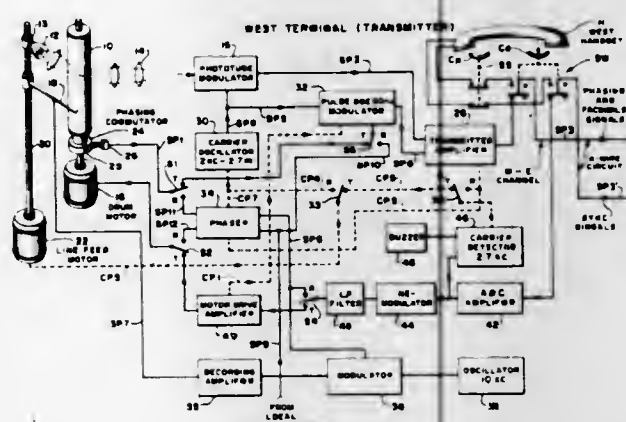
1. In a system for recording a first character array composed of one or more lines of variable characters in superposed relation upon a second character array composed of a plurality of lines of a fixed arrangement of such characters for subsequent printing out of the characters of both arrays in their proper relative positions, the combination comprising, means providing a signal input character code characteristic of the variable characters desired to be recorded, a character generator controlled by said input character code for producing the desired

characters in code form and in a sequential manner, means connected to the output of said character generator for converting the code form of said sequentially produced variable characters into one or more line images in a line-by-line manner in accordance with the signal input character code, means establishing said second character array as a standard image and projecting the same in a line by line manner onto a light-sensitive surface which moves in a direction transverse to the direction of the projected lines of characters of said second character display, means for also projecting the line images of said variable characters of said first character display in a line-by-line manner onto said moving light-sensitive surface in the same transverse direction as said character lines of said second character display are projected, means establishing vertical and horizontal recording addresses and means actuated by said vertical and horizontal recording addresses for controlling respectively the production of said line images of said variable characters and the horizontal position of the characters on the line such that said line images will be superimposed according to a predetermined layout upon the projected line images of said second character display.

3,313,884
RECEIVER SYNCHRONIZED AND CONTROLLED
FACSIMILE SYSTEM

John H. Hackenberg, Forest Hills, N.Y., and Garvice H. Rldings, Summit, N.J., assignors to The Western Union Telegraph Company, New York, N.Y., a corporation of New York

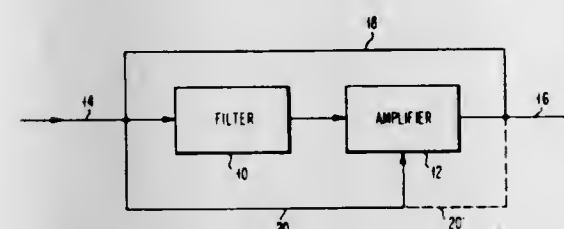
Filed Oct. 10, 1963, Ser. No. 315,229
13 Claims. (Cl. 178—69.5)



1. In a facsimile transmission system, in combination:
a transmitting terminal;
a receiving terminal;
a transmission path connecting the terminals;
means at the transmitting terminal for optically scanning
at a controllable speed successive lines of graphic
material to derive light pulses therefrom;
means at the transmitting terminal for converting the
light pulses to electrical message signals and for feed-
ing the electrical signals to said path for transmission
to the receiving terminal;
recording means at the receiving terminal for convert-
ing at controllable speed the electrical message sig-
nals received from said path into graphic copy dupli-
cating said graphic material;
an alternating current power supply at said receiving
terminal for driving said recording means at a speed
determined by the frequency of said power supply;
means for transmitting from the receiving terminal to
the transmitting terminal through said path control
signals having a frequency corresponding to that of
said power supply; and means at the transmitting
terminal for receiving said control signals and for
controlling the speed of the scanning means so that
the speed of the scanning means is synchronous with
the speed of the recording means.

3,313,885
COMBINED TONE CONTROL AND VOLUME
EXPANDER ARRANGEMENT

EXPANDER ARRANGEMENT
William R. Aiken, 10410 Magdalena Ave.,
Los Altos Hills, Calif. 94022
Filed May 21, 1963, Ser. No. 281,946
4 Claims. (Cl. 179—1)

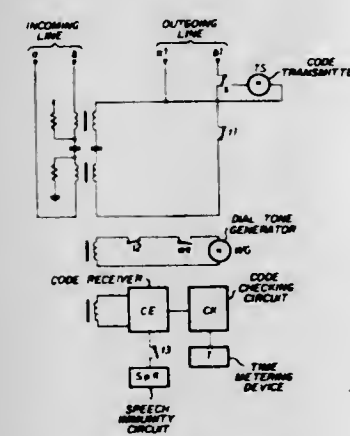


1. A volume expander and tone control arrangement comprising signal input and output means, a filter arranged to pass the middle frequencies of a range while attenuating the high and low frequencies thereof and a variable volume changing device connected in series between said signal input and output means, a by-pass line shunted across said filter and said volume changing device, and means for controlling the operation of said volume changing device with a gain increasing control voltage derived from the signal applied to the arrangement.

3,313,886
V-F KEY-DIALLING

Georg Vogel, Schwieberdingen uber Ludwigsburg, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed July 2, 1963, Ser. No. 292,261

**Claims priority, application Germany, July 17, 1962,
St 19,491
5 Claims. (Cl. 179-16)**



1. A voice frequency key telephone dialing system wherein subscriber stations are equipped for transmitting coded dialing signals in the voice frequency range over telephone lines, register means coupled to incoming ones of said telephone lines for picking up said coded signals, code receiver means in said register means, said code receiver means normally in a condition to receive said coded signals, timing means operated responsive to the receipt by said receiver means of signals at the frequency of said coded signals, speech immunity means associated with said code receiver means, first means operated responsive to the operation of said timing means for connecting said speech immunity means to said coded receiver means for a definite time period for muting said receiver means if speech signals are received over said incoming lines, second means operated responsive to the operation of said timing means for disconnecting said outgoing lines whereby the receipt of said dial signal is disconnected by

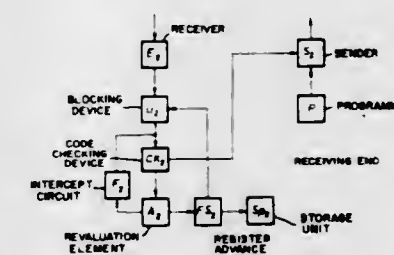
voltages on said outgoing lines and means for checking said signals received by said code receiver means while said speech immunity means is connected to said receiving means to determine whether said received signal at said frequency of said coded signal is a dialing signal.

3,313,887
MULTI-FREQUENCY CODE SIGNALLING
ARRANGEMENT

Theodor Burlan, Ditzingen, Heinz Plitschka, Stuttgart-Zuffenhausen, Rotweg, and Georg Vogel, Schwieberdingen über Ludwigsburg, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 10, 1963, Ser. No. 307,848
Claims priority, application Germany, Sept. 14, 1962,
St 19,715
6 Claims. (Cl. 179—18)

6 Claims. (Cl. 179—18)



1. A compelled system signalling arrangement using multi-frequency coded signals between sending registers and receiving registers in telephone systems, transmitting means associated with said sending registers for transmitting coded signals to said receiving registers, receiver means at said receiving register for receiving said coded signals, code checking means operated responsive to said coded signals originally received by said receiving register receiving means, associated sender means controlled by the operation of said code checking means to transmit a confirmation signal, receiving means at said sending register for receiving said confirmation signal, blocking means at said receiving register operated responsive to the receipt of said coded signals for preventing further signals from reaching said code checking means, intercept circuit means for maintaining said originally received coded signals at the input of said code checking means, evaluation means operated responsive to the signals from said code checking means for evaluating and storing said checked coded signals and for releasing said intercept circuit means and said blocking means, said evaluation occurring while said confirmation signal is being transmitted, means at said sending register operated responsive to said confirmation signal, for terminating transmission of said coded signals, and means including said code checking means at said receiving register operated responsive to the termination of transmission of said coded signals for terminating said confirmation signal.

SPLIT-SWITCH CROSSBAR TRUNKING SYSTEM

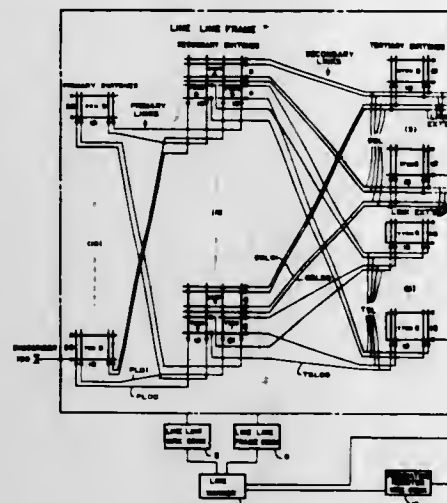
**Toru Ohno, Yokohama, Japan, assignor to Hitachi
Limited, Tokyo, Japan, a corporation of Japan
Filed May 13, 1963, Ser. No. 279,856**

Claims priority, application Japan, May 15, 1962, 37/19,166; May 23, 1962, 37/20,410
2 Claims. (Cl. 179-22)

2 Claims. (Cl. 179—22)

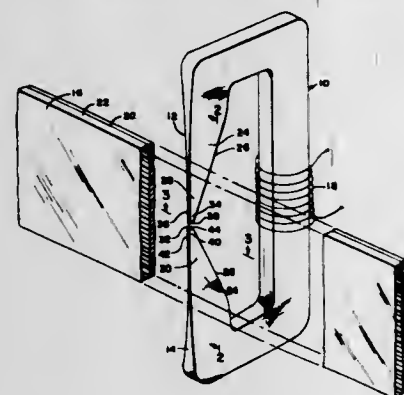
1. A switch frame for a cross bar switching system, comprising a first group of switches, a second group of switches, each of said first group of switches being horizontally divided into a first and second part, said second part being vertically divided into subswitches, said second

group of switches being divided into a first and second group, links connecting said first part of said first group



of switches to said first subgroup, and links connecting said subswitches to said second subgroup.

3,313,889
MAGNETIC HEAD WITH THIN EDGE POLE PIECES
Edward Machinski, 3715 Milbury Ave.,
Baldwin Park, Calif. 91706
Filed June 12, 1961, Ser. No. 116,496
7 Claims. (Cl. 179-100.2)

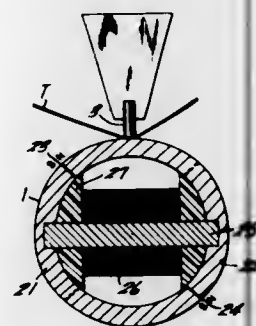


1. An electromagnetic transducer comprising, a record medium, a magnetic core, said core including thin edge pole pieces extending substantially beyond the edges of and in the same plane as the surface of said record medium, said thin edge pole pieces being in contact with said record medium and disposed at a substantial angle to the direction of relative movement therebetween, the thin edge pole pieces having a magnetic gap between them; means cooperating with the thin edge pole pieces to define a magnetic path, and means for inducing in the magnetic path between the thin edge pole pieces and across said gap through said record medium a magnetic field which varies in response to the time-variations in the signal intelligence to be recorded, said thin edge pole pieces defining the magnetic path as a flux path of thin configuration extending into the record medium between said pole pieces to record the intelligence.

3,313,890
MAXIMUM DENSITY MAGNETIC RECORDING APPARATUS
Miguel Lopez-Henriquez, 240 W. 73rd St.,
New York, N.Y. 10019
Filed Feb. 28, 1962, Ser. No. 176,344
12 Claims. (Cl. 179-100.2)

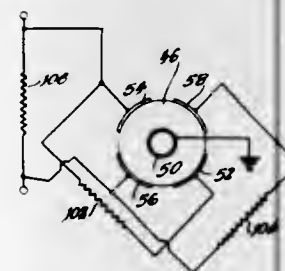
1. In a transducer for recording on or reproducing from magnetic tape, a rotatable drum comprising on its periphery two opposite pole portions of magnetically permeable

material separated by a narrow non-magnetic gap extending spirally of said drum, a magnetic winding in said drum having poles magnetically coupled respectively with said pole portions, electrical connections between said winding and a signal circuit, a narrow stationary pressure bar extending lengthwise along the periphery of said drum, said pressure bar having a concave edge facing said drum and adapted to hold a narrow sharply defined transverse zone of said tape in intimate contact with said drum through the width of said zone, tape transport means for



transporting tape at a selected lineal speed between said pressure bar and said drum in a direction transverse to said bar, said transport means guiding said tape in a V-shaped path with said edge of said bar at its vertex, and means for rotating said drum at a selected speed in timed relation with said tape transport means so that a narrow sharply defined zone of coincidence between said gap and the portion of tape between said drum and bar moves transversely of said tape as said tape is moved forward by said transport means.

3,313,891
PHONOGRAPH PICKUP
John F. Wood, Guaynabo, Puerto Rico, assignor to Electro-Voice, Incorporated, Buchanan, Mich., a corporation of Indiana
Filed Sept. 17, 1962, Ser. No. 223,883
7 Claims. (Cl. 179-100.41)

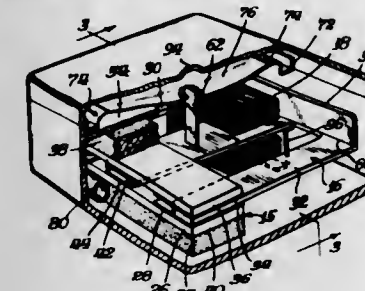


7. A stereophonic phonograph pickup comprising a cartridge holder having a recess therein and three electrical terminals exposed therefrom and located within the recess, a phonograph cartridge removably disposed within the recess having three electrical terminals in contact with the three terminals of the holder, said cartridge having a first piezoelectric generator electrically connected between two of said terminals and a second piezoelectric generator connected between the third terminal and one of the two terminals, and a resistor connected between the other of the first two terminals and the third terminal.

3,313,892
ELECTROMECHANICAL TRANSDUCERS
August F. Mostardo, Jr., Norridge, and Floyd W. Cross, Wheaton, Ill., assignors to Industrial Research Products, Inc., Franklin Park, Ill., a corporation of Delaware
Filed July 29, 1963, Ser. No. 298,332
6 Claims. (Cl. 179-115)

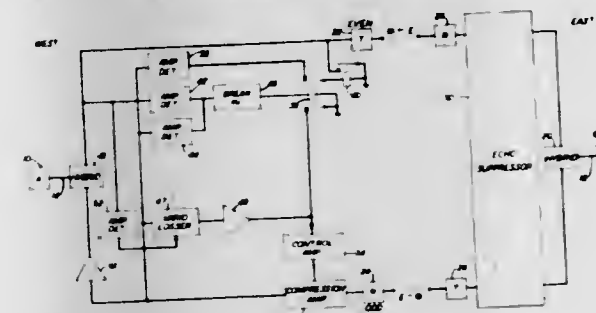
2. An E-shaped armature for use in a transducer comprising a flat plate of flux-permeable, flexible material

having the plan configuration of an E, with all three arms of the E flexible at right angles to the flat surface of the



flat plate, and with the base of the E positioned at right angles to the flat surface of the plate.

3,313,893
BREAK-IN CIRCUITRY FOR ECHO SUPPRESSORS
George K. Helder, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 12, 1963, Ser. No. 330,196
5 Claims. (Cl. 179-170.6)

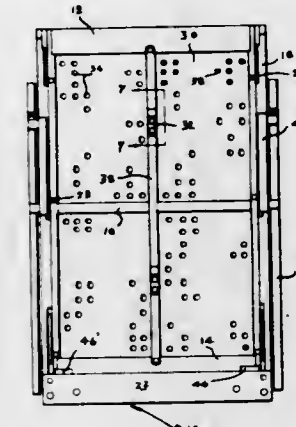


1. In a communication system, first and second terminals, a two-way local circuit associated with each of said terminals, first and second transmission circuits, means interconnecting said transmission and local circuits at said terminals to permit two-way transmission between said local circuits and means for suppressing echoes in said transmission despite extended delay in said transmission circuits comprising at each terminal means for detecting speech incoming to that terminal, means responsive to said detecting means for blocking the transmission circuit to the other of said terminals, break-in means, effective when speech is initiated in the associated local circuit for transmission from that terminal to the other terminal, for disabling said blocking means, loss means, means also responsive to said break-in means for inserting said loss means in the path from said other terminal, and means for varying the amount of loss so inserted to maintain a predetermined relationship between the level of speech transmitted to said other terminal and the level of echo signals returned to said other terminal during double talking.

3,313,894
VIBRATION-PROOF PROGRAM SYSTEM
Donald Richard Harner, Camp Hill, and Ronald John Brookman, Lancaster, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Feb. 25, 1965, Ser. No. 435,127
10 Claims. (Cl. 200-1)

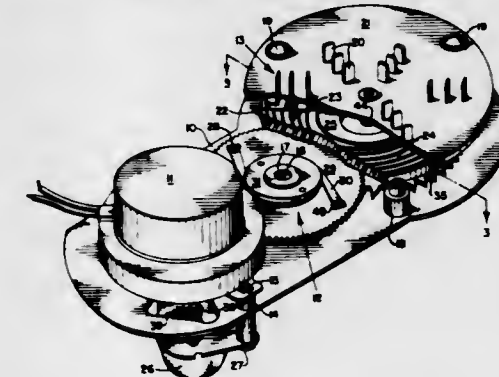
1. In a multiple switching device of the type adapted to make and break electrical contact paths and to maintain electrical circuits in high vibration and shock environment, the combination comprising relatively movable panels of substantial surface area each carrying contact members adapted for mutual engagement, driving means to drive one panel in substantially parallel movement relative to the other panel, the contact members of one

of the panels including spring characteristics developing spring forces acting in the planes of such panels, the said driving means acting on an edge surface of the one panel to develop a substantial force operating in the plane of said panels opposing the spring forces developed by said contact members, the said panels each having a frame, first means on each frame adapted for mutual engagement to develop forces operating to lock said panels in



planes transverse to the major plane of said panels and transverse to the forces developed by said spring systems, second means on one frame adapted to engage the other frame, said second means having characteristics of resiliency and being positioned to be compressed by the engagement of said first means whereby the said panels are held against relative movement and each of the panels is held against diaphragming.

3,313,895
RAPID ADVANCE AND INTERMITTENT DRIVE MECHANISM FOR A TIME SEQUENCE SWITCH
Gianni A. Dotto, Dayton, Ohio, assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Filed June 28, 1965, Ser. No. 467,473
4 Claims. (Cl. 200-38)



2. In a time sequence switch for accomplishing a plurality of timing sequences, a first driving means for advancing said time sequence switch through a programmed timing cycle and a second driving means for advancing said time sequence switch to a particular cycle at a rapid rate of speed, said first driving means comprising a constant speed motor, said constant speed motor driving a gear, said gear imparting rotational motion to an escapement mechanism, a spring means resiliently connecting said gear to a pin means, said pin means engaging teeth of a ratchet, said pin means consisting of a plurality of pins affixed to a mounting plate said plurality of pins extending through elongated slots in said gear, said elongated slots limiting the travel of said pins with respect to said gear, said escapement mechanism imparting rotational motion to said ratchet when said gear rotates said escapement mechanism, thereby deflecting said ends of said spring to store rotational energy in said spring, said

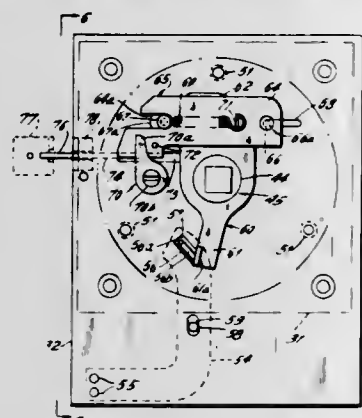
spring releasing said rotational energy when said pins hit the end of said elongated slot, thereby imparting rotational motion to said ratchet, said ratchet imparting rotational motion to a camshaft of said time sequence switch, said camshaft supporting and rotating control cams of said time sequence switch, said control cams operating a plurality of control switches, said second driving means comprising a drive motor; said drive motor driving a plurality of worm and worm gears, said plurality of worm and worm gears imparting rotational motion to said camshaft through one-way clutch means.

3,313,896

ROTARY HANDLE OPERATOR FOR CIRCUIT BREAKER WITH IMPROVED BLOCKING POSITION AND LATCHING COVER STRUCTURE

David T. Gray, Roslyn, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Feb. 25, 1966, Ser. No. 530,041
9 Claims. (Cl. 200—50)



1. In combination, an enclosure having a first side normally closed by an openable front cover, a circuit interrupter within said enclosure and having a handle disposed entirely within said enclosure; a mechanism separate from said cover and connected to said handle for manually operating said circuit interrupter from a point outside of said enclosure and in front of said cover; said mechanism including an operating handle, means rotatably mounting said operating handle for movement in a plane generally parallel to said cover in its closed position; said cover having an aperture to receive said handle as said cover moves from its open to its said closed position, a first element biased to cover latching position for maintaining said cover closed, a second element biased to blocking position, cam means operable by said handle to move said first element to cover releasing position, said cam means and said second element in said blocking position cooperating to prevent operation of said operating handle to close said circuit interrupter when front cover is open; depressible means operable by said cover upon closing thereof to move said second element from said blocking position to a retracted position wherein said operating handle may be operated to close said circuit interrupter.

3,313,897

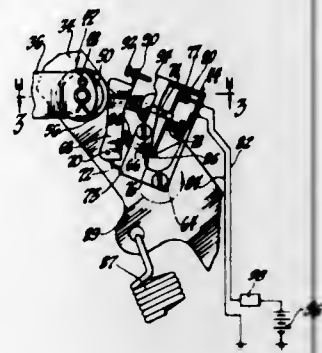
CIRCUIT CONTROLS INCLUDING LOAD-RESPONSIVE SWITCH

Rudolph J. Gorsky, Fenton, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 30, 1965, Ser. No. 476,056
13 Claims. (Cl. 200—61.89)

1. Circuit control structure comprising first and second operator members, pivot means for pivotally supporting each of said members, coupling means slidably and pivotally connecting adjacent end portions of said members together, said last-mentioned means including

an actuator, switch means supported by one of said members, spring means for turning one of said members on its pivot means, switch operating means responsive to pre-



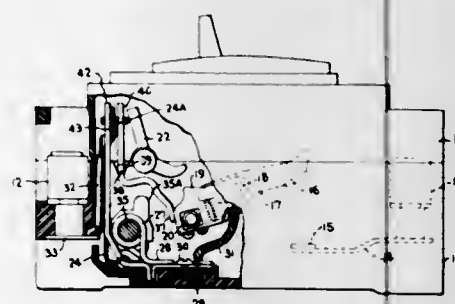
determined force exerted through said actuator on relative movement between one of said members and said switch means.

3,313,898

CIRCUIT BREAKER WITH THERMAL TRIP DEVICE OF HIGH SHORT-CIRCUIT WITHSTANDABILITY

Henry E. S. Owen, Unionville, Conn., assignor to General Electric Company, a corporation of New York

Filed July 1, 1964, Ser. No. 379,648
2 Claims. (Cl. 200—116)



1. An electric circuit breaker comprising:

- (a) an insulating casing,
- (b) at least one pair of relatively separable contacts supported in said insulating casing,
- (c) operating mechanism for operating said separable contacts, said operating mechanism including trip means movable to cause automatic opening of said contacts,
- (d) an elongated bimetallic strip supported in said insulating casing, and having a thermal coefficient of resistivity of not less than .01% per degree Fahrenheit,
- (e) means for heating said bimetallic strip in response to current passing through said contacts,
- (f) means connecting said bimetallic strip to said trip means to cause actuation of said trip means and automatic opening of said contacts upon predetermined heating of said bimetallic strip;
- (g) shunting means electrically in parallel with said heating means for said bimetallic strip, said shunt being constructed of a metallic material having a thermal co-efficient of resistivity of not more than .002% per degree Fahrenheit.

3,313,899

ELECTRIC FUSE INCLUDING HEATER WINDING FOR SOLDER JOINT

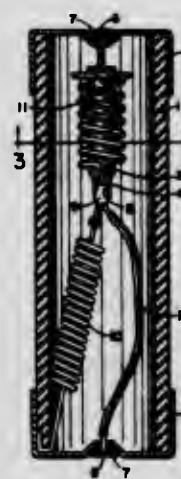
Frederick J. Kozacka, South Hampton, N.H., assignor to The Chase-Shawmut Company, Newburyport, Mass.

Filed Oct. 19, 1965, Ser. No. 498,027
2 Claims. (Cl. 200—123)

1. An electric fuse comprising in combination:

- (a) a substantially tubular casing of insulating material;

- (b) a pair of terminal elements closing the ends of said casing;
- (c) means for conductively interconnecting said pair of terminal elements, said interconnecting means including a heater element wound of resistance wire, a fusible element responsive to major fault currents connected in series with said heater element, and, a spring-biased solder joint heated by said heater element, said solder joint being interposed between one end of said heater element and said fusible element;



ment responsive to major fault currents having relatively close i^2t values resulting in a likelihood of substantially simultaneous vaporization of said heater element and of said fusible element responsive to major fault currents on occurrence of such fault currents; and

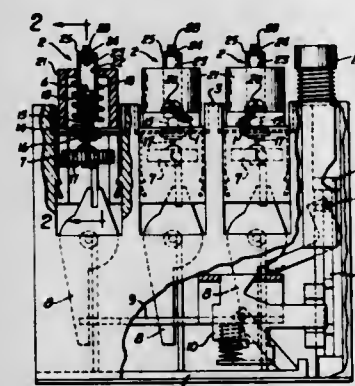
- (d) a sleeve of woven glass cloth surrounding said resistance wire of said heater element for controlling the vapors resulting from vaporization of said heater element.

3,313,900

OVERLOAD PROTECTION DEVICE WITH HEAT SHIELD INTERPOSED BETWEEN HEATER AND THERMAL ELEMENTS

Roland Russo, South Euclid, Ohio, assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York

Filed Dec. 16, 1965, Ser. No. 514,253
7 Claims. (Cl. 200—124)



1. A protective device for an electric circuit, comprising a movable switch member adapted to be connected in electrical circuit and biased toward a circuit opening position, latching means operably connected to said switch member and settable upon movement of said switch member to a circuit closing position to hold said switch member in said circuit closing position, said latching means including a stationary heater adapted to be connected in the electrical circuit to be protected and including a thermal device exposed to said heater and

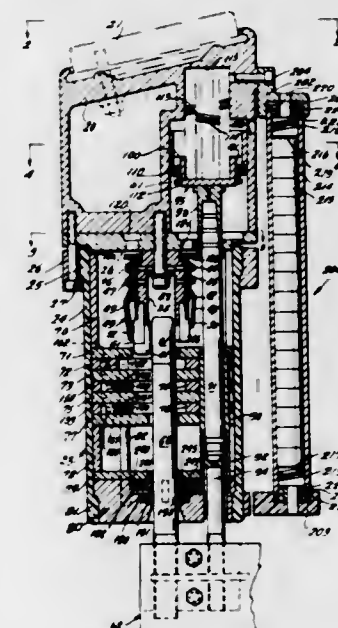
responsive to a given elevated temperature to trip said latching means and permit said switch member to move to the circuit opening position, a heat shield disposed between the heater and the thermal device, means mounting the heat shield for movement with respect to the heater and to the thermal device, thermal responsive means movable in response to changes in the ambient temperature and connected to the shield for moving the shield to thereby vary the exposure of said thermal device to said heater in accordance with variations in the ambient temperature, and heat insulating means disposed between the heater and the thermal responsive means and insulating said thermally responsive means from said heater.

3,313,901

SINGLE BREAK OIL CIRCUIT BREAKER STRUCTURE HAVING DUAL VALVE STRUCTURE

James R. McCloud, Burbank, and Lorne D. McConnell, Sierra Madre, Calif., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Nov. 20, 1964, Ser. No. 412,662
3 Claims. (Cl. 200—150)



1. A check-valve structure for the interrupter structure of an oil circuit breaker; said interrupter structure including an interrupter container, stationary contact means secured within said interrupter container, movable contact means movable into and out of engagement with respect to said stationary contact means and a pump means for forcing fluid under pressure into said interrupter container responsive to movement of said movable contact to a disengaged position with respect to said stationary contact; said pump means including a piston and a cylinder; said cylinder communicating with the interior of said interrupter container; said piston having a plurality of openings circularly distributed around an end wall thereof; said piston having an annular check-valve connected to said end wall movable into and out of sealing engagement with said circularly distributed openings; said annular check-valve being moved to its said sealing engagement position responsive to the operation of said movable contact to said disengaged position; said circularly distributed openings forming a channel for the flow of oil into and out of said interrupter container when said movable contact is in engagement with said stationary contact; and a plate member for enclosing the top of said interrupter container and the bottom of said cylinder; said plate having second openings therein for permitting fluid flow from said interrupter chamber to said cylinder; and a second check valve; said second check valve being mounted

with respect to said plate for movement into and out of sealing engagement with respect to said second openings; said second check valve being movable into its said sealing engagement position responsive to a higher pressure in said interrupter container than in said cylinder; and said second check valve being normally in an open position to normally permit circulation of oil therethrough.

3,313,902

COAXIAL ELECTRODE ASSEMBLY

Welling T. Akin, Birmingham, and Edgar A. Bongort, Southfield, Mich., assignors to B/W Controller Corporation, Birmingham, Mich., a corporation of Michigan
Filed Jan. 19, 1965, Ser. No. 426,522
18 Claims. (Cl. 200-152)

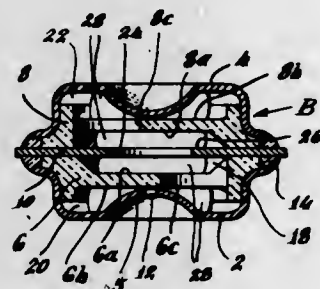


2. In an electrode assembly: telescopically connected electrodes electrically insulated from each other by an intervening sleeve of deformable dielectric plastic, one of said electrodes provided with an annular groove with the sleeve bridging the groove, and an elastomeric sealing ring disposed between the other electrode and the sleeve radially opposite the groove and in radial and circumferential compression squeezing the sleeve into the groove and establishing fluid pressure seals between the electrodes and sleeve.

3,313,903

LIQUID CONTACT SWITCH FOR CONTROLLING PLURAL CIRCUITS

George Albert Riley, Bridgeport, Conn., assignor to Harvey Hubbell, Incorporated, Bridgeport, Conn., a corporation of Connecticut
Filed June 10, 1965, Ser. No. 462,916
11 Claims. (Cl. 200-152)



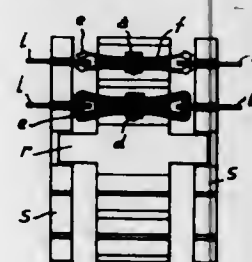
1. A dual circuit controlling electrical switch comprising: a pair of spaced opposed juxtaposed shallow dished shell terminal members of electrical conductive material being electrically separated and connected at their adjacent peripheries by an annular electrical insulating seal to form an enclosure; barrier means of electrical insulating material disposed within said enclosure between said terminal members and cooperating therewith to divide said enclosure into three spaced separate spaces for storage of electrically conductive liquid including a middle space and two end spaces; an electrical conducting terminal means extending through said barrier means from the interior to the exterior of said enclosure out of contact with said terminal members, said terminal means having a first portion extending into said middle space arranged

to be contacted by said liquid and a second portion extending to the exterior of said enclosure and arranged for electrical contact with an electrical conductor; a quantity of electrically conductive liquid disposed in said spaces; and said barrier means having passage means forming a passage extending between said middle space and an end space, and a separate displaced passage extending between said middle space and the other end space; said passages and terminal means being arranged so only one of said passages is immersed in a pool of said liquid in certain angular positions of said switch whereby said liquid electrically connects one terminal member with said terminal means first portion, and the other of said passages is immersed in a pool of said liquid in certain other positions of said switch whereby said liquid electrically connects the other terminal member with said terminal means first portion.

3,313,904

CONTACT SYSTEM

Henri L. Chambaut, 7 Rue Nationale a Villeneuve-Loubet, Alpes Maritimes, France
Filed Mar. 15, 1965, Ser. No. 439,788
Claims priority, application France, Mar. 14, 1964, 967,477
6 Claims. (Cl. 200-166)

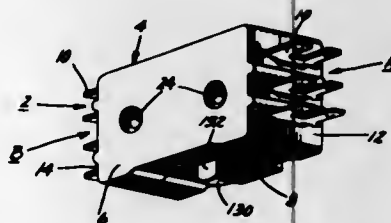


1. A contact system for cooperation with an external contact member constituted by a unit including an elongated carrier plate and at least one elongated contact blade of a predetermined elasticity, secured directly to each side of said carrier plate, extending along the latter and the two ends of which project longitudinally beyond the corresponding ends of the carrier plate and are bent towards the corresponding ends of the blade on the other side of the carrier plate, said cooperating blade ends being adapted to elastically hold between them the external contact member.

3,313,905

SWITCH AND TERMINAL ASSEMBLY FOR SELECTIVELY CONTROLLING DYNAMOELECTRIC MACHINE WINDING CIRCUITS AND THE LIKE

Wladyslaw S. Zagorski, Morrison, Ill., assignor to General Electric Company, a corporation of New York
Filed Nov. 26, 1965, Ser. No. 516,202
16 Claims. (Cl. 200-168)



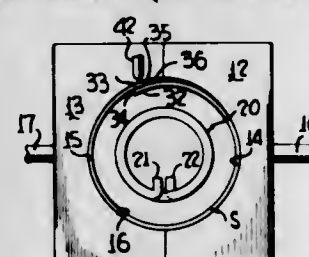
1. In an electrical device including a plurality of insulating members forming a housing, one of said insulating members including a wall portion in contiguous relationship with a wall portion of an adjacent insulating member, each of said contiguous wall portions having a slot formed therein, said slots aligned to form a terminal receiving slot, said housing having a depression on

its outside surface adjacent the closed end of each of said slots, each of said insulating members having a recess formed therein inside of said housing and spaced from said slot and a terminal including two tabs, a shank section, two resilient arms and a first and second pair of lip elements, said shank section joining said tabs and extending through said terminal receiving slot, said resilient arms extending from said shank section inside said housing, each of said arms associated with a respective one of said tabs, one of the lip elements of said first pair formed on one of said tabs and the other lip element of said first pair formed on the arm associated with said tab, said first pair of lip elements projecting toward one another, one of the lip elements of said pair formed on the other of said tabs and the other lip element of said second pair formed on the other arm, said second pair of lip elements also projecting toward one another, said first pair of lip elements engaged with one of said insulating members with the lip element on the tab engaged in the depression on said insulating member and with the lip element on the arm engaged with the recess, and said second pair of lip elements engaged with the other of said insulating members with the lip element on the tag engaged in the depression on said other insulating member and with the lip element on the arm engaged with the recess to hold the insulating members in assembled relation to form the switch housing.

3,313,906

WELDING METHOD

Howard L. Gerber, Chicago, and Paul M. Erlandson, Palos Park, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Oct. 14, 1964, Ser. No. 403,859
20 Claims. (Cl. 219-8.5)



1. A method of joining portions of a metallic member comprising the steps of arranging edge portions of a metallic member in contact and subjecting the metallic member to an energy field of sufficient intensity to both induce current flow in the member through the contacting edge portions whereby the same are heated and establish a force which forcefully urges the edge portions into intimate contact whereby the edge portions are joined upon subsequent cooling thereof.

3,313,907

APPARATUS FOR INDUCTIVELY HEATING METAL STRIP

Herbert Giesel, Remscheid, Luttringhausen, Hans Heinz Müller, Remscheid, and Vincens Seul, Franz Josef Lenze, and Richard Elzer, Andernach, Germany, assignors to Deutsche Edelstahlwerke Aktiengesellschaft, Krefeld, Germany, Allgemeine Elektrizitäts-Gesellschaft, Berlin-Grünwald, Germany, and Rasselstein Aktiengesellschaft, Neuwied (Rhine), Germany
Filed Aug. 17, 1964, Ser. No. 389,899
Claims priority, application Germany, Sept. 6, 1963, D 42,416
5 Claims. (Cl. 219-10.61)

1. Apparatus for raising the temperature of a metal strip to a higher, predetermined temperature which is uniform across the width of the strip, comprising:
(a) means for conveying said metal strip generally longitudinally through first and subsequent heating stages,

(b) said first heating stage including means for heating the central portion of the moving metal strip, and
(c) said subsequent heating stage including means for

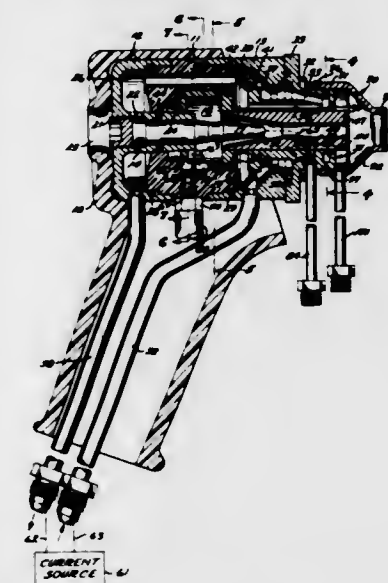


heating the longitudinal marginal edges of the strip,
(d) said edge heating means comprising linear heating conductors disposed to face and heat each of the two side margins of the strip.

3,313,908

ELECTRICAL PLASMA-TORCH APPARATUS AND METHOD FOR APPLYING COATINGS ONTO SUBSTRATES

Robert Unger, Dana Point, and Robert F. Byram, Santa Ana, Calif., assignors to Giannini Scientific Corporation, Amityville, N.Y., a corporation of Delaware
Continuation of abandoned application Ser. No. 448,065, Apr. 14, 1965. This application Aug. 18, 1966, Ser. No. 573,431
18 Claims. (Cl. 219-76)



1. A method of operating a gas-vortex electrical plasma torch on different types of gases and in such manner that benefits including maximum electrode life are achieved, which comprises:

providing an electrical plasma-jet torch having a gas-vortex chamber communicating axially with a nozzle passage,

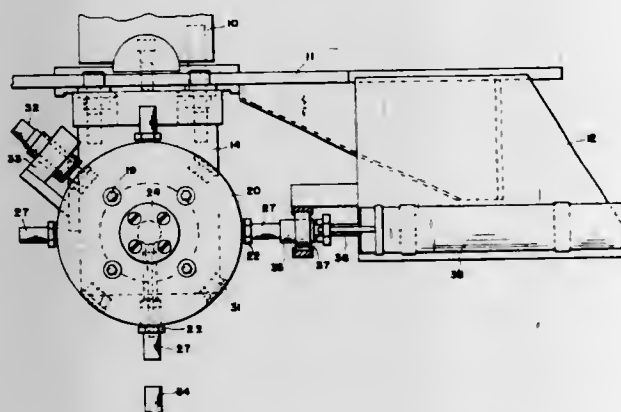
said torch also having an elongated rear electrode extending axially of said nozzle passage, maintaining an electric arc in said nozzle passage between said rear electrode and another electrode, introducing, during periods when it is desired to operate the torch with a gas which is essentially diatomic, an essentially diatomic gas into said gas-vortex chamber and generally tangentially thereof, said gas flowing vortically and helically in said gas-vortex chamber and discharging through said nozzle passage, and introducing, during periods when it is desired to operate the torch with a gas which is essentially monatomic, an essentially monatomic gas into said gas-vortex chamber and generally tangentially thereof,

the direction of introduction of said monatomic gas being forwardly inclined in comparison to the direction of introduction of said diatomic gas whereby the gas helix relative to said monatomic gas has a substantially greater lead or pitch than in the case of the helix relative to said diatomic gas.

3,313,909

SPOT WELDER ELECTRODE CLEANING DEVICE
Robert D. Matthews, Cortland, Ohio, assignor to The Taylor-Winfield Corporation, Warren, Ohio, a corporation of Ohio

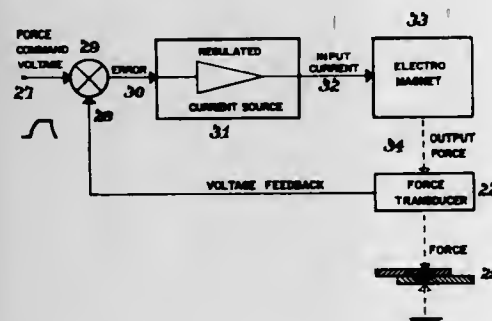
Filed July 10, 1964; Ser. No. 381,864
2 Claims. (Cl. 219-86)



1. In an electric resistance spot welding machine having a current-conductive support guided for movement toward and away from the work, a current-conductive turret journaled on said support in current-conductive relation therewith and mounting on its outer periphery a plurality of spot welding electrodes adapted to be brought into selective contact with the work upon indexing movement of said turret and movement of said support toward said work tapered, indexing bushings at spaced intervals on said turret and a correspondingly tapered retractable index pin carried by said support to selectively enter one of said bushings whereby said turret may be locked in one or the other of its operative welding positions, and means rigidly carried with said support to clean and dress the tip of one of said electrodes while another of said electrodes is in welding position.

3,313,910

ELECTROMAGNETIC FORCE SYSTEM
David Sciaky, Chicago, Ill., assignor to Welding Research, Inc., Chicago, Ill., a corporation of Illinois
Filed Jan. 6, 1966, Ser. No. 519,147
12 Claims. (Cl. 219-86)

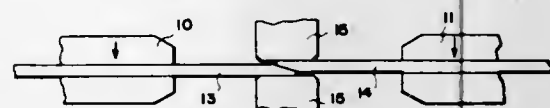


1. In a resistance welding machine having a movable and a fixed electrode means for applying current to the sheets to be welded, electromagnetic force means including a coil and a fixed and a movable iron magnetic circuit, said moving part of the electromagnetic circuit being fixed to the movable electrode, means for passing current

through the coil of the electromagnet and means for varying this current in accordance with a predetermined program, and pneumatic means for placing the electrodes in contact with the work and for retracting the aforementioned movable electrode.

3,313,911
METHOD OF JOINING METAL SHEET AND STRIP

Melvin M. Seeloff, 2740 Atlantic St. NE., Warren, Ohio 44483
Filed June 9, 1964, Ser. No. 373,779
16 Claims. (Cl. 219-105)

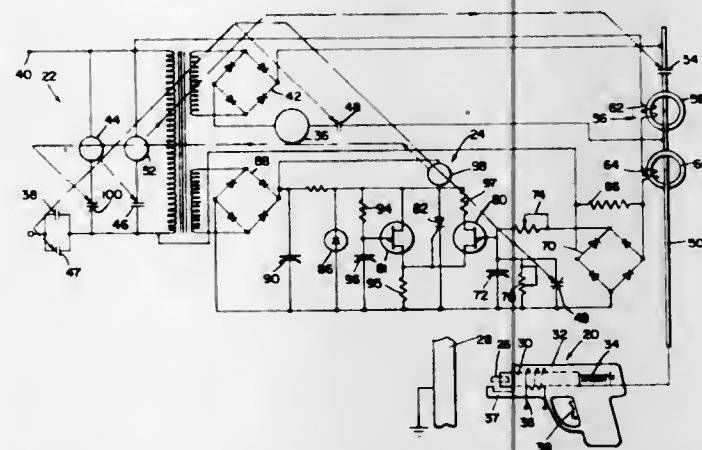


1. The method of joining metal sheet or strip workpieces comprising the steps of first narrowly overlapping adjacent edge portions of the workpieces to be joined together, applying a sufficient compressive force to the overlap to cause the interengaging edges thereof to be mashed down to establish on each workpiece a welding face angular but flatly related to the plane of the workpiece, thereafter backing off said workpieces slightly away from each other to expose narrow widths of said faces, welding the remaining interengaging portions of said faces together by an electric resistance process, and finally compressing the overlapped workpieces along the line of weld sufficiently to displace metal thereof onto said exposed narrow portions of said faces to reduce the overall thickness of the weld to substantially the initial thickness of the workpieces.

3,313,912
ENERGY LIMITING SYSTEM FOR STUD WELDING

Charles Connor Pease, Pennsauken, N.J., assignor to KSM Products, Inc., Moorestown, N.J., a corporation of New Jersey

Filed June 28, 1963, Ser. No. 291,529
3 Claims. (Cl. 219-108)

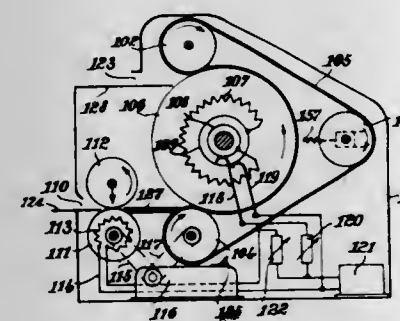


1. In a stud welding apparatus comprising a chuck for holding a stud, a stop for positioning said stud against a workpiece, a solenoid for withdrawing said stud from said workpiece prior to a discharge of welding current between said stud and said workpiece and a spring for urging said chuck together with said stud, toward said workpiece following said discharge, the improved control circuit comprising an alternating current source, first rectifying bridge means and a master switch serially connected through a welding cable in series with said stud and workpiece, closure of said switch causing current to flow from said rectifying bridge means through said welding cable, said stud and said workpiece, saturable core

reactor means surrounding said welding cable, a second rectifying bridge means, an inductor coupled with said saturable core reactor means for providing an input to said second rectifying bridge means, a resistor-capacitor transient network connected across said second rectifying bridge means, said capacitor offering a shunt path for the output of said second rectifying bridge means in such a way as to charge at a predetermined rate in response to said output of said second rectifying bridge means, unijunction transistor means characterized by an emitter and a pair of bases, said emitter being connected to one terminal of said capacitor, said unijunction transistor means being adapted to conduct between said bases when the voltage level at said emitter is at a predetermined level, said bases of said unijunction transistor means generating a sharp pulse when said emitter reaches said predetermined level, a third rectifying bridge means energized by said transformer, said third rectifying bridge means and a zener diode being connected in parallel across said bases of said unijunction transistor means in order to supply power thereto, a silicon controlled rectifier and a solenoid serially connected across said third rectifying bridge means, said silicon controlled rectifier having an emitter, a collector and a control electrode, said emitter of said silicon controlled rectifier being connected to said solenoid, said collector of said silicon controlled rectifier being connected to a terminal of said third rectifying bridge means, said control electrode of said silicon controlled rectifier being connected to one terminal of said unijunction transistor, said silicon controlled rectifier normally being biased at cutoff but being adapted to conduct and thereby to energize said solenoid under the control of said control electrode when a pulse is emitted by said unijunction transistor, said solenoid controlling said master switch of said welding cable, whereby upon discharge of said first rectifying bridge means through said welding cable, said stud and said workpiece in order to effect a weld, said saturable core reactor generates a signal that is applied to said second rectifying bridge means in order to charge said capacitor of said transient network, said unijunction transistor means emits a pulse at the moment said capacitor reaches a predetermined charge level, said silicon control rectifier discharges and said solenoid opens said master switch in order to precisely time said discharge through said cable.

3,313,913

ELECTRICALLY HEATED MACHINE FOR PRODUCING PHOTOGRAPHIC COPIES
Walter Limberger, Hamburg-Poppenbützel, Germany, assignor to Lumoprint Zindler K.G., Hamburg, Germany
Filed Mar. 5, 1962, Ser. No. 177,648
Claims priority, application Germany, Mar. 6, 1961, L 38,372
6 Claims. (Cl. 219-216)

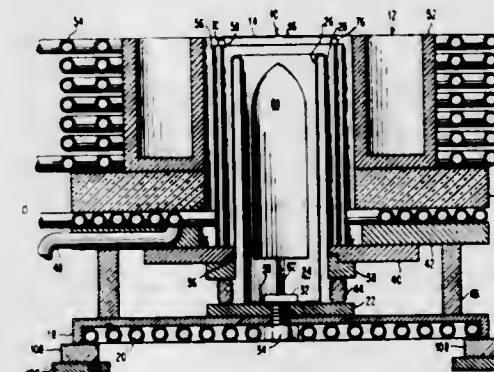


1. In a machine for producing photographic copies by applying heat to an exposed negative and a print film containing the required development and diffusion substances in a form releasable through heat, a pair of rollers, means rotatably supporting said rollers in parallel inter-relation,

means for driving at least one of said rollers, adjustable means resiliently biasing one of said rollers towards line contact with the other roller, heating means for at least one of said rollers, and non-chemical pressure means at the exit side of the nip between said pair of rollers for resiliently pressing said films against each other, the improvement comprising means for heating said pressure means, and means for adjusting the pressure exerted on the films in said pressure means to a value below that between said pair of rollers, said pressure means having extended surface contact with each other.

3,313,914

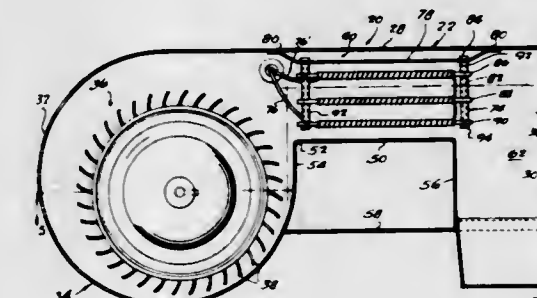
MONITORED EVAPORANT SOURCE
Gilbert C. Roberts, Jr., Owego, N.Y., and Giorgio G. Via, Rockville, Md., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 31, 1964, Ser. No. 422,795
6 Claims. (Cl. 219-272)



1. An evaporator for use in vacuum deposition apparatus comprising, an evaporant source comprising a charge of evaporant material and means adapted to energize said charge for causing a stream of vapor flow therefrom, and a monitor for measuring the intensity of such stream comprising, a pair of electrodes constituting a diode mounted in said stream, means for energizing said electrodes to cause a net thermionic emission of electrons from one of said electrodes to the other, said net emission as modified by vapor between the electrodes constituting a current between said electrodes, and circuit means including current responsive means connecting said electrodes one to the other operative to sense changes in said current between said electrodes.

3,313,915

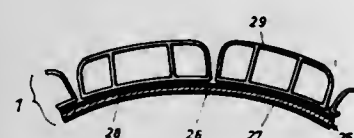
ELECTRIC HEATER FOR AUTOMOBILES
Arthur G. Chamberlain, Jr., 9 W. Kenneth St., Lawrence, Mass. 01843
Filed Jan. 31, 1964, Ser. No. 341,544
5 Claims. (Cl. 219-370)



3. An electrical heater for mounting behind a firewall and partly under an instrument panel of an automobile, comprising an elongated housing having front and back

walls, horizontal top and bottom walls, a vertical end wall, and a cylindrical blower casing whose diameter is greater than the height of said end wall mounted on the end of the housing remote from said end wall, said casing being enclosed by said front and back walls of the housing, a blower mounted within said casing on a horizontal axis transverse to the longitudinal axis of the housing, an air inlet register disposed in one of said front and back walls in the area of said blower casing and of a size slightly less than the cylindrical area of the casing, an opening in said casing extending from said front to said back wall but of less height than that of the end wall of the casing, a partition wall within the housing spaced from the top wall and defining therewith a reduced cross section, horizontal and longitudinally disposed heating chamber connected at one end with said opening in the blower casing and spaced at its other end from said first end wall, a substantially vertical partition wall extending across the interior of the heater housing beneath said chamber and defining with said front and back walls, said top wall, and said end wall a vertical discharge duct extending below the heating chamber, an electrical heating element mounted within the heating chamber, a laterally extending discharge nozzle, at the lower end of said discharge duct, a defroster air outlet opening in said end wall aligned with said heating chamber and a defroster pipe connected thereto.

3,313,916
PORTABLE PERSPIRATION APPARATUS
Martin Achner, Burgstrasse 21, Garmisch-Partenkirchen, Germany
Filed Dec. 7, 1964, Ser. No. 416,271
Claims priority, application Germany, Dec. 12, 1963, A 44,781; Aug. 19, 1964, A 46,889
10 Claims. (Cl. 219-385)



1. In a portable perspiration apparatus, a collapsible cabinet side wall comprising:
 - a plurality of vertical, spaced apart, heat insulative staves;
 - sheet means for hingedly fastening together such staves in side-by-side relation, said sheet means comprising inner and outer layers of flexible sheet material and a substantially continuous flexible layer of electrically conductive, heat generating, material therebetween, said layers being bonded together.

3,313,917
DOORLESS INFRARED OVEN
Richard C. Ditzler, Riverton, and Norman Burstein, Cherry Hill, N.J., assignors to Litton Precision Products, Inc., Cleveland, Ohio, a corporation of Delaware
Filed Nov. 21, 1963, Ser. No. 325,230
11 Claims. (Cl. 219-400)

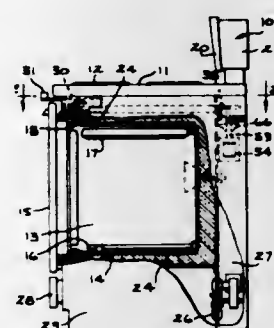
1. A doorless oven comprising an air duct enclosure having at least a front and top wall and an oven unit housing having a plurality of sides including front and top sides; means to mount said oven unit housing within said enclosure having at least its front and top sides confronting and spaced from the front and top walls, respectively, of said enclosure to form first and second communicating air ducts, respectively, therebetween, said oven unit housing containing a heating chamber, heating means, and an oven access passage in the front side thereof to

permit the entrance of objects to be heated therein, said enclosure having a doorless access passage in the front wall thereof confronting said oven access passage to permit the entrance of objects from the exterior of said enclosure, through said first air duct to the heating chamber without the opening and closing of a door; a first air passage located in an enclosure wall below said doorless access opening communicating between the exterior of said enclosure at a first location and said first air duct for permitting the passage of air between the exterior of the housing and the first air duct; a second air passage located in an enclosure wall and remote from said front



wall of said enclosure communicating with said second air duct and with the exterior of said enclosure at a second location for permitting the passage of air between said second air duct and the exterior of said housing; and blower means for moving a stream of air in a path comprising one location exterior of said enclosure, said first air passage, said first air duct, said second air duct and said second air passage whereby a curtain of air is formed at the doorless access opening to prevent the escape therethrough of hot vapors and at least the front and top walls of said enclosure are cooled by the continuous removal of the hot gases therebetween.

3,313,918
SAFETY MEANS FOR OVEN DOOR LATCHING MECHANISM
Ronald B. Barber, Marblehead, Mass., assignor to General Electric Company, a corporation of New York
Filed Aug. 4, 1964, Ser. No. 387,439
16 Claims. (Cl. 219-412)



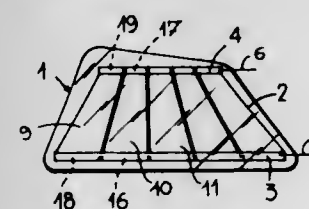
1. A heated cavity and an access door for closing said cavity, heating means connected to a source of energy for raising the temperature within the cavity, and door latching means movable between open and closed positions and adapted to hold the door in a closed position during a high temperature cycle, locking means for locking the door latching means in its closed position, and electro-responsive means for releasing the locking means, and control means for energizing the electroresponsive means, and means to de-activate the control means during the high temperature cycle so that the door latching means may not be unlocked and the door opened during such cycle.

3,313,919
COOKING APPARATUS WITH COOKING VESSEL CENTERING AND HOLDING MEANS
George W. Richardson and Jerry E. Wright, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed June 26, 1964, Ser. No. 378,169
3 Claims. (Cl. 219-433)



1. The combination of a ground and polished glass-ceramic flat and slippery smooth cooking surface having at least one heating unit positioned below said surface for heating only a portion of the surface and having adjustable thermostat control therefor especially constructed for use with special glass-ceramic cooking vessels having ground and polished flat and slippery smooth bottoms to prevent any thermal air barrier gap between the cooking surface and the bottom of the cooking vessel, the cooking surface having a much larger total area than the bottom of a cooking vessel to be used therewith, the heated portion of the cooking surface having an area much less than the total area of the cooking surface, at least one glass-ceramic cooking vessel having a ground and polished flat and slippery smooth bottom for cooperating with the ground and polished flat and slippery smooth cooking surface, the coefficients of friction between the vessel bottom and cooking surface being such that the vessel tends to skate or slip on the surface unless positively prevented from so doing, the cooking surface including a circular button protruding therefrom, the button being located in the center of the heated portion of the cooking surface, the bottom of the cooking vessel being substantially the same size as the heated portion of the cooking surface, and the bottom of the cooking vessel including a circular depression generally complementary to the circular button, but slightly larger in diameter and depth than the diameter and height of the circular button so that the protruding button does not engage and thus does not support any of the weight of the cooking vessel, the circular depression located centrally of the bottom of the vessel cooperating with the button to prevent sliding and skating of the vessel on the cooking surface and to center the vessel on the heated surface portion of the cooking surface.

3,313,920
HEATER PANEL
Pierre Gallez, Sorinnes-lez-Dinant, Belgium, assignor to Glaverbel, Brussels, Belgium
Filed Apr. 16, 1964, Ser. No. 360,352
Claims priority, application Luxembourg, Apr. 30, 1963, 43,658
4 Claims. (Cl. 219-522)



1. A heater panel comprising at least one electrically insulating glass sheet, an electrically conductive transparent film on said glass sheet, a single pair of electrodes

extending parallel to each other in contact with said film along the entire length of said film in marginal zones of said glass sheet, said electrodes being adapted for being connected to an electrical power source, said film having a plurality of grooves extending between the electrodes for isolating the film on either side of the grooves to define a plurality of isolated strips extending from one electrode to the other and in electrical contact therewith, said glass sheet being of quadrilateral outline and said grooves converging in one direction.

3,313,921
INFRARED HEATER
Heinrich Mohn, Haller, Georg Horstmann, Bruchkobel, near Hanau am Main, and Eberhard Muller, Hanau am Main, Germany, assignors to Heraeus Quarzschmelze G.m.b.H., Hanau am Main, Germany, a German firm
Filed Nov. 6, 1963, Ser. No. 321,950
Claims priority, application Germany, Nov. 16, 1962, H 47,417; Mar. 12, 1963, H 48,501
3 Claims. (Cl. 219-553)

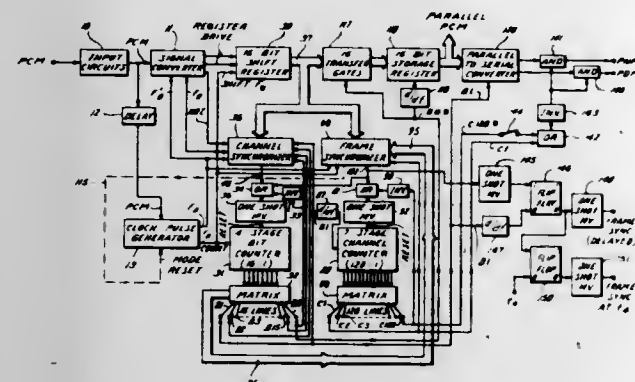


1. An infrared heater comprising an elongated outer tube of quartz having an open end and a closed end, an electrically insulating partition member substantially transparent to infrared radiation and defined by an elongated strip twisted about its longitudinal axis to divide the interior of said tube into two adjacent convoluted chambers, an electrical resistance heating element disposed within each of said convoluted chambers for extension along the length thereof and containment thereby, said resistance heating elements being electrically connected in series at the closed end portion of said tube and disposed for connection at the open end portion of said tube to an external source of electrical energy for heating thereby to generate infrared radiant energy for transmission from and through said tube, and support means disposed within said tube at the closed end portion thereof to support said twisted strip partition member in an endwise separated relation to the closed end of the tube.

3,313,922
TELEMETERING SIGNAL PROCESSING SYSTEM
Jean P. Magnin, Sarasota, Fla., assignor to Electro-Mechanical Research, Inc., Sarasota, Fla., a corporation of Connecticut
Filed Jan. 22, 1962, Ser. No. 167,643
12 Claims. (Cl. 235-92)

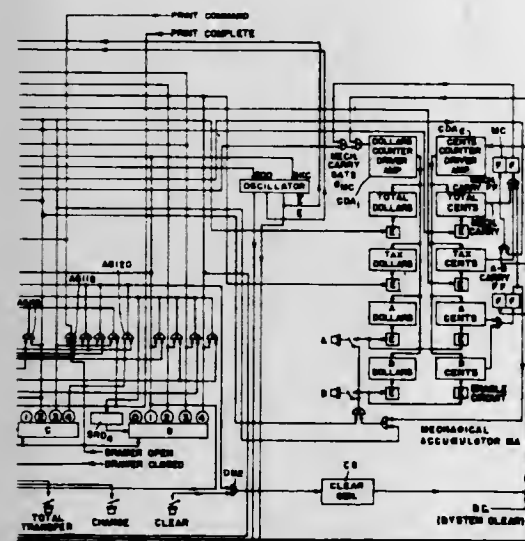
1. A telemetering signal processing system comprising: circuit means for supplying a serial pulse code signal; a plural-bit shift register; circuit means for reading the serial pulse code signal into the shift register for providing a parallel representation thereof; a plural-bit pulse counter; circuit means for transferring in a parallel manner the complement of the shift register signal representa-

tion to the pulse counter; circuit means for supplying pulses to the pulse-counting input of the pulse counter; and circuit means for providing an indication of the num-



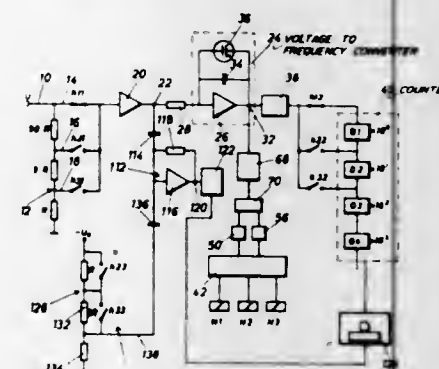
ber of pulses required to fill the pulse counter thereby to provide an indication of the data value represented by the pulse code signal.

3,313,923
NUMERICAL ACCUMULATOR FOR BUSINESS ACCOUNTING
Marvin Felcheck, Bayside, N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Sept. 29, 1964, Ser. No. 400,062
5 Claims. (Cl. 235-92)



1. In combination with a source of pulses having individual portions of which one provides pulses in number representing dollars and the other provides pulses in number representing cents of total price information of consecutive orders; an accumulator having a plurality of different categories and providing a continuous record of the total prices of all orders selectively applicable in each of the different categories, comprising a dollars portion and a cents portion; each of the portions of the accumulator including a mechanical counter for each of the different categories, individual means for enabling each of the counters to be driven, and drive means common to all of the mechanical counters for simultaneously driving all of the enabled counters in response to pulses from the pulse source; a pair of gate means connected between the pulse source and the accumulator; and means for each of the gate means to selectively enable one of the gate means to pass dollars representing pulses therethrough to the drive means of the accumulator dollars portion, and the other of the gate means to pass cents representing pulses therethrough to the accumulator cents portion.

3,313,924
INTEGRATOR INCLUDING MEANS FOR CONTROLLING AN OUTPUT COUNTER AND THE INPUT SIGNAL MAGNITUDE
Wolfgang Schulz, Überlingen (Bodensee), and Gerhard Siess, Owingen, Kreis Überlingen, Germany, and Harry V. Carter, Beaconsfield, England, assignors to Bodenseewerk Perkin-Elmer & Co. G.m.b.H., Überlingen (Bodensee), Germany
Filed June 7, 1963, Ser. No. 286,359
Claims priority, application Germany, June 8, 1962, B 67,615
8 Claims. (Cl. 235-150.51)

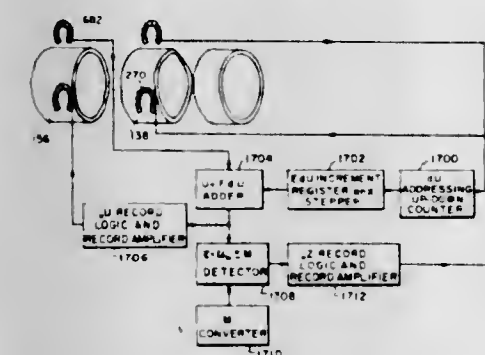


1. An integrator comprising:
a voltage to frequency transducer having a limited range over which the frequency of the impulses developed by said transducer is linearly related to the amplitude of a signal supplied thereto;
means for supplying an input signal to said voltage to frequency transducer;
a counter for counting the impulses developed by said voltage to frequency transducer;
sensing means for monitoring the level at which said voltage to frequency transducer is operating and for developing a control effect when a preselected level on said limited range is exceeded;
means responsive to said control effect for attenuating said input signal by a prescribed factor when said preselected level is exceeded and for translating said attenuated signal to said voltage to frequency transducer;
and means responsive to said control effect for increasing the counting rate of said counter by the same prescribed factor by which said input signal is attenuated when said preselected level is exceeded.

3,313,925
DIGITAL DIFFERENTIAL ANALYZER
Robert E. Bible, Burbank, Calif., assignor to General Precision Inc., a corporation of Delaware
Filed May 11, 1956, Ser. No. 586,342
7 Claims. (Cl. 235-150.31)

1. In a digital differential analyzer defined by a plurality of integrator storage sections and defined by a plurality of digital positions in each integrator storage section in the plurality and having an interrelationship between the integrator storage sections in the plurality in accordance with a problem to be solved,
means for sequentially presenting the integrator storage sections in the plurality and the successive digital positions in each integrator storage section in the plurality for computation to obtain successive cycles of computation,
means for providing signal indications representing a dependent quantity for a particular integrator storage section in the plurality,
means for providing signal indications external to the particular integrator storage section in the plurality and representing a quantity for comparison with the dependent quantity for the particular integrator storage section,

means responsive to the signal indications representing the dependent quantity and the comparison quantity for the particular integrator storage section for comparing these signal indications upon the presentation of the particular integrator storage section for computation to produce signals representing errors in the dependent quantity for the particular integrator storage section,
means responsive to the error signals for each cycle of computation for introducing these error signals back to the signal indications representing the dependent quantity for the particular integrator storage section in the next cycle of computation in a direction for reducing any errors between the dependent quantity and the external quantity for the particular integrator storage section,
means responsive in each cycle of computation to the error signals two cycles of computation previously for the particular integrator storage section for providing signals representing the inverse of such error signals upon a lack of an error in the preceding cycle of computation,
means for providing signal indications representing digital variations in an independent quantity for the particular integrator storage section upon the presen-

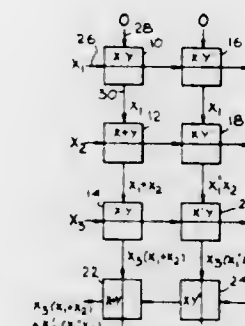


tation of the particular integrator storage section for computation and in accordance with the interrelationship between the particular integrator storage section and other integrator storage sections in the plurality,
means for providing signal indications representing an output quantity for the particular integrator storage section upon the presentation of the particular integrator storage section for computation,
means responsive to the signal indications representing the dependent quantity and the variations in the independent quantity for the particular integrator storage section for differentially combining these signal indications upon the presentation of the particular integrator storage section for computation to produce signal indications representing a differential combination for the particular integrator storage section, and
means responsive to the signal indications representing the output quantity and the differential combination for the particular integrator storage section for combining these signal indications upon the presentation of the particular integrator storage section upon the presentation of the particular integrator storage section for computation to obtain signal indications representing a new value of the output quantity for the particular integrator storage section.

3,313,926
MICROELECTRONIC CELLULAR ARRAY
Robert C. Minnick, Redwood City, Calif., assignor to Stanford Research Institute, Menlo Park, Calif., a corporation of California
Filed Apr. 26, 1965, Ser. No. 453,872
25 Claims. (Cl. 235-175)

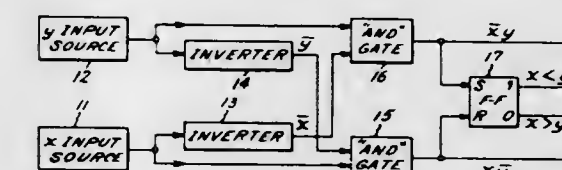
1. A function device comprising:
a plurality of function elements arranged in operational

rows and columns, each of said elements including two input ports for receiving input binary signals and an output port for producing a binary output signal; a plurality of row bussing means, each of said bussing means connecting together one input port of each function element of an operational row thereof;



a plurality of column series connectors, each of said series connectors connecting an output of one of said function elements to an input port of another function element in an operational column thereof; and
function changing means included in each function element for altering the functional output of the element thereof in response to the two input binary signals received thereby.

3,313,927
PULSE WIDTH COMPARATOR
Ronald R. Raikes, Endwell, and Hermann Schmid, Binghamton, N.Y., assignors to General Electric Company, a corporation of New York
Filed Oct. 10, 1963, Ser. No. 315,230
2 Claims. (Cl. 235-177)

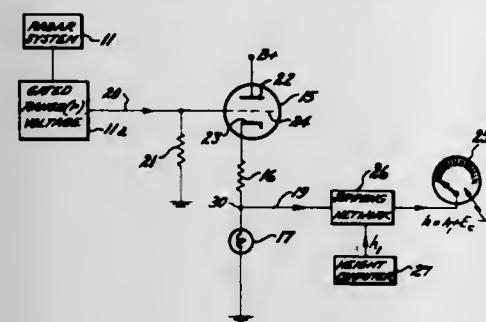


1. A pulse width comparator comprising:
(a) a first source of input signals representing a first information quantity such as x by pulse width modulation;
(b) a second source of input signals representing a second information quantity such as y by pulse width modulation which provides signals in synchronism with said x pulses;
(c) first and second inverters responsive to said first and second input sources for producing the inverted signals \bar{x} and \bar{y} ;
(d) a first "AND gate," responsive to said first input source and said second inverter throughout a cycle of the input signals, for producing a first "exclusive OR" term signal $\bar{x}y$;
(e) a second "AND gate," responsive to said second input source and said first inverter throughout the cycle of the input signals, for producing the second "exclusive OR" term signal $x\bar{y}$; and
(f) a set-reset flip-flop, responsive to said first and second "AND gates," for producing a bistable output signal indicative of which input signal is greater, $x > y$ or $x < y$.

3,313,928

EARTH CURVATURE FUNCTION GENERATOR
George F. Harpell, Concord, Mass., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Feb. 14, 1962, Ser. No. 173,620
1 Claim. (Cl. 235-197)



The method of developing an output signal proportional to the height of a tangent above the surface of the earth at any given range from the point of tangency comprising the steps of applying to the grid of an electronic discharge tube an input voltage responsive to said range, providing a positive voltage to the anode of said tube, inserting a first resistance element in the cathode follower circuit of said tube, said first resistance element having a constant resistance value over the operating range of said tube, inserting a second resistance element in said cathode follower circuit, said second resistance element being connected between said first resistance element and ground and having a variable resistance value over the operating range of said tube, said resistance value being responsive to said input voltage, and obtaining an output voltage from the junction of said first and second resistance elements.

3,313,929

ILLUMINATED UMBRELLA
Edward L. Schiavone, 10502 Insley St., Silver Spring, Md. 20902
Filed Dec. 4, 1964, Ser. No. 415,931
1 Claim. (Cl. 240-2)

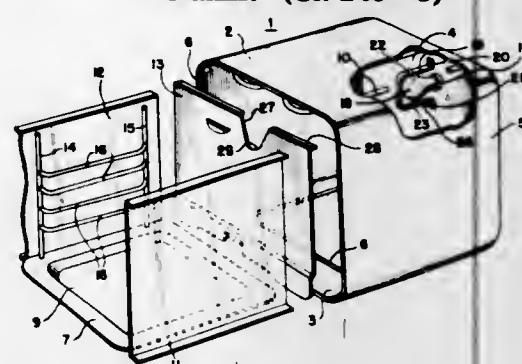


An illuminated umbrella comprising, a tubular supporting member, a retractable canopy assembly having a light-reflective lower surface supported at one end of the tubular member, a removable cap means closing said one end of the tubular member, an elongated electric lamp means contained within said tubular member adjacent said one end, first and second socket means within the tubular member supporting the lamp means, at the respective ends thereof, and resilient means bearing longitudinally against one of the socket means for holding the lamp means in place, said tubular member having a plurality of slotted openings for viewing said lamp means.

3,313,930

COOKING OVEN HAVING COMBINATION LIGHT SHIELD AND PANEL HOLDER

Wayne C. Smitley, Naperville, Ill., assignor to General Electric Company, a corporation of New York
Filed Mar. 22, 1965, Ser. No. 441,623
2 Claims. (Cl. 240-5)



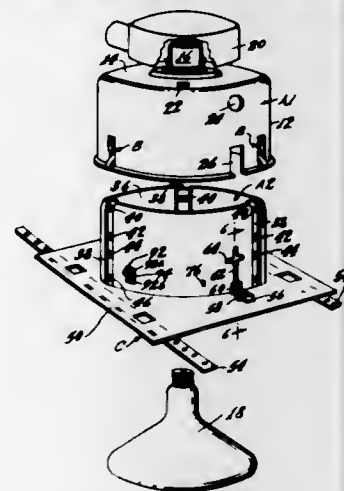
1. A cooking oven comprising:

- a fixed box-like structure including top and bottom and rear walls and a pair of side walls, and having a front access doorway thereinto;
- an electric light extending into said structure forwardly from the rear wall thereof;
- removable rigid side and back panels respectively substantially coextensive in area with said side and back walls, said back panel having an opening formed therein for accommodating said light;
- means for maintaining said side panels in position against said side walls;
- a protective shield member for said light, said shield member being formed as a unitary U-shaped strip of spring metal and being secured at its ends on opposite sides of said light whereby said light is positioned within said shield member, said shield member having an externally convex indentation in one leg adjacent the end thereof;
- said back panel being formed so that, when said back panel is positioned against said back wall, the edge of said opening is trapped behind said indentation whereby said shield member retains said back panel in position.

3,313,931

TELESCOPING RECESSED LIGHTING FIXTURE
Jack A. Klugman, Havertown, Pa., assignor to Sterling Industries, Inc., Philadelphia, Pa., a corporation of Pennsylvania

Filed May 14, 1962, Ser. No. 194,259
2 Claims. (Cl. 240-78)

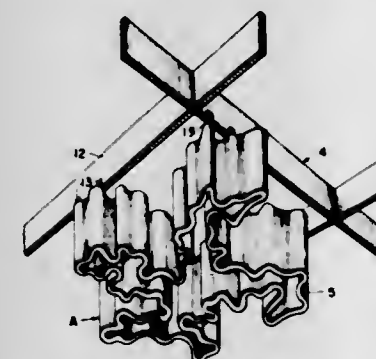


1. A recessed lighting fixture for attachment to a plaster ring within a ceiling comprising a lower housing member, an upper housing member in telescoping slidable engagement with said lower housing member, securing means for adjustably supporting said lower housing member within the plaster ring, guide means maintaining said

upper housing member in fixed circumferential disposition with respect to said lower housing member, said guide means constituting three longitudinally-extending recessed fluted channels equally-spaced circumferentially in said lower housing member, longitudinally-spaced slots in each of said fluted channels disposed in a series of sets of three coplanar slots therein, latching means constituting three equally-spaced spring loaded fingers slidably received in said respective fluted channels and simultaneously engaging all of the slots of a given set at a time for detachably securing said upper housing member to said lower housing member against relative axial movement, said fingers being manually releasable from the interior of the fixture and automatically and selectively engaging another set of slots in the series upon displacement of the two housing members with respect to each other, face trim means resiliently coupled to said lower housing member, and lamp trim means downwardly projecting from the interior of said upper housing member whereby the overall depth of said housing is adjustable while the fixture is in the ceiling, and three cruciform slits equally-spaced circumferentially in said lower housing member intermediate said fluted channels, each of said cruciform slits including an elongate portion parallel with said channels and an intersecting portion transverse thereto, said elongate portion of said cruciform slits permitting vertical adjustment of said fixture with respect to the ceiling and said securing means for accommodating variations in ceiling thickness, said intersecting portion providing for insertion therethrough of said securing means from the interior of said fixture for suspending said fixture from the exterior thereof within an existing ceiling.

3,313,932

LIGHT RAY BAFFLE CONSTRUCTION
Charles U. Deaton, Genesee Mountain, Rte. 3, Golden, Colo. 80401
Filed Aug. 13, 1964, Ser. No. 389,332
17 Claims. (Cl. 240-78)



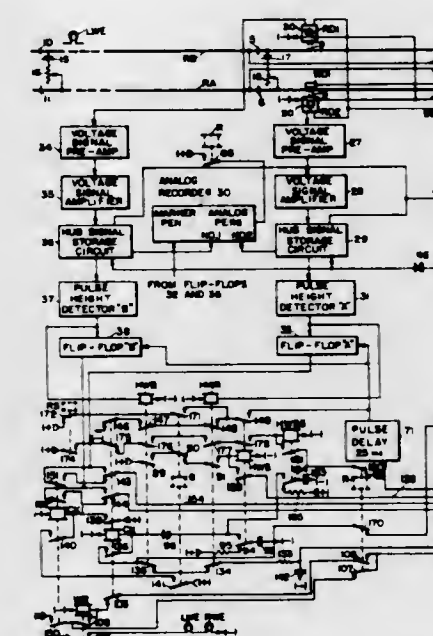
2. A light ray baffle adapted to mask a light source; said baffle comprising support means, and a plurality of laterally intersticed baffle-units secured to the support means and projecting outwardly therefrom so as to mask the support means and light source, each of said baffle-units being formed from a continuous endless ribbon-like piece of solid material of irregular and random shape which branches out from a central point so that opposed areas of the interior surfaces are close together to form an overall random pattern which is seemingly without beginning or end.

3,313,933

INTEGRITY CHECK FOR HOT BOX DETECTOR
Henry C. Sibley, Spencerport, N.Y., assignor to General Signal Corporation
Filed Sept. 19, 1962, Ser. No. 224,710
7 Claims. (Cl. 246-169)

1. A system for checking the integrity of wayside apparatus adapted for detecting hot journal bearings on cars passing said wayside apparatus comprising, car detector

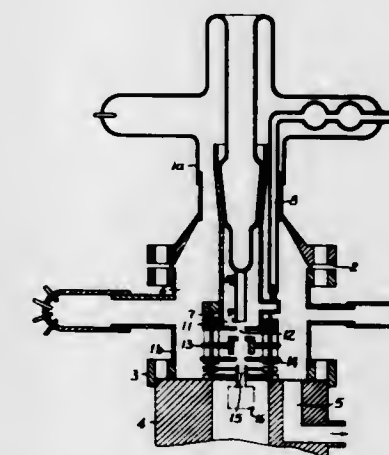
means responsive to a car approaching the wayside apparatus, check signal means responsive to said car detector means for generating a signal simulating a hot journal bearing and acting on said wayside apparatus,



and check means controlled by the response of said wayside apparatus to said simulated signal for providing a distinctive manifestation prior to the passage of any journal of said cars past said wayside apparatus.

3,313,934

FIELD ION SOURCE FOR MASS SPECTROMETRY WITH ELONGATED EMITTER
Hans-Dieter Beckey, Bonn, Germany, assignor to Atlas Meß- & Analysentechnik G.m.b.H., Bremen, Germany, a limited company of Germany
Filed Feb. 17, 1964, Ser. No. 345,407
Claims priority, application Germany, Feb. 19, 1963, A 42,368
13 Claims. (Cl. 250-41.9)



1. A field ion source for mass spectrometry comprising means defining an ion chamber, inlet means coupled to said ion chamber for introducing matter into said ion chamber, an emitter in said chamber for forming field ions from said matter and having an emission zone defining a small radius of curvature, said emitter defining a linear distance many times as large as the distance defined by said small radius of curvature,

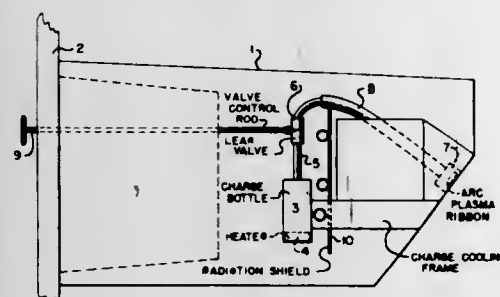
means defining an inlet to mass spectrometric analyzing apparatus, and means for directing said ions to the latter inlet for mass spectrometric analysis.

3,313,935

VAPOR FEED SYSTEM FOR EASY VAPORIZABLE MATERIALS TO THE ARC CHAMBER OF CALUTRONS

William A. Bell, Jr., and Robert M. Ennis, Jr., Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Sept. 21, 1964, Ser. No. 398,137
3 Claims. (Cl. 250-41.9)



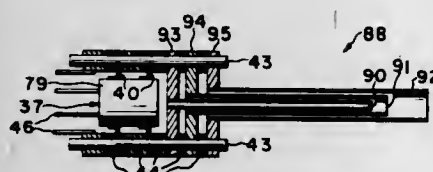
1. In a calutron provided with an arc chamber, an improved vapor feed control system for feeding vapor to said arc chamber comprising a heated charge bottle for containing an easy vaporizable charge material, an adjustable leak valve, a length of restrictive tubing having a length-to-diameter ratio such as to provide therewithin a constant transition-flow conductance region connected between the exit of said charge bottle and said leak valve, a relatively large diameter tube connected and extending between said leak valve and said arc chamber, said larger tube providing high Knudsen flow conductance therein between said leak valve and arc chamber, a water-cooled heat shield interposed between said heated charge bottle and said arc chamber to minimize heat feedback, and means for adjusting said leak valve to maintain a selected pressure in the range from 75 to 3000 microns in said charge bottle and restrictive tubing to provide transition flow in said restrictive tubing for any selected value of pressure within said pressure range, thereby maintaining accurate control over vapor flow from said charge bottle to said arc chamber to provide constant vapor flow at any desired value without restrictive condensation of feed material in said tubes.

3,313,936

LOW ENERGY ELECTRON DIFFRACTION APPARATUS HAVING THREE CONCENTRIC TUBULAR FOCUSING ELECTRODES

John C. Helmer, Menlo Park, and Norman J. Taylor, Sunnyvale, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Jan. 6, 1964, Ser. No. 335,793
6 Claims. (Cl. 250-49.5)



1. In a low energy electron diffraction apparatus for studying the surface phenomena of a solid having a high vacuum evacuable chamber with means for supporting a

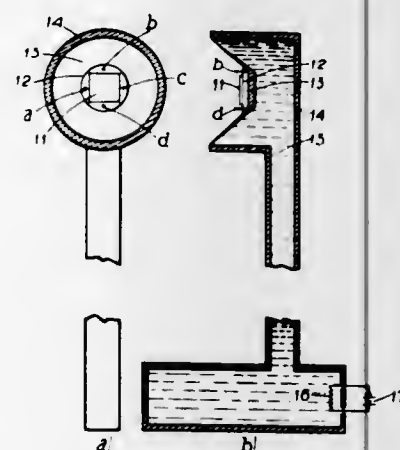
sample under investigation and a spherically shaped screen and grid means for displaying back diffracted electron beam patterns and having a centrally located aperture, an electron gun assembly comprising: means disposed on the convex side of said screen for providing a stream of electrons; a first tubular electrode which passes through the aperture in said screen having its upstream end spaced from said cathode and its downstream end positioned on the concave side of said screen for collimating said stream of electrons; means for applying a potential to said first electrode to accelerate said electrons; a second tubular electrode concentric with and surrounding said first electrode having its downstream end closer to said sample than said first electrode for focusing said stream of electrodes; means connected to said second electrode for applying a low potential to said second electrode relative to the potential applied to said first electrode; a third tubular electrode concentric with and surrounding said second electrode having its downstream end closer to said sample than said second electrode for controlling the incident electron beam voltage of said stream of electrons; and means connected to said third electrode for applying a voltage potential to said third electrode.

3,313,937

FERRO-ELECTRIC INFRARED DETECTOR HAVING A SEMITRANSSPARENT METALLIZED RADIATION RECEIVING SIDE

Armand Hadni, Paris, France, assignor to CSF—Compagnie Generale de Telegraphie Sans Fil, a corporation of France

Filed Aug. 24, 1964, Ser. No. 391,632
Claims priority, application France, Aug. 26, 1963, 945,646, Patent 1,374,475
6 Claims. (Cl. 250-83)



2. A thermal radiation receiver comprising: a heat conductive hollow support having one face shaped as a concave cone; a ferro-electrical target strip placed at the bottom of said cone, said strip having a semi-transparent, metallized front side for receiving said thermal radiation, and a metallized rear side, said hollow support including means for thermostating said cone; two conductors respectively, connected to each of said sides, and having respective terminals; and means for collecting an output signal at said terminals.

3,313,938

TRANSMISSION LINE LIGHT MODULATOR

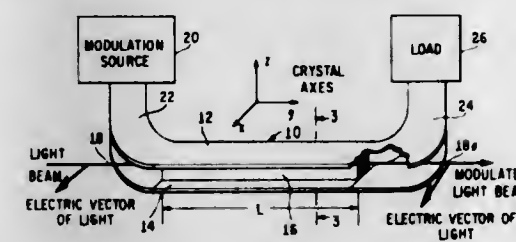
Charles J. Peters, Wayland, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed May 18, 1962, Ser. No. 195,880

13 Claims. (Cl. 250-199)

1. A light modulator comprising, a section of transmission line of the transverse electromagnetic type including a dielectric through its length at least a portion of which

consists of a material which exhibits the electro-optic effect, means for directing a beam of light to be modulated into said material for propagation therein along the



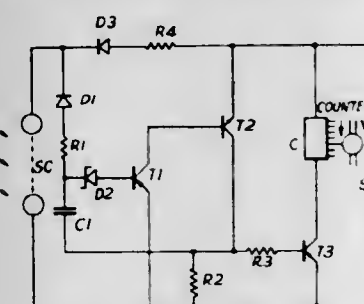
length direction of said line section, and means for applying a modulating signal to said line for propagation therein in the same direction as the light is propagated.

3,313,939

CONTROL DEVICES RESPONSIVE TO SOLAR RADIATION

Herbert Cyril Spencer, Taplow, England, assignor to British Telecommunications Research Limited, Taplow, England, a British company

Filed Dec. 17, 1963, Ser. No. 331,290
Claims priority, application Great Britain, Dec. 20, 1962, 48,165/62; Feb. 13, 1963, 5,891/63
4 Claims. (Cl. 250-212)



3. A control device responsive to a predetermined amount of solar radiation, comprising in combination, a device for converting solar radiation into electrical energy, a rechargeable battery connected to said device so as to be charged thereby when said device is energised by solar radiation, a capacitor, a first resistor having one terminal connected to one terminal of said capacitor, a second resistor of much lower value having one terminal connected to the other terminal of said capacitor, connections from the other terminals of said first and second resistors respectively to opposite poles of said device whereby said capacitor is charged by said device in series with said first and second resistors when said device is energised by solar radiation, first, second and third transistors each having base, emitter and collector electrodes, a Zener diode connected between the junction of said capacitor and said first resistor and the base of said first transistor, a connection from the collector of said first transistor to the base of said second transistor, a connection from the emitter of said second transistor to one pole of said battery, a connection from the emitter of said first transistor to the other pole of said battery, a connection from the collector of said second transistor to said other pole of said battery in series with said second resistor, a connection from the collector of said second transistor to the base of said third transistor and a load device connected in the emitter-collector circuit of said third transistor across said battery whereby when said capacitor is charged to a predetermined voltage due to a predetermined total amount of solar radiation falling on said device, said Zener diode conducts and biases the base of said first transistor which thereupon conducts and discharges said capacitor through said second resistor and causes said second transistor to conduct whereupon the base of said

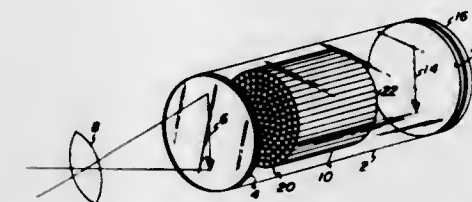
third transistor is biased to cause said third transistor to conduct and activate said load device and effect a control switching operation.

3,313,940

IMAGE INTENSIFIER WITH RADIATION ATTENUATING MEMBER FOR IMPROVING OUTPUT FIDELITY

George W. Goodrich, Oak Park, Mich., assignor to The Bendix Corporation, Southfield, Mich., a corporation of Delaware

Filed July 8, 1963, Ser. No. 293,356
6 Claims. (Cl. 250-213)



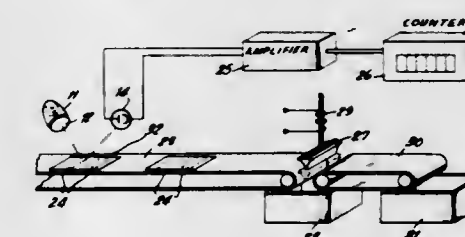
1. An image intensifier device comprising, a first radiation responsive surface disposed to receive an incident radiation image, a second radiation responsive surface disposed to receive the response from the first radiation responsive surface, a radiation amplifying member being located between said first and second radiation responsive surfaces with the input end of said amplifier member receiving the output of said first radiation responsive surface and the output end of said amplifier member directing the amplified image to said second radiation responsive surface, and radiation attenuating means disposed on the output side of said amplifying member and having spatial density variations disposed so that the resulting attenuation occurring to the amplified signal will preserve signal fidelity and equalize radiation conversion and transfer mechanisms within said device.

3,313,941

IDENTIFYING APPARATUS EMPLOYING FIBERS AND POLARIZED LIGHT

Mortimer M. Marks, 166-25 Cryders Lane, Whitestone, N.Y. 11357

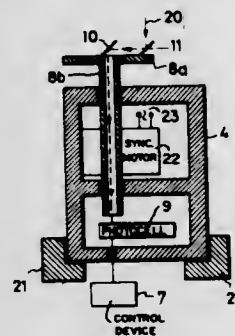
Filed Nov. 12, 1963, Ser. No. 322,970
6 Claims. (Cl. 250-219)



1. Paper document-counting apparatus comprising in combination means for transporting a paper document through a counting zone, polarized light illuminating means for rendering visible normally-invisible indicia in the from of light-polarizing fibers integral with a paper document in said counting zone, photoelectric sensing means for detecting said indicia when the same are made visible, and counting means responsive to said sensing means for totalizing the number of responses of said sensing means to said indicia.

3,313,942 PHOTOSENSITIVE APPARATUS FOR ASCERTAINING AND FOLLOWING GUIDE MARKS ON GOODS

Klaus Lange, Munich, Germany, assignor to Heinz Mahlo, Saal (Danube), Germany
Filed Dec. 7, 1964, Ser. No. 416,388
Claims priority, application Germany, Dec. 10, 1963, M 59,204
4 Claims. (Cl. 250-219)



1. In an apparatus for ascertaining and following of guide marks on moving goods, by means of a single photoelectric sensing device which senses the light of a light source arranged adjacent one side of said guide marks, said light source influencing the sensing device through reflecting means arranged on the other side of the guide marks opposite the light source, the improvement comprising,

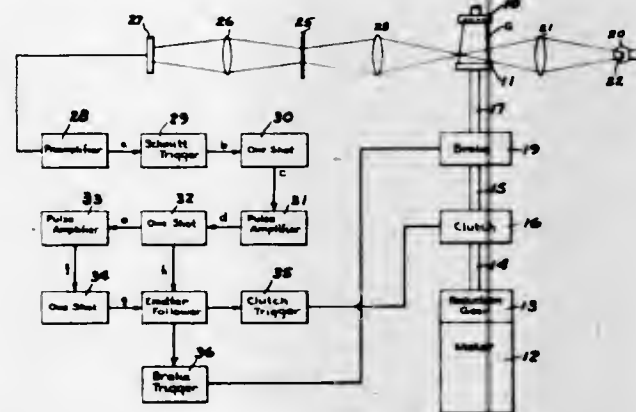
- (a) scanning disk having a central aperture and a surface facing the goods;
- (b) means for rotating the scanning disk about an axis extending through the central aperture;
- (c) said reflecting means including two reflecting surfaces, one reflecting surface being attached to the surface of the disk at the periphery of the disk and at an angle of 45° relative to said axis, the other reflecting surface being attached to the surface of the disk close to said central aperture and also at an angle of 45° relative to said axis, said reflecting surfaces facing each other for directing a light beam through the central aperture of the disk along said axis;
- (d) a single photocell arranged opposite said central aperture of the scanning disk and stationary relative to the disk;
- (e) drive means for moving the sensing device laterally to a direction of motion of the goods, and
- (f) control means electrically connected to the photocell and to said drive means for producing control signals in response to signals emanating from said photocell to control the drive means.

3,313,943 PHOTO-ELECTRIC REGISTRATION SYSTEM WITH PULSE SIGNAL DELAY

James R. Sager, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Sept. 26, 1963, Ser. No. 311,734
6 Claims. (Cl. 250-222)

1. In an apparatus for indexing an article of transparent material for multi-color decoration wherein a spot of opaque material is applied to the surface of said article, the combination comprising
means for rotating said article about an axis with respect to which the article is to be oriented,
means for directing and focusing a beam of light on the surface of said article so that an image of said spot is formed when the spot intersects the beam as the article is rotated,
means in the normal path of said beam for focusing the image of said spot on a plane,

a mask including a slit positioned in said plane in the normal path of the light beam,
a light sensitive element in the normal path of the beam,
means in the path of said beam for focusing the image of said slit and said spot on said light sensitive element,
means for creating a signal in response to the energization of said light sensitive element by said spot,

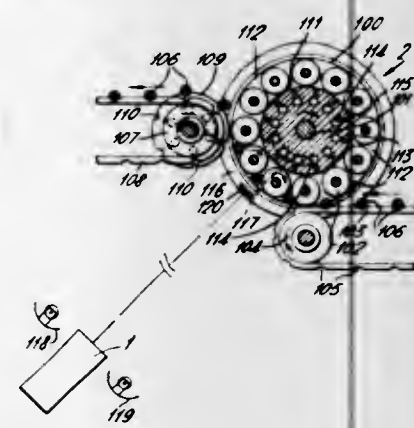


and means for stopping the rotation of said rotating means in response to said signal,
said signal creating means including
means for amplifying said signal,
means for creating a signal of predetermined time interval in response to said first mentioned signal,
means for creating a pulse signal in response to the trailing edge of said signal of predetermined time interval,
and means responsive to said pulse signal for stopping said rotation of said article.

3,313,944 GAUGING APPARATUS INCLUDING AN ELECTRONIC-OPTICAL SCANNER

Douglas William Ballantyne Muir, London, England, assignor to The Molins Organisation Limited, a British company

Filed Jan. 9, 1964, Ser. No. 336,665
Claims priority, application Great Britain, Jan. 14, 1963, 1,589/63
10 Claims. (Cl. 250-224)

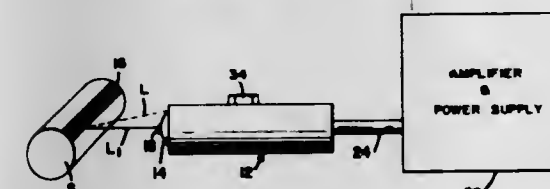


1. Gauging apparatus for measuring linear dimensions of articles such as cigarettes, comprising means including a constant-frequency time-base generator for scanning an article in a predetermined pattern and producing an electric output representative at any instant of the reflectance of the part of the article then being scanned, an oscillator adapted to operate at constant frequency, and gate means arranged to respond to predetermined changes in said electric output to control delivery of oscillations from said oscillator to at least one counter, including feedback means arranged to stabilize the scanning means, said feedback means comprising a pair of markers within the field of scan but sufficiently separated to allow placing of

an article to be scanned therebetween, and control means responsive to changes in the electric output as the scan encounters said markers to determine the operating frequency of said time-base generator.

3,313,945 APPARATUS FOR SENSING VARIATIONS IN LIGHT REFLECTIVITY OF A MOVING SURFACE

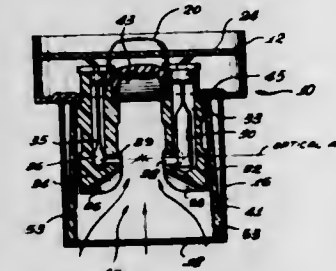
James R. Clinton, 854 Main St., El Segundo, Calif. 90245
Filed Aug. 27, 1963, Ser. No. 304,870
3 Claims. (Cl. 250-236)



2. In combination with a rotatable shaft having a light reflective surface and a strip of non-reflective material covering a portion of said surface; apparatus for counting the number of revolutions of said shaft comprising: an opaque centrally bored casing, a translucent body disposed in said casing and defining a convex lens surface axially protruding from said casing, said translucent body being formed with the cylindric opening disposed concentrically with said convex lens surface, an opaque shield mounted in said opening and projecting beyond said lens surface so as to prevent direct illumination of the interior of said shield by light from said lens surface, said shield being opened only at said projecting end, means disposed in said shield in communication with said end opening for generating an electric signal proportional to the light intensity impinging thereon, means within said tubular casing for illuminating said translucent body thereby to illuminate said lens, and means for amplifying the output of said electric signal generating means, whereby the amplified output from said signal generating means varies at a frequency proportional to the speed of rotation of said shaft.

3,313,946 SMOKE, FLAME, CRITICAL TEMPERATURE AND RATE OF TEMPERATURE RISE DETECTOR

Benton G. Goodwin, 19107 Ruddock St., Covina, Calif. 91722, and Walter L. Crumpacker, Sylmar, Calif.; said Crumpacker assignor to said Goodwin
Original application Nov. 30, 1962, Ser. No. 241,199, now Patent No. 3,255,441, dated June 7, 1966. Divided and this application Sept. 1, 1965, Ser. No. 493,302
2 Claims. (Cl. 250-239)

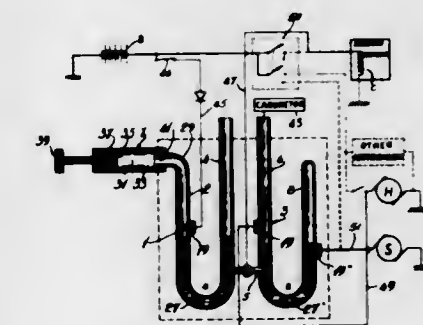


1. A smoke detector, comprising:
a chassis having at least one component mounting surface and a second surface;
a pair of spaced apart, opaque housings mounted upon said mounting surface of said chassis, each of said housings having outer walls;
a lamp carried within one of said housings;
a photoelectric device carried within the other of said housings, said photoelectric device having a photosensitive surface;

a pair of coaxially aligned holes defined by said walls at confronting sides of said housings, whereby light from said lamp will be directed along an optical axis to impinge upon said photosensitive surface;
a first opening defined in said mounting surface of said chassis, said first opening being located between said housings;
a second opening defined in said second surface of said chassis and communicating with air outside the smoke detector;
a cover surrounding said housings and mounted upon said mounting surface of said chassis, a portion of the interior surface of said cover being a tapered surface tapering towards said first opening in said mounting surface of said chassis, the taper angle of said tapering surface with respect to said mounting surface of said chassis being approximately the same as the angle formed with said mounting surface by a line drawn from the center of said first opening through the center of said optical axis;
and a flue passageway extending between said first and said second openings, the cross-sectional area of said passageway progressively decreasing in moving along said passageway from said first opening to said second opening.

3,313,947 THERMOSTATIC ENGINE STARTER

Denis Bisson, Argenteuil Co., Lachute, Quebec, Canada
Filed Oct. 23, 1964, Ser. No. 406,110
6 Claims. (Cl. 290-38)



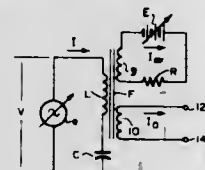
1. A thermostatic switching device for automatically starting and stopping an internal combustion engine having an ignition coil, a starter motor and a heater which have a terminal connected to a power source, the said device comprising in combination:
(a) a first and second electrically non-conductive upstanding U-tube, each tube formed of a pair of bottom-interconnected legs;
(b) a bath of mercury in each of said tubes defining in each leg a column of mercury having a free level;
(c) means defining a closed thermostatic gas chamber in one leg of said first tube above the corresponding mercury level;
(d) a connection electrically joining the mercury baths in said tubes; the said connection adapted to be connected to the other terminal of said coil;
(e) a first electrode through said first tube projecting, in non-operative condition of said starter, in said chamber above the mercury level, the said first electrode adapted to be connected to the other terminal of said coil;
(f) a second electrode through one of the legs of said second tube and, in non-operative condition of said starter, above the mercury level in said one leg; the said second electrode adapted to be connected to the other terminal of the starter motor;
(g) a third electrode through the other leg of said second tube and, in non-operative condition of the starter, within the mercury column in the said other leg.

leg, said other leg being closed at the top thereof, the said third electrode adapted to be connected to the other terminal of the heater.

3,313,948

MULTI-STABLE FERRORESONANT CIRCUIT
Theodore Hamburger, Baltimore, Md., and June E. Painter, Dayton, Ohio, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 27, 1963, Ser. No. 261,379
7 Claims. (Cl. 307—88)

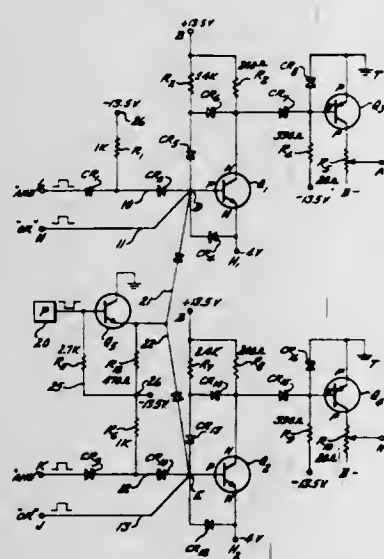


1. A multi-stable switching device operative with a source of potential comprising, a ferroresonant circuit including a non-linear inductive element, and a capacitive element serially connected to said inductive element, said ferroresonant circuit being energized by the source of potential connected across the series connection of said inductive and capacitive elements; biasing means operative to alter the non-linearity of said inductive element so that said ferroresonant circuit has a current versus voltage characteristic providing at least three stable states of operation; control means operative to switch said ferroresonant circuit to its various stable states of operation; and output means operative to provide output signals indicative of the particular stable state of operation.

3,313,949

MAGNETIC CORE DRIVER AND INHIBIT CIRCUIT
James J. Nyberg, Woodland Hills, Calif., assignor to the United States of America as represented by the Secretary of the Air Force

Filed June 25, 1963, Ser. No. 290,572
2 Claims. (Cl. 307—88)

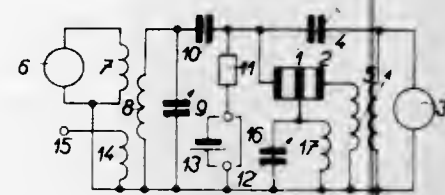


1. In a signal storage system, a pair of parallel circuits coupled to magnetic cores, said circuit to receive, selectively, a "1" or "0" signal pulse, means for sending such a signal pulse to a selected one of said parallel circuits, and means for sending an inhibit pulse to both said parallel circuits, simultaneously, in response to false operation of said first-named sending means, wherein said inhibit pulse sending means includes a clock pulse-driven transistor having an emitter follower output, and branching circuits connecting said emitter follower output to said parallel circuits.

3,313,950

REACTANCE PARAMETRIC AMPLIFIER
Antonin Glanc, Libochovice, Czechoslovakia, assignor to Ceskoslovenska akademie ved, Prague, Czechoslovakia, a corporation of Czechoslovakia

Filed Aug. 25, 1964, Ser. No. 391,951
Claims priority, application Czechoslovakia,
Aug. 31, 1963, PV 4,852/63
4 Claims. (Cl. 307—88.5)

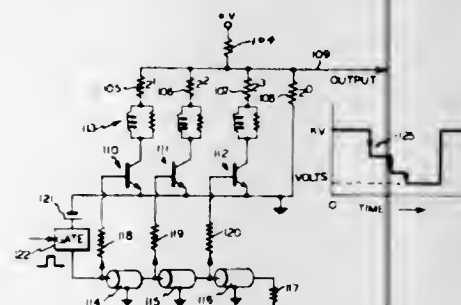


1. A reactance amplifier comprising in combination a source of a signal frequency; a source of a pumping frequency; a circuit tuned to the signal frequency; input means to supply the signal frequency into said tuned circuit; a non-linear capacitor, said capacitor comprising a ferroelectric dielectric material having a temperature region above its Curie point in which a maximum of non-linear dielectric properties are provided and at which temperature region the dielectric material can be automatically maintained by internal dielectric losses; said source of pumping frequency being connected across said non-linear capacitor for periodically varying the reactance of said capacitor and for dielectrically heating said capacitor to said temperature region with an alternating current; coupling means connecting said tuned circuit across said source of pumping frequency and said non-linear capacitor; regulation means disposed between said source of pumping frequency and said nonlinear capacitor for adjusting the dielectric heating region of said nonlinear capacitor and also for adjusting the output magnitude of said source of pumping frequency and output means for deriving amplified signals from said tuned circuit.

3,313,951

STEPWAVE GENERATOR
Tibor Jankovich, Jenkintown, Pa., assignor, by mesne assignments, to United Aircraft Corporation, a corporation of Delaware

Original application Oct. 5, 1962, Ser. No. 228,622, now Patent No. 3,218,630, dated Nov. 16, 1965. Divided and this application Oct. 11, 1963, Ser. No. 315,541
4 Claims. (Cl. 307—88.5)



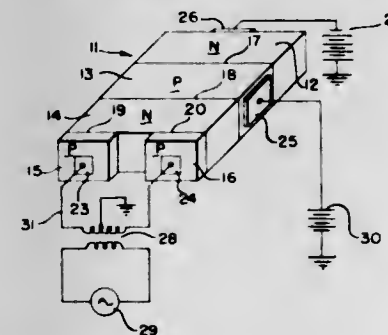
1. A compensated stepwave generator producing a series of sharp edge impulses of different potential levels in time sequence with the different levels being nonuniformly spaced from one another according to a binary progression:
a resistor network including a series resistor and a plurality of parallel arranged resistors, of progressively increasing resistance according to a binary progression,
a high speed switch means for each parallel resistor for selectively interconnecting its associated resistor to the series resistor,

and a transmissive network having a series of terminals, each being time delayed from the next when the network is energized by an initiating impulse, means interconnecting the different terminals of the network to actuate the different ones of the switches, and means for compensating the waveform produced across the series resistance against switching transients.

3,313,952

PHASE SENSITIVE SWITCHING ELEMENT
Andrew F. Deming, Sebring, Ohio, assignor to Consolidated Electronics Industries Corporation, Alliance, Ohio, a corporation of Delaware

Filed Oct. 25, 1963, Ser. No. 318,856
6 Claims. (Cl. 307—88.5)



1. A phase sensitive switching element for controlling the path of electric current in accordance with the phase of a gating signal relative to the phase of a controlling alternating signal comprising: a first zone of material having a first conductivity type, second and third zones of material of conductivity type opposite from that of said first zone formed contiguously to the outer surfaces of said first zone, the contiguous portions forming junctions between each of said second and third zones and said first zone, fourth and fifth zones of material having the same conductivity as said first zone formed on the outer surface of said second zone of material the contiguous portions forming junctions between said fourth and fifth zones and said second zone, said fourth and fifth zone being spatially removed from each other, connecting means for applying a biasing potential to said third zone of material, means for applying a variable phase signal to said first zone, and means for concurrently applying control signals of opposite phase to said fourth and fifth zones.

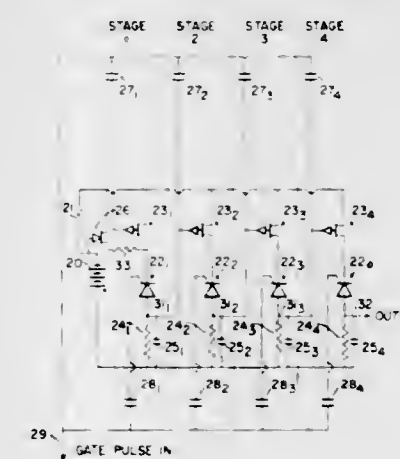
3,313,953

SWITCHING AND MEMORY CIRCUIT COMPRISING SERIES FIELD EFFECT TRANSISTORS AND SILICON CONTROLLED RECTIFIERS
John Bohm, Montreal, Quebec, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada

Filed Jan. 27, 1964, Ser. No. 340,171
8 Claims. (Cl. 307—88.5)

1. A circuit which comprises, a first and a second switchable conducting device, each said device having a conduction characteristic wherein its electrical resistance shows a sudden fall from a higher to a lower value at a given applied potential and remains at said lower value until current through said device falls below a given holding level, a trigger electrode on each switchable device, said characteristic being modified by trigger excitation applied to said trigger electrode to lower said given potential establishing the onset of said fall, a first current pinch-off device in series with said first switchable device, a second current pinch-off device in series with said second switchable device, each said pinch-off device including a pinch-off electrode and having a resistance which rises from a low to a higher resistance upon application of a pinch-off excitation to said pinch-off electrode, means

for connecting each said series connected switchable device and current pinch-off device across a direct current source, said source producing a potential across each said switchable device below said given applied potential in the absence of said trigger excitation, but above said value in the presence of said trigger excitation, said source inducing a current through each said switchable device of a magnitude greater than said holding current when its respective pinch-off device electrode is unexcited, each said pinch-off device having a resistance in the presence of said pinch-off excitation sufficient to drop current through its respective switchable device below said holding level, means for connecting said trigger electrodes on said first and second switchable devices and said pinch-off electrodes of said first and second pinch-off devices to a source of excitation current for triggering current conduction through said switchable devices and current pinch-off in said pinch-off devices in the



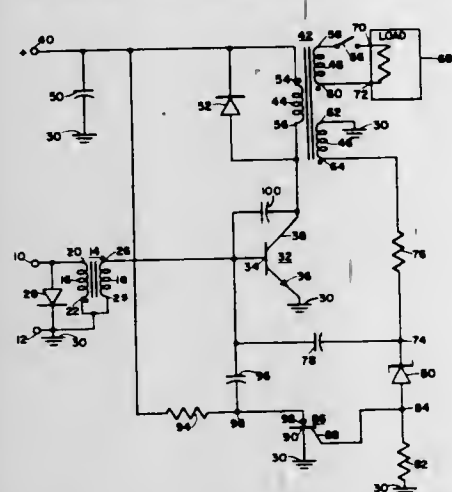
presence of excitation from said excitation source, a load series connected with said first switchable device and said first pinch-off device, and means connecting said load and said pinch-off electrode of said second pinch-off device for applying an inhibiting potential to said pinch-off electrode of said second pinch-off device for preventing current pinch-off in said second pinch-off device when said first switchable device is conducting; a second load in series with said direct current source, a third pinch-off device connected in parallel with said first pinch-off device, said third pinch-off device including a pinch-off electrode and having a resistance which rises from a low to a higher resistance upon application of a pinch-off excitation to its pinch-off electrode, and means connecting said second load and said pinch-off electrode of said third pinch-off device for inhibiting current through said third current pinch-off device when either of said first and said second switchable devices is conducting.

3,313,954

CONTROL APPARATUS
Arthur Hugh Walker, Clearwater, Fla., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Aug. 13, 1964, Ser. No. 389,244
6 Claims. (Cl. 307—88.5)

1. A blocking oscillator comprising, in combination:
a transistor having a base, a collector, and an emitter means;
reference potential means;
means connecting said emitter to said reference potential means;
a source of input signals connected to said base for switching said transistor to a current conducting condition;
transformer means having first, second, and third windings with said second winding connected to said collector;

a source of energizing potential connected to said second winding to form a current path including said transistor, said second winding, and said source of energizing potential;
 controlled rectifier means having an anode, a cathode, and a control electrode;
 a circuit including said controlled rectifier means, first impedance means, and said source of energizing potential;
 means connecting said anode to said base;



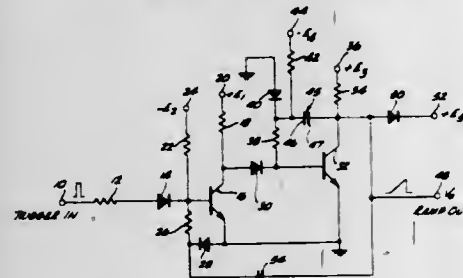
feedback means, including said second winding, second impedance means, and a zener diode, connected to said base such that feedback voltage developed in said second winding aids in switching said transistor to said current conducting condition, said feedback voltage operating said zener diode to provide a control current to said control electrode for switching said controlled rectifier to a current conducting condition, and the conduction of said controlled rectifier causing a signal to be applied to said base thereby switching said transistor to a current blocking condition; and load means connected to said third winding.

3,313,955

RAMP GENERATOR CIRCUITS HAVING RAPID RECOVERY AND PROVIDING LINEAR RAMP

George S. Des Brisay, Jr., Manhattan Beach, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Sept. 21, 1964, Ser. No. 397,940
 15 Claims. (Cl. 307-88.5)



1. A ramp generator comprising: a switching device having a first electrode, a second electrode, and a control electrode; an amplifying device having a first electrode, a second electrode, and a control electrode; said first electrodes being connected together; a first unidirectionally conductive device coupled between said first and said control electrodes of said switching device; a second unidirectionally conductive device coupled between said second electrode of said switching device and said control electrode of said amplifying device; a first impedance device having a first terminal coupled to said control electrode of said amplifying device and having a second terminal; a third unidirectionally conductive device coupled between said first electrode of said amplifying device and

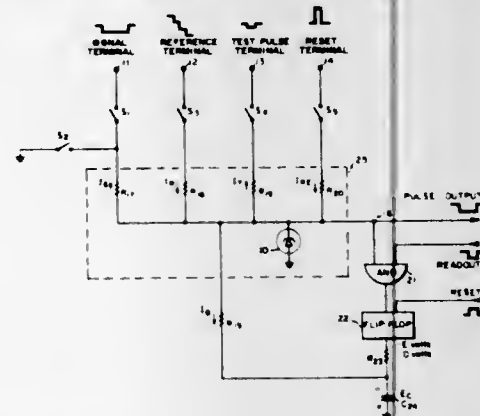
said second terminal; a first capacitance device coupled between said second terminal and said second electrode of said amplifying device; a second capacitance device coupled between said second electrode of said amplifying device and said control electrode of said switching device; a second impedance device having one terminal coupled to said second terminal and having another terminal; bias means coupled to said first and second electrodes of said switching device and said amplifying device and to said another terminal; and means coupled between said second electrode of said amplifying device and said bias means for preventing the magnitude of the potential between said second and first electrodes of said amplifying device from exceeding a preselected value.

3,313,956

AMPLITUDE DISCRIMINATOR WITH AUTOMATIC CHECKING AND COMPENSATING CIRCUITRY FOR BIAS LEVEL

Kurt Hillman, Flushing, N.Y., assignor to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware

Filed Oct. 1, 1964, Ser. No. 400,829
 10 Claims. (Cl. 307-88.5)



1. In combination with an amplitude discriminator wherein the sensitivity of the included amplitude decision-making means is periodically checked, a feedback circuit for maintaining the sensitivity substantially constant which comprises

- amplifying means coupled to the output of said discriminator for inverting and amplifying the output thereof during checking,
- integrating means coupled to the output of the amplifying means, and
- impedance means coupled to the output of said integrating means and to the decision-making element of the amplitude discriminator, the current supplied through said impedance means maintaining the sensitivity of the discriminator substantially constant.

3,313,957

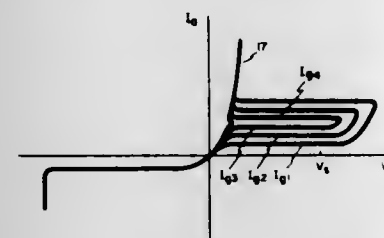
PULSE GENERATOR WITH TRANSFORMER COUPLING OF CONTROLLED RECTIFIER ELECTRODES TO EFFECT FREE-RUNNING OR TRIGGERED OPERATION

Martin Fischman, Wantagh, N.Y., assignor to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware

Filed Feb. 26, 1965, Ser. No. 435,541
 8 Claims. (Cl. 307-88.5)

- A pulse generator comprising
 - a controlled rectifier having first, second and third electrodes,
 - a transformer having first and second windings, one terminal on the first winding of said transformer being coupled to the second electrode of said controlled rectifier and one terminal on the second winding of said transformer being coupled to the third electrode of said rectifier,

(c) first and second capacitors, said first capacitor being coupled between a second terminal on said first transformer winding and the first electrode of said controlled rectifier and said second capacitor being



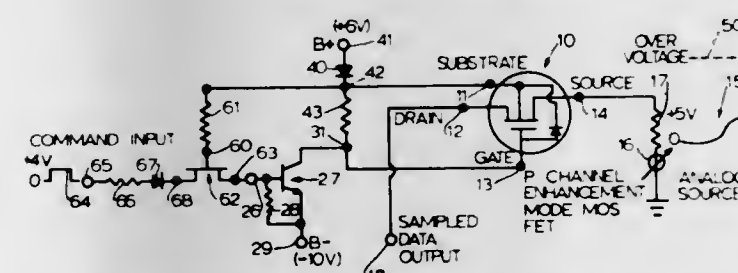
coupled between a second terminal on said second transformer winding and the first electrode of said rectifier, and
 (d) load means coupled between the first and third electrodes of said rectifier.

3,313,958

GATE CIRCUITRY UTILIZING MOS TYPE FIELD EFFECT TRANSISTORS

John O. Bowers, Jr., Maitland, Fla., assignor, by mesne assignments, to General Dynamics Corporation, a corporation of Delaware

Filed Sept. 3, 1965, Ser. No. 484,951
 5 Claims. (Cl. 307-88.5)



1. In combination with a gating circuit which includes an MOS type field effect transistor having source, substrate, drain and gate terminals:

- a B positive bias supply,
- a diode having its anode connected to said bias supply and its cathode connected to said substrate terminal,
- a current limiting resistor connected between said diode cathode and said gate terminal, and
- a command input and drive circuit connected to said gate terminal whereby when said source terminal is subjected to a positive overvoltage and irrespective of the condition of said command input and driver circuit whether on or off, the level of said overvoltage is transferred to said substrate and gate terminals and acts to oppose the establishment of a conducting path between said source and drain terminals.

3,313,959

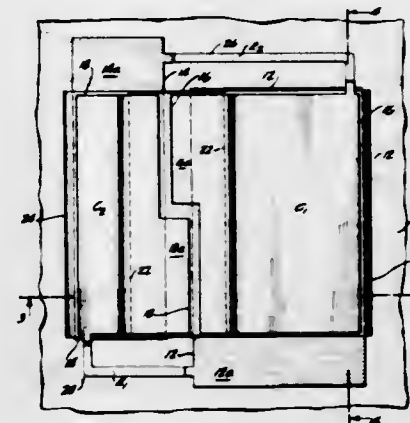
THIN-FILM RESONANCE DEVICE

Johann G. Dill, Costa Mesa, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Continuation of application Ser. No. 329,406, Dec. 10, 1963. This application Aug. 8, 1966, Ser. No. 571,137
 9 Claims. (Cl. 307-88.5)

1. A resonance circuit comprising a body of semi-insulator material, first and second electrodes separated by and making ohmic contact with said semi-insulator body, third and fourth electrodes capacitively coupled with said body for controlling the flow of injected majority charge carriers in said semi-insulator body between said first and second electrodes, a first voltage dividing

network including a resistive device and a reactive device coupled in series between said first and second electrodes with the junction between the said devices coupled to said third electrode, a second voltage dividing network includ-



ing a reactive device and a resistive device coupled in series between said first and second electrodes with the junction between the said devices coupled to said fourth electrode.

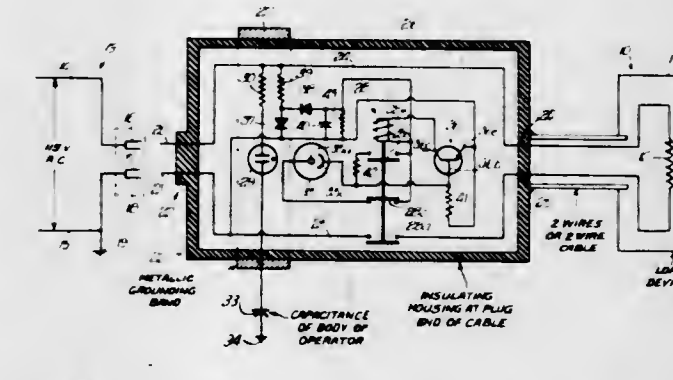
3,313,960

CIRCUIT CONNECTING MEANS OF THE PLUG IN TYPE

Emil Borys, 710 Old Rand Road,

Lake Zurich, Ill. 60047

Filed Mar. 19, 1963, Ser. No. 266,385
 4 Claims. (Cl. 307-127)



1. Means for interconnecting a load device and a two-conductor alternating current energizing source having one conductor grounded comprising:

- a relay having an energizing winding and normally open contacts for completing when closed a circuit between the ungrounded conductor of said two conductors and said load device,
- light emitting means adapted to be connected for energization between said ungrounded conductor and ground,
- a light sensitive device disposed to have its conductivity changed when light from said light emitting means impinges thereon and connected to effect energization of said winding and closure of said contacts only when said circuit is connected to said ungrounded conductor,
- an insulating housing enclosing said relay, light emitting means and light sensitive device,
- a two prong plug on said housing for insertion into a socket to which said two conductor alternating current energizing source is connected with one prong being connected to said circuit completed by said contacts and the other prong being connected

to a conductor extending through said housing for connection to said load device,
 (f) a two conductor cable extending from said housing with the conductors therein for connection to said load device at one end and at the other end for connection to the portion of said circuit completed by closure of said contacts and to said conductor extending through said housing respectively, and
 (g) metallic means on said housing connected to said light emitting means and adapted to be grasped manually whereupon a circuit to ground is completed for said light emitting means.

3,313,961

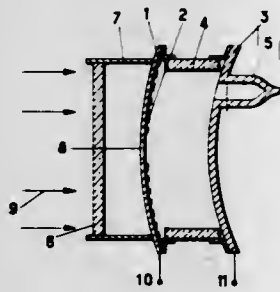
THERMIONIC ENERGY CONVERTER EMPLOYING MULTIPLE REFLECTION IONIZATION

Jacques Bensimon and Pierre Laures, Paris, France, assignors to CSF—Compagnie Generale de Telegraphie Sans Fils, Paris, France

Filed Nov. 7, 1963, Ser. No. 322,100

Claims priority, application France, Nov. 19, 1962, 915,792

8 Claims. (Cl. 310—4)



1. An energy converter having vacuum-tight enclosure means, comprising:
 emitter electrode means supported within said enclosure means for emitting electrons into said enclosure means upon application of heat to said emitter electrode means,
 collector means supported within said enclosure means for collecting the electrons emitted from said emitter means, said collector means being electrically insulated and spaced from said emitter means and defining a space therebetween,
 an ionizable substance in gaseous state at relatively low pressure within said enclosure means and said space,
 means in said converter for admitting into said enclosure means and said space a photon flow of radiant energy,
 and means supported within said enclosure means for reflecting and concentrating the volume density of said radiant energy within said space to enhance ionization of said substance by the electrons emitted from said emitter electrode means.

3,313,962

PIEZO-ELECTRIC TRANSDUCER

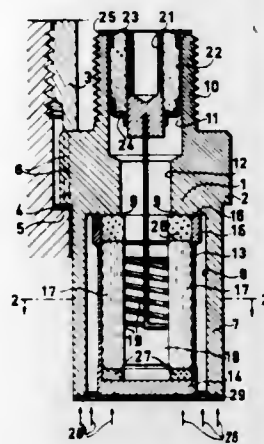
Hans Conrad Sonderegger, Winterthur, Switzerland, assignor to Messrs. Kistler Instrumente A.G., Winterthur, Switzerland

Filed Nov. 17, 1964, Ser. No. 411,765

5 Claims. (Cl. 310—9.7)

1. Piezo-electric transducer comprising several crystal elements assembled in a pressure casing, the crystal elements having surfaces which face each other and define an inner space and run essentially in the directions of the neutral and optical crystal axes of which the neutral axes are directed parallel to the axis of the inner space, characterized in that for taking off the charges from the facing and at least partially metal-plated surfaces (20) of

the crystal elements (17) a common helically wound electrode (19) is provided, which is screwed into the



inner space and after having reached its end position is tightened and secured by rotating it against its direction of winding.

3,313,963

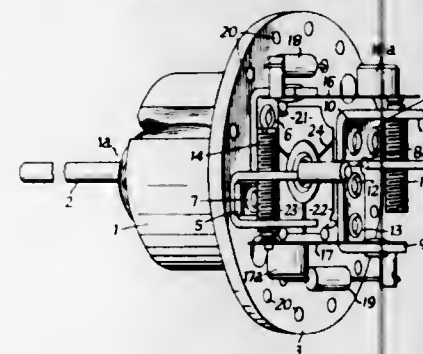
GOVERNOR-CONTROLLED ELECTRIC MOTORS HAVING A COMMUTATOR

John Pelham Wren, Chiseldon, Swindon, England, assignor to Garrard Engineering Limited, Swindon, England, a British company

Filed June 23, 1964, Ser. No. 377,422

Claims priority, application Great Britain, June 27, 1963, 25,675/63

7 Claims. (Cl. 310—48)



1. In a constant speed electric motor, comprising an armature body having journals mounted for rotation, armature windings on said body, a disc secured to said armature body coaxially thereto for joint rotation therewith, the said disc having two major surfaces, a plurality of substantially flat commutator segments secured in mutually electrically insulated relation on one of said major surfaces of said disc, said elements being connected to said armature windings to constitute a commutator for said windings, at least two centrifugal switches of equal inertial mass mounted on said disc at equal radial distances from the journal axis and uniformly spaced therearound, said switches being arranged to open respectively at different speeds of rotation and being so connected each in one of the winding circuits controlled by the commutator segments as to decrease, the effective armature torque in progressive stages as each switch opens.

3,313,964

PORTABLE ELECTRIC TOOL

Charles A. Mattson, Oak Park, and William V. Kalnins, Lombard, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois

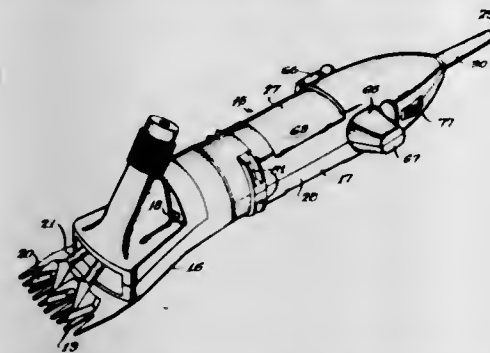
Original application June 8, 1962, Ser. No. 200,984

Divided and this application Dec. 17, 1965, Ser. No. 514,565

7 Claims. (Cl. 310—90)

1. A portable power tool comprising a housing having a base and a cover both made of an electrically insulating material and secured together in abutting relation, a motor

received in said housing and including a stator and a rotary armature supported by an armature shaft, said base having walls with recesses within which front and rear armature shaft bearings are received, means securing one of said bearings rigidly to said base, resilient means biasing the other armature bearing into seated engagement with said base, said resilient means comprising a ring of compressible material surrounding said bearing, means on said cover forming a complementary recess facing the recess in said base for receiving said other bear-



ing, said ring being received in a substantially continuous semicylindrical groove formed in the cover recess and the base recess for said other bearing, said recesses being semicylindrical in shape and aligned on a common axis, said semicylindrical groove in said cover being shallower than the groove in said base to provide a biasing force from said ring urging said other bearing into seated engagement with said base, said stator being rigidly seated against said base, and resilient means carried by said cover and engaging stator to urge it into seated engagement with said base.

3,313,965

SHADED POLE MOTOR

Harold D. Arnold, Bellefontaine Neighbors, Mo., assignor to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri

Filed Nov. 19, 1964, Ser. No. 412,382

5 Claims. (Cl. 310—172)



1. In a shaded pole motor, the improvement comprising an integrally insulated stator having a plurality of poles with shading coils, each of said poles having a center pole area and oppositely circumferentially directed tip sections integral with said center pole area, each of said tip sections having a nose projecting circumferentially to define with a nose of an adjacent pole a gap, and circumferentially inboard and radially outboard of the nose with respect to the center pole area, a lip, flaring with respect to the stator bore, radially outwardly from the center pole section toward the nose, said lip and said center pole area defining between them a J-shaped winding-receiving area; and running winding wound directly on and embracing said center pole area, said lips serving as the sole means for positively holding said winding against radially inward movement.

3,313,966

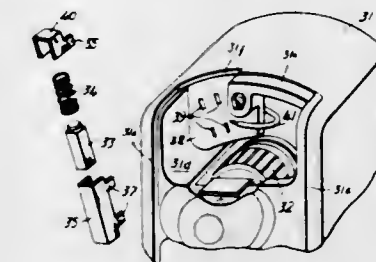
BRUSH MOUNTING ARRANGEMENT

Kingo Kasajima, Nakano-ku, Tokyo, Japan, assignor to Janome Sewing Machine Co., Ltd., Tokyo, Japan

Filed Jan. 6, 1964, Ser. No. 335,847

Claims priority, application Japan, Jan. 10, 1963, 38/702

4 Claims. (Cl. 310—239)



4. Brush mounting arrangement for a rotary electric machine, comprising, in combination, housing means having an end member formed with at least one opening, and support wall means located inwardly of said end member and opposite of said opening, said support wall having a plurality of slots; brush holder means including a holder having a U-shaped cross section and forming a channel-shaped guide way closed by said support wall, said holder having lateral walls having edges abutting the outside of said support wall, and attaching prongs projecting from said edges through said slots and being bent over on the inside of said support wall for detachably attaching said holder to the outside of said support wall opposite said opening, and a cap member on said holder closing said guide way and having a pair of prongs projecting through said slots and being bent over on the inside of said support wall for detachably attaching said cap member; and at least one cover member located outwardly of said end member and closing said opening, said cover member being detachably attached to said housing means so that said support wall means and said brush holder means are accessible through said opening in said end member upon removal of said cover member whereby said brush holder can be detached and removed.

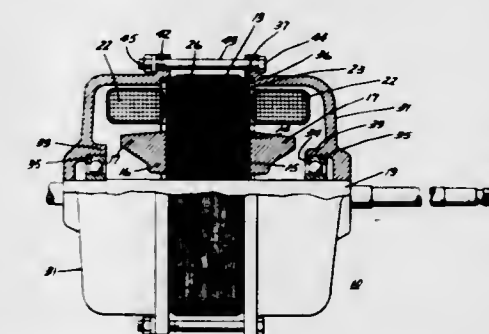
3,313,967

DYNAMOELECTRIC MACHINE

Irvine E. Ross, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York

Filed May 28, 1964, Ser. No. 370,852

6 Claims. (Cl. 310—254)

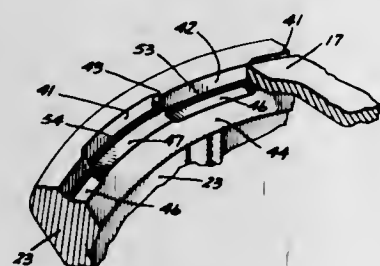


1. In a dynamoelectric machine, a stator comprising a core including a plurality of laminations arranged in juxtaposed relation to form a stack having side faces and a rotor receiving bore, at least one winding accommodated by said core with end turns projecting beyond each side face of said core, a plurality of grooves extending transversely across the outer periphery of said stack at angularly spaced apart locations, stiff elongated strip members accommodated in at least some of said grooves connecting the laminations of the stack together, said strip members having free ends extending axially beyond at least one outer edge of the core radially above said end

turns for a predetermined axial distance, said free ends being radially resilient and including transversely curved outer surfaces with the curvatures thereof defining arcs of substantially the same circle having a center of revolution at the rotational axis of the machine, and an end frame having an annular section disposed adjacent the outer edge of said core in overlapping and complementary relation to form a totally enclosed connection therewith, said resilient strip ends firmly engaging said annular section of the associated end frame thereby providing a preselected position for said end frame relative to said stator core.

3,313,968

DYNAMOELECTRIC MACHINE FRAME
Donald E. Kaiser, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York
Filed Apr. 1, 1964, Ser. No. 356,595
4 Claims. (Cl. 310-258)



1. In a dynamoelectric machine having a stationary frame supporting a shaft; a substantially tubular shell and an end frame member mounting a bearing and being connected to one end of said shell; said member having a radial wall and an axially extending flange formed inwardly of said radial wall, said flange having a number of angularly spaced apart radial interruptions defining axial extensions therebetween, said radial wall including angularly spaced apart axial depressions arranged adjacent a majority of said extensions with said axial depressions forming axially protruding radial surfaces therebetween for engaging the associated edge of said shell; said axial extensions being of greater structural stiffness than the associated end of said shell, each said axial extension having a transversely curved, radial, outer surface and being connected to an adjacent axial extension by an axially extending ridge, said curved radial outer surfaces being in engaging relation to the inner surface of the shell end thereby tending to force said shell into a circular form with said axial depressions compensating for axial irregularities of said shell end; said radial surfaces, axially extending ridges, and curved outer surfaces of said axial extensions together forming a totally enclosed connection with the associated end of said shell.

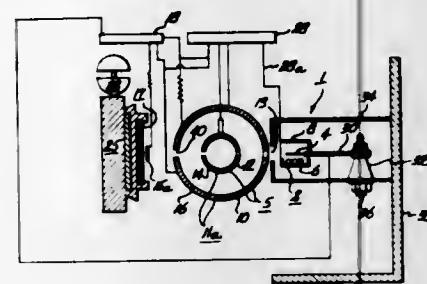
3,313,969

CHARGED PARTICLE DEFLECTING APPARATUS HAVING HEMISPHERICAL ELECTRODES
Allan Roy Wolter, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Mar. 25, 1966, Ser. No. 537,469
2 Claims. (Cl. 313-63)

1. Apparatus for focusing and deflecting a beam of charged particles having a predetermined average velocity comprising:

(a) four electrodes defining and forming a sectioned hemisphere, each of said four electrodes forming a quadrant of said sectioned hemisphere and each of said four electrodes being joined one to the other by insulating means so that said four electrodes additionally define a central aperture in said sectioned hemisphere, said sectioned hemisphere being positioned concentric about the path of the beam of

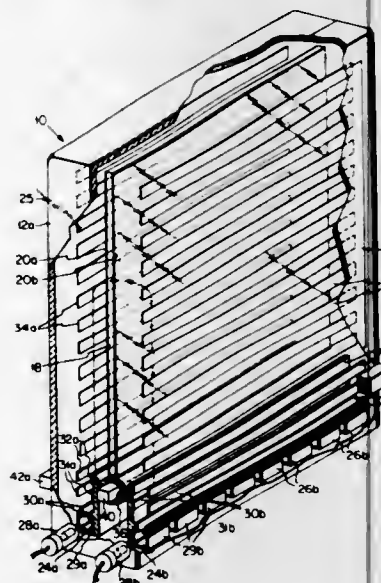
charged particles such that the beam of charged particles passes into the volume enclosed by said sectioned hemisphere and then passes through said four electrodes defined central aperture of said sectioned hemisphere; and



(b) potential difference means connected to each of said four electrodes such that opposite quadrants of said sectioned hemisphere are of opposite potential polarity so as to create an electrostatic field within the volume enclosed by said sectioned hemisphere for focusing the beam of charged particles and said potential difference means creating an electrostatic field across said four electrodes defined central aperture such that the focused beam of charged particles, in passing through said four electrodes defined central aperture, will be deflected to conform to a selected pattern without effect upon beam energy.

3,313,970

FLAT CATHODE RAY TUBE TRAVERSED BY TUNNEL CONTAINING MAGNETIC DEFLECTOR
William R. Aiken, 10410 Magdalena Ave., Los Altos Hills, Calif. 94022
Filed June 29, 1964, Ser. No. 378,540
6 Claims. (Cl. 313-79)

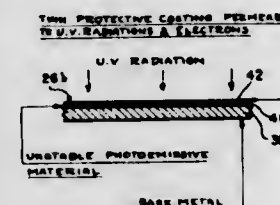


1. A cathode ray tube comprising an envelope having relatively spaced side walls and a picture area, end walls extending between the end edges of said side walls and defining an evacuated space with said side walls, and a tunnel in communication with the outside atmosphere extending between opposite end walls at a level below said picture area; electrostatic means within said evacuated space below said picture area for deflecting an electron beam upwardly into a plane parallel and adjacent to the inner surface of a side wall, and means passing through said tunnel and externally adjacent to the outer surface of a side wall for establishing a magnetic field passing through said evacuated space.

3,313,971

PHOTOSENSITIVE ELEMENT STABLE IN AIR
Rudolph Nagy, Upper Montclair, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Original application Feb. 29, 1960, Ser. No. 11,709.
Divided and this application May 14, 1962, Ser. No. 201,230

7 Claims. (Cl. 313-101)



6. A photocathode comprising, a metal substrate, an electronegative material covering said metal substrate, and a layer photoemissive material on said electronegative material that is more electropositive than said metal substrate and is chemically stable in air, said layer of photoemissive material having a work function such that it is responsive to ultraviolet radiation and is thereby adapted to emit electrons when exposed to the atmosphere and such radiation.

3,313,972

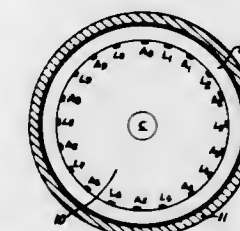
SPARK PLUG WITH COMBINED HIGH TENSION GAP AND CREEPAGE SPARK GAP
Otto Beesch, Stuttgart-Sonnenberg, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed Sept. 16, 1965, Ser. No. 487,881
Claims priority, application Germany, Oct. 7, 1964, B 78,825
9 Claims. (Cl. 313-130)



1. A spark plug with combined high tension and creepage spark gap comprising, in combination, a first electrode adapted to be connected at one end to a source of high tension; a ground electrode spaced from said first electrode and having one end in the region of the other end of said first electrode; insulator means between said electrodes and having an end face in the region of said one end of said ground electrode and in the path of sparks passing from said first to said ground electrode, said end face being separated at least from one said electrode by an air gap forming with said end face a combined spark gap, whereby sparks between said electrodes will during part of the path slide along said end face; and means electrically connected to one of said electrodes and constructed and arranged to form an additional high tension spark gap with the other electrode of a length which is shorter than the total length of said combined spark gap, said additional high tension spark gap being arranged in parallel to said combined spark gap.

3,313,973

MULTI-ELECTRODE COLD-CATHODE DISCHARGE TUBE COMPRISING RING MAGNET WITH ATTACHED ELECTRODES
Donald Reaney, Long Eaton, England, assignor to Ericsson Telephones Limited, London, England, a British company
Filed May 20, 1963, Ser. No. 282,534
Claims priority, application Great Britain, June 1, 1962, 21,131/62
1 Claim. (Cl. 313-161)



A multi-electrode cold-cathode gas-filled discharge tube which includes a first electrode and a plurality of second electrodes disposed equidistant therefrom so that a discharge may invest the first electrode and any one of the second electrodes, at least one permanent magnet located inside the envelope of the tube and arranged to apply a uniform magnetic deflection field at right angles to a discharge so that the discharge is thereby deflected from one to another of said second electrodes, and an intermediate electrode between each pair of second electrodes capable of being maintained at a locking potential whereby deflection of a discharge is prevented, each of said second and said intermediate electrodes being carried by said magnet.

3,313,974

HIGH PRESSURE ELECTRIC DISCHARGE DEVICE HAVING ELECTRODES WITH THORIUM ON THE EXPOSED SURFACE THEREOF
Frederic Koury, Lexington, and John F. Waymouth, Marblehead, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed May 2, 1963, Ser. No. 277,634
5 Claims. (Cl. 313-218)



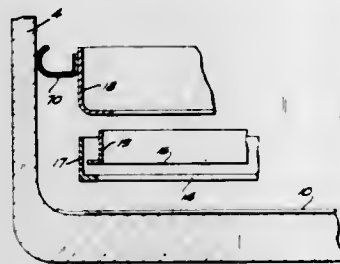
1. A high pressure electric discharge device comprising an arc tube; a filling in said arc tube comprising mercury atoms and iodine atoms; a pair of electrodes disposed at either end of said arc tube, said electrodes having a coating of thorium metal disposed upon the exposed surface thereof in order to supply thorium atoms to the arc discharge.

3,313,975

ELECTRON IMPERVIOUS FLEXIBLE SHIELD MEMBER FOR ELECTRON DISCHARGE TUBES
Frederick G. Oess, Oceanside, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed July 6, 1964, Ser. No. 380,453
6 Claims. (Cl. 313-241)

4. In combination, a direct-viewing storage tube of the type having an envelope with a target member therein adapted to be disposed in the path of a flood beam of

electrons, a trough-shaped electron impervious flexible shield member disposed between said envelope and said target member and comprising a strip of flexible metal



folded along its length on a fold line and having parallel slits therein transverse to said fold line at an angle of less than 90° with respect thereto.

3,313,976

JOINED ARC CARBONS

Wilbur R. Lauzan and Marvin R. Riek, Fostoria, Ohio, assigns to Union Carbide Corporation, a corporation of New York

Filed Oct. 18, 1963, Ser. No. 317,339
9 Claims. (Cl. 313-354)



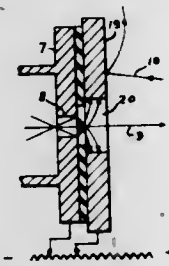
1. An arc carbon electrode having a shell and a core, said cores having a flame material incorporated therein, adapted to be joined with another arc carbon electrode to form an assembly of electrodes suitable for use in an arc lamp, said electrode having a plug on one end, a socket in the other end, and an arc-supporting material disposed in said socket in an amount which provides a substantially steady arc during burning of a joint in said assembly of electrodes.

3,313,977

IMAGE ORTHICON WITH IMPROVED BEAM MODULATION FACTOR

Radams K. H. Gebel, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force

Filed July 3, 1962, Ser. No. 207,441
3 Claims. (Cl. 315-1)



1. In an image orthicon comprising an elongated electron gun having an accelerating electrode with an aperture concentric with the longitudinal axis of said gun for the emission of an axial beam of low velocity electrons and an electron multiplier having a plurality of cascaded circular dynodes and the second and succeeding dynodes of which surround said electron gun and are coaxial therewith and in which the first dynode is in the form of a flat circular secondary emissive surface normal to and concentric with the axis of said gun and surrounding said aperture, means providing a conductive cylindrical surface of larger diameter than said aperture but of much smaller diameter than said first dynode, said cylindrical surface being placed close to said aperture so that electrons emerging from said aperture im-

mediately enter the cylindrical space defined by said surface, the inner diameter of said cylindrical electrode being large enough that the surface be struck by electrons originating in said gun and means for maintaining said conductive cylindrical surface at a positive potential relative to said accelerating electrode.

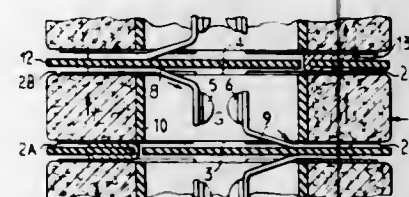
3,313,978

SURGE DIVERTER UNITS COMPRISING SPARK GAPS SHUNTED BY RESISTIVE BLOCKS

Alan David Miller, Wigan, England, assignor to Associated Electrical Industries Limited, London, England, a British company

Filed Aug. 31, 1964, Ser. No. 393,044
Claims priority, application Great Britain, Sept. 3, 1963, 34,830/63

5 Claims. (Cl. 315-36)



1. A surge diverter unit comprising a unitary annular block of resistance material, a spark gap assembly accommodated in the bore of said block, series resistive elements for the unit constituted by two circumferentially spaced portions of the block, connections connecting the spark gap assembly in series with said series resistive element portions, and shunt resistive elements for the spark gap assembly constituted by the portions of the block of higher resistance between the first-mentioned portions.

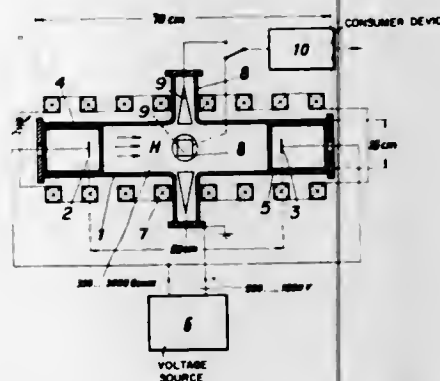
3,313,979

DEVICE FOR PRODUCING ELECTRO-MAGNETIC OSCILLATIONS OF VERY HIGH FREQUENCY

Gerd J. Landauer, Unterhaching, Germany, assignor to Max-Planck-Gesellschaft zur Förderung der Wissenschaften e.V., Göttingen, Germany

Filed June 29, 1962, Ser. No. 206,466
Claims priority, application Germany, June 29, 1961, M 49,505; Sept. 15, 1961, M 50,310; Nov. 21, 1961, M 50,946

10 Claims. (Cl. 315-39)



1. An arrangement for producing electro-magnetic waves having a wavelength in the millimeter range and below, comprising, in combination:
a hollow body;
a gas capable of being ionized disposed in said body under reduced pressure;
means for producing a magnetic field in a certain region within said body;
means for producing in said region, a low temperature plasma including free electrons, the plasma having an index of refraction at least within certain portions of said region which is so high that the wavelength of the electron-cyclotron radiation, which

wavelength is inversely proportional to said index of refraction, is at least of the order of magnitude of the circumference of the arcuate paths along which at least some of the electrons move under the action of the magnetic field; and
means for coupling out high frequency energy at a frequency which is a harmonic of the electron-cyclotron frequency.

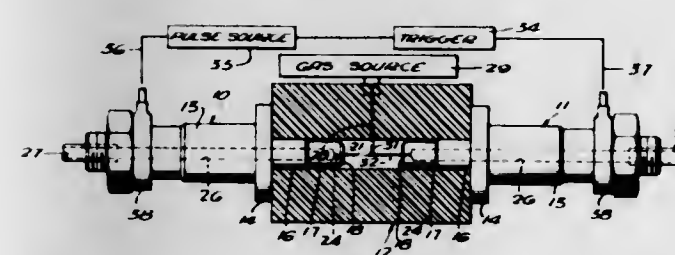
3,313,980

HIGH PRESSURE LAMP HAVING A COIL FOR MAGNETICALLY STABILIZING THE DISCHARGE ARC

Adriano C. Ducati, Santa Ana, Calif., assignor to Giannini Scientific Corporation, Amityville, N.Y., a corporation of Delaware

Application May 23, 1962, Ser. No. 197,097, which is a continuation of abandoned application Ser. No. 763,926, Sept. 29, 1958. Divided and this application
Nov. 12, 1964, Ser. No. 410,510

1 Claim. (Cl. 315-111)



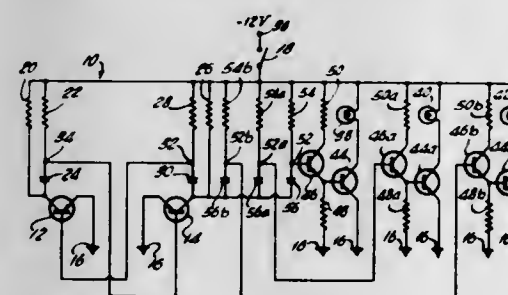
A magnetically stabilized high pressure discharge lamp comprising an envelope containing an ionizable filling and having a pair of electrodes supported on inleads sealed therein, at least one of said electrodes having an emitting portion located on the lamp axis and surrounded by a coil providing circuit continuity from the inlead to the emitting portion, the turn of said coil generally surrounding said emitting portion but being spaced therefrom whereby current flowing to said emitting portion circulates through said coil and produces an axial magnetic field in said lamp, and means to effect series flow through said coil, through said emitting portion and between said electrodes of a current which is sufficiently large that said axial magnetic field produces an effective magnetic stabilization action on the electrical discharge which is generated in said envelope between said electrodes as the result of said current flow.

3,313,981

SEQUENTIAL FLASHER

Harry Kratochvil, Fords, N.J., assignor, by mesne assignments, to Tung-Sol Industries, Inc., Newark, N.J., a corporation of Delaware

Filed May 27, 1964, Ser. No. 370,551
6 Claims. (Cl. 315-210)



6. An electronic circuit which will sequentially energize a plurality of lamp loads and which comprises:
(a) a three terminal semiconductor switching means which can be switched into either of two operating states by the proper biasing of one of the terminals with respect to one of the other terminals;

(b) means for supplying the proper biasing to switch the three terminal semiconductor switching means in repetitive cycles between the two operating states; and
(c) a lag circuit means coupled to each lamp load for energizing each lamp load once in sequential order starting with the switching of the semiconductor switching means into one of its operating states whereby said lamp loads are energized at different times and deenergized at the same time.

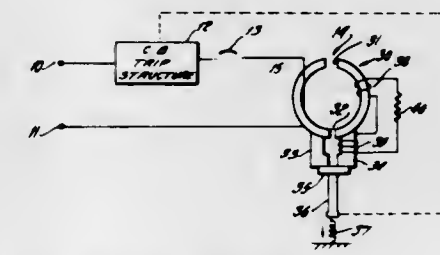
3,313,982

MAGNETIC CURRENT ZERO SENSING CIRCUIT

Lutz Seguin, Hamburg, Germany, assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Mar. 22, 1965, Ser. No. 441,616
Claims priority, application Germany, Mar. 23, 1964, S 90,153

11 Claims. (Cl. 317-11)



1. A signal generating system for generating a signal prior to the passage of zero current in a conductor; said signal current system comprising magnetic core means encircling said conductor, a relatively small air gap extending across said magnetic core means, a relatively large air gap extending across said magnetic core means, a magnetic circuit connected in parallel with said relatively small air gap, auxiliary winding means wound on said magnetic circuit and toroidal winding means wound on said magnetic core means, a resistor, and signal output means connected to said magnetic circuit for generating an output signal responsive to a change in flux in said magnetic circuit; said auxiliary winding means, said toroidal winding and said resistor connected in series; the magnetomotive forces across said relatively small air gap due to the flux in said magnetic core being in phase with the current through said conductor; the magnetomotive force induced in said magnetic circuit by said auxiliary winding means being in quadrature with the current through said conductor whereby the net magnetomotive force around said magnetic circuit passes through zero prior to the passage of current in said conductor through zero whereby the flux of said magnetic circuit reverses prior to passage of zero current through said conductor.

3,313,983

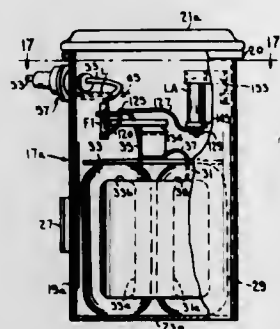
TRANSFORMERS

Montville B. Mallett, Clayton, and William C. Reinhardt, Bellefontaine Neighbors, Mo., assignors to Central Transformer Corporation, Pine Bluff, Ark., a corporation of Arkansas

Filed Aug. 27, 1965, Ser. No. 483,062
6 Claims. (Cl. 317-15)

1. A distribution transformer for interconnection to a primary line conductor comprising a tank containing a dielectric fluid, a core and coil unit located within said tank below the level of said fluid, said unit including a primary winding and a secondary winding, means for securing said unit within said tank, an electrical junction within said tank connected to the primary winding, said tank having at least one primary fitting providing an electrically insulated path through the tank for an insulated primary cable conductor electrically connecting said junction

tion interior said tank to said primary line conductor exterior said tank by a completely insulated conductive path with no exposed live parts, said fitting forming and maintaining a leak- and corona-free electrical connection between the junction and the primary line conductor, a valve type lightning arrester, a hermetically sealed housing enclosing said arrester and having two lightning arrester

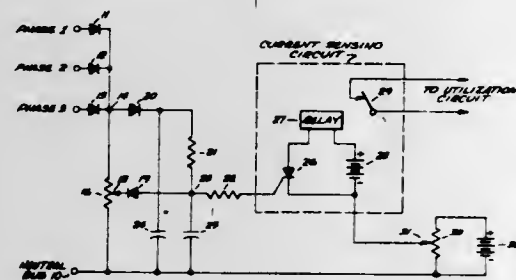


terminals, the housing and lightning arrester assembly being mounted within said tank, one of said terminals being connected to said tank for grounding, a fuse inter-connected between the other of said arrester terminals and the junction, and a cover for said tank sealing said tank and the lightning arrester and housing assembly from the ambient atmosphere.

3,313,984

INSTANTANEOUS MULTIPHASE UNDERVOLTAGE SENSING CIRCUIT

Arthur C. Hupp, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Filed Oct. 11, 1963, Ser. No. 315,441
3 Claims. (Cl. 317-33)

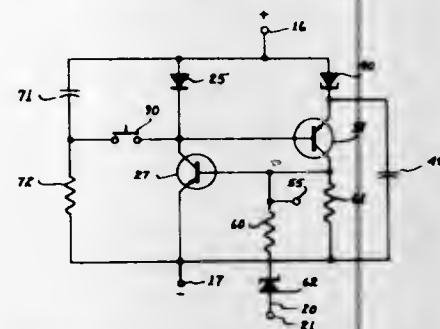


1. An undervoltage detector for a multiphase voltage source comprising a plurality of rectifiers equal in number to the number of phases of said voltage source, means for coupling each rectifier to the corresponding one of the phase outputs of said source, means coupling each of said rectifiers together in a common output connection for deriving the unfiltered composite instantaneous voltage from the rectified voltages of said voltage source, a source of reference voltage, voltage dividing means coupled to said common output connection to derive a voltage proportional to said unfiltered composite instantaneous voltage and having a normal minimum value that is substantially equal to said reference voltage, a sensing rectifier coupling said voltage dividing means to said source of reference voltage and oriented to block current flow therethrough so long as the instantaneous voltage from said voltage dividing means exceeds said reference voltage and to permit current flow therethrough whenever the instantaneous voltage from said voltage dividing means falls below said reference voltage, and current sensing means coupled to said sensing rectifier to provide an indication whenever current flows through said sensing rectifier.

3,313,985

SOLID STATE D.C. CIRCUIT BREAKER

Richard L. White, Glendora, Calif., assignor to
Dickson Electronics Corporation
Filed Apr. 3, 1964, Ser. No. 357,253
6 Claims. (Cl. 317-33)

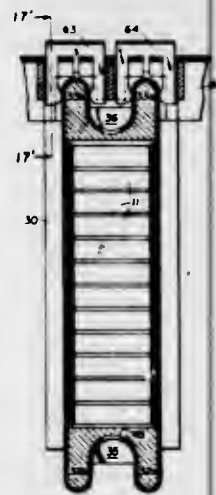


1. In a solid state D.C. circuit breaker the combination comprising:
 - (a) a first and a second transistor each having a collector electrode, an emitter electrode, and a base electrode, said transistors being of complementary types;
 - (b) means connecting the collector electrode of each transistor to the base electrode of the other transistor;
 - (c) a capacitor connected between the emitter electrodes of said transistors;
 - (d) a first and a second terminal;
 - (e) a device exhibiting a negative resistance along only a portion of its volt-ampere characteristic connected in series between said first terminal and the emitter electrode of said first transistor;
 - (f) a voltage dropping device connected in series between said first terminal and the base electrode of said first transistor, and
 - (g) means connecting the emitter electrode of said second transistor to said second terminal.

3,313,986

INTERCONNECTING MINIATURE CIRCUIT MODULES

Jack S. Kilby, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Continuation of application Ser. No. 70,478, Nov. 21, 1960. This application Dec. 23, 1965, Ser. No. 515,852
18 Claims. (Cl. 317-101)

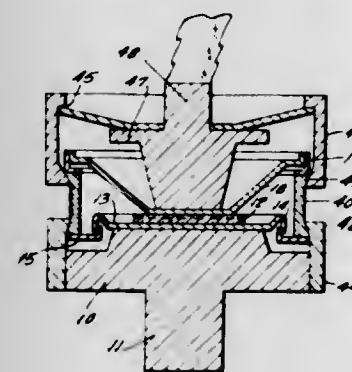


1. An assembly comprising a stack of circuit module elements, a stack of electrically conducting sheets mounted against one side of said stack of circuit module elements, and means insulating each of said conducting sheets from each other, said stack of conducting sheets having a plurality of aligned holes defined therein passing through each of said sheets, each of said circuit module elements having a plurality of leads extending into different ones of said holes to the depths of selected ones of said sheets, where said leads are bent over at said depths and are each

connected to said selected ones of said conducting sheets, and sheets of heat conducting material mounted between the circuit modules in said stack.

3,313,987 COMPRESSION BONDED SEMICONDUCTOR DEVICE

John L. Boyer, El Segundo, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California
Filed Apr. 22, 1964, Ser. No. 361,827
2 Claims. (Cl. 317-234)

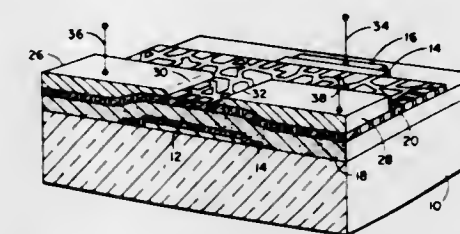


1. In combination, a subassembly including a semiconductor wafer, a lower conductive mounting stud, an upper conductive mounting stud, an upper and lower conductive header and an insulation ring connected between the outer peripheries of said upper and lower conductive headers and sealing the volume interior of said headers; said upper and lower conductive headers having central flat sections; said semiconductor wafer being positioned between said central flat sections of said upper and lower headers; said wafer being laterally movable with respect to said central flat sections of said upper and lower headers; said central flat section of said lower header being mechanically and electrically connected to said lower conductive mounting stud; said central flat section of said upper header being mechanically and electrically connected to said upper conductive mounting stud; said upper conductive stud having a shoulder therein; a spring washer having a central opening therein; said spring washer having a uniform thickness; first and second axially spaced conductive tubular end rings; said insulation ring interposed between and mechanically connected to the opposing ends of said first and second tubular end rings; the upper end of said first tubular end ring directly mechanically connected to the outer periphery of said spring washer; the lower end of said second tubular end ring directly connected to said lower conductive stud; the inner diameter of said central opening of said spring washer being mechanically connected to said shoulder of said upper conductive stud thereby to apply a compressive force to said upper and lower headers and said wafer interposed therebetween.

3,313,988 FIELD EFFECT SEMICONDUCTOR DEVICE AND METHOD OF FORMING SAME

Carl E. Drumbeller, Pittsford, N.Y., assignor to General Dynamics Corporation, a corporation of Delaware
Filed Aug. 31, 1964, Ser. No. 393,248
9 Claims. (Cl. 317-234)

1. A thin film transistor comprising a thin film of semiconductor material, a thin film of polycrystalline material overlying at least a portion of a surface of said semiconductor film, said polycrystalline material film having grain boundaries substantially perpendicular to said semiconductor film surface, the grain boundaries of adja-

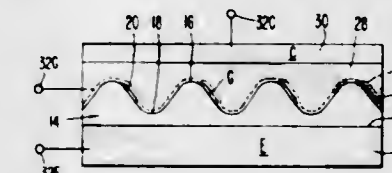


being spaced from each other to define a channel region therebetween, said polycrystalline film contacting said semiconductor film in said channel region and gate electrode means disposed adjacent said channel region.

3,313,989

THIN FILM AMPLIFYING APPARATUS AND METHOD

Robert A. Tracy, Castro Valley, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 16, 1964, Ser. No. 404,367
7 Claims. (Cl. 317-234)



5. Quantum mechanical tunneling apparatus comprising:
 - (a) a monocrystalline metallic structure having a 1-1-0 face,
 - (b) said 1-1-0 face being oxidized in such manner as to cause the crystalline lattice of said structure to be displaced relative to the crystalline lattice of the oxide material and produce an undulating but repeating surface pattern,
 - (c) a metallic coating disposed on similar portions of said surface pattern undulations thereby forming parallel spaced apart metallic rows of conductive material,
 - (d) said rows being electrically interconnected with conductive material,
 - (e) insulating material disposed in a layer over said rows and said conductive interconnecting material, and,
 - (f) electrically conductive material in a layer overlying said insulating material.

3,313,990

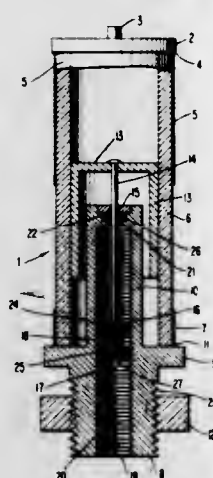
ADJUSTABLE REACTANCE COMPONENTS

Nelson Berman, Far Rockaway, N.Y., assignor, by mesne assignments, to Stratford Retreat House, White Plains, N.Y., a religious organization of New York
Filed Feb. 1, 1966, Ser. No. 532,826
1 Claim. (Cl. 317-249)

An adjustable reactive component having:

- (a) a hollow longitudinal dielectric cylinder bearing a reactive element,
- (b) a reactance varying member arranged for slidable movement within said dielectric cylinder with close tolerances therebetween and arranged to telescope over,
- (c) a cylindrical tube having a screw threaded bore, an integral flange on which is attached the dielectric cylinder, and an externally threaded stud,

(d) disposed in the threaded bore of said cylindrical tube, propulsion means comprised of two threaded discs resiliently biased into engagement with threads of the bore of the tube by a spring between the discs which exerts axial tension and prevents relative rotation between the discs,

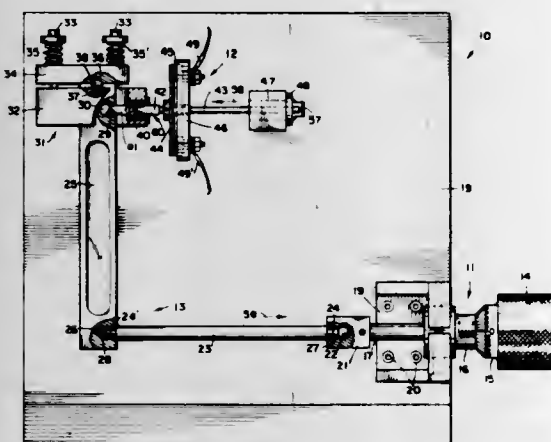


(e) a flexible member connecting the propulsion means to the reactance varying member.

3,313,991

VARIABLE CAPACITOR

Robert H. Kelsey, West Acton, and Hans R. Camenzind, Lexington, Mass., assignors to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Filed Dec. 6, 1965, Ser. No. 511,705
10 Claims. (Cl. 317-255)



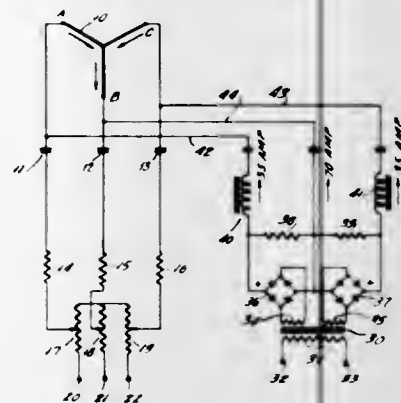
1. A read-out means for use in one leg of a bridge circuit of a tensile testing apparatus, said bridge circuit including an element elongation sensing capacitor in another leg thereof, said read-out means comprising: a read-out capacitor including a movable plate and a fixed plate; means connected to said movable plate biasing said movable plate of said capacitor away from said fixed plate; a plurality of displaceable means for reducing motion coupled in sequence, one of said plurality of means abutting said movable plate and biasing said movable plate toward said fixed plate of said capacitor; and an indicia carrying means including a micrometer having a spindle connected to another one of said displaceable means for adjusting the position of said movable plate with respect to said fixed plate of said capacitor through said plurality of displaceable means, said micrometer having means for displaying the elongation of an element.

3,313,992

BRAKING CIRCUIT

Donald I. Bohn, Asheville, N.C., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Oct. 30, 1963, Ser. No. 320,163
3 Claims. (Cl. 318-212)



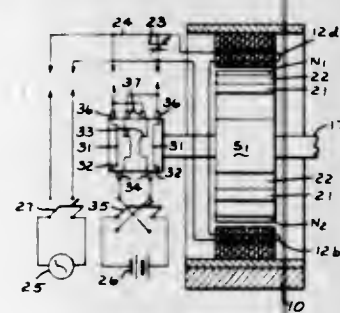
1. A braking circuit for a three-phase A-C. induction motor having a three-phase stator winding, each of said phases of said stator winding having a respective terminal; said braking circuit including a first and second D-C. current injection circuit; the terminals of said first D-C. current injection circuit respectively connected to a first and a second of said stator winding terminals; the terminals of said second D-C. current injection circuit respectively connected to said second terminal and a third of said stator winding terminals each of said D-C. current injection circuits including a respective D-C. voltage source, and a respective saturable reactor connected in series with said D-C. voltage source and the said terminals of said respective D-C. current injection circuit; each of said respective D-C. voltage sources including a rectifier means, and a common single phase voltage source connected to each of said rectifier means; said first and second D-C. current injection circuits conducting unidirectional current pulses 60° phase displaced from one another.

3,313,993

MOTOR-GENERATOR USING A RESONANCE CIRCUIT

Hermann Rupp, P.O. Box 257, Collinsville, Ill. 62234

Filed Dec. 20, 1963, Ser. No. 332,105
6 Claims. (Cl. 318-254)



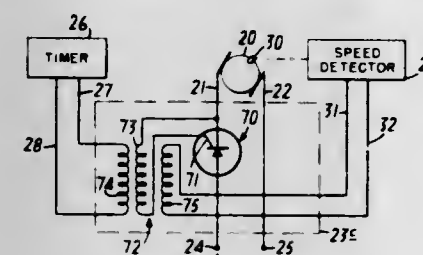
2. An electric machine comprising:
(a) a stator having a substantially circular series of spaced poles formed of magnetic material,
(b) a winding for each of the stator poles, the windings being connected in series,
(c) a condenser connected in parallel with the series-connected stator windings to provide a resonance circuit,
(d) a rotor mounted for rotation within the stator and having a substantially circular series of poles formed of permanent magnets,
(e) a source of direct current, and
(f) means supplying pulses of direct current from the source to the resonance circuit,

(g) the resonance circuit having a predetermined alternating current frequency, and
(h) the said means supplying the direct current pulse from the source to the resonance circuit at each half cycle of and in synchronization with the resonance circuit current frequency and during the first 90 electrical degrees of each half cycle with relatively reversed polarity at each half cycle.

3,313,994

TIMER-ACTUATED MOTOR SPEED CONTROL SYSTEM

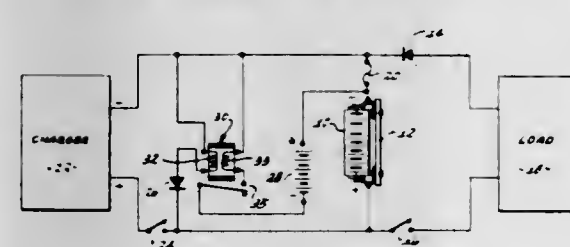
Arthur W. Haydon, Milford, Conn., assignor to Tri-tech, Inc., a corporation of Connecticut
Filed Apr. 13, 1964, Ser. No. 359,296
2 Claims. (Cl. 318-311)



1. A motor speed control system comprising detector means adapted to detect the passage of a reference element associated with the rotor of an electric motor and thereby provide signals indicative of the rate of rotation of the rotor, power supply means, semiconductor switch means for connecting the power supply means to the motor to supply driving power thereto, timer means for actuating the semiconductor switch means at selected regular time intervals which are independent of the operation of the motor so as to initiate the application of driving power to the motor, and means responsive to signals from the detector means for opening the semiconductor switch means to discontinue application of driving power to the motor.

3,313,995

REVERSE POLARITY PROTECTION CIRCUIT
Walter H. Bach, Los Angeles, and Gerhard H. Koester, Pacific Palisades, Calif., assignors to Bach Aircon, Inc., Los Angeles, Calif., a corporation of California
Filed Jan. 16, 1964, Ser. No. 338,168
5 Claims. (Cl. 320-25)



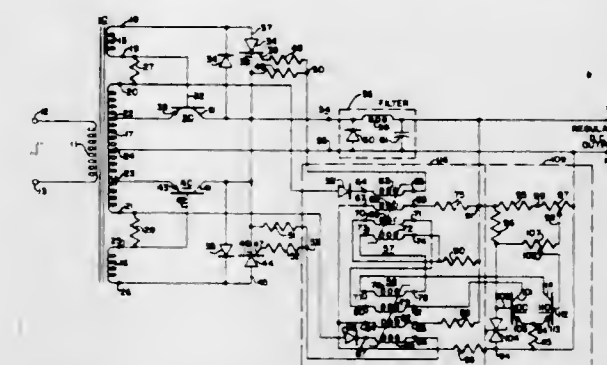
1. An electrical system, comprising:
receptacle means for removably connecting a battery into an electrical system;
a fuse electrically connected in series with said receptacle means;
a unidirectional electrical path in parallel with said fuse and said receptacle means;
a booster battery;
normally disabled means for electrically connecting said booster battery across said fuse;
and means responsive to flow of electrical current through said unidirectional electrical path to enable said normally disabled means, whereby electrical current from said booster battery causes said fuse to burn out.

3,313,996

RECTIFIER CONTROL APPARATUS

John T. Lingle, Bloomington, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Minnesota

Filed May 4, 1964, Ser. No. 364,445
4 Claims. (Cl. 321-16)



3. A rectification circuit for converting an alternating voltage to a direct voltage, said circuit comprising:
a pair of input terminals for connection to an alternating voltage source;
a first and a second output terminal;
a first and a second transistor, each having an emitter electrode, a collector electrode, and a base electrode;
a voltage transformer having a primary winding connected between said input terminals, a first secondary winding connected between said base and said collector electrodes of said first transistor, a second secondary winding connected between said base and said collector of said second transistor, and a third secondary winding connected between the emitter electrodes of said first and said second transistors, said third secondary winding being oriented such that at each transistor the polarity of the collector electrode with respect to the base electrode is the same as the polarity of the emitter electrode with respect to said intermediate tap;
means connecting said second output terminal to the collector terminals of said first and said second transistors;
a first switching means connected between the base and the collector electrodes of said first transistor;
a second switching means connected between the base and the collector electrodes of said second transistor;
and
control means connected to said first and said second switching means to operate said switching means and thereby pulse width modulate the signals appearing between said first and said second output terminals.

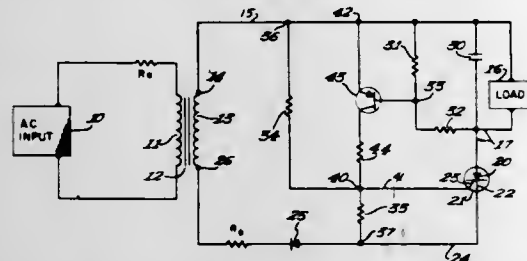
3,313,997

TRIGGERING CIRCUIT FOR CONTROLLED RECTIFIER SYSTEM

Balthasar H. Pinckaers, Edina, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Apr. 24, 1964, Ser. No. 362,275
6 Claims. (Cl. 321-18)

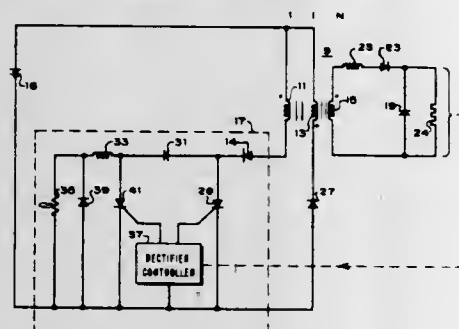
3. Semiconductor controlled rectifier triggering apparatus for converting a slowly changing alternating current signal voltage into a step type direct current output voltage comprising:
variable magnitude alternating current signal source means having first and second output terminals;
semiconductor controlled rectifier means having a plurality of electrodes including an anode, a cathode and a control electrode;
conductive current path means serially connected and including rectifier means, the anode-cathode circuit

of said controlled rectifier means and load means energized from said first and second output terminals;
voltage divider network means including a variable impedance portion, the terminals of said voltage divider network being connected to said output terminals, said voltage divider means also having an intermediate terminal connected to said control electrode to provide a first predetermined portion of said signal voltage to said control electrode;



and further circuit means responsive to the energization of said load means connected in controlling relation to said variable impedance portion to modify said voltage divider network and increase to a second value said voltage portion existing at said intermediate terminal such that the voltage to said control electrode is increased after said control rectifier means has been rendered conductive thereby providing a turn on-turn off differential for said controlled rectifier triggering apparatus.

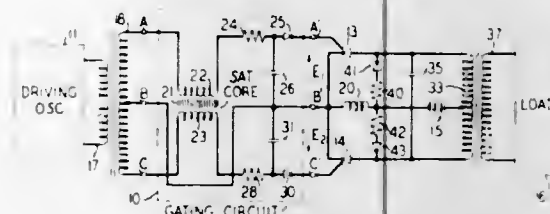
3,313,998
SWITCHING-REGULATOR POWER SUPPLY HAVING ENERGY RETURN CIRCUIT
Bradley D. Bunker, Millington, N.J., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Feb. 17, 1964, Ser. No. 345,428
1 Claim. (Cl. 321-44)



An electrical circuit comprising:
a transformer having primary and secondary windings;
a source of unidirectional signal;
a switch having high conductivity in response to a control signal applied thereto;
means including said switch connecting said primary winding to said source;
a pair of load terminals isolated from said primary winding;
an inductor and a rectifier;
means connecting said secondary winding of the transformer, said inductor and said rectifier in series circuit between said load terminals;
means connected to said switch for applying control signal thereto to alter the conductivity time of said switch in response to the signal appearing at said load terminals;
another winding on said transformer; and
a diode connecting said other winding to said source; the polarity of said other winding being opposite to the polarity of said primary winding and said diode being poled to oppose conduction of current from said source to said other winding.

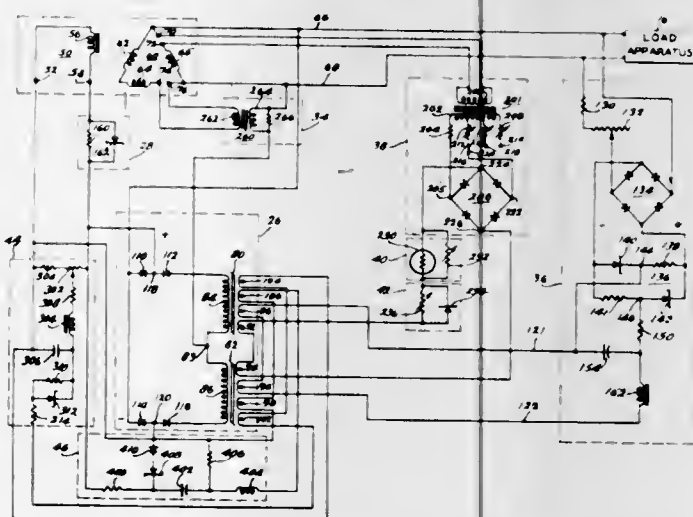
3,313,999
FIRING SIGNAL GATING CIRCUIT FOR POWER INVERTERS

William E. Jewett, Basking Ridge, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 30, 1963, Ser. No. 334,654
5 Claims. (Cl. 321-45)



5. In combination, a transformer having primary and secondary windings, said primary winding having first and second end connections and a center-tap connection, a two-terminal source of a direct-current potential, means for connecting one terminal of said source to said center-tap connection, means including a first thyatron-like switching device for connecting the other terminal of said source to said first end connection, means including a second thyatron-like switching device for connecting said other terminal of said source to said second end connection, a commutating capacitor connected between said first and second end connections, a source of a periodic waveform having first and second output terminals, first and second windings wound on a common saturable core, first circuit means for applying signals appearing on said first output terminal through said first winding to initiate conduction through said first thyatron-like switching device whenever said core is saturated in a first direction, and second circuit means for applying signals appearing on said second output terminal through said second winding to initiate conduction through said second thyatron-like switching device whenever said core is saturated in a second direction, the time required to change the flux in said core from saturation in said first direction to saturation in said second direction being larger than the time required to reverse the charge on said commutating capacitor.

3,314,000
ELECTRICAL SYSTEM
Merton I. Rosenberg and Walter G. Bohaker, Springfield, Mass., assignors to American Bosch Arma Corporation, Garden City, N.Y., a corporation of New York
Filed Aug. 30, 1963, Ser. No. 305,596
4 Claims. (Cl. 322-25)



1. In a voltage regulator system of the class adapted to provide stabilization of an electrical generator having a current-controlled magnetic field element by feeding back a portion of the output voltage of said generator in degenerative phase to control the current through said

field element, said generator being responsive to increases in current in said field element to increase said output voltage at a relatively rapid rate for values of said current in a first relatively low range and to increase said output voltage at a substantially lower rate for values of said current in a second, higher range for which substantial saturation of said field element occurs:

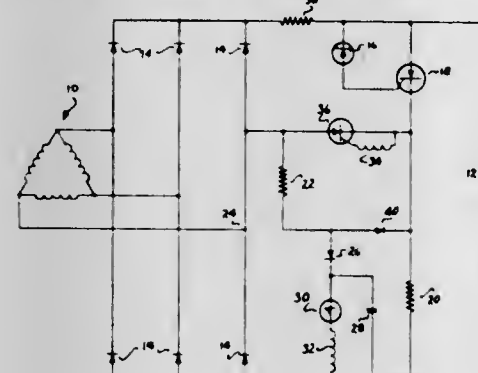
means for deriving from said output voltage a control voltage varying in accordance with variation in the magnitude of said output voltage;

means for feeding back said control voltage to said field element to vary the current in said field element in the sense to oppose changes in said output voltage; and

means for providing a more rapid increase in said control voltage with changes in said output voltage for values of said control voltage producing values of said field current in said second range than for values of said control voltage producing values of said field current in said first range;

said last-named means comprising the parallel combination of a zener diode and a resistive element disposed in said means for feeding back said control voltage, said zener diode being poled to break down in its reverse-conduction direction when the voltage across said resistive element exceeds a predetermined voltage, said resistive element being responsive to current therethrough to produce a voltage across itself which is below said predetermined voltage for values of said field current in said first range and above said predetermined voltage for values of said field current in said second range.

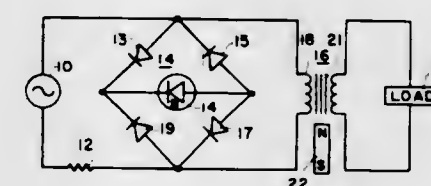
3,314,001
EXCITATION SYSTEM FOR A SYNCHRONOUS GENERATOR
John J. Brockman, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Nov. 14, 1963, Ser. No. 323,773
5 Claims. (Cl. 322-73)



1. An excitation system for a synchronous generator comprising:
an A.C. exciter having an armature winding and rectifiers connecting its armature winding to a generator field winding for furnishing excitation power thereto, a first switch and a discharge resistor connected in parallel with the exciter and with the generator field winding, said switch having characteristics such that it becomes conductive when the induced voltages in the field winding reach a predetermined maximum, detecting means connected to and responsive to the voltage across the resistor and including components for sensing when the exciter voltage persists across the resistor, and
a second switch coupled to said detecting means and connected to said armature winding and the discharge resistor in parallel with the first switch and one of said rectifiers, said second switch being actuated to conduction by the detecting means, when the latter

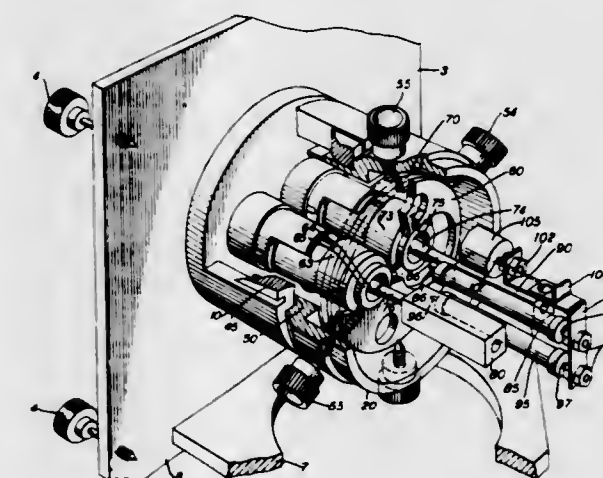
senses exciter voltage across the discharge resistor, to conduct exciter current to the resistor and by-pass the first switch to render the latter non-conducting.

3,314,002
CONTROL ARRANGEMENT FOR MAGNETIC CIRCUIT ELEMENT
Armistead L. Wellford, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Filed June 26, 1963, Ser. No. 290,856
1 Claim. (Cl. 323-51)



Means for varying the flux of the core of a magnetic circuit element comprising a housing consisting of a non-magnetic material for containing said circuit element, said housing comprising a first flat surface having a cut-out portion, a member having a second flat surface, a permanent magnet affixed to said surface, said second flat surface being adapted to be moved along said first flat surface with said magnet received in said cutout portion such that the direction of the flux produced thereby is at right angles to the flux produced by said circuit element, said magnet being moved closer to and further away from said core in said right angle flux direction by movement of said second surface.

3,314,003
HOUSING AND ADJUSTMENTS FOR AN ELECTRICAL STANDARD NETWORK
Harold A. Sauer, Hatboro, Pa., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 24, 1964, Ser. No. 398,908
11 Claims. (Cl. 323-75)



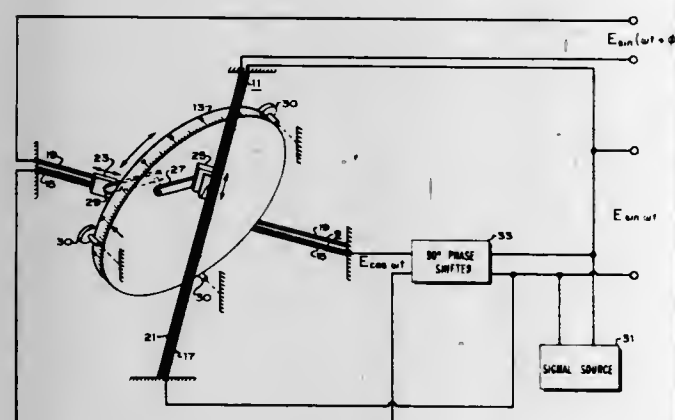
1. Apparatus for calibrating an electrical bridge comprising, in combination, a plurality of electrical resistor elements forming a Y network, housing means for enclosing said network, support means for mounting said network to a bridge connection, adjustment means operable in said housing, said support means including means for connecting said network electrically and mechanically from outside said housing means for fixedly holding said support means within said housing and for releasing

ing said support means when said connecting means is connected to said bridge connection during calibration thereby to isolate electrically and mechanically said network from said housing means, and means including said adjustment means for selectively connecting and disconnecting each of said elements from said network whereby each successive element is connected individually to said bridge.

3,314,004

WIDEBAND PHASE SHIFTER SELECTABLY ALTERING THE PHASE ANGLE OF AN APPLIED SIGNAL

Ronald Grob, Grafton, Wis., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Jan. 29, 1965, Ser. No. 428,967
1 Claim. (Cl. 323-108)



Apparatus for selectably shifting the phase of an applied signal comprising:

a pair of terminals for receiving an applied signal;
first and second linear potentiometers each including a resistance element disposed along an axis and including a movable contact which is slidable along the resistance element, the resistance elements being electrically isolated from each other and the axes of the resistance elements of the first and second linear potentiometers being oriented in spaced, right angle relationship to each other;

means connecting said pair of terminals to the resistance element of the first linear potentiometer for applying thereto the signal appearing on said pair of terminals;
phase shift means having input terminals connected to receive applied signal appearing on said pair of terminals for producing therefrom a quadrature signal shifted in phase by 90° with respect to the applied signal appearing on said pair of terminals;

means connecting the resistance element of the second linear potentiometer to receive the quadrature signal from said phase shift means;

a dial disposed intermediate the spaced first and second linear potentiometers rotatable about an axis which is normal to the spaced, right-angle crossing of the resistance elements of the first and second potentiometers;

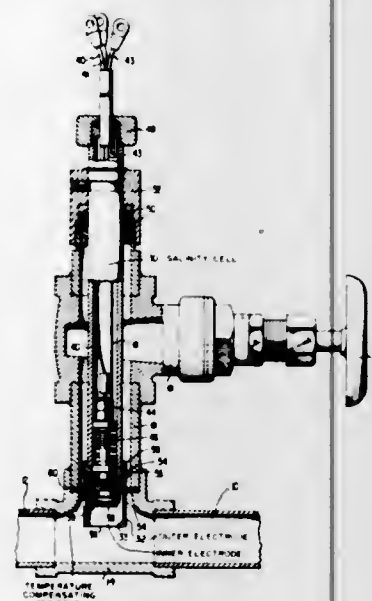
a link of selectable length mechanically coupling together said movable contacts and being rotatably mounted on the dial about an axis parallel to and spaced away from the rotational axis of the dial for imparting to the movable contacts coupled to said link translational motion along the resistive elements in response to rotation of said dial; and

means connected to said movable contacts for providing an output which is shifted in phase angle relative to an applied signal appearing on said pair of terminals by a value represented by the angular position of said dial.

RETAINER FOR SALINITY CELL IN COMBINATION OF FLOW THROUGH PIPE, NIPPLE AND VALVE

Robert V. Whitener, Huntington, N.Y., assignor to Marine Electric Corporation, Brooklyn, N.Y., a corporation of New York

Filed Dec. 3, 1963, Ser. No. 327,671
5 Claims. (Cl. 324-30)

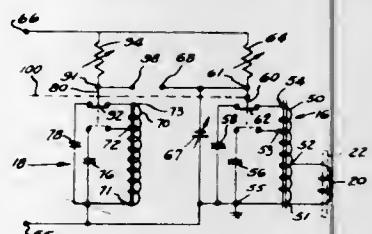


1. In a flow through pipe having a nipple, a valve secured to said nipple and a removable salinity cell with a separable outer electrode installed in and extending through said valve and nipple so that the outer end of said outer electrode projects into the path of and is subjected to flow of liquid in said flow through pipe without obstruction, the improvements comprising projecting means secured to said nipple and flow through pipe and extending inwardly of said bore of said nipple, said outer electrode having a flange projecting outwardly of the salinity cell for engagement with said projecting means, and said flange being positioned within said nipple spaced from said projecting means on the side away from said flow through pipe, whereby said projecting means will upon accidental separation of said outer electrode from said salinity cell prevent passage of said outer electrode from said nipple into said flow through pipe.

3,314,006

VARIABLE FREQUENCY EDDY CURRENT TEST DEVICE WITH VARIABLE MEANS FOR MAINTAINING THE APPARENT IMPEDANCE OF THE PROBE CONSTANT AT ALL FREQUENCIES

Rudolf G. Hentschel, Ann Arbor, Mich., assignor to Automation-Forster, Inc., a corporation of Michigan
Filed Apr. 19, 1965, Ser. No. 449,055
10 Claims. (Cl. 324-40)



1. In a multi-frequency apparatus for use in eddy current testing, a source of drive signals having a first frequency selected within a range of test frequencies, means for changing the frequency of said drive signals to a second frequency within said range, a fixed inductance probe arranged and adapted to be excited by said drive signal to provide an output, said output representing characteristics of a test specimen when said probe is loaded by said

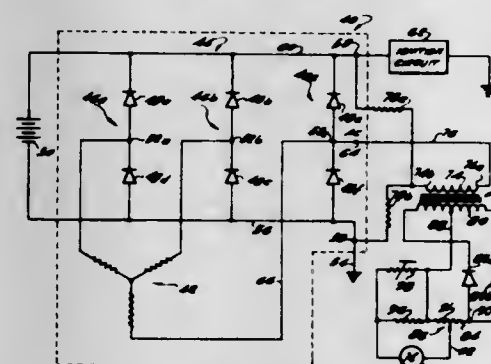
specimen, means providing a standard impedance output for comparison with said probe output when said probe is loaded by said specimen, variable transformer means connected between said source of drive signals and said probe, control means coupled to said transformer means to vary the transformer means for maintaining an apparent impedance of said probe constant at said first and said second frequencies in the absence of said specimen, means for comparing said standard impedance output with said probe output to provide a difference signal when said probe is loaded by said specimen, and means responsive to said difference signal for indicating characteristics of said specimen.

3,314,007

ALTERNATOR OPERATED TACHOMETER CIRCUIT

Myron J. Johnson, Arlington Heights, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia

Filed Feb. 17, 1964, Ser. No. 345,354
5 Claims. (Cl. 324-70)



1. A circuit for use in operating an electrically powered meter from an engine driven alternator having three coils connected to a rectifier bridge for providing a direct current potential to two terminals connected to opposite poles of a battery for charging said battery with said bridge including two rectifiers for each coil serially connected across the poles of said battery and arranged to either pass or block current in the same direction with each two rectifiers having a terminal connected intermediate the respective two rectifiers to a respective one of the coils of said alternator whereby the potential at each intermediate terminal varies substantially as a square wave alternating between the potential at said two terminals in response to potentials generated across said coil, the circuit comprising a saturable transformer having a primary with one end of said primary connected to one of said intermediate terminals, a first resistor connected between the other end of said primary and either one of said two terminals, a second resistor connected between the other end of said primary and the opposite of either of said two terminals, a tap on the secondary of said transformer connected to one side of said meter, and a pair of unidirectional circuit elements respectively connected between opposite ends of the secondary of said transformer and the other side of said meter with said elements poled to pass current in the same direction from said secondary through said meter.

3,314,008

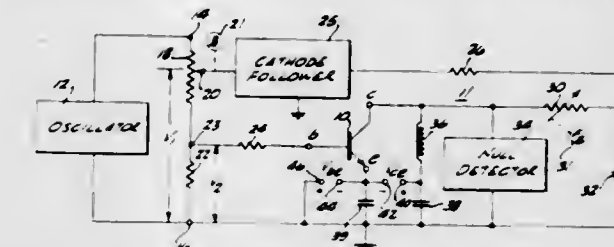
CIRCUIT EMPLOYING CALIBRATED VARIABLE IMPEDANCES FOR MEASURING TRANSISTOR BETA AND BETA CUTOFF FREQUENCY

James L. Heard, Manhattan Beach, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Oct. 28, 1963, Ser. No. 319,105
11 Claims. (Cl. 324-158)

1. A test circuit for measuring the frequency at which the gain figure of a transistor between first and second

ones of its electrodes is a predetermined portion of the maximum value of the gain figure comprising: first and second terminals adapted to be connected to the respective first and second electrodes of the transistor to be tested and a third terminal adapted to be connected to a third electrode of the transistor; means for applying D.C. potentials between said first, second and third terminals to bias the transistor to be tested in its amplification region of operation; impedance means coupled between said second and third terminals and having a variable impedance vs. frequency characteristic similar to that measured between the second and third electrodes of the



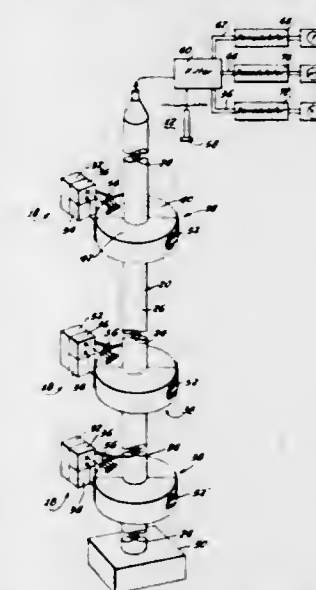
transistor to be tested; means for applying a first A.C. voltage at a given frequency between said first and third terminals; and means for applying a second A.C. voltage at said given frequency to said impedance means; means for measuring the A.C. potential between said second and third terminals; and means calibrated as a function of the frequency to be measured for varying the impedance vs. frequency characteristic of said impedance means to achieve a minimum A.C. potential between said second and third terminals, with the impedance of said impedance means then being indicative of the frequency to be measured.

3,314,009

CLAMP ON SYSTEM FOR MEASURING THE CHARACTERISTICS OF SEA WATER

Lawrence C. Murdock, San Diego, Calif., assignor to The Bissett-Berman Corporation, Santa Monica, Calif., a corporation of California

Filed Mar. 18, 1964, Ser. No. 352,885
12 Claims. (Cl. 325-51)



1. In combination for measuring characteristics of sea water,

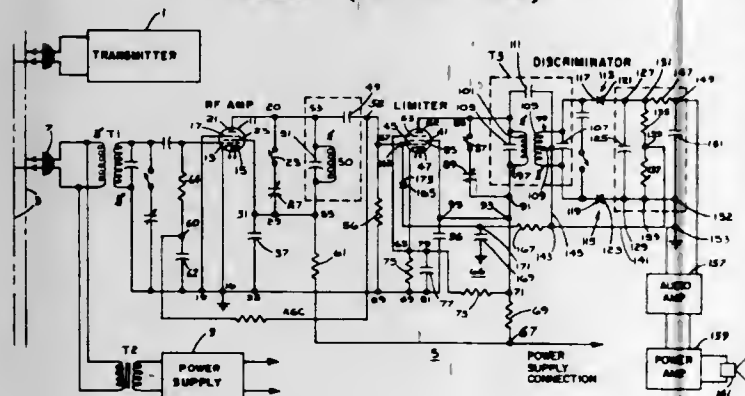
a cable having an electrically conductive center conductor and having electrical insulation enveloping the electrically conductive center conductor and constructed to be immersed in the sea water;

pickup means removably attached to the cable for disposition in the sea water, said pickup means being constructed to be responsive to produce magnetic flux for inducing electrical signals in the central conductor of the cable;

transducer means in said pickup means and responsive to the characteristics of the sea water at the location of the pickup means to generate an electrical signal having characteristics dependent upon the characteristics of the sea water; and

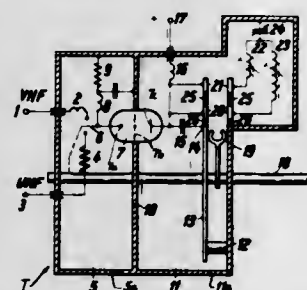
winding means electrically interconnected with the transducer means and magnetically coupled to the pickup means to produce magnetic flux in the pickup means in accordance with the characteristics of the electrical signal generated in the transducer means.

3,314,010
RAPID TRANSITION SQUELCH CIRCUIT
Gerard C. Wolters, Decatur, Ill., assignor to General Electric Company, a corporation of New York
Filed Sept. 10, 1963, Ser. No. 307,839
4 Claims. (Cl. 325-348)



1. In a squelch circuit for a receiver of carrier waves including at least one amplifier stage, an amplifier device, means for biasing said device to cut-off in the absence of a radio frequency carrier at the input of said receiver, means including the series combination of a diode and a capacitor connected to a control element of said device for clamping noise pulses received by said amplifier device below the cut-off point thereof in the absence of a radio frequency carrier at the receiver input, said diode and capacitor being connected and arranged so that a gradually increasing positive charge is developed across the capacitor for limiting the conduction of said diode during a first predetermined period after the application of a carrier signal at the receiver input, and means for increasing said positive charge further during a second predetermined period after application of a carrier signal until said diode becomes biased to effective cut-off.

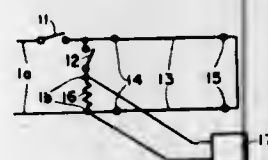
3,314,011
UHF-VHF COMBINED ARCUATE TUNER
Werner Bachnick, Bredenbeck, Germany, assignor to Telefunken Patentverwertungs G.m.b.H., Ulm (Danube), Germany
Filed Dec. 20, 1963, Ser. No. 332,043
Claims priority, application Germany, Dec. 20, 1962, T 23,237
21 Claims. (Cl. 325-459)



19. A combined UHF and VHF tuner comprising, in combination: a casing having wall means and a partition dividing said casing into two chambers; an amplifier element having first, second and third electrodes, said first

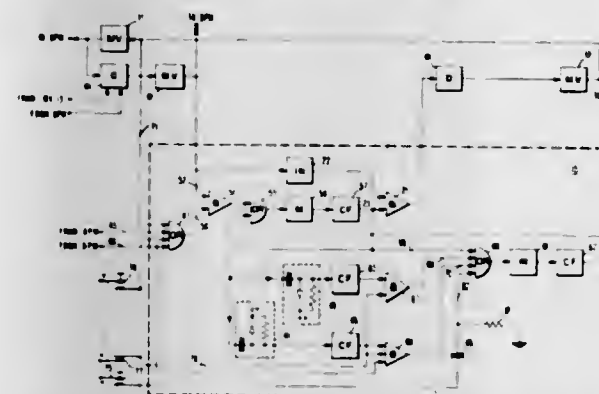
electrode being grounded to said casing; a VHF input terminal and a UHF input terminal; selector switch means arranged in one of said chambers for selectively connecting said input terminals to said second electrode of said amplifier element; an arcuate inner conductor arranged in the other of said chambers and forming together with an outer conductor constituted by said partition and so much of said wall means as pertains to said other chamber a UHF tuning circuit, said inner conductor being insulated from said outer conductor and electrically connected to said third electrode of said amplifier element; a rotary shaft passing through said chambers and being coaxial with said arcuate inner conductor; a slide carried by said shaft and arranged in said second chamber for movement along said inner conductor for connecting the same, at any point along the length thereof, to said outer conductor; lumped circuit elements forming a plurality of VHF resonant circuits; and a plurality of pairs of contacts, one contact of each pair being connected to said third electrode of said amplifier element and the other electrode of each pair being connected to a respective one of said plurality of VHF resonant circuits, said contacts being arranged at an end of said inner conductor along the path of movement of said slide beyond said inner conductor, the two contacts of each pair being bridged by said slide when the same has moved beyond said inner conductor and into engagement with the two contacts for connecting to said third electrode of said amplifier the particular VHF circuit associated with said pair of contacts, whereby said slide may, selectively, connect said UHF tuning circuit and said VHF circuit means to said third electrode of said amplifier element; mechanical means interconnecting said shaft and said selector switch means for causing the latter to connect said UHF input terminal to said second electrode of said amplifier element while said slide connects said inner conductor of said UHF tuning circuit to said outer conductor thereof and to connect said VHF input terminal to said second electrode of said amplifier element while said slide is in a position beyond said inner conductor and bridges a pair of contacts; and indexing means for holding said slide in a position in which it bridges a pair of contacts.

3,314,012
PULSE CODE MODULATOR ENCODER SYSTEM
Yuchi Yoshida, Tokyo, Japan, assignor to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed May 27, 1963, Ser. No. 283,177
13 Claims. (Cl. 328-56)



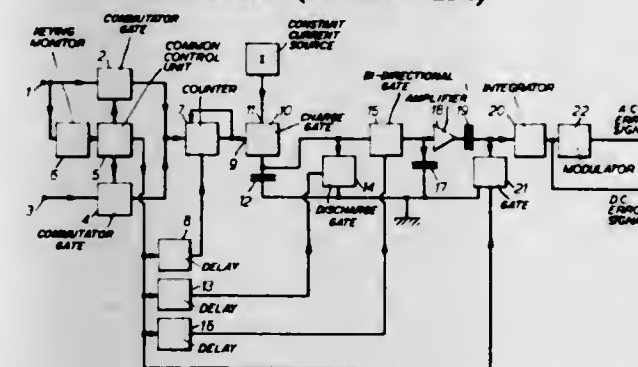
1. A bit coder, comprising reflecting a transmission line having a set of input terminals and a set of end terminals, momentarily operable switch means connected to said input terminals for permitting pulses to enter and reflect back and forth in said transmission line, and circuit means for short-circuiting one set of said terminals to cause polarity reversal of a pulse in said transmission line and for responding to an input quantum value to suppress reflections and read out the polarity of a pulse in said transmission line, said circuit means including pulse end resistance means, pulse terminating switch means adapted to respond to the quantum value of a signal for connecting said pulse end resistance means to one set of terminals so as to absorb the pulse in said transmission line, and memory means connected across said pulse end resistance means for memorizing the polarity of the pulse.

3,314,013
VARIABLE DELAY PULSE GENERATING APPARATUS
Jules Dirac, Poughkeepsie, N.Y., and David Royse, Los Gatos, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Continuation of application Ser. No. 705,525, Dec. 27, 1957. This application June 6, 1963, Ser. No. 286,124
8 Claims. (Cl. 328-61)



1. Apparatus for generating timing signals comprising: a plurality of monostable devices arranged in sequence, each device having an input and an output and each adapted to deliver a signal on its output in response to a signal on its input; coupling circuit means for coupling each of said outputs to the next succeeding input; a delay device; and means responsive to a coincidence of output signals from two of said monostable devices for switching said coupling circuit means through said delay device.

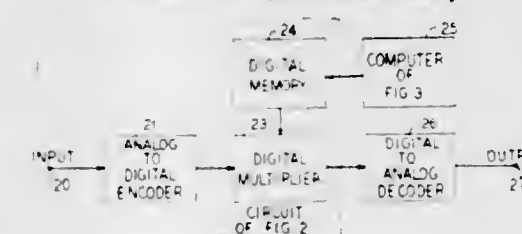
3,314,014
FREQUENCY COMPARING SYSTEMS
Kenneth George Perkins, Cranham, Essex, England, assignor to Plessey U.K. Limited, a British company
Filed Feb. 7, 1964, Ser. No. 343,420
Claims priority, application Great Britain, Feb. 21, 1963, 6,946/63
8 Claims. (Cl. 328-134)



1. A frequency comparison system capable of comparing a signal frequency with a reference frequency comprising commutating means arranged in use to commutate the signal frequency with the reference frequency so as to produce a resultant waveform consisting of alternate elements of the signal frequency and reference frequency wherein each element comprises a number of cycles of the reference frequency or the signal frequency as the case may be, counter means arranged in use to count a predetermined number of cycles of each element of the resultant waveform so as to produce for each element a corresponding output pulse whose duration is characteristic of the frequency of the element to which it corresponds, successive output pulses being alternately characteristic of the reference frequency and the signal frequency, converter means fed with the output pulses from the counter so as to produce corresponding pulses the amplitude of alternate ones of which are characteristic

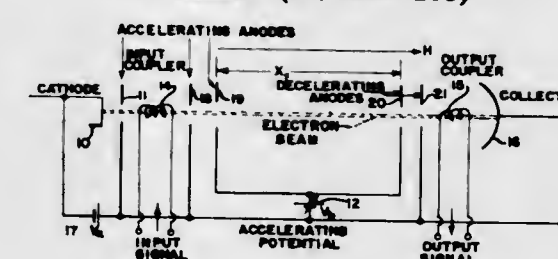
of the reference frequency and the signal frequency respectively, sampling means arranged so as to sample the amplitude of each successive corresponding pulse, and capacitor means arranged so as to be charged or partially discharged by said corresponding pulses dependent upon their sample amplitude so as to produce an output signal characteristic of the frequency difference between the signal frequency and the reference frequency.

3,314,015
DIGITALLY SYNTHESIZED ARTIFICIAL TRANSFER NETWORKS
Carl F. Simone, Florham Park, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 16, 1963, Ser. No. 309,003
5 Claims. (Cl. 328-165)



1. Apparatus for synthesizing a network having a desired impulse response which comprises, in combination with a source of a time varying input signal, means for sampling and encoding said signal to form a first series of binarily expressed numbers, a digital memory, means for storing in said memory a second series of binarily expressed numbers, said second series being composed of a fixed number of terms representative of the sample values of an impulse response which approximates said desired impulse response, means for multiplying together said first and said second series to form the polynomial product thereof, and means for translating said product into an output signal.

3,314,016
APPARATUS FOR VARYING TIME DELAY IN ELECTRON DRIFT TUBE BY VELOCITY MODULATING ELECTRON BEAM
John B. Payne III, Westernville, N.Y., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Sept. 4, 1964, Ser. No. 394,639
3 Claims. (Cl. 328-233)

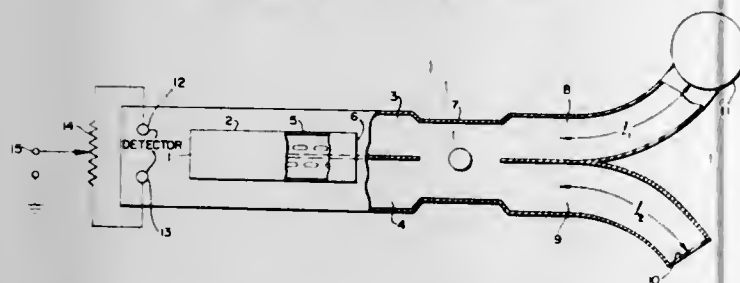


1. Apparatus to provide a variable time delay by controlling the propagation velocity of an electron beam in an electron discharge device comprising means to form an electron beam in said electron discharge device, first means to accelerate said electron beam to a first preselected velocity, means to couple an input signal to be delayed onto said electron beam subsequent to accelerating said electron beam to said first preselected velocity, second means to accelerate said electron beam to a second preselected velocity subsequent to said input signal coupling operation, said second means being variable, a drift region having a predetermined distance through which said electron beam passes after attaining said preselected second velocity, said predetermined distance and said preselected second velocity determining said time delay, means to hold the electrons passing through said

drift region in a pencil beam, means to decelerate said electron beam after passage through said drift region to said first preselected velocity, and means to couple out the input signal from said electron beam after said decelerating operation.

3,314,017 BALANCED PHASE TYPE FREQUENCY DISCRIMINATORS

Henry J. Riblet, 35 Edmunds Road,
Wellesley, Mass. 02181
Filed June 1, 1964, Ser. No. 371,319
4 Claims. (Cl. 329—116)



1. A frequency discriminator comprising: means constituting a first transmission channel; a frequency sensitive wave energy reflector terminating one end of the first transmission channel, the wave energy reflector responding to changes in the frequency of an incident signal by causing the phase of the signal reflected from it to vary with changes in the frequency of the incident signal; means constituting a second transmission channel; a frequency insensitive wave energy reflector terminating one end of the second transmission channel, the wave energy reflector causing the phase of the signal reflected from it to be independent of changes in frequency of the incident signal; means for coupling the input signal applied to the discriminator into each channel in a manner causing the signal coupled into each channel to propagate toward the reflectively terminated end; a quadrature hybrid having two input arms and two output arms; the signal reflected from the reflectively terminated end of the first transmission channel being directed along a path of fixed length into one input arm of the quadrature hybrid; the signal reflected from the reflectively terminated end of the second transmission channel being directed along a path of fixed length into the other input arm of the quadrature hybrid; the path length for the input signal which is directed by the coupling means to the reflectively terminated ends of the transmission channels and thence to the input arms of the quadrature hybrid being equal for both transmission channels whereby the reflected signals arrive simultaneously at the input arms; and means for separately detecting the outputs from the two output arms of the quadrature hybrid.

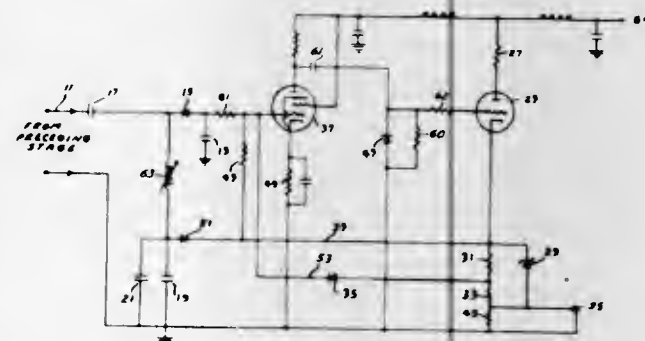
3,314,018 DETECTOR-LINE DRIVE WITH INPUT TUNING AND FEEDBACK MEANS

John W. Taylor, Jr., Baltimore, and Gordon W. Amato,
Clarksville, Md., assignors, by mesne assignments, to
the United States of America as represented by the
Secretary of the Air Force

Filed June 3, 1964, Ser. No. 372,421
1 Claim. (Cl. 329—194)

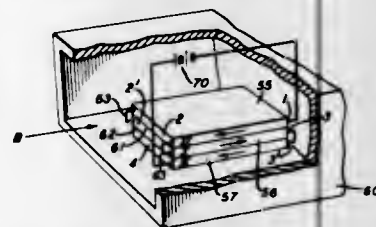
The improvement in a detector-line driver system having signal input means; signal output means; an input signal; an output signal; a signal developing capacitor;

a diode rectifier cooperating with the signal input means and the said signal developing capacitor for developing a rectified envelope of the input signal across the said capacitor; a vacuum tube voltage amplification stage, having at least a grid and a plate, cooperating with the said capacitor for amplifying the rectified envelope of the input signal; a triode cathode follower vacuum tube output stage having a grid, a cathode and a plate; and resistor-capacitor coupling means for coupling the grid of the cathode follower stage to the plate of the voltage amplification stage; the said improvement comprising: a zener diode cooperating with the cathode of the said cathode follower stage and the said output means for positioning the cathode of the cathode follower stage a determined voltage above the signal output means; resistor voltage divider means connected in parallel with the said zener diode for providing a reference voltage having a difference level constant in magnitude from the output voltage and from the cathode voltage of the said



cathode follower stage; diode means cooperating with the said voltage divider and the grid of the said vacuum tube voltage amplification stage for preventing the grid of the said voltage amplification stage from being driven more negatively than the said reference voltage, and limiting the said output signal to a predetermined value; a capacitor for energy storage having larger energy storage capacity than the said signal developing capacitor; connecting means cooperating with the cathode of the said cathode follower stage, the signal input means and the said capacitor for energy storage for placing the signal input means and the charge voltage on the large energy storage capacitor at the quiescent voltage of the cathode of the said cathode follower stage; and means including a diode cooperating with the capacitor for energy storage and the grid of the said voltage amplification stage for maintaining the voltage on the grid of the voltage amplification stage at substantially a constant voltage.

3,314,019
HELICON WAVE PLASMA AMPLIFIER
Gene A. Baraff, Berkeley Heights, Solomon J. Buchsbaum,
Morristown, and Charles C. Grimes, Berkeley Heights,
N.J., assignors to Bell Telephone Laboratories, Incorporated,
New York, N.Y., a corporation of New York
Filed Mar. 25, 1965, Ser. No. 442,620
8 Claims. (Cl. 330—5)

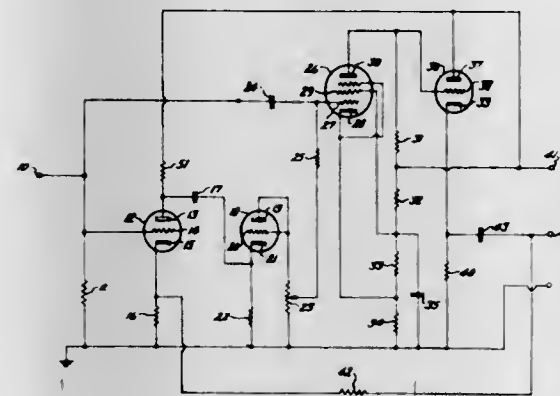


1. A helicon wave amplifier comprising: two dissimilar one-component plasma supporting media disposed adjacent to each other to define a plasma-plasma interface; means for coupling an electromagnetic signal into one end of said media;

means for establishing a steady magnetic field through said media in a direction parallel to said interface; means for producing a current in at least one of said media in a direction substantially parallel to said interface characterized in that the differential drift current through the two media exceeds the critical value above which signal amplification occurs; means for coupling an amplified electromagnetic signal out of the other end of said media.

3,314,020 SIGNAL-TO-NOISE ENHANCING AMPLIFIER

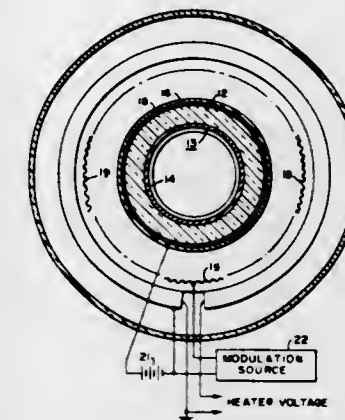
Laurence E. Orne, 4 Enbar Circle,
Billerica, Mass. 01821
Filed June 3, 1964, Ser. No. 372,433
5 Claims. (Cl. 330—96)



1. An amplifier modulated solely by the information content of a noisy input signal thereto to provide an improved signal-to-noise ratio at the output thereof comprising a first amplifier including control grid, cathode and plate, said first amplifier having means producing feedback at said cathode, and receiving said input signal at said control grid, a detector circuit consisting of a triode connected as a diode and a resistance, said triode including plate and cathode, said detector being coupled to said first amplifier exclusively by a capacitor, the combination of said first amplifier and said detector operating to produce at the output thereof a D.C. signal varying solely in magnitude in accordance with said information content of said input signal, a second amplifier including a control grid, plate and cathode, said second amplifier cathode being exclusively connected to ground by a resistor, the gain of said second amplifier being minimum without said input signal and being increased solely in accordance with an increase of a D.C. voltage applied to said second amplifier control grid, said second amplifier control grid receiving simultaneously said input signal and the output from said detector, a cathode follower directly receiving the output from said second amplifier, and a resistance interconnecting the output of said cathode follower and said cathode of said first amplifier.

3,314,021
CATHODOLUMINESCENT PUMPED LASER HAVING
A CATHODE SURROUNDING THE LASER
Robert D. Haun, Jr., Monroeville, and Robert C. Ohlmann,
Wilkins Township, Allegheny County, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh,
Pa., a corporation of Pennsylvania
Filed Mar. 15, 1963, Ser. No. 265,475
6 Claims. (Cl. 331—94.5)

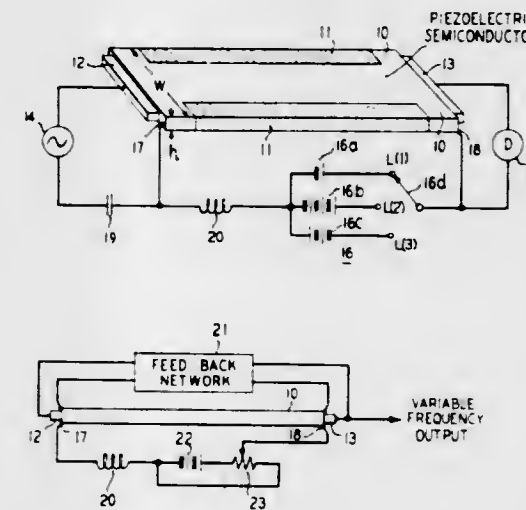
1. Maser apparatus comprising a sample of solid state active medium in the form of a cylindrical annulus having a selected energy absorption spectrum, a layer of a luminescent phosphor pumping means surrounding said sample in juxtaposed relation thereto and responsive to irradiation by electrons for producing optical photon en-



ergy for pumping said medium to produce a negative temperature therein, an annular cathode surrounding said medium and said phosphor, and a conducting film previous to electrons on said phosphor constituting an anode for the electrons from said cathode and further constituting a reflector for optical photon energy.

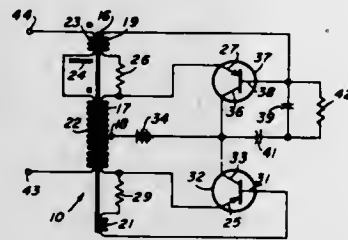
3,314,022 PARTICULAR MODE ELASTIC WAVE AMPLIFIER AND OSCILLATOR

Allen H. Meitzler, Morristown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 29, 1964, Ser. No. 378,648
4 Claims. (Cl. 331—107)



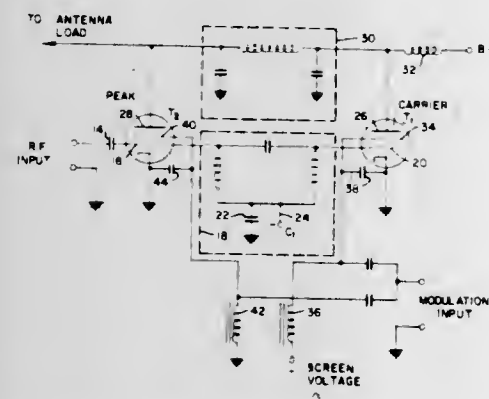
1. In combination, an elongated member of piezoelectric semiconductive material, means for launching an ultrasonic elastic wave including substantial energy in the third longitudinal mode for propagation through said member, said member having a rectangular cross section with a width dimension at least ten times that of the thickness dimension so that a plurality of different modes of elastic wave propagation including said third mode can travel with different phase velocities through said member, means for impressing a direct-current voltage through said member in a direction parallel to said elastic wave propagation, said voltage having such magnitude and direction that current carriers in said material drift under the influence of said voltage in a direction opposite to the direction of propagation of said energy and at a velocity which is slightly greater than the phase velocity of said third mode and substantially different from the phase velocity of other of said modes.

3,314,023
SATURABLE CORE OSCILLATOR WITH ANOTHER
SATURABLE CORE DETERMINING FREQUEN-
CIES AT HEAVIER LOADS
Robert F. Gibb, Solana Beach, Calif., assignor to Topaz,
Inc., San Diego, Calif., a corporation of California
Filed Apr. 16, 1965, Ser. No. 448,594
6 Claims. (Cl. 331—113)



4. A load current limiting transformer core flux switching oscillator comprising:
a flux switching oscillator having an output transformer with a primary and output winding, and a feedback transformer with a saturable core; and
an inductor having a saturable core connected in serial relationship with said transformer output winding and any load connected thereto, the said saturable core of said inductor being so proportional that at heavy loads the said saturable core of said inductor causes the oscillator to switch, while at normal loads the saturable transformer core of the said oscillator causes the oscillator to switch
whereby variations in the series connected load control the period of saturation of the saturable core inductor to vary the frequency of the oscillator for compensation of load variations.

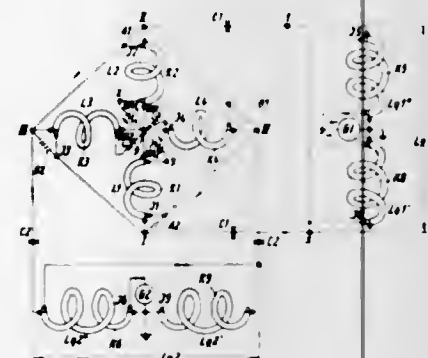
3,314,024
HIGH EFFICIENCY AMPLIFIER AND
PUSH-PULL MODULATOR
Joseph B. Sainston, Dallas, Tex., assignor to Continental
Electronics Manufacturing Co., Dallas, Tex., a corpo-
ration of Texas
Filed Mar. 25, 1964, Ser. No. 354,734
8 Claims. (Cl. 332-43)



1. A device for the high efficiency amplification and coupling of modulated carrier energy to a load, comprising a pair of amplifiers each having output terminals and first and second control grids; means for applying a carrier wave component to said first control grids, said means including means for imparting a ninety degree phase shift to the carrier wave component applied to the first grid of one of said amplifiers; means for applying a modulation wave to both of said second grids, said means including a first amplifying means for producing two output potentials 180 degrees apart, a second amplifying means having an input terminal connected to one

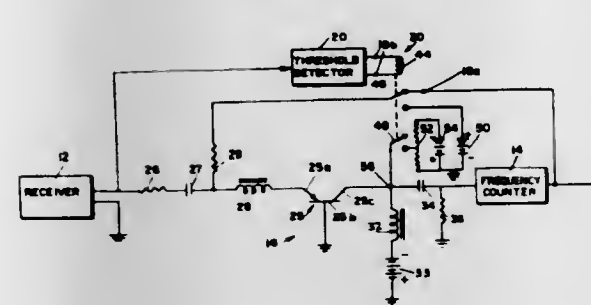
output potential of said first amplifying means and an output terminal connected to the second grid of one of said amplifier pair, a third amplifying means having an input terminal connected to the second output potential of said first amplifying means and an output terminal connected to the second grid of the second of said amplifier pair, and means for biasing said second and third amplifying means substantially near cut-off; means connected between the load and the respective output terminals of each of said amplifiers for imparting a ninety degree phase shift to the output of said one amplifier; and means for biasing said amplifiers substantially below their plate current cut-off points.

3,314,025
**HYBRID BRIDGE FOR APPLYING TWO MUTUAL-
LY ISOLATED SOURCES TO A COMMON LOAD,
INCLUDING MEANS TO PARTIALLY SHIFT
BALANCING RESISTORS AND LOAD RESIST-
ANCES TOWARD BRIDGE CENTER**
**Werner Buschbeck, Ulm (Danube), Germany, assignor to
Telefunken Patentverwertungsgesellschaft m.b.H., Ulm
(Danube), Germany**
Filed Mar. 16, 1964, Ser. No. 352,109
31 Claims. (Cl. 333-11)



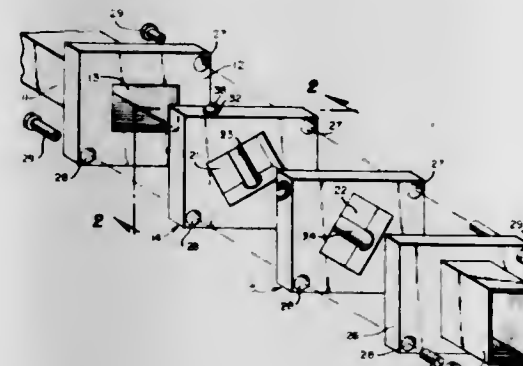
1. A circuit arrangement for feeding a common load from first and second high-frequency generators whose outputs are of the same frequency and are either in phase or of the opposite phase, said circuit arrangement comprising a balanced Wheatstone-type alternating current bridge; said bridge having a center point and two diagonals, the first and second generators being connected across said diagonals, respectively; two opposite arms of said bridge being load arms and the other two opposite arms being balancing arms; said load arms being connected to, respectively, first and second coaxial line sections each having an external and an internal conductor and each conductor having an inner and an outer end, the external conductor of each coaxial line section constituting an inductance, the inductances connected to the two load arms being equal to each other; the outer end of each external conductor being connected to one point of the bridge pertaining to the respective load arm and the outer end of the corresponding internal conductor being connected to a place in the respective load arm which is spaced from said one point; the inner ends of said external conductors being connected to each other in consequence of which said inductances are connected in series, the junction of said external conductors being connected to said center point of the bridge; said serially-connected external conductors lying across one of said diagonals of the bridge; and a resistance element connected across the inner ends of the external and internal conductors of each of said coaxial line sections, said resistance element representing at least a portion of the load resistance which is shifted toward said center point of the bridge.

3,314,026
AUTOMATIC BANDPASS CONTROL
Robert L. Maynard, Nashua, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Original application Oct. 1, 1962, Ser. No. 227,357, now Patent No. 3,218,641, dated Nov. 16, 1962. Divided and this application Mar. 4, 1965, Ser. No. 445,816
15 Claims. (Cl. 333—17)



15. A variable filter comprising, in combination, a transistor connected for a low input resistance and a high output resistance, a signal source having an output signal to be filtered by said variable filter, a low pass resistance-inductance filter connected to pass an input current through said transistor in response to said signal to said source, a high pass resistance-inductance filter connected to the output of said transistor, the inductor of said high pass filter being in the direct current path of the collector of said transistor, the inductors of both said high pass and low pass filters being saturable, and tuning means connected to pass a unidirectional input current through said transistor by way of said first inductor.

3,314,027
STEP TWIST DIODE MICROWAVE SWITCH
Howard S. Jones, Jr., Washington, D.C., and Robert V. Garver, Rockville, Md., assignors to the United States of America as represented by the Secretary of the Army
Filed Oct. 14, 1964, Ser. No. 403,962
10 Claims. (Cl. 333-21)



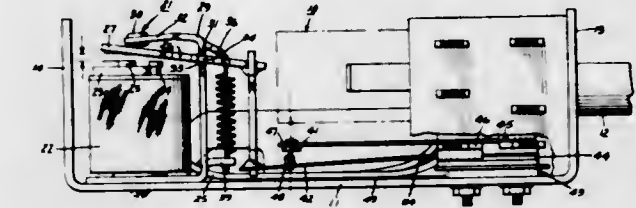
3. A switching station for a wave guide, said station comprising a twist section of wave guide for rotating the planes of energy transmission from a first plane to a second plane which is angularly related to the first plane, said section comprising at least a first portion and a section portion of rectangular wave guide, the sides of said first portion being angularly related to the corresponding sides of the second portion, and at least one diode switching member supported in said first portion of said twist section generally perpendicular to said shorter dimension, said diode switching member comprising a diode and a casing.

3,314,028

RELAY SWITCH ASSEMBLY HAVING IMPROVED SWITCH CONTACT ACTUATING MEANS ESPECIALLY SUITABLE FOR USE IN THE IGNITION CONTROL UNIT OF A FLUID BURNER

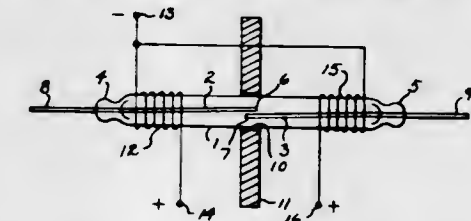
Alvin D. Wyland and Dann W. Denny, Morrison, III., assignors to General Electric Company, a corporation of New York

Filed Dec. 22, 1965, Ser. No. 515,644
10 Claims. (Cl. 335—128)



1. A relay switch assembly for use in an ignition control unit comprising a magnetic core; an armature pivotally mounted for swinging one armature section alternately between open and closed positions with respect to said magnetic core; spring means biasing said one armature section toward the open position; electromagnetic means adapted to be energized for actuating said one armature section from the open to the closed position; switch means including spaced apart first and second switch elements having contact surfaces facing one another; said second switch element having a resilient blade movably supporting the associated contact surface between open, initially engaged, and fully closed contact positions relative to the first switch element; switch actuating link means connecting a second section of said armature to said second switch element for controlling operation of said switch elements in response to the movement of said armature; the contact surface of said second switch element being spaced outwardly from the blade and the area of the contact surface for said first switch element being dimensionally sufficient for effecting a scraping action of the contact surfaces between the initially engaged and closed contact positions; said resilient blade having a reduced cross section and deflectable region adajcent the contact surface of said second switch element and being so formed as to produce approximately the greatest amount of angular deflection of said second switch element in the vicinity of said deflectable region adjacent the contact surface for sharply turning the contact surface of said second element as it travels between said initially engaged and fully closed contact positions whereby a cleansing action is attained between the contact surfaces.

3,314,029
"AND" TYPE REED SWITCH CONTROL
 Lynn H. Matthias, Fox Point, Wis., assignor to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin
 Original application Jan. 3, 1963, Ser. No. 249,185, now Patent No. 3,215,795, dated Nov. 2, 1965. Divided and this application July 6, 1965, Ser. No. 469,593
 3 Claims. (Cl. 335—151)



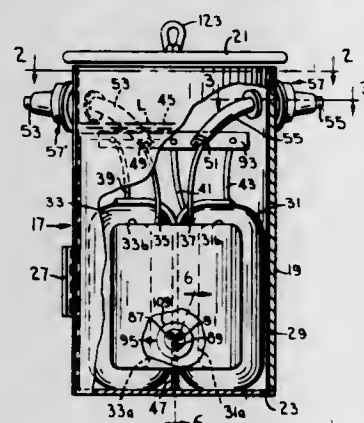
1. In a control for a reed switch having a pair of elongated, electrically conductive magnetic reeds which have relatively movable, facing, normally open contact ends, the combination comprising: a flux diverting member of a magnetic material disposed closely adjacent to the reed

contact ends that provides a region of low reluctance restricted to the vicinity of the reed contact ends; a pair of operating coil sets, each of said sets including a main coil magnetically encircling one of said reeds to directly establish magnetic flux in the reed which is disposed on one side of the flux diverting member and a supplementary coil magnetically encircling the other reed to directly establish magnetic flux in the reed that is disposed on the opposite side of the flux diverting member and adapted to establish in its associated reed magnetic flux opposite in direction and of less magnitude than the magnetic flux established by the main coil, the main coils of the coil sets being on opposite sides of the flux diverting member and being adapted to establish magnetic flux through the reeds in the same direction, said reeds comprising substantially the only magnetic flux path of magnetic material within the center of the coils of each coil set, and said flux diverting member conducting flux from the reed contact ends for leading flux from the contact ends in a path around the outer sides of the coils, such that upon energization of a single coil set the flux conduction of the flux diverting member and the opposing flux of the supplementary coil preclude closure of the reeds whereby energization of both coil sets is required for reed closure, continued energization of both coil sets is required for maintaining reed closure, and upon de-energization of either coil set the flux conduction of the flux diverting member and the opposing flux of the supplementary coil that is still energized causes positive opening of said reeds.

3,314,030

TRANSFORMERS WITH LEAK- AND CORONA-FREE DIRECT ELECTRICAL CONNECTIONS
Montville B. Mallett, Clayton, and William C. Reinhardt, Bellefontaine Neighbors, Mo., assignors to Central Transformer Corporation, Pine Bluff, Ark., a corporation of Arkansas

Filed Oct. 31, 1963, Ser. No. 320,411
22 Claims. (Cl. 336-58)

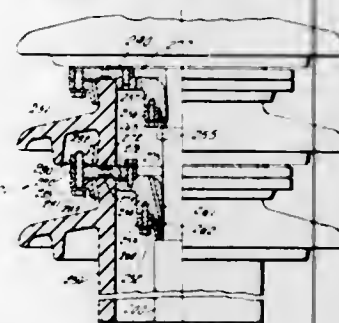


1. A distribution transformer for interconnection to a primary line conductor comprising a tank containing a dielectric fluid, a core and coil unit located within said tank below the level of said fluid, said unit including a primary winding and a secondary winding, means for securing said unit within said tank, said tank having at least one primary squeeze fitting providing an entry into the tank interior, at least one insulated primary cable connected to said primary winding and carried directly through said squeeze fitting and adapted to be directly connected to the primary line conductor exterior said tank, said squeeze fitting comprising a tubular conductive member extending through the tank wall and having a cylindrical passage therethrough, a resilient generally cylindrical insulating grommet positioned within said fitting and having an outer diameter substantially equal to the inner dimension of said passage, an insulating substantially nonresilient retainer coaxially positioned within said passage on the inner end of said grommet, said cable insulation being formed of a thermoplastic synthetic resin

and the grommet being formed of substantially incompressible thermosetting synthetic resin, said grommet and retainer having axial passages through which said primary cable is carried, shoulder means on the inner end of said cylindrical passage against which said retainer bears, and means including a cap threadable on the outer end of said fitting for maintaining endwise compression on said grommet, said grommet being provided with recesses which are substantially closed under compression by said cap whereby upon any deformation of the primary cable insulation the grommet expands correspondingly and deforms radially inwardly to maintain a seal around said cable thereby effectively sealing the interior of said tank whereby leak- and corona-free direct electrical connections may be made and maintained between the primary winding and the primary line conductor.

3,314,031

ZERO REACTANCE TRANSFORMER
Otto Jensen, Malvern, and Isadore K. Dortort, Philadelphia, Pa., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Feb. 17, 1964, Ser. No. 345,148
2 Claims. (Cl. 336-195)



1. A transformer winding comprising a plurality of coaxial tubular conductors insulated from one another by a plurality of respective tubular insulation sheaths; said plurality of coaxial conductors being wound as a unitary winding to form at least two turns; and a plurality of cross-over terminal conductors for connecting each of said plurality of adjacent conductors in series with one another; each of said plurality of coaxial conductors having first adjacent ends and second adjacent ends; each of said first ends of each of said coaxial conductors being connected to a respective second end of one of said coaxial conductors immediately adjacent and interior of each of said respective coaxial conductors by a respective cross-over terminal conductor of said plurality of cross-over terminal conductors; each of said first and second ends being elongated; said coaxial conductors being sequentially exposed from their said insulation sheaths along the axis of said elongated ends; and a first and second plurality of hollow stacked insulators; each of said first and second ends being respectively received by said first and second plurality of hollow stacked insulators; and a plurality of clamping means for clamping each of said stacked insulators to one another; one end of each of said coaxial conductors and one end of each of said cross-over conductors being electrically connected to one another by said clamping means.

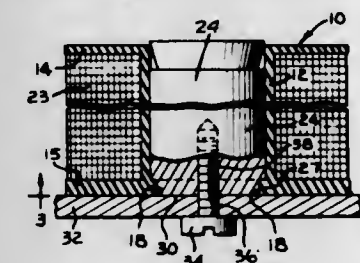
3,314,032

ELECTRICAL COIL ASSEMBLY
Donald L. Van Erden, Bellwood, Ill., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 8, 1964, Ser. No. 394,954
4 Claims. (Cl. 336-198)

1. A coil mounting comprising:
a bobbin for supporting a coil and having a cylindrical tubular hub with outwardly projecting heads at

opposite ends thereof and with a plurality of lugs extending inwardly from the inner surface of the hub at one end thereof, said lugs having surfaces disposed substantially parallel to the axis of the hub and having shoulder forming surfaces disposed transversely of the axis;

a pole piece abutting said one end of said bobbin;



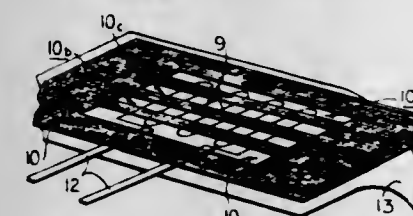
a cylindrical core fitting within said hub and having a reduced end portion fitting between said lugs and providing an end surface in substantial alignment with the end surface of said bobbin and providing shoulders in overlying and abutting engagement with said shoulder forming surfaces of the lugs; and means for securing said core and said pole piece to each other.

3,314,033

GAGE UNITS FOR FLAME-SPRAY INSTALLATION

Stephen P. Whuk, Jr., Marlborough, Mass., assignor to BLH Electronics, Inc., Waltham, Mass., a corporation of Delaware

Filed Jan. 29, 1965, Ser. No. 428,939
3 Claims. (Cl. 338-2)



1. An electrical sensor adapted to be affixed to a test surface by a deposit of flame-sprayed material, comprising electrically-conductive sensor elements disposed in a substantially planar grid pattern, electrical leads in electrical contact with said sensor elements, a flexible frame having a layer of pressure-sensitive adhesive on one side thereof adhesively secured to portions of said elements and having openings therethrough which expose other portions of said elements, said frame including a flexible heat-resistant reinforcement member and a covering of polytetrafluoroethylene at least about one thousandth of an inch thick over the side of said reinforcement member opposite said one side, whereby a molten refractory oxide may be flame-sprayed onto a test surface and over the exposed portions of said elements through said openings without so eroding the reinforcement member as to prevent its being peeled away from the test surface without breaking.

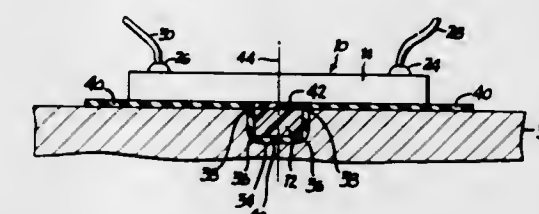
3,314,034

SEMICONDUCTOR STRAIN GAGE SYSTEM
Richard F. Carls, Southfield, Mich., assignor to Lebow Associates, Inc., Oak Park, Mich., a corporation of Michigan

Filed June 25, 1965, Ser. No. 466,905
1 Claim. (Cl. 338-2)

In a strain gage system, a test member, a pair of semiconductor strain gages, means defining a slot in said test member adapted to receive one of said gages, a layer of insulating material disposed upon the surfaces of said slot and extending outwardly upon the surface of said test member from opposite sides of said slot, one of said

gages being located within said slot and bonded therein by said insulating material with the lower surface of said one of said gages being spaced from the bottom of said slot by the thickness of said layer of insulating material, the other of said gages extending laterally across said slot with the thermal center of said other gage being lo-

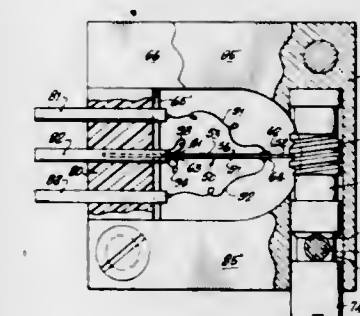


cated directly above the thermal center of said one gage, said other gage being bonded to the surface of said test member by said layer of insulating material and having its lower surface spaced from the surface of said test member by the thickness of said layer of insulating material.

3,314,035

SEMICONDUCTOR POTENTIOMETER
Joseph C. Sanchez, Pasadena, Calif., assignor to Electro-Optical Systems, Inc., Pasadena, Calif., a corporation of California

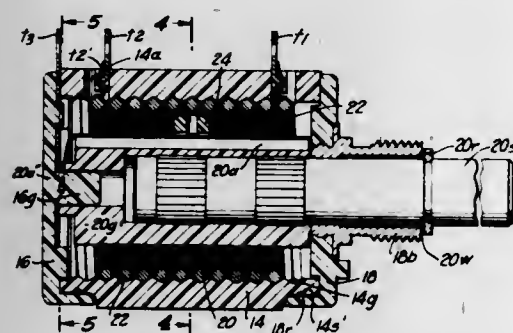
Filed Sept. 4, 1964, Ser. No. 394,553
2 Claims. (Cl. 338-68)



1. A potentiometer device comprising:
(a) a support structure consisting of a substantially rectangular body block defining an elongate slot therein, and a support block of electrical insulating material mounted to said body block within said slot and extending across the open end of said slot;
(b) an elongate unitary crystal semiconductor body of a predetermined conductivity type defining a large end section and a small end section separated by a tapered intermediate section, said semiconductor body being rigidly secured at its large end to said support block and extending into said slot, whereby said semiconductor body is supported as a cantilever beam, said semiconductor body further defining first and second surface regions in said intermediate tapered section on opposing sides of the beam neutral axis, each of said first and second surface regions being of the conductivity type opposite to said predetermined conductivity type and having the same type of resistance change characteristic, a semiconductor barrier junction electrically isolating each of said surface regions from the remainder of the semiconductor body, each of said surface regions having spaced apart ohmic contacts thereon for establishing electrical connection thereto;
(c) adjustable screw means rotatably mounted within said body block and having an elongate circumferential threaded portion extending partially into said slot substantially perpendicular to said semiconductor body adjacent its small end section and with the tip of said small end section engaged with the threads

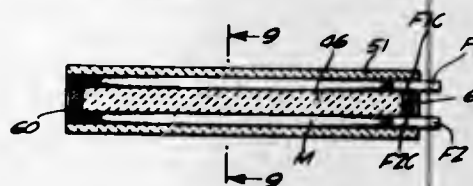
of said screw means for controllably deflecting the crystal beam upon rotation of the screw means; and (e) first, second and third terminal pins mounted to said support block and extending into said slot, flexible wire means electrically connecting said first terminal pin to one of the ohmic contacts on said first surface region, said second terminal pin to one of the ohmic contacts on said second surface region, and said third terminal pin to the other ohmic contact of each of said first and second surface regions.

3,314,036
HELICAL-ELEMENT VARIABLE RESISTOR
Harold L. Kruse, Riverside, Calif., assignor to Bourns, Inc.
Filed July 24, 1964, Ser. No. 384,901
10 Claims. (Cl. 338-143)



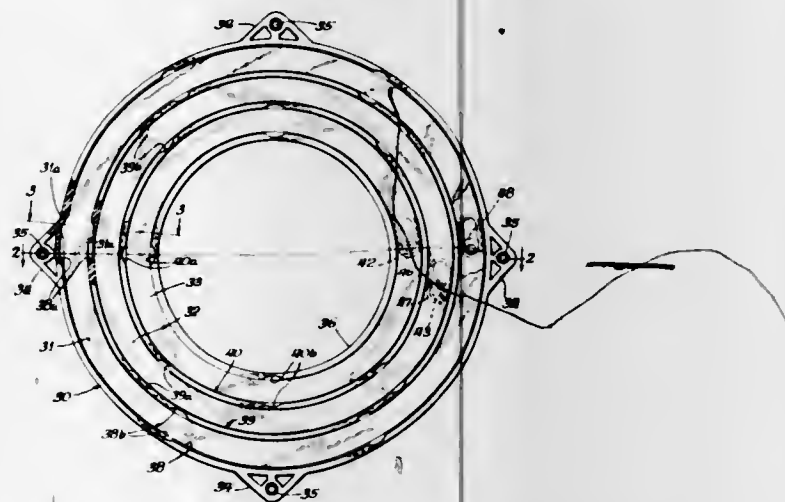
1. A helical-element variable resistor comprising: first means, including means providing a housing having an open-ended barrel-like central housing portion, and first and second end bells each providing a respective one of first and second ends of said housing, said barrel-like central housing portion and said end bells each having integral therewith a respective one of pairs of complementary interengaging snap-acting formations provided thereon one of which at each end of said housing comprises a groove and the other of which comprises a ridge mating with the grooves permitting direct endwise pressing of said end bells onto said housing portion and said formations serving to resiliently retain said end bells on said housing portion, and said housing portion and said end bells having at each end of said housing a set of complementary mating longitudinally-extending notch and key formations mutually effective to position the end bells and said body portion each relative to the others thereof and to prevent relative rotation therebetween, and said end bells comprising respective bearing means;
 - second means, including a plural-convolution helical resistance element disposed on the interior of said central housing portion about an axis extending longitudinally of said housing, and terminal means for respective ends of said resistance element;
 - third means, including rotary means journaled for rotation about said axis and supported by said bearing means, and a conductive electrical return bus included in said rotary means;
 - fourth means, including contact-carrier means and a contact device thereon, disposed between said rotary means and said resistance element and engaging said rotary means for rotation therewith about said axis and guided along a helical path adjacent said element, said contact device brushing on and electrically interconnecting said resistance element and said return bus; and
 - fifth means providing a terminal connection for said return bus;
- whereby assembly of said variable resistor is facilitated.

3,314,037
HEATING ELEMENT
Alvis R. Knowles, Torrance, and Valdemar Lovicz, Redondo Beach, Calif., assignors to Eldon Industries, Inc., Hawthorne, Calif., a corporation of California
Original application Dec. 31, 1962, Ser. No. 248,458, now Patent No. 3,233,637, dated Feb. 8, 1966. Divided and this application Feb. 25, 1964, Ser. No. 360,786
4 Claims. (Cl. 338-268)



1. A heating element comprising: a longitudinally extending ceramic core of uniform cross section throughout its length, said core being symmetrical about its longitudinal axis, said core having axially straight, radially extending fins defining grooves therebetween; a heating coil including a filament-like wire coiled into a helix and positioned in said grooves; a hollow, cylindrical ceramic body extending around said core fins spaced a finite distance from the edges thereof holding said wire in said grooves, said helix fitting snugly between said core and said body, each pair of mutually adjacent fins extending around said helix an angular extent less than 180 degrees whereby turns of said helix are undistorted when assembled with said core; a refractory powder packed inside said body around said wire and said core; and means sealing the ends of said body shut, said means including electrically non-conductive material at each end of said body and a low resistance conductor fixed to each end of said wire and projecting through said electrically non-conductive means material at one end of said body.

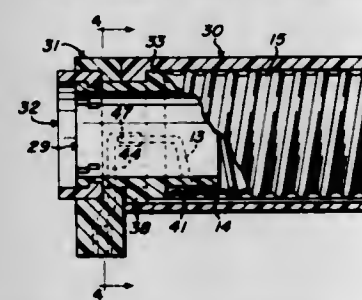
3,314,038
COLLECTOR RING CONSTRUCTION
Donald E. Rutten, Division St., Plainfield, Ill. 60544
Filed Mar. 24, 1964, Ser. No. 344,219
3 Claims. (Cl. 339-5)



3. In a collector ring construction, a base member molded of an electrical insulating material, one surface of said base member having a groove formed therein, a collector ring for said groove, means for manually mechanically retaining said collector ring in said groove, said means comprising a plurality of projecting shoulders formed on said collector ring circumferentially thereof, a plurality of correspondingly shaped slots formed in the side walls of said groove to permit said collector ring to be manually inserted in said groove, said plurality of slots further formed in the walls of said groove to extend in directions in alignment with the planes of said shoulders to receive said shoulders therein responsive to an incremental manual rotation of said collector ring in

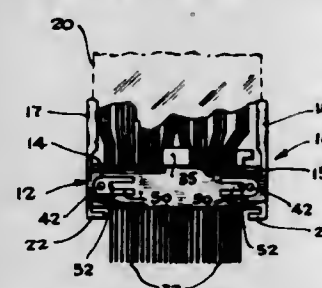
said groove to mechanically retain said collector ring in said groove, said projecting shoulders of said collector ring shaped as segments of a circle, and said collector ring having a terminal lug thereon, said base member having an opening formed through said one surface into said groove with said opening being positioned so that said terminal lug is in axial alignment therewith when said collector ring is positioned to be mechanically retained in said groove, said opening being formed to receive a terminal post, means for securing said terminal post to said terminal lug so that a power conductor is connectible to said lug through said terminal post and so that when said terminal post is secured to said terminal lug the said collector ring is locked in said mechanically retained position.

3,314,039
VACUUM CLEANER CONNECTOR
Lincoln I. Oppen, Dayton, Ohio, assignor to Dayco Corporation, Dayton, Ohio, a corporation of Ohio
Filed Mar. 9, 1965, Ser. No. 438,330
6 Claims. (Cl. 339-15)



1. In a vacuum cleaner hose assembly including a vacuum hose having a plurality of electrical conductors incorporated therein, a connector mounted at one end of the hose comprising an inner sleeve located partially within the end of said hose, an outer sleeve surrounding said hose end and engaging said inner sleeve, a collar mounted on said inner sleeve and a separate locking member engaging said inner sleeve and said collar.

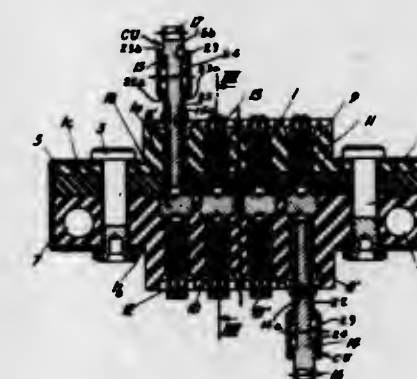
3,314,040
ELECTRICAL CONNECTOR
William H. McKee, West Covina, Calif., assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Jan. 15, 1965, Ser. No. 425,697
4 Claims. (Cl. 339-75)



1. An improved electrical connector to receive a printed circuit board, or the like, in positive frictional and electrical engagement therewith comprising, in combination: an insulating body defining a circuit board receiving opening, the opening in said body having electrical contact means therein to mate with the leads on the circuit board when mounted in said body;
- a support jacket mounted about the walls of said insulating body, opposed legs of said jacket being formed such that a clamping force is exerted on the insulating body to bias the insulating body to a more compact condition thereby to narrow the opening in said body in loaded condition to a lateral dimension less than the thickness of the circuit board without the circuit board in said opening, said jacket having

means thereon for application of an externally applied force to relieve the loaded condition on the insulating body and to permit the body to assume its static unloaded condition for ease of insertion of the circuit board, whereby upon removal of said externally applied force the jacket again applies a clamping force to said insulating body and forces the body and contact means in the opening thereof into intimate electrical and physical engagement with said circuit board.

3,314,041
DEVICE FOR CONNECTING CONDUCTORS
Ernest Potterin, Orleans, France, assignor to Societe Anonyme des Extincteurs J. Martin, Orleans, France, a corporation of France
Filed Mar. 1, 1965, Ser. No. 436,229
Claims priority, application France, Mar. 4, 1964, 966,060
5 Claims. (Cl. 339-91)

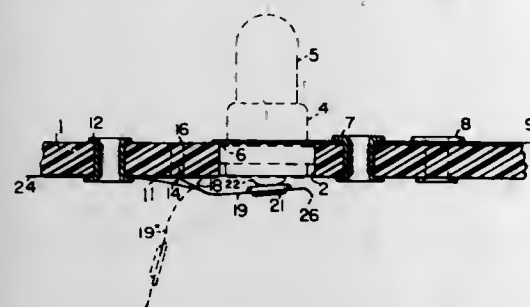


1. A device for connecting electrical conductors comprising an insulating support having a socket extending therethrough from face-to-face thereof and a recess opening to said socket; a unitary conductor pin fixed in said socket and including two end parts and an intervening connecting portion, each of said end parts being hollow for the reception of the free end of a conducting stem; a conducting member in said recess and being in contact with said conductor pin; and a cooperating connector unit cooperable with said conductor pin, said connector unit comprising said conducting stem; a first sleeve slidable on said stem and having an inner end engageable with one of said pin end parts, and an outer end; a second sleeve slidable on said stem and relatively to said first sleeve; a spring interposed between said stem and the outer end of said first sleeve and urging the latter axially of said stem toward the free end thereof; means on said sleeves engageable with each other for limiting movement of said first sleeve relative to said second sleeve toward the free end of said stem; and means on said stem and said second sleeve engageable with each other for limiting movement of said second sleeve relative to said stem toward the free end thereof.

3,314,042
LAMP SOCKET
Henry Gabriellian, Santa Ana, Calif., assignor to Electronic Engineering Co. of California, Santa Ana, Calif., a corporation of California
Filed Mar. 4, 1964, Ser. No. 349,396
11 Claims. (Cl. 339-126)

1. A lamp socket comprising: (a) an insulating member having an aperture, (b) a substantially flat stationary contact attached to one side of said member, (c) said stationary contact having a lamp-receiving aperture smaller than and concentric with the aperture in said insulating member, (d) a leaf spring attached to the other side of said member,

(e) a flap contact hinged under said leaf spring to have stable equilibrium by minimum deformation of said leaf spring when said flap is against said insulating member to hold a lamp within said aperture by bearing upon a contact of said lamp, and

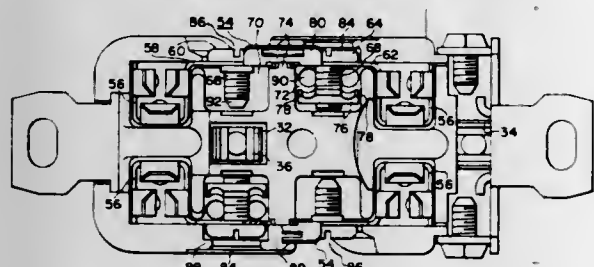


(f) to also have stable equilibrium again by minimum deformation of said leaf spring when said flap contact is disposed at an angle greater than a right angle away from the previously described position to allow said lamp to be removed from said aperture in said insulating member.

3,314,043

WIRING DEVICE HAVING BACK AND SIDE WIRING TERMINAL MEANS

Vincent L. Carissimi, Fairfield, Conn., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 28, 1964, Ser. No. 340,674
2 Claims. (Cl. 339-164)



1. A wiring device comprising an insulative housing within which there are disposed at least one contact and terminal means including a fixed terminal plate portion, a back wiring screw and a side wiring screw disposed in spaced relation on said contact and terminal means such that respective shanks thereof extend through respective terminal plate portions of said contact and terminal means, said screws further exposed to the exterior through respective access openings in one side of said housing, means for captivating said back wiring screw against shank axial movement and for captivating a clamping nut engaged therewith against rotative movement within a housing back wiring pocket therefor, at least one opening in a rear side of said housing aligned with said back wiring pocket for wire insertion between said clamping nut and the associated terminal plate portion, and said side wiring screw having its shank threadedly engaged with the associated terminal plate portion and axially movable along a housing side wiring pocket, the housing side access opening associated with said side wiring screw structurally arranged to provide for outward movement of said side wiring screw to an extent limited only by a staked end portion of said side wiring screw shank.

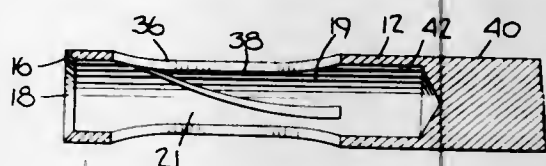
3,314,044

FEMALE ELECTRICAL CONNECTORS

Albert E. Powell, Binney Lane,
Old Greenwich, Conn. 06870
Filed Dec. 16, 1964, Ser. No. 418,733
2 Claims. (Cl. 339-256)

1. A female electrical contact member for receiving a corresponding mating male electrical member, said fe-

male member comprising an elongated member having a substantially centrally disposed longitudinally extending bore commencing from one end thereof, said elongated member having an elongated necked-down tubular portion spaced inwardly from said one end, said portion having a substantially uniform internal diameter less than the diameter of said bore, said portion of said elongated member being provided with a plurality of resilient torsional gripping members separated by slots, said gripping mem-

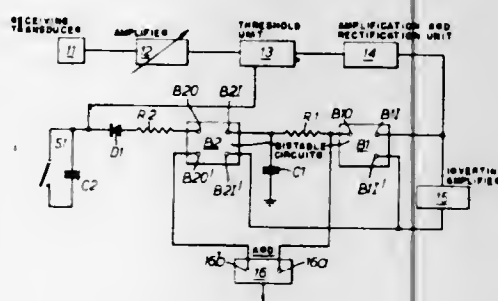


bers extend substantially the length of said portion and which are helically twisted through an angle of about 120 degrees, the summation of the slot width being a distance of between about 13 percent and about 29 percent of the perimeter of said elongated member prior to twisting, said slots being substantially closed subsequent to twisting, whereby said gripping members exert a combination radial and torsional force upon the male member when it is in its inserted position.

3,314,045

ECHO SOUNDERS

Robert Lawton Williamson, Ilford, and John Henry Lindars, Chelmsford, England, assignors to Plessey-UK Limited, Ilford, England, a British company
Filed Nov. 30, 1964, Ser. No. 414,795
Claims priority, application Great Britain, Nov. 29, 1963, 47,171/63
15 Claims. (Cl. 340-3)



1. An echo sounder receiving system comprising a receiving transducer, an amplifier connected to said transducer, said amplifier having a gain which increases over a predetermined range during each sounding cycle, a comparison unit connected to said amplifier and operative during each sounding cycle to produce an electrical output pulse upon reception of the first significant amplified electrical echo-representing signal and a further electrical output pulse upon reception of each succeeding amplified electrical echo-representing signal which is greater than all the preceding amplified electrical echo-representing signals.

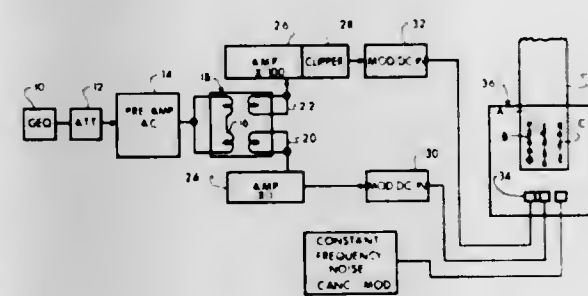
3,314,046

SEISMIC WIDE RANGE MAGNETIC TAPE RECORDING

James H. Brown, Houston, Tex., assignor to Dresser Sie, Inc., Dallas, Tex., a corporation of Delaware
Filed Oct. 8, 1964, Ser. No. 402,418
14 Claims. (Cl. 340-15.5)

1. The method of recording the seismic signal derived from a geophone with at least a 90 db range comprising: preamplifying the signal received from the geophone to condition it for further processing; splitting the signal into two like signals; amplifying one signal at unity level; amplifying the other signal 100 times unity level;

clipping said amplified other signal to a precise level; modulating both signals; simultaneously recording the modulated signals on two separate channels of a magnetic tape; playing back the tape; demodulating each channel; amplifying said previously amplified other signal at unity level;

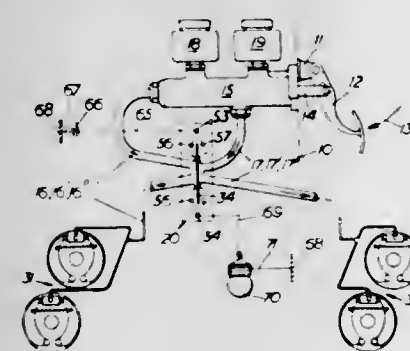


amplifying the previously unity level recorded signal 100 times unity level; clipping said 100 times amplified one signal at slightly below the level of said clipped amplified other signal; rejecting all portions of said 100 times amplified playback one signal above said precise level of the clipped signal and combining the two playback signals into a composite signal.

3,314,047

WARNING DEVICES FOR MOTOR VEHICLE BRAKE SYSTEMS

Helmut Zinke, Russelsheim am Main, and Walter Kollander, Hochheim am Main, Germany, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 16, 1964, Ser. No. 383,145
Claims priority, application Germany, July 19, 1963, O 9,563
9 Claims. (Cl. 340-52)

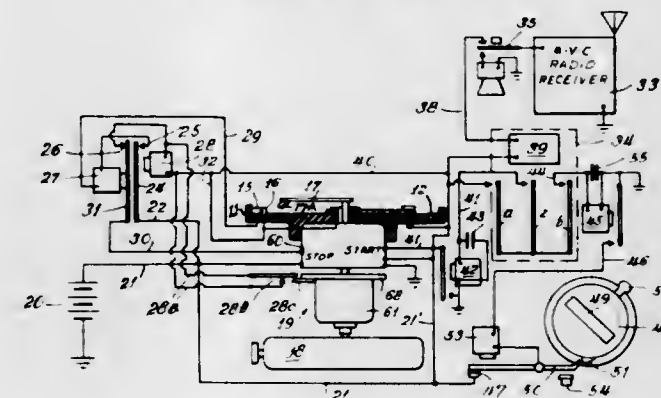


1. A brake system warning device for monitoring pressures in a pair of hydraulic circuits of a fluid-operable brake system for a motor vehicle, comprising a housing, a pair of coaxially spaced annular pivot edges of equal diameter projecting from opposed internal faces of the housing, a diaphragm which is of larger diameter than the pair of annular pivot edges and is clamped by said pivot edges coaxially therebetween, connecting means extending from the interior of said housing for connecting each side of said diaphragm to a respective one of said pair of hydraulic circuits, a switch contact member engageable by a rim portion of said diaphragm when the diaphragm responds to disturbance of said pressure differential, and an electrical warning circuit connected to said switch contact member to provide a warning signal when said rim portion of said diaphragm engages said switch contact member.

3,314,048

RADIO PAGING SYSTEM RESPONSIVE TO PULSES OF CORRECT FREQUENCY AND TIMING

Stanley S. Green, 115 E. 61st St.,
Indianapolis, Ind. 46220
Filed Aug. 31, 1965, Ser. No. 484,074
55 Claims. (Cl. 340-164)



1. A radio paging system including a multitude of selective radio paging receivers and a radio sending station for selectively paging any one thereof:

the sending station including radio sending means, synchronizing means for causing the sending means to send a synchronizing impulse modulated by a combination of two frequencies, and including paging signal means for causing the sending means to send paging signals each modulated with another combination of two frequencies, with clock-accurate timing from the synchronizing impulse;

said paging receivers each including a radio receiver having an audio-class output reflecting said frequencies, clock-accurate connection timing means, and alert means,

and vibrating armature relay means for controlling the alert means, connected under control of the connection timing means to be energized by the output of the radio receiver when a pulse is received of correct modulation frequency and with correct timing after the synchronizing pulse for paging the particular receiver, the connection timing means otherwise maintaining the relay means de-energized during the reception of paging signals, so that no false paging will result from the decay time of the relay means even if a paging impulse intended for another paging receiver is received immediately preceding said correct timing;

and said sender including means for sending paging impulses, for various receivers of the multitude, in close succession; whereby false paging could result if such relays were subjected indiscriminately to all of the impulses received.

3,314,049

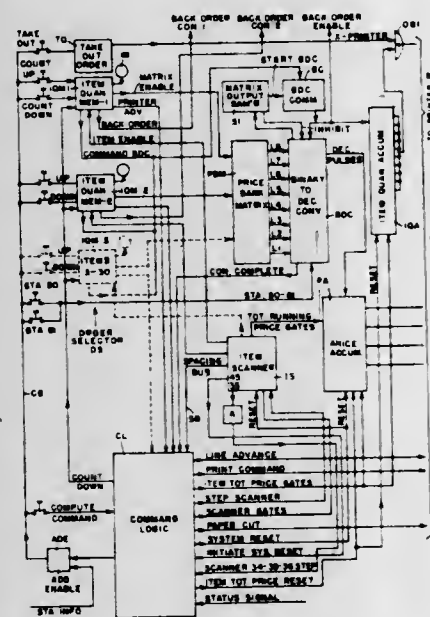
ELECTRONIC ORDERING, COMPUTING AND BILL-PRINTING SYSTEM

Marvin Felcheck, Bayside, N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey

Filed July 23, 1963, Ser. No. 297,118
4 Claims. (Cl. 340-172.5)

1. In combination in an ordering, price computing and indicating system, a computer including a plurality of bi-directional ring counter devices one for each of a number of items of predetermined price available for ordering, each ring counter device being adapted to produce and store an output voltage representing the quantity information for its particular item being ordered and having a trigger circuit with an add switch and a subtract switch for entering and removing one of its items respectively each time the switches are closed and a plurality of ordering keys each connected to one of the switches for closing

such switch when manually operated, a binary to decimal converter connected to all of the counter devices and controlled to respond on a time sharing basis to the respective output voltages therefrom of a single order for converting the output voltages to respective trains of pulses in number respectively representing the total price of the total number of each item ordered, a plurality of indicators each connected to one of the counter devices and responsive to the quantity information stored therein to indicate the total number of such item to be ordered and to remove such indication when the stored quantity information is provided to the converter, scanning means including gating means connected to the binary to decimal converter and to all the ring counter devices for passing, when the gating means is qualified, stored information from each ring counter device in sequence on a time sharing basis to the binary to decimal converter, command means connected to the scanning means and operable to provide a start command signal to qualify the



gating means to pass the stored information from the first counter device of the sequence to the binary to decimal converter, indicator means connected to the converter and responsive to the respective trains of pulses for indicating the total number of each of the items ordered and the total price thereof, the indicator means being connected to the scanning means and having means to provide a step command signal after indicating the total number and price of each one of the items to alter the qualification of the gating means to pass the stored information from the next ring counter device in the sequence to the binary to decimal converter, a plurality of customer ordering stations each having a relay connected to all the add and subtract switches to provide a source of signals thereto when one of the relays is operated, and an interlock to qualify the relays providing a closed path from the relays to the add and subtract switches when a system operator is in contact with the station having a customer operated relay.

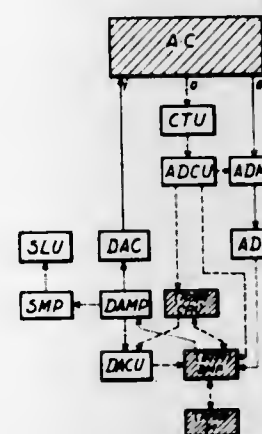
3,314,050

AD-DA COMPUTER LINKAGE SYSTEM
André Debroux, Clément Green, and Hervé D'Hoop, Varese, Italy, assignors to Communauté Européenne de l'Energie Atomique—Euratom, Brussels, Belgium
Filed July 24, 1963, Ser. No. 297,283
Claims priority, application Great Britain, Aug. 7, 1962, 30,250/62

7 Claims. (Cl. 340—172.5)

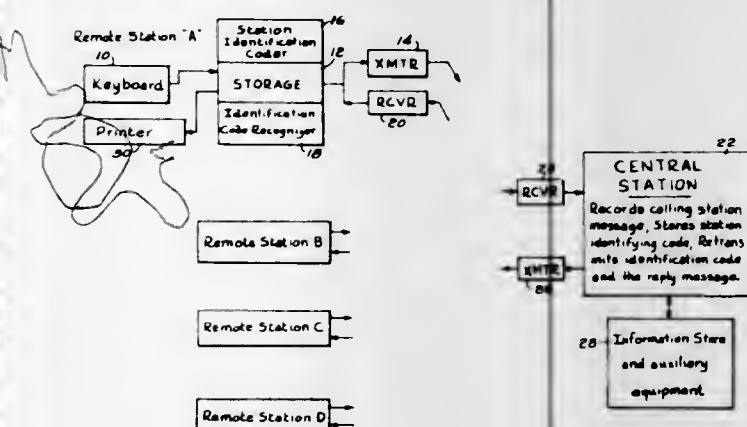
1. Improvement in or relating to the functional linkage of a digital and an analog computer that form a hybrid system, the digital computer, comprising programme interrupt facilities controlled by its input- and

output-channels, characterized in, that there is at least one register (OCB) which in the train of the transfer of a steady function's argument of the analog computer (AC) is fed by a digital computer output channel with data signifying characteristics of a straight line as well as of the limits, between which the function is to be replaced by the line, and that there is at least one interpolating converter (IC) connected via its input to said



3,314,051

SELECTIVE-CALL DATA SYSTEM
Frederick P. Wilcox, 261-1 Oenoke Ridge, New Canaan, Conn. 06840, and Newland F. Smith, New Canaan, Conn.; said Smith assignor to said Wilcox
Filed May 12, 1964, Ser. No. 366,792
4 Claims. (Cl. 340—172.5)



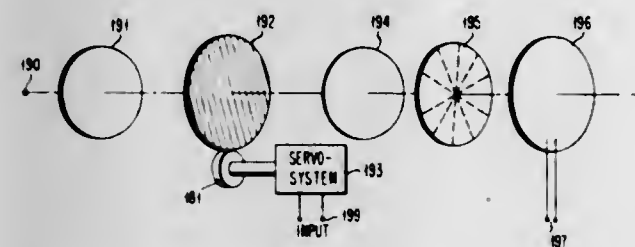
1. A pulse-coded stored information interrogating and responding system of the type including a central remotely-interrogable information store and a plurality of remote inquiry stations, said system comprising:

- means at each of said remote stations for initiating, and transmitting to said central station, a series of pulse combinations constituted by an initial set of pre-assigned pulse combinations forming a station-identification, and a following set of pulse combinations forming an information query;
- means at said central station for registering said station-identification pulse combinations and for encoding a response to said query;

- further means at said central station for transmitting to all of said remote stations a series of pulse combinations including an initial set of pulse combinations corresponding to those registered by (b) and a following set of pulse combinations constituting said encoded response;
- means at each of said remote stations for comparing (1) the initial set of pulse combinations received from said central station with (2) the pulse combination pre-assigned to that respective station, and
- means at each of said remote stations, responsive to the operation of said comparing means upon its recognition of correspondence between (1) and (2), for manifesting the said following set of pulse combinations constituting said encoded response.

3,314,052

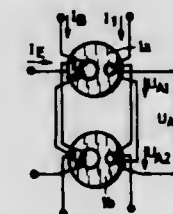
LIGHT MODULATION SYSTEM
Adolf W. Lohmann, Los Gatos, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Apr. 12, 1963, Ser. No. 272,793
12 Claims. (Cl. 340—173)



- A system comprising, a point source of light, a collimating lens, a converging lens, a diffraction grating positioned between said collimating lens and said converging lens, a signal input means, means for modulating the angular orientation of said grating in response to said signal input means, a mask in the Fraunhofer plane of said converging lens, said mask having areas of varying transmissivity, and detecting means in the image plane of said converging lens to detect the amount of light incident upon said detecting means.

3,314,053

TRANSFLUXOR CIRCUIT ARRANGEMENT
Martin Bler and Georg Glünder, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany
Filed Nov. 13, 1962, Ser. No. 237,401
Claims priority, application Germany, Nov. 14, 1961, S 76,674; Oct. 17, 1962, S 82,068
26 Claims. (Cl. 340—174)

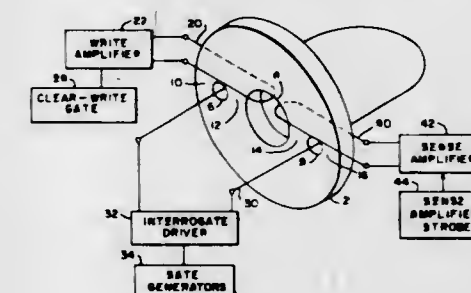


- A transfluxor circuit arrangement comprising at least two transfluxors, an output winding for each transfluxor, wherein the characteristic curves of the respective output values are shifted so that the setting region of one transfluxor starts above the end of the setting region of

at least one other transfluxor, and means for electrically connecting the output windings so as to effect superposition of the respective output values.

3,314,054

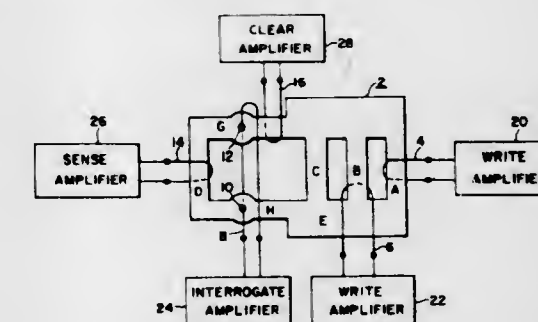
NON-DESTRUCTIVE READOUT MEMORY CELL
Edward R. Higgins, North Linthicum, Md., assignor to Westinghouse Electric Corporation, Pittsburgh Pa., a corporation of Pennsylvania
Filed Mar. 22, 1963, Ser. No. 267,204
1 Claim. (Cl. 340—174)



A non-destructive readout memory cell comprising, in combination; a magnetic core having at least three apertures; means for inducing a remanent flux in one direction within said core around one of said apertures indicative of a binary ONE; means for inducing a remanent flux in the other direction within said core around said one of said apertures indicative of a binary ZERO; means threaded through the other apertures and being the only means so threaded through said other apertures for reversibly altering the remanent flux encircling said one of said apertures; said other apertures being symmetrically disposed on the diametrical axis of said one aperture; and means threaded through said one aperture responsive to said change in remanent flux for providing an output signal having a polarity indicative of the direction of the remanent flux stored in said core.

3,314,055

MULTIAPERTURE MAGNETIC STORAGE DEVICE
Edward R. Higgins, Jr., North Linthicum, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 31, 1963, Ser. No. 284,623
3 Claims. (Cl. 340—174)

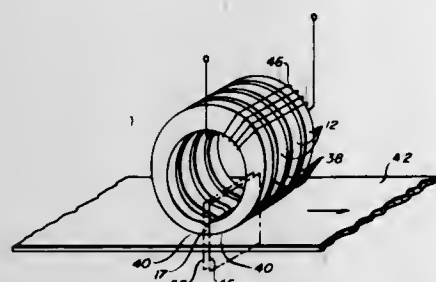


- An element of magnetic material having two remanent states; first, second and third legs of said element being of substantially equal length and cross-sectional area; a fourth leg of longer length but of substantially equal cross-sectional area; said fourth leg having two apertures therethrough; and other portions of said element interconnecting the flux within said legs and having cross-sectional areas substantially twice the cross-sectional area of the aforementioned legs.

3,314,056

GAPLESS MAGNETIC HEAD

Richard B. Lawrance, Winchester, Mass., assignor to Honeywell Inc., a corporation of Delaware
Filed Oct. 2, 1962, Ser. No. 227,931
12 Claims. (Cl. 340-174.1)

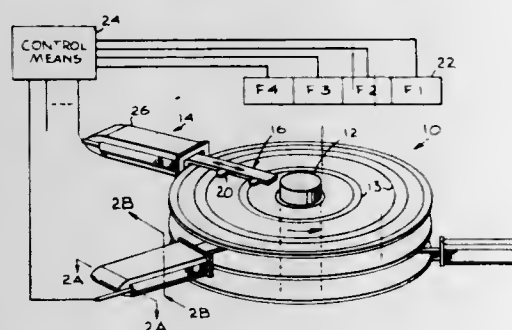


1. A transducer head comprising a continuous closed-loop core consisting entirely of a magnetic material, said core further comprising a narrow cross-sectional region including at least a portion of an external surface adapted to be presented to a magnetic storage medium, and means for inducing a magnetic flux flow in said core, the core material in said cross-sectional core region having a permanently low actual permeability with respect to the remainder of said core adapted to force said flux outward with respect to said core in the vicinity of said external surface portion.

3,314,057

RANDOM ACCESS POSITIONING MEANS

Charles S. Mogtader, Beverly Hills, Calif., assignor to Data Products Corporation, Culver City, Calif., a corporation of Delaware
Filed June 17, 1963, Ser. No. 288,197
9 Claims. (Cl. 340-174.1)

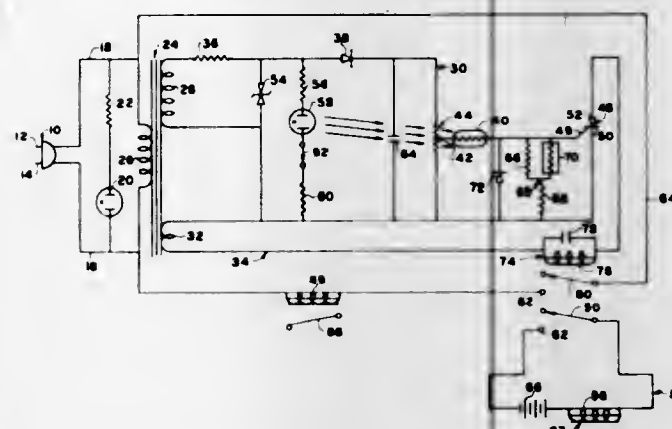


3. For use in combination with a disc having a plurality of tracks thereon, positioning means for positioning a head adjacent the one of said tracks identified by a binary address stored in a multistage track register, said positioning means comprising a plurality of bistable devices each including a member mounted for rotational movement; means coupling each of said track register stages to a different one of said bistable devices for causing each of said members to assume a first stable position in response to a stored binary "1" and a second stable position in response to a stored binary "0"; a plurality of rods each having first and second ends; means pivotally and eccentrically securing each of said rod first ends to a different one of said members; a plurality of arms each having first and second ends; means pivotally attaching each of said second rod ends to a different one of said first arm ends; said head supported on the second end of one of said arms; and bearing means enclosing a portion of said head supporting arm for restraining movement thereof to a direction along a radius of said disc.

3,314,058

ELECTRONIC SMOKE DETECTOR AND FIRE ALARM

Jack D. Osborne, Milford, Mich., assignor to Aseco, Incorporated, Milford, Mich., a corporation of Michigan
Filed Jan. 13, 1964, Ser. No. 337,445
11 Claims. (Cl. 340-228)



1. An alarm system adapted for connection to a source of electrical power comprising
(a) An alarm circuit adapted for connection to said source of electrical power and including switching means and means producing an alarm upon closing of said switching means,
(b) an alarm relay circuit including an inductor and operable to close said switching means upon de-energizing of said inductor,
(c) a control circuit including a solid state switch device series connected with said inductor and operable to energize and de-energize said inductor in response to changes in the voltage impressed upon the input side of said switch device,
(d) said control circuit further comprising a gaseous incandescent lamp and means regulating the voltage to said lamp to produce a substantially constant light source from said lamp, a photoconductive cell adjacent said lamp to receive light energy emitted therefrom and being series connected to the input side of said solid state switch device whereby variations in the light intensity received by said photoconductive cell caused by particles intermediate said lamp and said cell will produce a variation in the voltage impressed upon the input side of said solid state switch device, and a normally closed thermostat switch series connected with said switch and being operable to open upon being heated to a predetermined temperature.

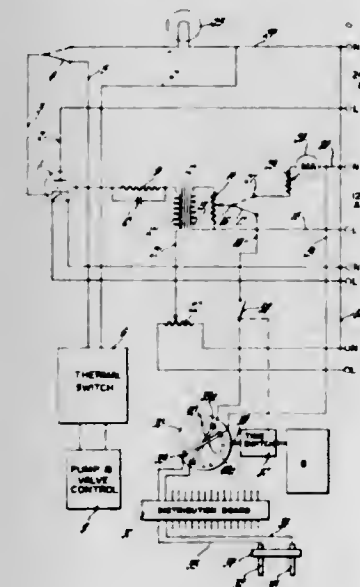
3,314,059

APPARATUS FOR DETECTING AND CONTROLLING THE PRESENCE OF SEWAGE AND OTHER SLUDGES IN A LIQUID

Edward Sydenham Hill, 39 Alexandra Road, Bedford Park, London, England; George Albert Keep, 122 Hinton Road, Hounslow, England; and James Glen, 1 Trevor Close, Isleworth, England
Filed Sept. 24, 1962, Ser. No. 225,528
2 Claims. (Cl. 340-244)

1. Apparatus for determining the sludge density of a liquid comprising an electric conductivity probe having two spaced electrodes for insertion in the liquid, a transformer having a primary and a secondary winding, a first source of alternating current to energize said probe, voltage selecting means for setting a desired sludge datum level connected to said primary winding probe and first source, whereby the alternating current flowing through said probe varies with the resistance of said liquid between said electrodes in dependence upon the sludge density thereof and a selected proportion of the voltage drop in said voltage selecting means due to said current is

applied to said primary winding, a second source of alternating current, second voltage selecting means connected to said second source and said secondary winding, a three-electrode electron tube having a control electrode and two other electrodes for connection in a power circuit, said control electrode being connected to said secondary winding so that an alternating voltage bias selected by the setting of said second voltage selecting means is applied to said control electrode to maintain

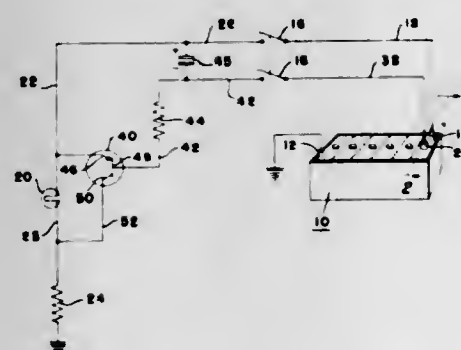


said tube in a non-conductive state, and means to carry out a desired function for connection in said power circuit, whereby an increase in the sludge density beyond the datum level set by said first voltage selecting means causes a voltage to be induced in said secondary winding whose magnitude is sufficient to overcome said bias voltage and cause said tube to become conductive and said means to carry out a desired function to become operative.

3,314,060

FLUID LEVEL INDICATOR

Robert P. MacKenzie, Muncie, and William D. Worrell, Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 6, 1964, Ser. No. 357,632
4 Claims. (Cl. 340-244)

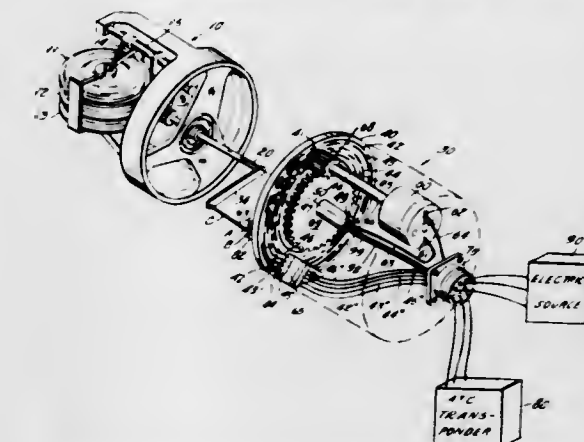


1. A fluid level indicator comprising; an electrical power source, electrical indicating means connected between said power source and ground, a fluid container conductively engaging said power source and ground, and current responsive means adapted to short out the indicating means when current flows through a fluid in the fluid container into said current responsive means, said current responsive means is a transistor that is normally conducting, said transistor becoming non-conductive when the fluid level recedes below a predetermined desired level.

3,314,061

SERVO ALTIMETER

William F. Magagnos, Glen Cove, N.Y., assignor to Kollman Instrument Corporation, Elmhurst, N.Y., a corporation of New York
Filed June 24, 1963, Ser. No. 289,948
9 Claims. (Cl. 340-347)



1. In a navigational apparatus, an encoder arrangement comprising:
a rotatable encoder disc having data annularly disposed about a first surface thereof;
first and second contact elements carried by said encoder disc, in spaced apart angular relationship;
a potential source having first, second and third terminals;
said first and second potential source terminals being at opposite polarities with respect to said third potential source terminal;
said first and second potential source terminals directly connected to said first and second contact elements;
a third contact element rotatable responsive to variations in a navigational parameter to be encoded, and disposed intermediate said first and second contact elements;
a polarity sensitive servo motor operatively connected to said encoder disc for controlled rotation thereof;
said third contact element directly connected to a first terminal of said servo motor;
a second terminal of said servo motor directly connected to said third potential source terminal, clockwise rotation of said third contact element effecting engagement thereof with said first contact element, thereby electrically connecting said first contact element to said first servo motor terminal; the application to said servo motor of the potential defined by said first and third potential source terminals providing follow-up clockwise rotation of said encoder disc; counter-clockwise rotation of said third contact element effecting engagement thereof with said second contact element, thereby electrically connecting said second contact element to said servo motor first terminal; the application to said servo motor of the potential defined by said second and third potential source terminals providing follow-up counterclockwise rotation of said encoder disc.

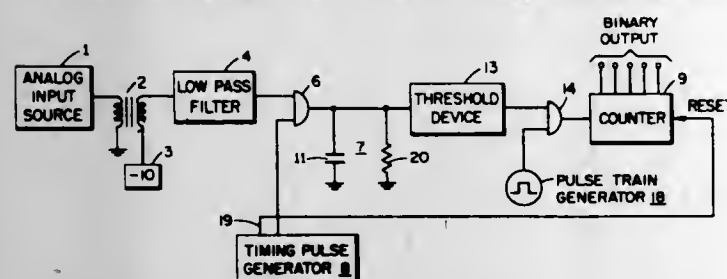
3,314,062

ANALOG-TO-DIGITAL CONVERTER

Uwe A. Pommerening, Webster, N.Y., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware
Filed Oct. 17, 1963, Ser. No. 316,832
6 Claims. (Cl. 340-347)

1. An analog-to-digital converter for providing a digital output which is representative of the amplitude of a sampled portion of an analog signal comprising an analog signal source, an energy storage circuit, means coupled between said analog signal source and said energy storage circuit for sampling the amplitude of said analog signal

during a predetermined sampling period and for inserting a quantity of electrical energy into said energy storage circuit during said sampling period to build up energy within said energy storage circuit which is a function of the sampled amplitude of said analog signal, means for



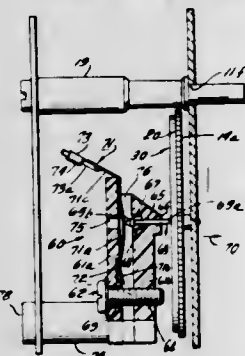
dissipating said electrical energy inserted into said energy storage circuit over an energy dissipation period, and means coupled to said energy storage circuit for measuring the time interval in which the energy level within said energy storage circuit remains above a predetermined level which is a function of said sampled amplitude.

3,314,063

METER REGISTER GEAR ENCODER

Abraham Brothman, Dumont, Nathaniel L. Kahn, Glen Rock, and Richard D. Reiser, Waldwick, N.J., assignors to Transitel International Corp., Paramus, N.J., a corporation of New Jersey

Filed Mar. 20, 1964, Ser. No. 353,362
19 Claims. (Cl. 340-347)



1. Register means for providing a visually observable indication for meters and the like, comprising a plurality of dial means; input means for receiving an output from a meter; gear means driven by said input means and having a plurality of pointers cooperating with said dial faces to provide a visually observable reading; said gear means comprising a plurality of gear members associated with each of said dial means; each of said gear members comprising encoder means each having a first surface thereof making surface contact with and being secured to substantially the entire surface of one face of an associated gear member for digitizing the angular position of said gear member; a plurality of sensing means associated with a second surface of each of said encoder means for reading the digital output of said encoder means.

3,314,064

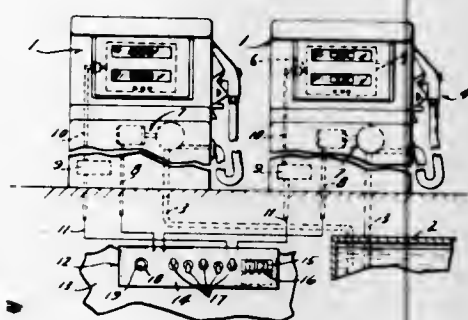
CODE PROGRAMMING MEANS

Charles R. Cahn, Manhattan Beach, and Lawrence C. Murdock, San Diego, Calif., assignors to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York

Filed Jan. 8, 1964, Ser. No. 336,554
12 Claims. (Cl. 340-348)

1. In a code program generating means,
(a) a plurality of code generators, each including a pair of similar multiple position switches interconnected to the opposite ends of conductors to form parallel circuit branches one of which is completed in each switch position,

(b) first drive means to simultaneously actuate first corresponding switches in each pair of switches,
(c) second drive means to simultaneously actuate second corresponding switches of each pair of switches, and



(d) means to actuate said drive means in a predetermined different circuit connection within said code generators.

3,314,065

VEHICLE SENSING AND VELOCITY MEASURING APPARATUS FOR USE IN TRAFFIC CONTROL SYSTEM

Oliver I. Steigerwalt and Harry F. Strenglein, Clearwater, Fla., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed Apr. 26, 1965, Ser. No. 450,662
10 Claims. (Cl. 343-8)



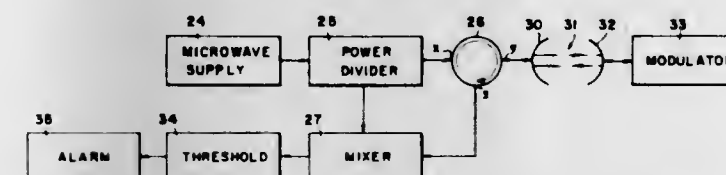
1. Means for determining the time of transit of a vehicle over a known distance along a predetermined path comprising the combination,
means for radiating energy onto regions of said path that define the beginning and the end of said known distance,
first and second receiving means for receiving reflected energy from said vehicle when it is at the beginning and end, respectively, of said known distance,
detector means selectively coupled to said receiving means for producing signals only in response to the reflected energy received from said vehicle,
switching means for selectively coupling said detector means to said first receiving means and being operable in response to an actuating signal to selectively couple the detector means to said second receiving means,
a bistable element coupled to said detector means for producing an actuating signal in response to a first detector signal that is produced in response to energy reflected by the vehicle when at the beginning of said known distance,
means for coupling said actuating signal to said switching means,
timing means responsive to said actuating signal to commence a timing signal, and
means coupled to said detector means for producing a terminating signal when said second receiving means receives reflected energy from the vehicle at the end of the known distance,
said timing means being adapted to receive said terminating signal and operating to terminate said timing signal in response thereto.

3,314,066

METHOD AND APPARATUS FOR DETECTING THE ENTRANCE OF AN OBJECT INTO A REGION BEING MONITORED

Edmund I. Schwartz, Fairlawn, and Harold A. Smith, Plainfield, N.J., and Albert D. Stern, Jamaica, N.Y., assignors to Devenco Incorporated, New York, N.Y., a corporation of New York

Filed June 2, 1965, Ser. No. 460,686
9 Claims. (Cl. 343-5)



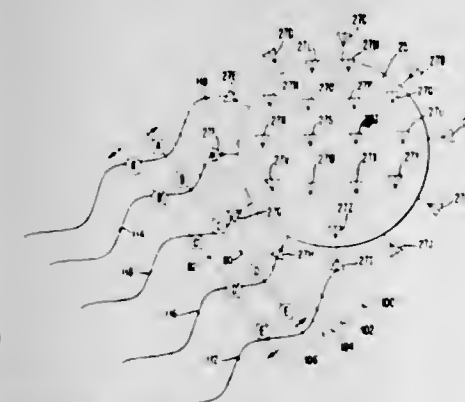
1. A system for detecting the entrance of an object into a region being monitored by the system, comprising a transmitter at one extremity of the region for sending an energy wave through the region, reflector means at another extremity of the region and arranged in the path of the wave and adapted to reflect the wave back through the region along substantially the same path traveled by the wave before reaching said reflector means, a receiver at one of said extremities of the region and adapted to receive the reflected wave, means associated with said reflector means for modulating at a constant frequency the energy wave impinging upon it to produce modulation energy within the reflected wave, and means associated with said receiver for measuring the intensity of only the modulation energy of the reflected wave.

3,314,067

RE-DIRECTIVE ANTENNA ARRAY AND RELATED COMMUNICATIONS SYSTEM

Elisabeth M. Rutz, Bethesda, Md., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 31, 1963, Ser. No. 334,744
26 Claims. (Cl. 343-100)



1. An antenna system comprising:
a plurality of individual signal converters each responsive to at least two signals at the input of each said signal converter to produce a third signal at each said input with phase which is a function of the difference of the phase of said two signals,
a plurality of individual antenna elements each adapted to receive transmitted electromagnetic radiation, at least two of said individual antenna elements each being electrically connected to the input of a signal converter,
means to generate an oscillatory signal,
means to connect said oscillatory signal across the input of each said signal converter connected to an antenna element in substantially the same phase relationship at each said signal converter and,
means connected to the input of each signal converter to reradiate said third signal in a pattern in which all reradiated third signals add coherently.

3,314,068

GRADING METHOD AND APPARATUS

Alphonse Verive, West Chicago, Ill., assignor of twenty-five percent to Frank J. Catalani, twenty-five percent to Anthony V. Pasquale and twenty-five percent to Alton D. Anderson

Filed Mar. 30, 1964, Ser. No. 355,679
10 Claims. (Cl. 343-107)



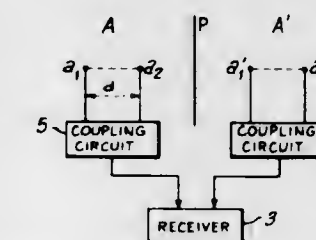
1. Apparatus for making grade determinations which comprises in combination: dual beam signal transmitting means; mounting means for said signal transmitting means, said mounting means including angle determining means for fixing the angle at which said signal is transmitted; receiving means for receiving the dual beam signal emitted by said transmitting means; elongated support means for said receiving means; height adjusting means for adjusting the position of said receiving means on said support means; and signal interpreting means mounted on said elongated support means.

3,314,069

WIDE BAND DIRECTION FINDER ANTENNA

Gérard Dubost, Paris, France, assignor to CSF—Compagnie Generale de Telegraphie Sans Fil, a corporation of France

Filed May 6, 1964, Ser. No. 365,434
Claims priority, application France, May 7, 1963, 933,896;
Apr. 28, 1964, 972,593, Patent 85,806
6 Claims. (Cl. 343-119)



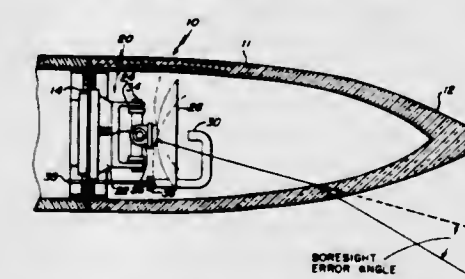
2. A wide-frequency band direction finder system comprising a first and a second directive array of elementary antennas and phase shifting means providing a phase shift between adjacent elementary antennas, whose absolute value decreases as the operating frequency increases.

3,314,070

TAPERED RADOMES

Fred R. Youngren, Bedford, Mass., assignor, by means assignments, to the United States of America as represented by the Secretary of the Army

Filed Apr. 30, 1959, Ser. No. 810,175
8 Claims. (Cl. 343-708)



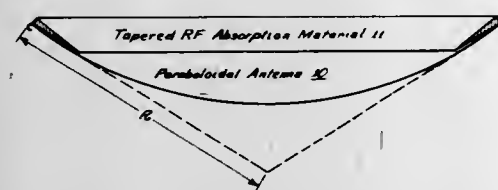
1. A radome comprising a member of dielectric material, the outer surface of said member approximating a surface of revolution about the longitudinal axis of said

radome, the inner surface of said member being uniformly shaped around its circumference substantially in the shape of an ellipse, thereby to define a wall gradually decreasing in width from said ellipse's minor axis.

3,314,071

DEVICE FOR CONTROL OF ANTENNA ILLUMINATION TAPERS COMPRISING A TAPERED SURFACE OF RF ABSORPTION MATERIAL

Leon J. Lader, Los Angeles, and Jay B. Winderman, Pomona, Calif., assignors to General Dynamics Corporation, Pomona, Calif., a corporation of Delaware
Filed July 12, 1965, Ser. No. 471,089
10 Claims. (Cl. 343-912)

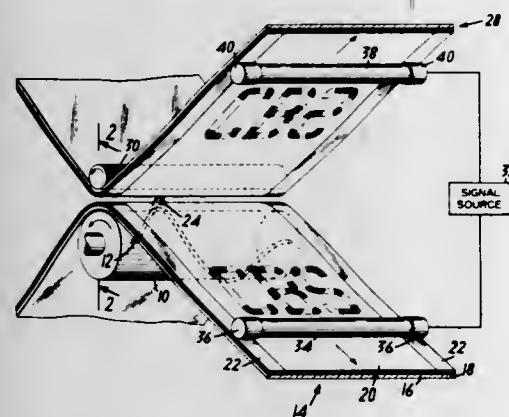


1. A device for precision control of antenna illumination tapers comprising a tapered surface of radio frequency absorption material adapted to be positioned near the outer edge of an antenna reflector, said surface increasing in thickness from the inner edge to the outer edge thereof.

3,314,072

ELECTROLYTIC RECORDING APPARATUS WITH CONTINUOUSLY MOVING CONTACT SURFACE

Erwin F. Littau, Stamford, Conn., assignor to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York
Filed Dec. 31, 1962, Ser. No. 248,649
9 Claims. (Cl. 346-74)



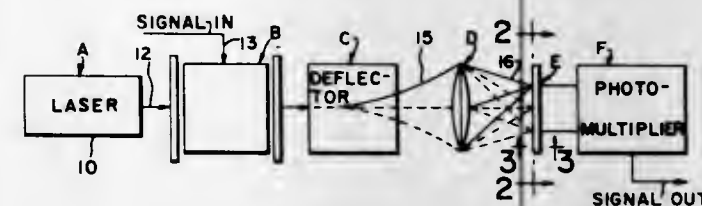
4. In an optical recording system employing as a record medium a flexible insulating tape having on one side thereof a layer of conductive material over which is applied a layer of insulating material, said medium being responsive to electrical signals applied thereto to vary its light transmitting properties, recording apparatus comprising, a rotatable drum having a helical ridge formed on the peripheral surface thereof, means for moving said record medium across said drum with the surface of said medium opposite said one side in contact with a portion of said helical ridge, said record medium being wrapped around a portion of said drum and maintained taut so as to be distended by said ridge, an additional flexible tape having at least a conductive coating applied to one side thereof, means for moving said additional tape in the same direction and at substantially the same speed as said record medium with said one side facing the insulating layer on said medium, roller means for maintaining the outermost surface on said one side of said additional tape

in contact with the insulating layer on the distended portion only of said medium, and means to apply electrical signals between the conductive layers on said medium and said additional tape as they move with respect to said rotatable drum.

3,314,073

LASER RECORDER WITH VAPORIZABLE FILM

Carl H. Becker, Palo Alto, Calif., assignor to Precision Instrument Company, Palo Alto, Calif.
Filed Oct. 20, 1964, Ser. No. 405,298
5 Claims. (Cl. 346-76)

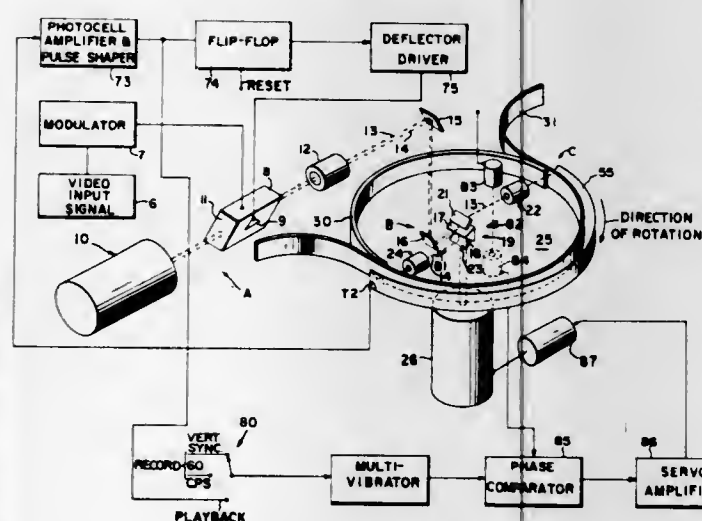


1. A system for high density or megacycle frequency recording of information comprising: a film substrate having mounted thereon a black thin thermally vaporizable coating having a higher factor of thermo-optical absorptency than both thermo-optical reflectivity and transparency, a single mode laser adapted to provide a single wavelength laser beam, means intensity modulating said laser in response to predetermined information, means focusing said laser on said coating, means moving said film past the point of impingement of said laser beam thereon, said modulating means limiting the maximum intensity of said beam at a point which will cause the coating to be removed due to thermo-optical energy absorption and below the level which will cause destruction of said substrate due to thermo-optical absorption thereby.

3,314,074

COHERENT LIGHT BEAM RECORDER

Carl H. Becker, Palo Alto, Calif., assignor to Precision Instrument Company, Palo Alto, Calif.
Filed Jan. 22, 1965, Ser. No. 427,392
3 Claims. (Cl. 346-108)



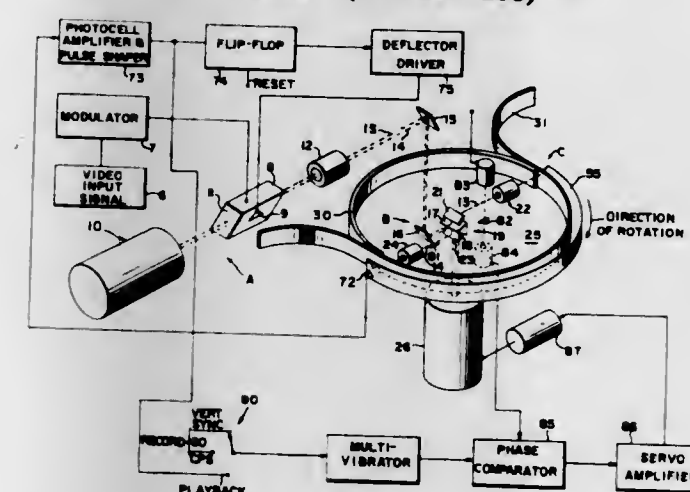
1. In a system for recording by impingement of a high intensity coherent light beam wherein a surface of a recording medium is modified in proportion to the intensity of the light beam; means for transporting said medium past a circular recording station including a guiding edge; means positioning said beam at successive intervals in a scan path along said recording station with the scan path positioned at an angle with respect to said guiding edge, each of said successive intervals being an instantaneous continuation of the information in the scan path

at the end of the preceding interval; said beam positioning means including a pair of beam positioning components; each of said components operating to independently scan said beam along said scan path during alternate intervals to produce a series of closely spaced recorded traces across said recording medium.

3,314,075

COHERENT LIGHT BEAM RECORDER

Carl H. Becker, Palo Alto, Paul T. Harper, Los Altos, and Siegfried H. Mohr, San Jose, Calif., assignors to Precision Instrument Company, Palo Alto, Calif.
Filed Jan. 22, 1965, Ser. No. 427,403
5 Claims. (Cl. 346-108)



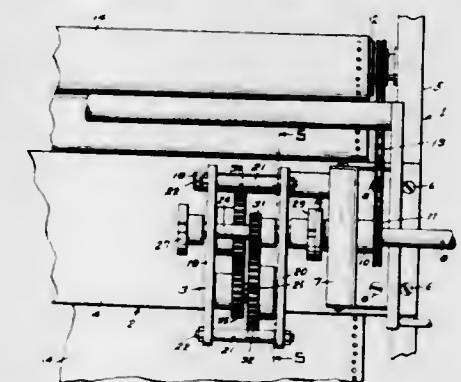
1. In a system for recording by impingement of a high intensity coherent light beam wherein a surface or recording medium is modified in proportion to the intensity of the light beam; a recording station lying along a 180° arc of a circle; means for transporting said medium past said recording station; a rotatable circular recording head provided with means for imaging the beam over the length of the 180° arc of said recording station during successive intervals, said recording head positioned with its rotational axis at an angle to the axis of said recording station circle substantially at the center thereof; said imaging

means including an objective lens system located on a diameter of said recording head, and means for directing at least a portion of said light beam through said objective lens system, said medium transporting means includes a circular guiding edge with the central axis of said guiding edge with the circle of said recording station and a circular idling ring rotatably mounted concentric with said recording for contacting said recording medium and urging said recording medium against said guiding edge during passage of said recording medium through said recording station.

3,314,076

RECORDER SPEED CHANGER

Baltzar Leo De Mare, Aberdeen, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Feb. 19, 1965, Ser. No. 434,144
4 Claims. (Cl. 346-136)



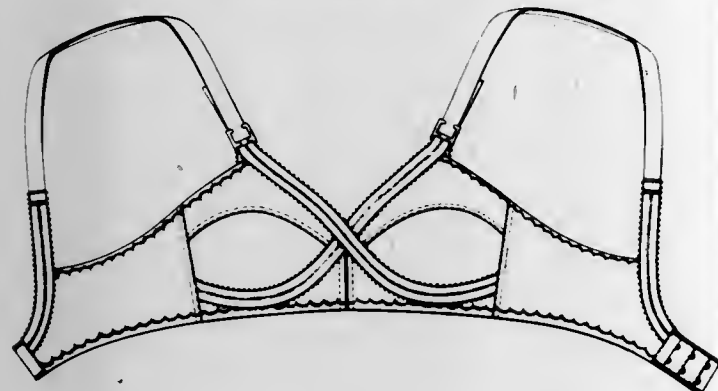
1. In combination with a chain drive for a recording mechanism including a supporting frame, a chart driving roller journaled in said frame, an adapter for attachment on said frame, said adapter having a driving shaft, an idler shaft spaced from said driving shaft and a male coupling carried by one end of each said shafts and a detachable speed changing gear unit having female couplings adapted to be mated with said male couplings on said shafts whereby said idler shaft is driven by said driving shaft.

DESIGNS

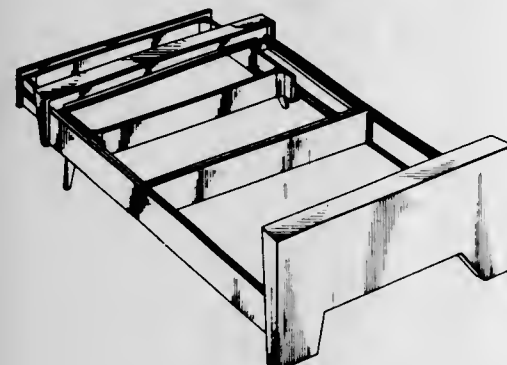
APRIL 11, 1967

207,390
BRASSIERE

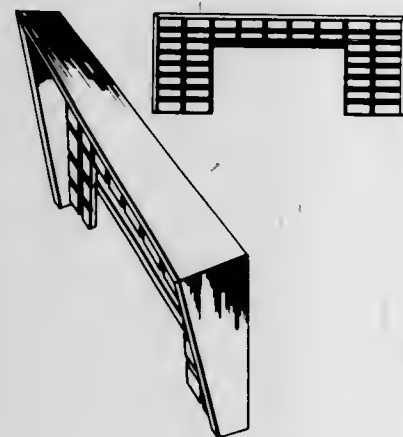
Charles M. Sachs, West Englewood, N.J., assignor to International Latex Corporation, Dover, Del., a corporation of Delaware
Filed Oct. 11, 1965, Ser. No. 87,405
Term of patent 14 years
(Cl. D2—24)



207,391
COMBINED BED AND DRAWER UNIT
Henry G. Zuk, 1431 6th St., Madison, Ill. 62060
Filed Oct. 22, 1965, Ser. No. 87,760
Term of patent 14 years
(Cl. D5—4)



207,392
FOOT-BOARD FOR A BED
Henry G. Zuk, 1431 6th St., Madison, Ill. 62060
Filed Oct. 22, 1965, Ser. No. 87,761
Term of patent 14 years
(Cl. D5—4)



207,393
BATTERY POWERED SHOE BRUSH

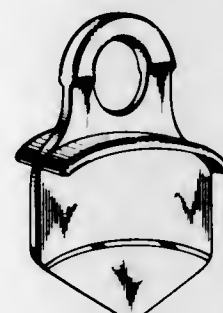
Alvin Polatchek, New York, N.Y., assignor to Shields, Inc., Attleboro, Mass., a corporation of Massachusetts
Filed Feb. 1, 1966, Ser. No. 822
Term of patent 14 years
(Cl. D9—2)



207,394
SHOE SHINE MACHINE
William F. Kelly, Rte. 2, Cleburne, Tex. 76031
Filed Sept. 19, 1966, Ser. No. 3,910
Term of patent 14 years
(Cl. D9—2)



207,395
LIVESTOCK TAG
Norman J. Hayes, 2138 Shoshone Trail N., Cody, Wyo. 82414
Filed Mar. 1, 1966, Ser. No. 1,224
Term of patent 14 years
(Cl. D12—2)



APRIL 11, 1967

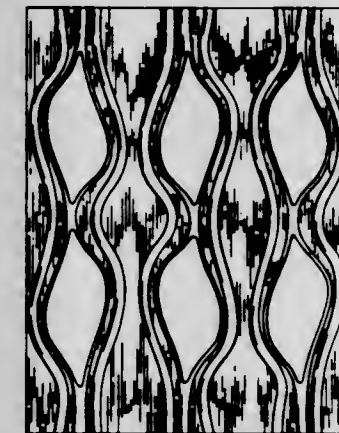
U. S. PATENT OFFICE

659

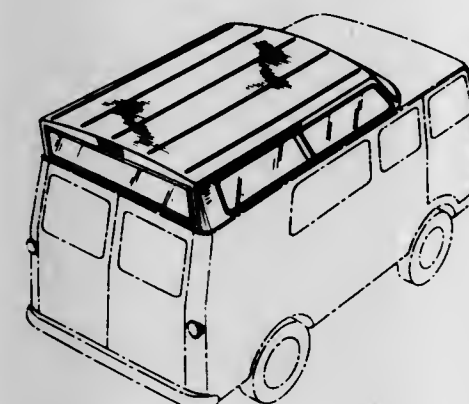
207,396
COMBINED SCREEN AND STORM DOOR
Claude O. Weikel, 1438 Velma Ave., Santa Rosa, Calif. 95401, and James Q. Scribner, Santa Rosa, Calif. 95401, assignors to Piper St., Healdsburg, Calif. 95448
Filed Jan. 14, 1966, Ser. No. 612
Term of patent 14 years
(Cl. D13—1)



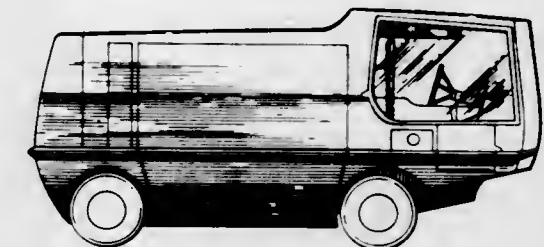
207,397
DECORATIVE GRILLE
Robert Porter Hooton, 1511 Marble Ave. NW., Albuquerque, N. Mex. 87104
Filed Jan. 14, 1966, Ser. No. 615
Term of patent 14 years
(Cl. D13—1)



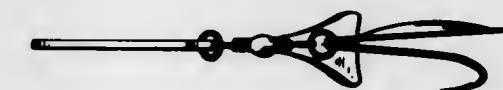
207,398
VAN SUPERSTRUCTURE
Manfred Block, Toronto, Ontario, and Gordon McWilliams, Malton, Ontario, Canada, assignors to Vistavan Limited, Toronto, Ontario, Canada, a Canadian company
Filed Jan. 7, 1966, Ser. No. 532
Claims priority, application Canada Sept. 3, 1965
Term of patent 14 years
(Cl. D14—3)



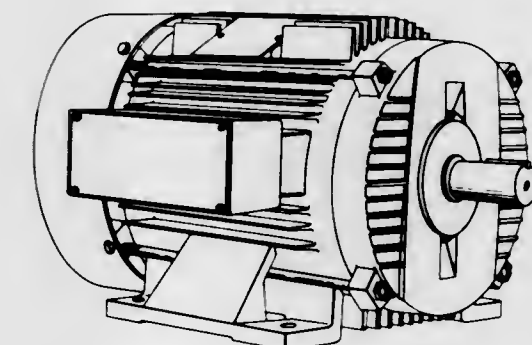
207,399
AMBULANCE
Jeffrey Elgin, 1124 Fuller St. 45202; Gerald M. Halpin, 5310 Robert Ave. 45211; and Thomas Rotroff, 224 Southern Ave. 45219, all of Cincinnati, Ohio
Filed Aug. 24, 1966, Ser. No. 3,566
Term of patent 14 years
(Cl. D14—17)



207,400
FISH LURE
Steve A. Jures, 18766 Williams St., Lansing, Ill. 60438
Filed Apr. 6, 1966, Ser. No. 1,795
Term of patent 14 years
(Cl. D22—29)

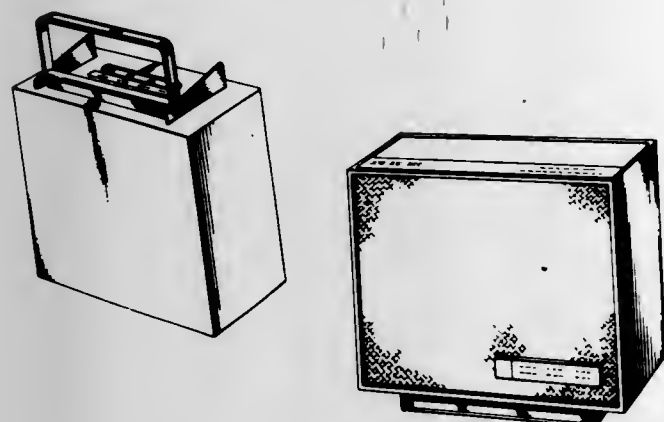


207,401
DYNAMOELECTRIC MACHINE
Loren E. Andrews, Fort Wayne, Ind., Frederick W. Baumann, Scotia, N.Y., George B. Dunn, Jr., Fort Wayne, Ind., and Roger B. Kerr, Topsfield, Mass., assignors to General Electric Company, a corporation of New York
Filed June 30, 1965, Ser. No. 85,967
Term of patent 14 years
(Cl. D26—5)



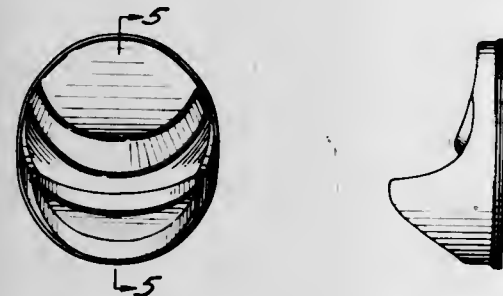
207,402

PORTABLE AMPLIFIER-SPEAKER CABINET
 Clarence S. McClellan, Woodland Hills, Calif., assignor to United Electronics Incorporated, Humacao, Puerto Rico, a corporation of Delaware
 Filed Jan. 4, 1966, Ser. No. 501
 Term of patent 7 years
 (Cl. D26—14)



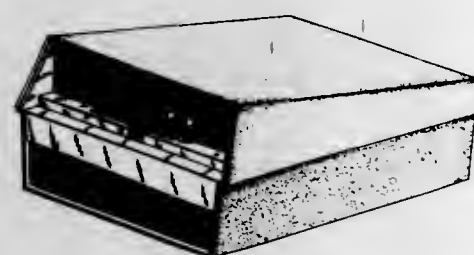
207,403

TELEPHONE HANDSET HANGER
 Edward L. Schulke, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
 Filed Apr. 6, 1966, Ser. No. 1,792
 Term of patent 14 years
 (Cl. D26—14)



207,404

MICROFILM IMAGE TRANSMITTER
 John R. Regal, East Brunswick, N.J., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
 Filed Oct. 18, 1965, Ser. No. 87,533
 Term of patent 14 years
 (Cl. D26—14)



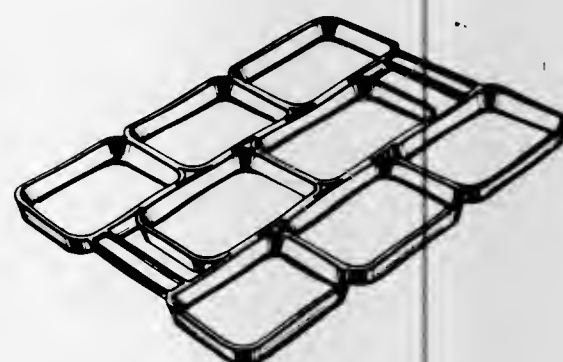
207,405

LAWN MOWER HAND GRIP
 Sherman C. Heth, Racine, Warren H. Price, Sheboygan, and Charles A. Wuerker, Racine, Wis., assignors to Jacobsen Manufacturing Company, Racine, Wis., a corporation of Wisconsin
 Filed Apr. 22, 1966, Ser. No. 1,986
 Term of patent 14 years
 (Cl. D40—1)



207,406

MULTIPLE UNIT BREAD BAKING PAN
 Warren C. Van Meter, 4800 Oaklawn Drive, North Little Rock, Ark. 72118
 Filed July 14, 1966, Ser. No. 3,073
 Term of patent 14 years
 (Cl. D44—1)



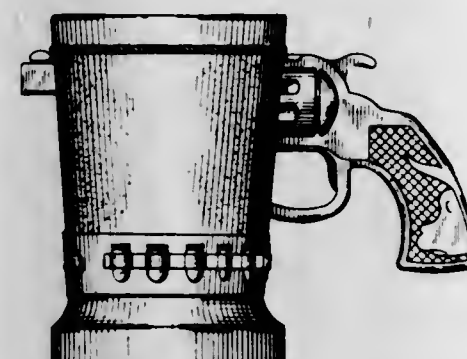
207,407

COMBINED BEVERAGE MIXER AND MIXING CUP
 Raymond J. Rogenski, Torrington, Conn., assignor to Dynamics Corporation of America, New York, N.Y., a corporation of New York
 Filed July 22, 1966, Ser. No. 3,188
 Term of patent 14 years
 (Cl. D44—1)



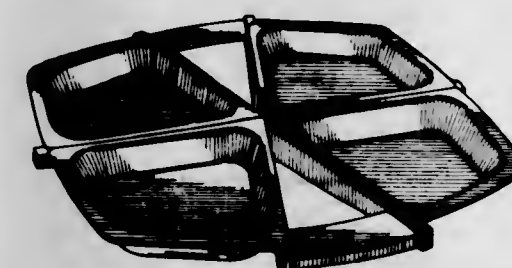
207,408

DRINKING CUP
 Myron M. Levin, Lincolnwood, and Norton R. Sachnoff, Wilmette, Ill. (both of 4315 N. Lincoln Ave., Chicago, Ill. 60618)
 Filed May 18, 1966, Ser. No. 2,344
 Term of patent 14 years
 (Cl. D44—9)



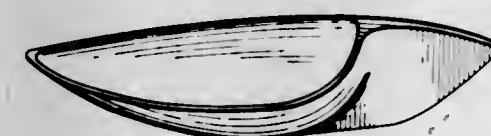
207,409

LAZY SUSAN OR THE LIKE
 Clayton A. Laughlin, Minneapolis, Minn., assignor to Arthur Salm, Inc., Chicago, Ill., a corporation of Illinois
 Filed May 2, 1966, Ser. No. 2,129
 Term of patent 14 years
 (Cl. D44—10)



207,410

APPETIZER SCOOP OR THE LIKE
 Leo F. Wildgen, Minneapolis, Minn., assignor to Arthur Salm, Inc., Chicago, Ill., a corporation of Illinois
 Filed May 2, 1966, Ser. No. 2,112
 Term of patent 14 years
 (Cl. D44—29)



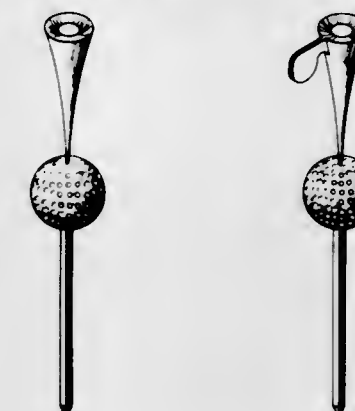
207,411

SPICE RACK
 William C. Diesinger, Jr., 624 Morris Ave., Bryn Mawr, Pa. 19010
 Filed Apr. 26, 1966, Ser. No. 2,036
 Term of patent 14 years
 (Cl. D44—29)



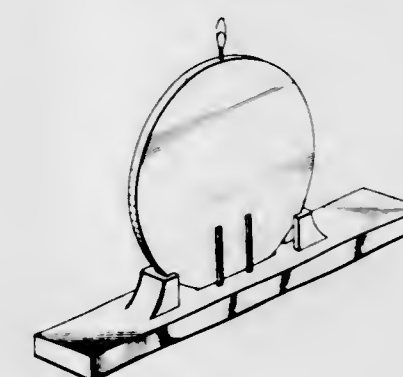
207,412

COCKTAIL PICK
 Enrico R. La Barbera, 4220 Aberfole Ave., Oakland, Calif. 94605
 Filed Aug. 28, 1964, Ser. No. 81,494
 Term of patent 14 years
 (Cl. D44—29)



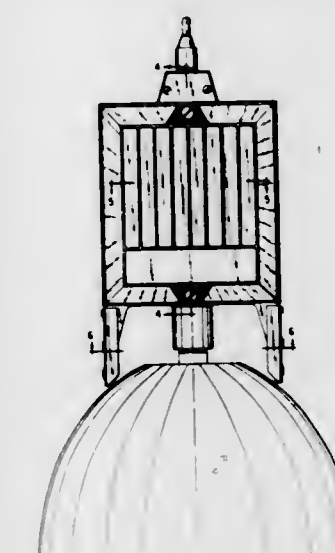
207,413

COMBINED CANDLE AND STAND
 Henrietta T. Gardner, 6903 Armat Drive, Bethesda, Md. 20014
 Filed May 31, 1966, Ser. No. 2,466
 Term of patent 14 years
 (Cl. D48—2)



207,414

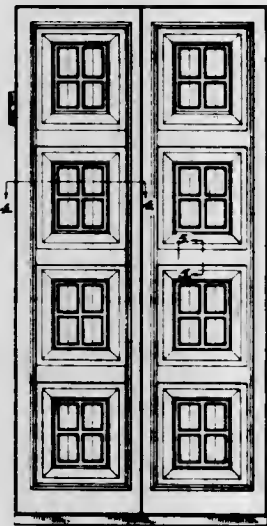
HIGH BAY LIGHTING UNIT
 Warren Sherwood Lum, Warners, and Bjarne Netland, Liverpool, N.Y., assignors to Crouse-Hinds Company, Syracuse, N.Y., a corporation of New York
 Filed Oct. 12, 1966, Ser. No. 4,252
 Term of patent 14 years
 (Cl. D48—23)



207,415
VENDING MACHINE

José Arturo Conde, Independence, Mo., assignor to The Vendo Company, Kansas City, Mo., a corporation of Missouri

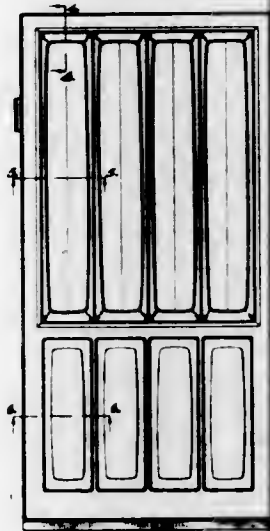
Filed Mar. 9, 1966, Ser. No. 1,361
Term of patent 7 years
(Cl. D52—3)



207,417
VENDING MACHINE

José Arturo Conde, Independence, Mo., assignor to The Vendo Company, Kansas City, Mo., a corporation of Missouri

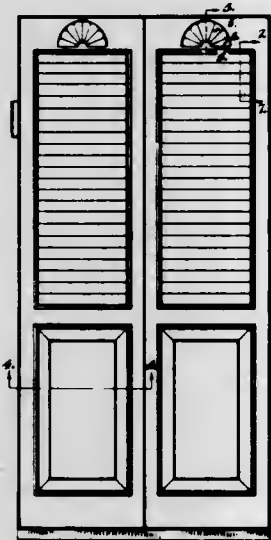
Filed Mar. 9, 1966, Ser. No. 1,377
Term of patent 7 years
(Cl. D52—3)



207,416
VENDING MACHINE

José Arturo Conde, Independence, Mo., assignor to The Vendo Company, Kansas City, Mo., a corporation of Missouri

Filed Mar. 9, 1966, Ser. No. 1,376
Term of patent 3½ years
(Cl. D52—3)



207,418
VENDING MACHINE

José Arturo Conde, Independence, Mo., assignor to The Vendo Company, Kansas City, Mo., a corporation of Missouri

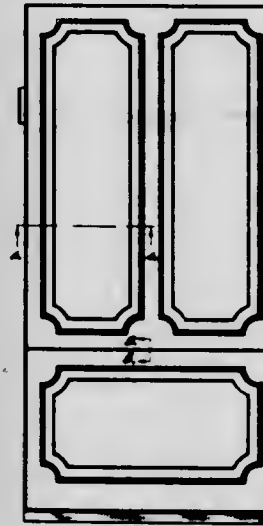
Filed Mar. 9, 1966, Ser. No. 1,378
Term of patent 3½ years
(Cl. D52—3)



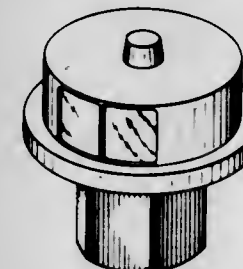
207,419
VENDING MACHINE

José Arturo Conde, Independence, Mo., assignor to The Vendo Company, Kansas City, Mo., a corporation of Missouri

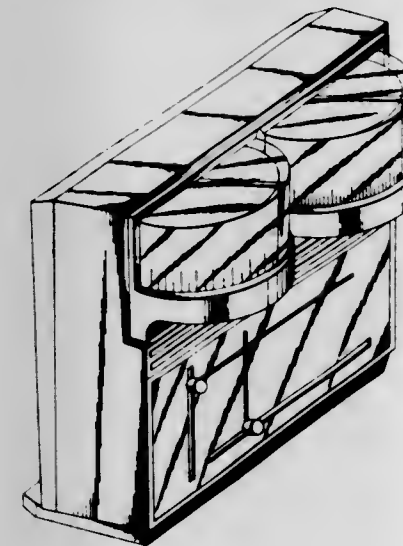
Filed Mar. 9, 1966, Ser. No. 1,379
Term of patent 3½ years
(Cl. D52—3)



207,420
HIGH PRESSURE GAUGE HOUSING
Jord O. Nelson, Paramount, Calif., assignor to Eltra Corporation, Toledo, Ohio
Filed Jan. 14, 1966, Ser. No. 599
Term of patent 7 years
(Cl. D52—6)



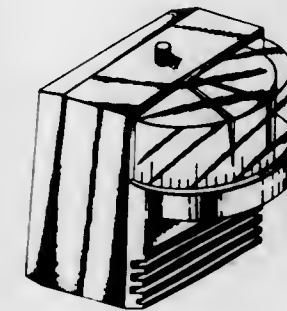
207,421
WEATHER INSTRUMENT
Ellworth R. Danz, La Salle, and Ralph H. Preiser and David W. Miley, both of Peru, Ill., assignors to General Time Corporation, Stamford, Conn., a corporation of Delaware
Filed June 27, 1966, Ser. No. 2,817
Term of patent 14 years
(Cl. D52—7)



207,422
WEATHER INSTRUMENT

Ellworth R. Danz, La Salle, and David W. Miley and Ralph H. Preiser, Peru, Ill., assignors to General Time Corporation, Stamford, Conn., a corporation of Delaware

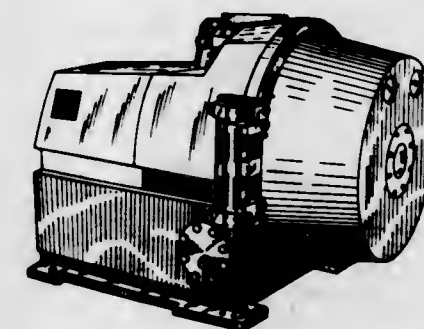
Filed June 27, 1966, Ser. No. 2,818
Term of patent 14 years
(Cl. D52—7)



207,423
BINDING HOOK
Charles Otto Pick, 10060 SW. Durham Road, Tigard, Ore. 97223
Filed June 27, 1966, Ser. No. 2,825
Term of patent 14 years
(Cl. D54—11)



207,424
DISC REFINER
Gregory F. Fossella, Marblehead, Mass., assignor to Bolton-Emerson, Inc., a corporation of Massachusetts
Filed Apr. 28, 1966, Ser. No. 2,057
Term of patent 14 years
(Cl. D55—1)



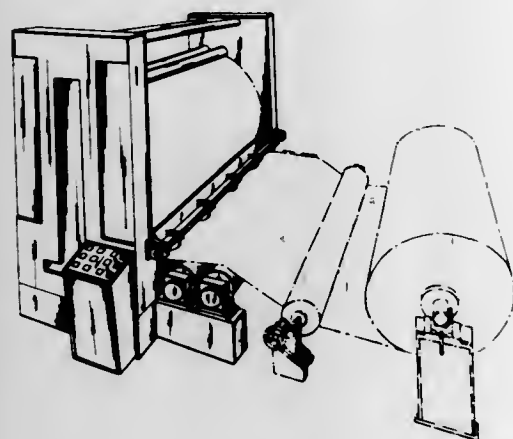
207,425

WINDER OR SIMILAR ARTICLE

Edward J. Klaczekiewicz, Wilmington, Del., assignor to Beloit Eastern Corporation, Downingtown, Pa., a corporation of Delaware

Filed Oct. 23, 1965, Ser. No. 87,858

Term of patent 14 years
(Cl. D55-1)



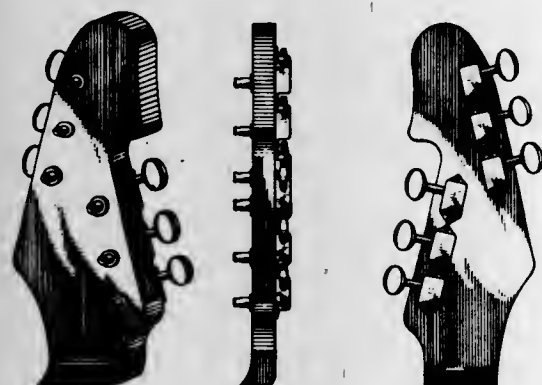
207,426

GUITAR HEAD

Lawrence G. Ludwick, Van Nuys, Calif., assignor to The Estey Musical Instrument Corporation, Torrance, Calif., a corporation of New York

Filed Jan. 28, 1966, Ser. No. 803

Term of patent 14 years
(Cl. D56-1)



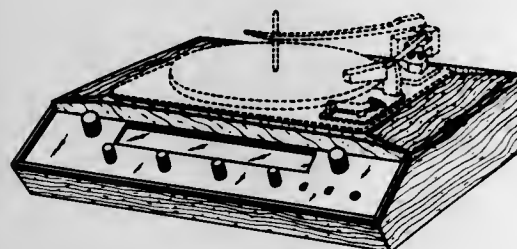
207,427

COMBINED PHONOGRAPH AND RADIO OR SIMILAR ARTICLE

Carl Yurdin, Port Washington, N.Y., assignor to Harman-Kardon, Inc., Philadelphia, Pa., a corporation of Delaware

Filed Mar. 4, 1966, Ser. No. 1,298

Term of patent 14 years
(Cl. D56-4)



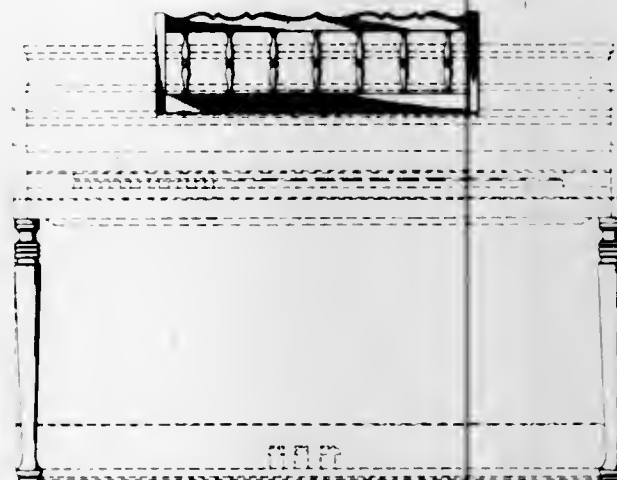
207,428

PIANO CASE

Winsor D. White, Jr., Blowing Rock, N.C., assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio

Filed Nov. 24, 1965, Ser. No. 88,204

Term of patent 14 years
(Cl. D56-9)



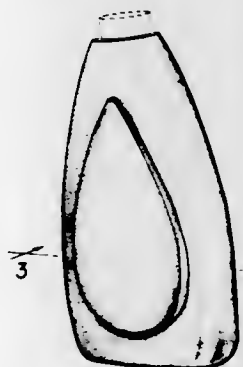
207,429

BOTTLE

George H. McLean, Chicago, Ill., assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio

Filed May 27, 1966, Ser. No. 2,453

Term of patent 14 years
(Cl. D58-6)



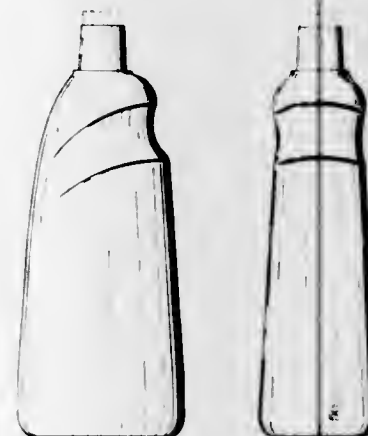
207,430

BOTTLE

James A. Shepler, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio

Filed June 6, 1966, Ser. No. 2,561

Term of patent 14 years
(Cl. D58-6)



207,431

BOTTLE

James A. Shepler, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio

Filed Sept. 19, 1966, Ser. No. 3,919

Term of patent 14 years
(Cl. D58-6)



207,432

DISPENSING STOPPER FOR A BOTTLE

Ernesto M. Salvatico, 12 Vincent St., Newark, N.J. 07105

Filed June 23, 1966, Ser. No. 2,787

Term of patent 14 years
(Cl. D58-10)



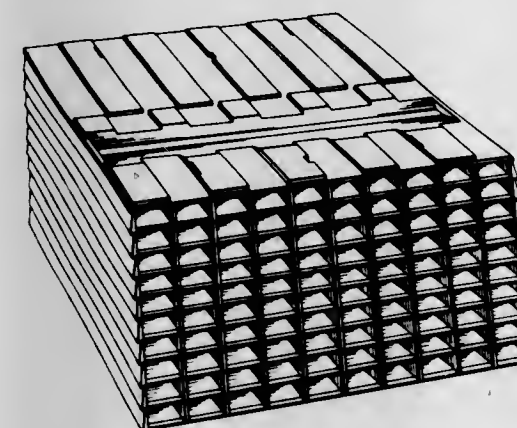
207,433

MULTI-COMPARTMENTED RECEPTACLE FOR FILM STRIPS

Edward B. Schoonmaker and Kenneth Wayne Scott, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed May 6, 1965, Ser. No. 85,139

Term of patent 14 years
(Cl. D58-13)



207,434

COVER FOR AN AEROSOL DISPENSER OR THE LIKE

Ellsworth R. Danz and Roman J. Szalek, La Salle, Ill., assignors to General Time Corporation, Stamford, Conn., a corporation of Delaware

Filed July 8, 1966, Ser. No. 3,004

Term of patent 14 years
(Cl. D58-26)



207,435

COMBINED LABEL PRINTING AND DISPENSING IMPLEMENT

Herbert H. Loeffler, 210 Clinton Ave., Brooklyn, N.Y. 11205

Filed Feb. 28, 1966, Ser. No. 1,210

Term of patent 14 years
(Cl. D64-10)



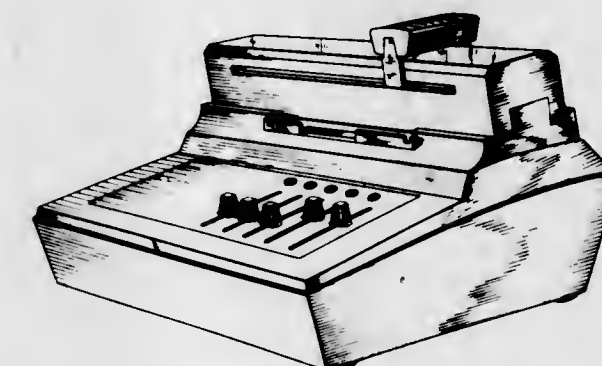
207,436

VARIABLE DATA PRINTING MACHINE OR SIMILAR ARTICLE

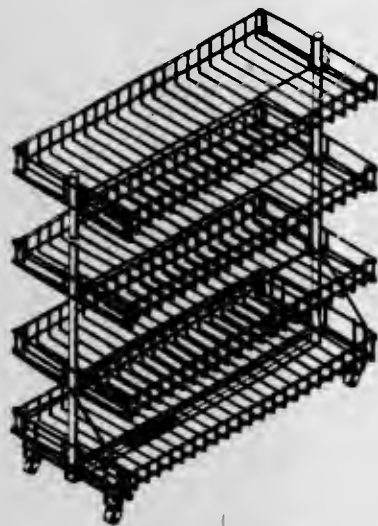
William Plumb Barbour, Fairfax County, Va., assignor, by mesne assignments, to Farrington Business Machines Corporation, Springfield, Va., a corporation of Virginia

Filed Jan. 21, 1966, Ser. No. 709

Term of patent 14 years
(Cl. D64-11)



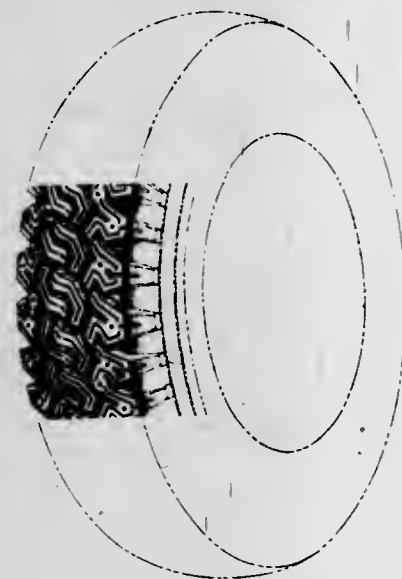
207,437
DISPLAY RACK
 Earl J. Oliver, Fremont, Calif.
 (555 W. Ave. 135th, San Leandro, Calif. 94578)
 Filed Feb. 28, 1966, Ser. No. 1,206
 Term of patent 14 years
 (Cl. D80—10)



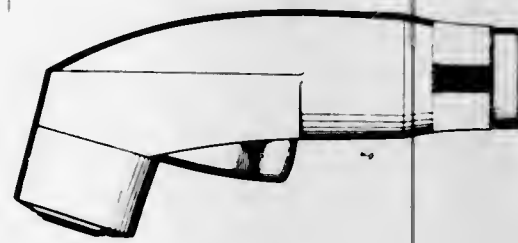
207,438
PLASTIC FIGURED TEXTILE FABRIC
 Reid C. Goodbar, Ware Shoals, and Richard N. James, Greenwood, S.C., assignors to Riegel Textile Corporation, a corporation of Delaware
 Filed Apr. 4, 1966, Ser. No. 1,764
 Term of patent 14 years
 (Cl. 87—3)



207,439
TIRE
 William P. Miller II, 715 Woodstock Road, and Bruce R. de Young, 267 Hollywood Ave., both of Akron, Ohio 44313, and Thomas E. Dow, 47 Whitehall Drive, Tallmadge, Ohio 44278
 Filed Sept. 1, 1966, Ser. No. 3,673
 Term of patent 14 years
 (Cl. D90—20)



207,440
SPRAY VALVE
 Ernest H. Bucknell, Los Angeles, and Jack K. Rauh and Irving A. Ward, Hacienda Heights, Calif. (all % Modern Faucet Mfg. Co., 1700 E. 58th Place, Los Angeles, Calif. 90001)
 Filed June 13, 1966, Ser. No. 2,659
 Term of patent 14 years
 (Cl. D91—3)



207,441
KNIFE OR THE LIKE
 Richard S. Latham, Chicago, Ill., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
 Filed Dec. 3, 1965, Ser. No. 34
 Term of patent 14 years
 (Cl. D95—3)



LIST OF REISSUE PATENTEEES

TO WHOM
 PATENTS WERE ISSUED ON THE 11TH DAY OF APRIL, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Esso Research and Engineering Co.: See—
 Kimberlin, Charles N., Jr., and Gladrow. Re. 26,188.
 Gladrow, Elroy M.: See—
 Kimberlin, Charles N., Jr., and Gladrow. Re. 26,188.

Kimberlin, Charles N., Jr., and E. M. Gladrow, to Esso Research and Engineering Co. Hydrocarbon conversion process. Re. 26,188, 4-11-67, Cl. 208—120.

LIST OF DESIGN PATENTEEES

American Home Products Corp.: See—
 Latham, Richard S. 207,441.
 Andrews, Loren E., F. W. Baumann, G. B. Dunn, Jr., and R. B. Kerr, to General Electric Co. Dynamoelectric machine. 207,401, 4-11-67, Cl. D28—5.
 Baldwin, D. H., Co.: See—
 White, Winsor D., Jr. 207,428.
 Barbour, William P., to Farrington Business Machines Corp. Variable data printing machine or similar article. 207,436, 4-11-67, Cl. D64—11.
 Beloit Eastern Corp.: See—
 Klackiewicz, Edward J. 207,425.
 Block, Manfred, and G. McWilliams, to Vistavan Ltd. Van superstructure. 207,398, 4-11-67, Cl. D14—3.
 Bolton-Emerson, Inc.: See—
 Fossella, Gregory F. 207,424.
 Bucknell, Ernest H., J. K. Rauh, and I. A. Ward. Spray valve. 207,440, 4-11-67, Cl. D91—3.
 Conde, Jose A., to The Vendo Co. Vending machine. 207,415, 4-11-67, Cl. D52—3.
 Conde, Jose A., to The Vendo Co. Vending machine. 207,416, 4-11-67, Cl. D52—3.
 Conde, Jose A., to The Vendo Co. Vending machine. 207,417, 4-11-67, Cl. D52—3.
 Conde, Jose A., to The Vendo Co. Vending machine. 207,418, 4-11-67, Cl. D52—3.
 Conde, Jose A., to The Vendo Co. Vending machine. 207,419, 4-11-67, Cl. D52—3.
 Crouse-Hinds Co.: See—
 Lum, Warren S., and Netland. 207,414.
 Dans, Ellsworth R., D. W. Miley, and R. H. Preiser, to General Time Corp. Weather instrument. 207,422, 4-11-67, Cl. D52—7.
 Dans, Ellsworth R., R. H. Preiser, and D. W. Miley, to General Time Corp. Weather instrument. 207,421, 4-11-67, Cl. D52—7.
 Dans, Ellsworth R., and R. J. Szalek, to General Time Corp. Cover for an aerosol dispenser or the like. 207,434, 4-11-67, Cl. D58—28.
 De Young, Bruce R.: See—
 Miller, William P., II, De Young, and Dow. 207,439.
 Diesinger, William C., Jr. Spice rack. 207,411, 4-11-67, Cl. D44—29.
 Dow, Thomas E.: See—
 Miller, William P., II, De Young, and Dow. 207,439.
 Dunn, George B., Jr.: See—
 Andrews, Loren E., Baumann, and Dunn. 207,401.
 Dynamics Corp. of America: See—
 Rogenski, Raymond J. 207,407.
 Eastman Kodak Co.: See—
 Schoonmaker, Edward B., and Scott. 207,433.
 Elgin, Jeffrey, G. M. Halpin, and T. Rotroff. Ambulance. 207,399, 4-11-67, Cl. D14—17.
 Eltra Corp.: See—
 Nelson, Jord O. 207,420.
 Estey Musical Instrument Corp.: The: See—
 Ludwick, Lawrence G. 207,426.
 Farrington Business Machines Corp.: See—
 Barbour, William P. 207,436.
 Fossella, Gregory F., to Bolton-Emerson, Inc. Disc refiner. 207,424, 4-11-67, Cl. D55—1.
 Gardner, Henrietta T. Combined candle and stand. 207,413, 4-11-67, Cl. D48—2.
 General Electric Co.: See—
 Andrews, Loren E., Baumann, Dunn, and Kerr. 207,401.
 General Time Corp.: See—
 Dans, Ellsworth R., Miley, and Preiser. 207,422.
 Dans, Ellsworth R., Preiser, and Miley. 207,421.
 Dans, Ellsworth R., and Szalek. 207,434.
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NOTE.—First number, class; second number, subclass; third number, patent number

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66	3,312,985	77	3,313,056	64	3,313,615	36	3,313,218	41.41	3,313,277	252	3,313,681
92	3,312,986	331	3,313,057	72-364	3,313,138	36.3	3,313,219	75	3,313,278	165-80	3,313,339
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11	3,312,989	44-7	3,313,060	9	3,313,141	94-50	3,313,222	119	3,313,281	124	3,313,342
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55	3,313,590	46-164	3,313,060	41	3,313,143	64	3,313,224	140	3,313,283		3,313,344
115.5	3,313,591	49-70	3,313,061	49.7	3,313,144	75	3,313,225	196	3,313,284	166-5	3,313,345
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83	3,312,992	460	3,313,065	99	3,313,148	73	3,313,626	391	3,313,288	45	3,313,349
180	3,312,993	51-283	3,313,066	105	3,313,149	98-40	3,313,226	127-44	3,313,653	46	3,313,350
	3,312,994	320	3,313,067	136	3,313,150		3,313,227	46	3,313,655	100	3,313,351
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32	3,312,997	93	3,313,070		3,313,153	115	3,313,229	2	3,313,290	30	3,313,683
	3,312,998	177	3,313,071	190	3,313,154	99-52	3,313,628		3,313,291		3,313,684
18-4	3,312,999	303	3,313,072	259	3,313,155	56	3,313,629		3,313,292		3,313,685
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19-89	3,313,005	617	3,313,078	74-5.22	3,313,163	149.2	3,313,233	188	3,313,298		3,313,691
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209.3	3,313,597	127	3,313,085	230.17	3,313,169	151	3,313,240	131-10.7	3,313,305		3,313,698
211	3,313,598	228	3,313,086	230.3	3,313,168	221	3,313,241		3,313,306		3,313,699
290	3,313,599	236	3,313,087	365	3,313,170	104-60	3,313,242	17	3,313,307		3,313,700
312	3,313,600	356	3,313,088	377	3,313,171	101	3,313,243	187	3,313,308	74	3,313,701
319	3,313,601	371	3,313,089	458	3,313,172	105-172	3,313,244	265	3,313,309		3,313,702
345	3,313,602	390	3,313,090	472	3,313,173	197	3,313,245	132-53	3,313,310		3,313,703
358	3,313,603	55-58	3,313,091	474	3,313,174	454	3,313,246	134-109	3,313,311		3,313,704
24-224	3,313,008	163	3,313,092	531	3,313,176	106-1	3,313,632	136-86	3,313,656	75	3,313,705
257	3,313,009	170	3,313,093	594.6	3,313,177		3,313,633	90	3,313,657	78	3,313,706
25-99	3,313,010	56-25	3,313,094	626	3,313,178	14	3,313,634	134	3,313,658	169-1	3,313,353
28-76	3,313,011	312	3,313,095	677	3,313,179		3,313,635	137-75	3,313,312	172-12	3,313,354
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	3,313,013	88	3,313,097	732	3,313,181	38.5	3,313,637	247.27	3,313,314	91	3,313,356
33	3,313,014	125	3,313,098	740	3,313,182	64	3,313,638	318	3,313,315	174-17	3,313,879
148.4	3,313,015	58-24	3,313,099	752	3,313,183	171	3,313,639	596	3,313,316	175-6	3,313,357
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155.58	3,313,017	105	3,313,101	75-5	3,313,616	213	3,313,641	630.15	3,313,318	11	3,313,359
169.5	3,313,018	60-31	3,313,102	5	3,313,617	107-7	3,313,247	138-89	3,313,320	45	3,313,360
183	3,313,019	39.06	3,313,103	60	3,313,618	108-53	3,313,248	105	3,313,321	61	3,313,361
192	3,313,605	39.16	3,313,104		3,313,619	124	3,313,249	121	3,313,319	71	3,313,362
252	3,313,019		3,313,105	123	3,313,620	109-6	3,313,250	139-13	3,313,322	207	3,313,363
455	3,313,020	39.28	3,313,106	212	3,313,621	110-7	3,313,251	291	3,313,323	325	3,313,364
494	3,313,021	52	3,313,107	222	3,313,622		3,313,252	140-71.5	3,313,324	176-8	3,313,707
509	3,313,022	53	3,313,108	76-31	3,313,184	8	3,313,253	103	3,313,325	52	3,313,708
30-4	3,313,023	54	3,313,109	43	3,313,185	99	3,313,254	141-40	3,313,326	178-5.1	3,313,880
273	3,313,024	54.5	3,313,110	108	3,313,186	112-2	3,313,255	144-2	3,313,327	5.4	3,313,881
32-23	3,313,025	105	3,313,111	77-58	3,313,187	25	3,313,256	288	3,313,328	7.5	3,313,882
33-50	3,313,026	200	3,313,112	62	3,313,188	158	3,313,257	312	3,313,329	15	3,313,883
105	3,313,027	254	3,313,113	81-15.7	3,313,189		3,313,258	146-117	3,313,330	69.5	3,313,884
156	3,313,028	61-45	3,313,114	323	3,313,190	260	3,313,259	123	3,313,331	179-1	3,313,885
164	3,313,029	72.6	3,313,115	83-89	3,313,191	266	3,313,260	192	3,313,332	16	3,313,886
169	3,313,030	62-45	3,313,116	370	3,313,192	114-66.5	3,313,261	148-6.11	3,313,659	18	3,313,887
174	3,313,031	125	3,313,117	488	3,313,193		3,313,262	11.5	3,313,660	22	3,313,888
34-5	3,313,032	176	3,313,118	568	3,313,194	115-1	3,313,263	31	3,313,662	100.2	3,313,889
21	3,313,033	186	3,313,119	698	3,313,195	70	3,313,265	187	3,313,661		3,313,890
53	3,313,034	188	3,313,120	84-1.01	3,313,877	116-70	3,313,264		3,313,663	100.41	3,313,891
57	3,313,035	197	3,313,121		3,313,878	114	3,313,266	150-5	3,313,333		3,313,892
99	3,313,036	263	3,313,122	297	3,313,196	116	3,313,267	29	3,313,334	170.6	3,313,893
	3,313,037	272	3,313,123	85-9	3,313,197	124	3,313,268	152-229	3,313,335	180-6.2	3,313,365
103	3,313,038	64-9	3,313,124	45	3,313,198	117-11	3,313,642	156-155	3,313,664	7	3,313,366
115	3,313,039	14	3,313,125	66	3,313,199	33.5	3,313,643	180	3,313,665		3,313,367
174	3,313,040	15	3,313,126	75	3,313,200	37	3,313,644	218	3,313,666	9.2	3,313,368
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13	3,313,041	65-21	3,313,608	40	3,313,202	119.2	3,313,646	291	3,313,668	181-5	3,313,370
18	3,313,042	33	3,313,609	41	3,313,203	122	3,313,647	294	3,313,669		3,313,371
28	3,313,043	34	3,313,610	88-14	3,313,204	124	3,313,648	359	3,313,670		3,313,372
56	3,313,044	182	3,313,611		3,313,205	126	3,313,649	425	3,313,671	59	3,313,373
74	3,313,045	331	3,313,612	24	3,313,206	127	3,313,650	467	3,313,672	182-89	3,313,374
36-2.5	3,313,046	66-50	3,313,128	89-1.813	3,313,207	138.8	3,313,651	566	3,313,673	150	3,313,375
7.3	3,313,047	154	3,313,129	7	3,313,208		3,313,796	158-140	3,313,336	187-2	3,313,376
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129	3,313,050	299	3,313,133	91-189	3,313,211	249	3,313,270	161-96	3,313,674	77	3,313,379
189	3,313,051	376	3,313,134	387	3,313,212	119-48	3,313,271	184	3,313,675	86	3,313,380
40-2.2	3,313,052	408	3,313,135	399	3,313,213	51.11	3,313,272	189	3,313,676	161	3,313,381

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	3,313,602		3,313,902		3,313,971		3,314,013		3,313,976		3,313,361
	3,313,626		3,313,940		3,313,981		3,314,016		3,313,977		3,313,371
	3,313,739		3,314,006		3,313,998		3,314,049		3,314,039		3,313,414
	3,313,829		3,314,034		3,313,999		3,314,061	40	: 3,313,280		3,313,423
	3,313,874		3,314,058		3,314,015		3,314,062		3,313,362		3,313,434
	3,313,877	27	: 3,314,046		3,314,019	37	: 3,313,000		3,313,370		3,313,448
	3,313,929		3,313,062		3,314,022		3,313,011		3,313,372		3,313,506
	3,313,948		3,313,070		3,314,063		3,313,189		3,313,544		3,313,526
	3,314,018		3,313,089		3,314,066		3,313,300		3,313,566		3,313,552
	3,314,054		3,313,190	35	: 3,313,364		3,313,307		3,313,786		3,313,588
	3,314,055		3,313,223		3,313,659		3,313,319		3,313,794		3,313,713
	3,314,067		3,313,225	36	: 3,313,025		3,313,397		3,313,858		3,313,744
25	: 3,314,076		3,313,236		3,313,058		3,313,410		3,313,859		3,313,814
	3,312,982		3,313,247		3,313,084		3,313,575	41	: 3,313,151		3,313,834
	3,312,983		3,313,415		3,313,098		3,313,721		3,313,374		3,313,846
	3,313,017		3,313,497		3,313,120		3,313,753		3,313,432		3,313,860
	3,313,023		3,313,549		3,313,125		3,313,756		3,313,557		3,313,869
	3,313,024		3,313,564		3,313,130		3,313,805	42	: 3,313,002		3,313,986
	3,313,052		3,313,580		3,313,140		3,313,847		3,313,039		3,314,024
	3,313,186		3,313,629		3,313,153		3,313,867		3,313,045		3,314,046
	3,313,240		3,313,658		3,313,154		3,313,992		3,313,066	49	: 3,313,042
	3,313,256		3,313,996		3,313,160	38	: 3,313,012		3,313,102	51	: 3,313,101
	3,313,331		3,313,997		3,313,196	39	: 3,312,985		3,313,111		3,313,208
	3,313,339	28	: 3,313,613		3,313,206		3,312,993		3,313,113		3,313,306
	3,313,390	29	: 3,313,121		3,313,214		3,313,001		3,313,138		3,313,321
	3,313,482		3,313,124		3,313,265		3,313,004		3,313,155		3,313,376
	3,313,569		3,313,162		3,313,266		3,313,022		3,313,159		3,313,449
	3,313,624		3,313,185		3,313,268		3,313,030		3,313,191		3,313,462
	3,313,625		3,313,292		3,313,312		3,313,060		3,313,204		3,313,615
	3,313,627		3,313,401		3,313,324		3,313,072		3,313,237		3,313,630
	3,313,666		3,313,493		3,313,326		3,313,073		3,313,253		3,313,631
	3,313,667		3,313,530		3,313,327		3,313,082		3,313,285		3,313,665
	3,313,673		3,313,531		3,313,336		3,313,083		3,313,289		3,313,872
	3,313,757		3,313,532		3,313,340		3,313,117		3,313,290		3,313,883
	3,313,776		3,313,599		3,313,344		3,313,177		3,313,315		3,313,984
	3,313,790		3,313,616		3,313,366		3,313,187		3,313,333		3,314,002
	3,313,915		3,313,647		3,313,395		3,313,188		3,313,338	53	: 3,313,038
	3,313,918		3,313,674		3,313,406		3,313,216		3,313,348		3,313,064
	3,313,928		3,313,720		3,313,426		3,313,219		3,313,386		3,313,262
	3,313,938		3,313,873		3,313,444		3,313,226		3,313,396		3,313,272
	3,313,974		3,313,965		3,313,452		3,313,228		3,313,424		3,313,296
	3,313,991		3,313,983		3,313,454		3,313,246		3,313,453		3,313,301
	3,314,000		3,314,030		3,313,457		3,313,248		3,313,464		3,313,429
	3,314,017	32	: 3,313,596		3,313,460		3,313,269		3,313,489		3,313,430
	3,314,020		3,313,738		3,313,468		3,313,273		3,313,525		3,313,435
	3,314,033	33	: 3,313,249		3,313,474		3,313,297		3,313,603		3,313,447
	3,314,056		3,313,270		3,313,510		3,313,302		3,313,604		3,313,509
	3,314,070		3,313,899		3,313,517		3,313,303		3,313,607		3,313,516
26	: 3,313,007		3,314,026		3,313,521		3,313,304		3,313,618		3,313,565
	3,313,094	34	: 3,312,981		3,313,548		3,313,308		3,313,643		3,313,969
	3,313,131		3,312,987		3,313,587		3,313,317		3,313,660	54	: 3,313,524
	3,313,136		3,313,014		3,313,590		3,313,398		3,313,662		3,313,685
	3,313,143		3,313,091		3,313,608		3,313,409		3,313,747		3,313,785
	3,313,147		3,313,250		3,313,609		3,313,421		3,313,760		3,313,845
	3,313,150		3,313,255		3,313,633		3,313,422		3,313,761	55	: 3,312,984
	3,313,180		3,313,279		3,313,636		3,313,438		3,313,771		3,312,988
	3,313,181		3,313,384		3,313,644		3,313,442		3,313,791		3,313,048
	3,313,199		3,313,394		3,313,663		3,313,466		3,313,813		3,313,095
	3,313,239		3,313,405		3,313,679		3,313,471		3,313,852		3,313,123
	3,313,241		3,313,488		3,313,680		3,313,473		3,313,879		3,313,157
	3,313,271		3,313,492		3,313,682		3,313,475		3,313,894		3,313,201
	3,313,281		3,313,545		3,313,690		3,313,528		3,313,896		3,313,264
	3,313,284		3,313,594		3,313,724		3,313,536		3,313,931		3,313,286
	3,313,316		3,313,610		3,313,737		3,313,539		3,313,951		3,313,343
	3,313,379		3,313,632		3,313,755		3,313,550		3,314,003		3,313,373
	3,313,383		3,313,638		3,313,762		3,313,553		3,314,021		3,313,408
	3,313,393		3,313,651		3,313,773		3,313,559		3,314,031		3,313,425
	3,313,399		3,313,652		3,313,800		3,313,562	43	: 3,313,074		3,313,508
	3,313,416		3,313,672		3,313,809		3,313,584		3,313,891		3,313,534
	3,313,417		3,313,686		3,313,815		3,313,592	44	: 3,312,989		3,313,670
	3,313,418		3,313,688		3,313,817		3,313,597		3,313,194		3,313,681
	3,313,481		3,313,751		3,313,818		3,313,617	45	: 3,313,650		3,314,004
	3,313,484		3,313,765		3,313,825		3,313,664	47	: 3,312,995		3,314,029
	3,313,485		3,313,767		3,313,835		3,313,677		3,313,202		

DESIGN PATENTS

5 : 207,406	10 : 207,425	17 : 207,441	29 : 207,417	36 : 207,414	39 : 207,439
6 : 207,396	17 : 207,391	18 : 207,401	29 : 207,418	36 : 207,427	41 : 207,423
207,402	207,392	24 : 207,413	207,419	207,433	42 : 207,411
207,412	207,400	25 : 207,424	34 : 207,390	207,435	45 : 207,438
207,420	207,408	27 : 207,403	207,404	37 : 207,428	48 : 207,394
207,426	207,421	207,409	207,432	39 : 207,431	51 : 207,436
207,437	207,422	207,410	35 : 207,397	39 : 207,396	55 : 207,405
207,440	207,429	29 : 207,415	36 : 207,393	207,430	56 : 207,395
9 : 207,407	207,434	207,416			

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
April 11, 1967 Volume 837 Number 2

TRADEMARKS
NOTICES

Notice of Daylight Saving Time

The Patent Office will operate on Daylight Saving Time from May 1, 1967 through October 29, 1967.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 671,020 (MARTINIZING), The American Laundry Machinery Co., Fabric cleaning and processing service, filed May 17, 1965, D.C., S.D.N.Y., Doc. Civ. 65-1460, *Martin Equipment Sales, etc. v. Milton Greenspan et ano.* Dismissed for lack of prosecution, Jan. 27, 1967. Same, *Martin Equipment Sales, etc. v. Bertha Fried et ano.*, Doc. Civ. 65-1461. Dismissed for lack of prosecution, Jan. 27, 1967. Same,

Martin Equipment Sales, etc. v. Kurt Brenner et ano., Doc. Civ. 65-1462. Dismissed for lack of prosecution, Jan. 26, 1967. Same, *Martin Equipment Sales, etc. v. Nathan Handler et ano.*, Doc. Civ. 65-1463. Dismissed for lack of prosecution, Jan. 26, 1967. Same, *Martin Equipment Sales, etc. v. Albert Fishman, et al.*, Doc. Civ. 65-1464. Order dismissing action for lack of prosecution, Jan. 26, 1967. Same, *Martin Equipment Sales, etc. v. Albert Fishman et al.*, Doc. Civ. 65-1465. Order dismissing action for lack of prosecution, Jan. 27, 1967. Same, *Martin Equipment Sales, etc. v. Simon Mayer et ano.*, Doc. Civ. 65-1466. Order dismissing action for lack of prosecution, Jan. 26, 1967. Same, *Martin Equipment Sales, etc. v. Sidney Klein et ano.*, Doc. Civ. 65-1467. Order dismissing action for lack of prosecution, Jan. 26, 1967. Same, *Martin Equipment Sales, etc. v. Albert Fishman et al.*, Doc. Civ. 65-1468. Order dismissing action for lack of prosecution, Jan. 26, 1967.

CONDITION OF TRADEMARK APPLICATIONS AS OF FEBRUARY 28, 1967

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]----- 17,447
Date of oldest new application----- Jan. 13, 1966
Date of oldest amended application (filing date)----- May 13, 1963

C. M. WENDT, Director, Trademark Examining Operation		Oldest Application	
TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION		New	Amended
(I) L. J. BETTENDORF, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 41, 42, 43, 44-----		1-21-66	7-30-64
(II) F. H. WETHERBEE, Classes 1, 3, 6, 7, 9, 10, 18, 22, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B-----		1-13-66	5-13-63
Renewals (All Classes)-----		1-24-67	
Sec. 12 (c) Publications (All Classes)-----		1-31-67	

Applications filed during the month of February 1967—2,064

Registration Issued ----- 376—No. 827,039 to No. 827,414
Renewals Issued ----- 80

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, \$12.00 per annum, foreign mailing \$4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105. A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 210,965. S. S. Kresge Company, Detroit, Mich. Filed Jan. 29, 1965.



Applicant disclaims the word "Mart" apart from the mark as shown. Owner of Reg. Nos. 743,912 and 774,794.

Class 100—Miscellaneous

For Restaurant Services.

Class 101—Advertising and Business

For Retail Grocery Services.

Class 103—Construction and Repair

For Automotive Services, Including Repair, Tire Mounting, Lubrication, Brake Adjustment, and Muffler Replacement.

First use on or before Feb. 28, 1962.

SN 215,849. Firma Werner Moll, Solingen-Wald, Germany. Filed Apr. 6, 1965.

MOLL

Owner of German Reg. No. 776,974, dated Sept. 10, 1963.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Etching Machines, Acid-Circular Pumps, Gear Wheels for Projectors, and Bushings for Projectors.

Class 26—Measuring and Scientific Appliances

For Developing Tables (for Photographic Use), Etching Tables, Etching Tubs, Photo-Bowls, Special Developing Bowls, Tanks for Developing of Films, Slide Magazines, Slide Frames, Handles for Projectors, Precision Scales, Etching Bowls, Developing Bowls, Dark-Chamber Lamps, and Developing Machines.

SN 218,886. Midlands Automotive Warehouse, Inc., Omaha, Nebr. Filed May 14, 1965.



The representation of the map of the United States is disclaimed apart from the mark as a whole.

Class 19—Vehicles

For Automotive Mechanics' Dollies, Automotive Floor Mats, and Automotive Seat Cushions.

TM 52

Class 21—Electrical Apparatus, Machines, and Supplies

For Storage Batteries.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Vacuum Cleaners (Service Station Type), Car Washers, Rebuilt Automotive Crankshafts, and Rebuilt Automotive Engines.

Class 35—Belting, Hose, Machinery Packing, and Non-metallic Tires

For Automotive Tubes.

First use Mar. 1, 1965.

SN 220,466. Condec Corporation, Stamford, Conn. Filed June 7, 1965.



Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Valves.

Class 19—Vehicles

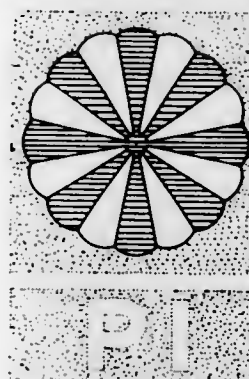
For Special Purpose Vehicles—Namely, Tow Tractors, Refueler Trucks, Amphibious Lighters and Spotting Dollies; and Aircraft and Missile Support Equipment—Namely, Missile and Bomb Handling Dollies and Aircraft Tow Tractors.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Gear Drives.

First use on or about May 1, 1965.

SN 225,459. Parachutes, Incorporated, Orange, Mass. Filed Aug. 11, 1965.



The drawing is lined to indicate the color "Blue"; however, no claim is made as to any particular color.

APRIL 11, 1967

U. S. PATENT OFFICE

TM 53

Class 26—Measuring and Scientific Appliances

For Altimeters, Wind Meters, and Goggles.

Class 27—Horological Instruments

For Interval Measuring Apparatus—Namely, Stop Watches.

Class 28—Jewelry and Precious-Metal Ware

For Charms, Tie-Clips, and Similar Jewelry.

Class 37—Paper and Stationery

For Parachutist's Log Book.

Class 39—Clothing

For Coveralls, Boots, Helmets, Gloves, Socks, and T-Shirts.

First use in or about June 1964.

SN 225,629. Atwater-General Corp., Watertown, Wis. Filed Aug. 13, 1965.



Class 31—Filters and Refrigerators

For Air Filters.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Humidifiers, Dehumidifiers, Air Heaters, Air Coolers, and Air Conditioners.

First use June 1, 1964.

SN 230,304. Steadman Industries Limited, Cooksville, Ontario, Canada. Filed Oct. 15, 1965.

TRUCK-TAINER

Applicant disclaims the right to the exclusive use of the word "Truck" apart from the mark. Owner of Canadian Reg. No. 135,099, dated Mar. 26, 1964.

Class 19—Vehicles

For Freight Containers for Railroad and Highway Vehicles.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Portable and Stationery Conveyors, Cranes, Load Lifting and Handling Equipment, for Loading, Off-Loading, and Transferring Freight Containers Between Vehicles.

SN 231,406. Etablissements Bauchet & Cie, Rueil-Malmaison, Seine-et-Oise, France. Filed Oct. 23, 1965.

ROLLAPRINT

Class 6—Chemicals and Chemical Compositions

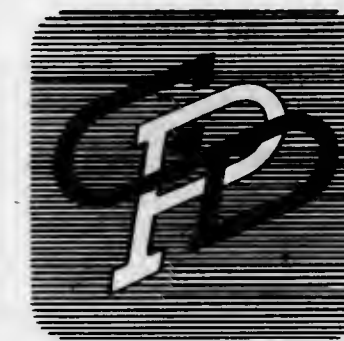
For Photographic Developing and Stabilizing Fluids.

Class 26—Measuring and Scientific Appliances

For Sensitized Photographic Papers.

First use January 1961; in commerce January 1961.

SN 233,216. General Precision Decca Systems, Inc., Washington, D.C. Filed Nov. 22, 1965.



The drawing is lined for blue, but color is not claimed as an integral part of the mark.

Class 21—Electrical Apparatus, Machines, and Supplies

For Radio Receivers, Radio Transmitters, Radio Antennae, Batteries and Battery Chargers for Use in Ships and Aircraft, and Parts Thereof.

Class 26—Measuring and Scientific Appliances

For Scientific Instruments and Apparatus for Use in Ships and Aircraft in Connection With Navigation, Surveys, and Position-Fixing—Namely, Computers, Remote Indicators, Tract Plotters, Frequency Independent Displays, Fix Printers, Pictorial Display and Course Line Units, Data Link Units, and Parts Thereof.

First use June 15, 1964.

SN 233,328. Dustex Corp., Buffalo, N.Y. Filed Nov. 26, 1965.

DUSTEX

Owner of Reg. No. 587,688.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Valves for Dust Collector Hoppers and Bin Dischargers—Namely, Vacuum Valves, Double Flap Valves, and Slide Gate Valves.

First use May 1956.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Industrial Separators and Collectors of the Centrifugal Type for Separating Entrained Particles From Fluids.

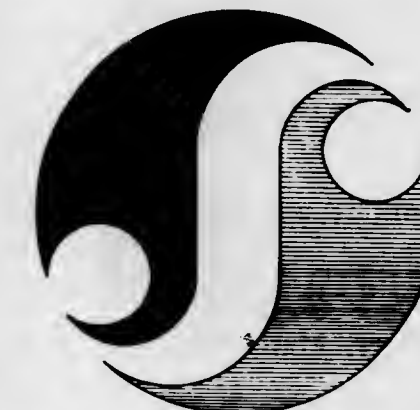
First use February 1947.

Class 31—Filters and Refrigerators

For Industrial Separators and Collectors of the Fabric Filter Type for Separating Entrained Particles From Fluids.

First use July 1958.

SN 233,650. Swift Industries, Inc., Elizabeth, Pa. Filed Nov. 30, 1965.



The drawing is lined for blue. The mark consists of a stylized "S."

Class 101—Advertising and Business

For Real Estate Brokerage Services.

Class 102—Insurance and Financial

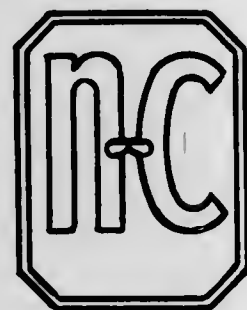
For Rendering Technical Assistance in the Fields of Construction, Maintenance, and Repair of Homes.

Class 103—Construction and Repair

For Providing Financing and Mortgaging Services in the Field of Construction Materials and in the Construction of Homes.

First use Sept. 10, 1965.

SN 237,998. Neva-Clog Products, Inc., Bridgeport, Conn. Filed Feb. 3, 1966.

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Staples for Use in Industrial and Office Staplers.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Industrial and Office Staplers.

First use about March 1930.

SN 237,999. Neva-Clog Products, Inc., Bridgeport, Conn. Filed Feb. 3, 1966.

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Staples for Use in Industrial and Office Staplers.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Industrial and Office Staplers.

First use about March 1930.

SN 238,000. Neva-Clog Products, Inc., Bridgeport, Conn. Filed Feb. 3, 1966.

NEVA-CLOG**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Staples for Use in Industrial and Office Staplers.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Industrial and Office Staplers.

First use about December 1925.

SN 238,001. Neva-Clog Products, Inc., Bridgeport, Conn. Filed Feb. 3, 1966.

NEVA-CLOG**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Staples for Use in Industrial and Office Staplers.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Industrial and Office Staplers.

First use about December 1925.

SN 238,002. Neva-Clog Products, Inc., Bridgeport, Conn. Filed Feb. 3, 1966.

N-C**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Staples for Use in Industrial and Office Staplers.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Industrial and Office Staplers.

First use about March 1930.

SN 238,019. Tri-Matic Equipment Co., Omaha, Nebr. Filed Feb. 3, 1966.

**Class 12—Construction Materials**

For Connections for Paint Spray Equipment and Paint Spray Booths.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Paint Circulating Valves, Couplings, and Adapters for Paint Spray Equipment.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Paint Spraying Equipment, Consisting of Air Compressors, Paint Spray Guns, Airless Paint Sprayers, Hot Paint Sprayers, Paint Agitators, and Lubricating Devices.

Class 26—Measuring and Scientific Appliances

For Air and Material Gauges, and Railroad Axle Testing Vehicles.

Class 31—Filters and Refrigerators

For Paint Filters.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Paint Heaters.

First use at least Feb. 1, 1961.

SN 238,191. Alfred Dunhill Limited, London, England. Filed Feb. 7, 1966. SN 243,747. American Pipe and Construction Co., Monterey Park, Calif. Filed Apr. 19, 1966.

DUNHILL

Owner of U.S. Reg. Nos. 155,951, 634,071, and others.

Class 26—Measuring and Scientific Appliances

For Barometers, Compasses, Thermometers, Hygrometers, Hour Glass Timers, and Map Globes.

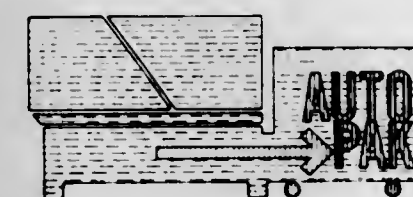
First use 1922; in commerce 1922.

Class 27—Horological Instruments

For Clocks and Watches.

First use 1943; in commerce 1943.

SN 239,856. Auto Pak Company, Washington, D.C. Filed Mar. 1, 1966.



The drawing is lined for red and gray.

Class 2—Receptacles

For Containers Used With Waste Material Compaction Apparatus.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Compaction Apparatus for Waste Material.

First use on or about Dec. 1, 1963.

SN 240,137. Glas-Kraft, Inc., Slatersville, R.I. Filed Mar. 4, 1966.

GLAS-KRAFT

Owner of Reg. No. 567,227.

Class 12—Construction Materials

For Reflective Insulation, Vapor Barrier Material, Copper Sandwich Flashing, Protective Blankets for Concrete Curing, and Polyethylene Protective Covering Material.

First use 1949.

Class 37—Paper and Stationery

For Glass Fiber Reinforced Paper and Tape for Wrapping and Packaging.

First use Apr. 5, 1949.

SN 242,925. Philip Morris Incorporated, New York, N.Y. Filed Apr. 7, 1966.

ROYAL OAK

Owner of Reg. Nos. 413,244, 435,527, and others.

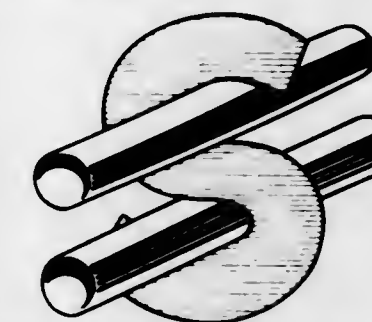
Class 51—Cosmetics and Toilet Preparations

For Shaving Lotion Adapted for Softening the Beard and Conditioning the Face To Facilitate Shaving, After Shaving Lotion, Shaving Cream, Hair Dressing, Hair Tonic, Personal Deodorant, Cologne, and Talcum Powder.

Class 52—Detergents and Soaps

For Bath Soap and Hand Soap.

First use Jan. 26, 1942.



The drawing is lined for the color blue, but no claim is made for color.

Class 12—Construction Materials

For Mortar Line Pipe and Pipe Joints.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Metal Pipe and Casing, Pipe Joints and Pipe Fittings, Both With and Without Protective Coatings of Asphalt and Like Materials.

First use on or about Aug. 22, 1956; 1943 in a different form.

SN 245,531. Wells Television, Inc., New York, N.Y. Filed May 13, 1966.



Owner of Reg. Nos. 754,029, 806,661, and 817,581.

Class 21—Electrical Apparatus, Machines, and Supplies

For Communication Equipment, Brackets for Mounting of Communication Equipment, Including Electrically Wired and Wireless Television Mounts, Television Reception Apparatus, Nurse Call Units, Radios, Communication Systems, Electrical Outlet Plates, and Related Items.

Class 100—Miscellaneous

For Rental of Communication Equipment, Including Nurse Call Units and Television Equipment in Hospitals, Hotels, and the Like.

Class 103—Construction and Repair

For Servicing and Maintenance of Communication Equipment Including Nurse Call Units and Television Equipment in Hospitals, Hotels, and the Like.

First use Jan. 12, 1966; Mar. 10, 1947, in a different form.

SN 245,764. Superior Industries, Incorporated, Youngstown, Ohio. Filed May 16, 1966.



Owner of Reg. No. 421,067.

Class 12—Construction Materials

For Metal Moldings, Nosings, Edgings, Bars, Caps, Coves, Corners and the Like, for Doors, Carpets, Sinks, Stairs, Shelves, Panels, Bathtubs and the Like; Metal Shapes—Namely, Angles, Channels, Beams; and Thresholds and Sink Well Frames.

Class 19—Vehicles

For Boat and Trailer Moldings, Gunwales, Nosings, Bars, Risers, Rails, and the Like.
First use Dec. 15, 1944.

SN 246,420. Caloric Corporation, Topton, Pa. Filed May 23, 1966.

OLIVETONE**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Sinks and Splash Plates.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Dishwashers and Waste Food Disposers.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Cooking Ranges and Ventilating Hoods for Stoves.

First use on or about Mar. 2, 1966.

SN 247,294. New Castle Products, Inc., New Castle, Ind. Filed June 6, 1966.



The lining in the drawing indicates shading as part of the mark and does not indicated color. Owner of Reg. Nos. 653,463, 808,320, and 811,395.

Class 12—Construction Materials

For Natural Wood Veneer Laminated to a Backing for Use in Covering Doors, Walls, Panels, and the Like.

First use October 1958.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Vinyl Coated Fabrics for Use in Covering Doors, Panels, Walls, and the Like.

First use Feb. 6, 1956.

SN 249,819. A. G. Busch & Co., Inc., Chicago, Ill. Filed July 8, 1966.

SAFCO**Class 19—Vehicles**

For Automobile Door Protectors.
First use June 1966.

Class 21—Electrical Apparatus, Machines, and Supplies

For Automobile Accessories Used in Connection With the Electrical System of the Automobile, Including Automobile Accessory Plugs, and Electrical Devices Connected to the Automobile Battery Through Accessory Plugs Such as Defroster Guns and Various Types of Lights.
First use Aug. 12, 1955.

Class 50—Merchandise Not Otherwise Classified

For Driveway Guides Comprising Reflective Markers.
First use July 1959.

SN 253,495. Wrecks Inc., Whitestown, Ind. Filed Sept. 30, 1966.

WRECKS**Class 19—Vehicles**

For Automobile Parts—Namely, Bodies, Frames, Wheels, Body Panels, Fenders, Bumpers, Brakes, Front and Rear Suspension Systems, Seats, Steering Mechanisms and Systems, Canvas Tops, Sunvisors, and Mirrors.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Automobile Parts—Namely, Engines, Transmissions, Overdrives, Fluid Couplings, Torque Converters, Clutches, Drive Shafts, Exhaust Systems, Differentials, and Universal Joints.

First use Jan. 2, 1951.

SN 259,046. Will Ross, Inc., Milwaukee, Wis. Filed Nov. 21, 1966.



Owner of Reg. No. 796,422.

Class 39—Clothing

For Bathrobes, Patients' Gowns, Pajamas, Nurses' Gowns and Caps, Disposable Diapers and Kerchiefs.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Pillowcases, Mattress Pads, Pillow Covers, Blankets, Pillows, Bed Spreads, Sheetings, Towelings, Drapes, Towels and Washcloths.

Class 44—Dental, Medical, and Surgical Appliances

For Surgical Dressings—Namely, Obstetrical Pads, Maternity Packs and Kits, Sanitary Belts, Breast Pads, Underpads, Sponges, Gauze, Gauze Bandages, Cotton Balls, Cotton Tipped Applicators, Elastic Bandages, Adhesive Tape, Binders for Post-Operative Use, Doctors' Examining and Operating Gowns, Masks, and Gloves; and Surgical Appliances—Namely, Examination Tables, Catheters, Disposable Enema Units, Catheterization Kits, and Surgery Preparation Shaving Kits.

Class 52—Detergents and Soaps

For Specialized Detergent for Cleaning Laboratory Glassware and Surgical Instruments.

First use November 1965.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.
A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 233,123. Peel's Poultry Farm Limited, Port Perry, Ontario, Canada. Filed Nov. 22, 1965.

PEEL'S CANUCK

For Poultry, Baby Chicks, and Poultry Breeding Stock.
First use Aug. 17, 1965; in commerce Aug. 17, 1965.

SN 233,124. Peel's Poultry Farm Limited, Port Perry, Ontario, Canada. Filed Nov. 22, 1965.

PEEL'S 132A

For Baby Chicks and Poultry Breeding Stock.
First use Apr. 7, 1964; in commerce Apr. 7, 1964.

SN 237,638. Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. Filed Feb. 1, 1966.

URECOLL

For Synthetic Resins.
First use Jan. 8, 1951; in commerce Mar. 17, 1964.

SN 261,699. Hermann Loewenstein, Inc., New York, N.Y. Filed Dec. 30, 1966.

CARRARA CALF

The word "Calf" is disclaimed apart from the mark as shown.

For Tanned and Finished Leather for Use in the Manufacture of Handbags and Other Articles Made of Leather.

First use Aug. 5, 1966.

Class 2—Receptacles

SN 228,893. Dodson Manufacturing Company, Wichita, Kans. Filed Sept. 29, 1965.

DODSON BIG-BOY SILALL

Owner of Reg. No. 668,318.
For Silos and Parts and Components Thereof.
First use Aug. 25, 1965.

SN 230,986. The J. G. Wilson Corporation, Norfolk, Va. Filed Oct. 21, 1965.

TEE-M

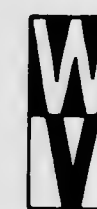
For Rolling Front Containers or Housings for Trash Receptacles, Cans, and Other Storage Devices.
First use on or about Oct. 6, 1965.

SN 236,662. Steiner American Corporation, Chicago, Ill. Filed Jan. 17, 1966.

RETRO-50

For Towel-Dispensing Cabinets.
First use Nov. 23, 1965.

SN 238,812. West Virginia Pulp and Paper Company, New York, N.Y. Filed Feb. 14, 1966.

**Westvaco**

Owner of Reg. Nos. 119,848, 729,741, and others.
For Blanks for Paper Cartons.
First use June 28, 1963.

SN 239,327. Sealright Co., Inc., Fulton, N.Y. Filed Feb. 21, 1966.

PLASTIKING

For Plastic Bottles.
First use June 14, 1965.

SN 240,697. American Vault & Concrete Products Corp., Detroit, Mich. Filed Mar. 11, 1966.

SUPREME

For Concrete Burial Vaults.
First use on or about Jan. 1, 1959.

SN 241,016. American Vault & Concrete Products Corp., Detroit, Mich. Filed Mar. 15, 1966.

EAGLE

Owner of Reg. No. 549,645.
For Concrete Burial Vaults.
First use on or about Jan. 1, 1939.

SN 241,496. National Biscuit Company, New York, N.Y. Filed Mar. 21, 1966.

FLAV-R-FOLD

For Bag Seal With Opening Device, Sold as a Component of a Bag.
First use Mar. 16, 1966.

Class 4—Abrasives and Polishing Materials

SN 224,114. Pratt & Lambert-Inc., Buffalo, N.Y. Filed July 23, 1965.

PRATT & LAMBERT

For Paste Wax and Self-Polishing Wax.
First use Jan. 4, 1947.

Class 5 — Adhesives

SN 225,377. Standard Chemical Products, Inc., Hoboken, N.J., assignee of Thompson-Werke, G.m.b.H., Dusseldorf, Germany. Filed Aug. 9, 1965.

THOMSIT

Owner of German Reg. No. 553,133, dated Jan. 30, 1942.
For Adhesives, in Particular Synthetic and Natural Resin Adhesives, Floor-Covering Cements.

SN 226,645. Joint-Lok, Olathe, Kans. Filed Aug. 27, 1965.

JOINT-LOK

For Adhesive for Anchoring and Securing Wooden Parts Together.
First use Sept. 29, 1964.

SN 227,576. The Glidden Company, Cleveland, Ohio. Filed Sept. 10, 1965.

MAC

Owner of Reg. Nos. 628,501, 758,262, and others.
For Adhesives, Particularly for Panels, Wall Tile, and the Like.
First use Mar. 20, 1964.

SN 260,700. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Dec. 14, 1966.

TARTAN

For Two-Part Adhesive for Use in Laying a Surfacing Material.
First use at least as early as Dec. 1, 1966.

Class 6 — Chemicals and Chemical Compositions

SN 227,750. The British Drug Houses Limited, London, England. Filed Sept. 14, 1965.

BDH

Owner of British Reg. No. 602,625, dated Nov. 24, 1938.
For Analytical Chemicals and Reagents for Laboratory and General Industrial Use.

SN 230,684. Pennsalt Chemicals Corp., Philadelphia, Pa. Filed Oct. 20, 1965.

**PENNSALT
SERVICE
BRAND**

Applicant disclaims the words "Service Brand," apart from the mark as shown in the drawing and specimens. Owner of Reg. Nos. 392,195, 662,748, and others.
For Specialty Chemicals in the Nature of Laundry Bleach and Textile Brightening and Whitening Agents.
First use Dec. 10, 1962.

SN 236,471. Dade Reagents, Inc., Miami, Fla. Filed Jan. 14, 1966.

REVERSE-CYTE

Owner of Reg. No. 793,552.
For Diagnostic Reagent Using Human Red Blood Cells for Laboratory Testing Procedures.
First use on or before Oct. 19, 1965.

SN 240,873. Fletcher Paper Company, Alpena, Mich. Filed Mar. 14, 1966.

EBONY

For Imaging Compositions for Electrostatic Copying Machines.
First use at least as early as Apr. 15, 1965.

SN 241,317. Cudahy Company, Phoenix, Ariz. Filed Mar. 18, 1966.

PLATONE

For Industrial Peptone for Use in Electroplating.
First use Feb. 2, 1966.

SN 241,884. Faultless Starch Company, Kansas City, Mo. Filed Mar. 25, 1966.

SOF-TOUCH

For Laundry Preparation—Namely, a Sizing and Softening Agent for Fabrics.
First use Mar. 17, 1966.

SN 241,885. Faultless Starch Company, Kansas City, Mo. Filed Mar. 25, 1966.

TOUCH-UP

For Laundry Preparation—Namely, a Sizing and Finishing Agent for Fabrics.
First use Mar. 17, 1966.

SN 242,052. Sarandos Deodorant Company, Inc., Houston, Tex. Filed Mar. 28, 1966.

Brush Air

For Toilet Bowl Deodorizer Blocks (of Paradichlorobenzene).
First use March 1960.

SN 242,129. Horne-Boatright Chemical Company, Inc., Minneapolis, Minn. Filed Mar. 29, 1966.

HABCO

For Herbicides.
First use Apr. 3, 1965.

SN 243,945. Astro Chemical Works, Inc., Oak Park, Ill. Filed Apr. 21, 1966.

ASTROWELD

For Latex Mortar Additives for Portland Cement.
First use on or prior to Dec. 18, 1964.

SN 242,965. Cudahy Company, Phoenix, Ariz. Filed Apr. 21, 1966.

PHARMATONE

For Heat Hydrolyzed Biological Peptone Composition.
First use Feb. 2, 1966.

SN 246,413. Whiffen & Sons Limited, Loughborough, England. Filed May 23, 1966.

ZEROX

Owner of British Reg. No. 750,368, dated Jan. 27, 1956.
For Hydrazines and Compounds of Hydrazines for Use in the Treatment of Water and Boilers, Excluding Chemical Substances for Use in Photography.

SN 252,730. Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany. Filed Aug. 19, 1966.

STABAXOL

Owner of German Reg. No. 521,570, dated July 24, 1939.
For Stabilizers for Plastics and Synthetic Rubbers.

SN 254,501. Chemco Photoproducts Company, Inc., Glen Cove, N.Y. Filed Sept. 15, 1966.

KOPR-TOP

Owner of Reg. Nos. 670,454, 528,795, and 715,189.
For Solutions for Photoengraving Use—Namely, Hot Top Enamel and Sensitizer.
First use June 1, 1959.

SN 254,502. Chemetron Corporation, Chicago, Ill. Filed Sept. 15, 1966.

DITAH

For Antioxidant for Rubber, Resins, or Oils.
First use Apr. 5, 1965.

SN 254,769. William R. Brown, d.b.a. Wilbro Products Company, Muncie, Ind. Filed Sept. 20, 1966.

ACTION-PAC

For Battery Additive.
First use Aug. 20, 1966.

SN 254,863. Century Chemical Products Company, Berkeley, Mich. Filed Sept. 21, 1966.

TRAVEL JON

For Deodorant for Trailer and Marine Toilets.
First use on or about July 1, 1965.

SN 254,922. Detrex Chemical Industries, Inc., Detroit, Mich. Filed Sept. 22, 1966.

PERM-ETHANE

For Inhibited 1,1,1-Trichloroethane Industrial Solvent.
First use Aug. 17, 1966.

SN 254,924. Dow Corning Corporation, Midland, Mich. Filed Sept. 22, 1966.

DOW CORNING

Owner of Reg. Nos. 570,268, 804,469, and others.
For Semiconductor Raw Materials—Namely, Hyperpure Silicon.
First use September 1964.

SN 255,200. General Aniline & Film Corporation, New York, N.Y. Filed Sept. 27, 1966.

GAFTAK

For Tackifier for Use in Natural and Synthetic Polymers, Especially Rubbers.
First use Aug. 16, 1966.

SN 255,209. Hustler Photo Products, Inc., Gladstone, Mo. Filed Sept. 27, 1966.

HUSTLER

For Chemicals for Use in Photographic Processing.
First use Aug. 8, 1966.

SN 255,513. Chevron Chemical Company, San Francisco, Calif. Filed Sept. 30, 1966.

DIFOCAP

For Fungicide.
First use Aug. 19, 1966.

SN 255,921. Reichhold Chemicals, Inc., White Plains, N.Y. Filed Oct. 6, 1966.

FORMOX

For Oxidation Catalyst for Use in Preparation of Formaldehyde.
First use May 26, 1966.

SN 257,139. Diamond Alkali Company, Cleveland, Ohio. Filed Oct. 25, 1966.

INTAMIX

For Non-Dusting Compositions Containing Synthetic Resin and Modifying Ingredients.
First use Sept. 19, 1966.

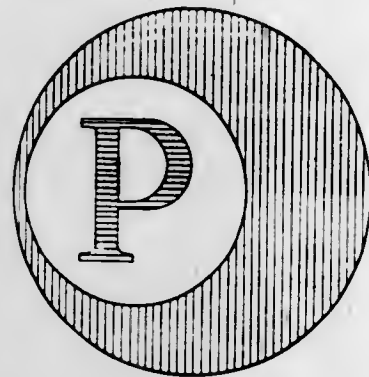
Class 7 — Cordage

SN 250,666. International Harvester Company, Chicago, Ill. Filed July 20, 1966.

ASTROLENE

For Baler Twine.
First use Feb. 11, 1966.

SN 252,126. Pacific Supply Cooperative, Portland, Oreg. Filed Aug. 10, 1966.



The drawing is lined for the colors red and blue, but no claim is made to color.
For Baler and Binder Twine.
First use Nov. 13, 1958.

Class 9—Explosives, Firearms, Equipments, and Projectiles

SN 261,008. Colt's Inc., Hartford, Conn. Filed Dec. 19, 1966.



Owner of Reg. Nos. 52,903 and 738,097, and others.
For Rifles.
First use June 30, 1962.

SN 261,009. Colt's Inc., Hartford, Conn. Filed Dec. 19, 1966.



Owner of Reg. Nos. 52,903, 738,097, and others.
For Rifles.
First use June 30, 1962.

Class 10—Fertilizers

SN 249,428. W. R. Grace & Co., New York, N.Y. Filed July 1, 1966.

REDI-EARTH

For Plant Growing Medium and Fertilizer.
First use May 2, 1966.

SN 249,966. Federal Chemical Company, Louisville, Ky. Filed July 11, 1966.

FEDERAL

Owner of Reg. No. 588,281.
For Fertilizers.
First use Jan. 6, 1948.

SN 250,940. Continental Oil Company, d.b.a. Agrico Chemical Co., Division of Continental Oil Company, Memphis, Tenn. Filed July 25, 1966.



For Plant Food.
First use January 1966.

SN 251,196. Elko Fertilizer Co., Inc., Elkhorn, Wis. Filed July 28, 1966.

POP-UP

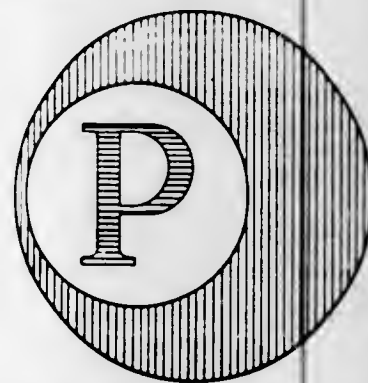
For Liquid Fertilizer.
First use Jan. 7, 1966.

SN 251,293. Emhart Corporation, Hartford, Conn. Filed July 29, 1966.

KINGRO

Owner of Reg. Nos. 541,494, 766,977, and 708,901.
For Fertilizer.
First use July 15, 1966.

SN 252,127. Pacific Supply Cooperative, Portland, Oreg. Filed Aug. 10, 1966.



The drawing is lined for the colors red and blue, but no claim is made to color.
For Lawn, Garden, and Field Fertilizer.
First use Feb. 3, 1965.

Class 12—Construction Materials

SN 219,049. National Expansion Joint Co., Oakland, Calif. Filed May 17, 1965.

GLAS-TOP

For Roofing and Deck Products—Namely, Emulsified and Solvent Cut-Back Asphalt Roofing and Deck Compounds and Woven Glass Fabric in Sheet and Roll Form.
First use Sept. 30, 1963.

SN 228,454. The Flintkote Company, New York, N.Y. Filed Sept. 23, 1965.



For Gypsum Plaster, Gypsum Lath, Gypsum Plasterboard and Interior Wall and Ceiling Systems Using the Same.
First use Aug. 15, 1963.

SN 231,806. J. Bibby & Sons Limited, Liverpool, England. Filed Oct. 29, 1965.

BIBBICOTE

Owner of British Reg. No. 874,878, dated Jan. 28, 1965.
For Thermal Insulation Material—Namely, Plastic Foam Spray for Roofs and Walls of Buildings.

SN 235,892. E. M. Cromwell & Company Limited, Bishop's Stortford, England. Filed Jan. 6, 1966.

"SQUISH"

Owner of British Reg. No. 864,042, dated May 11, 1964.
For Preparations and Materials in the Nature of Mastics, Plastic Compositions, and Tapes, All for Use in Packing, Stopping, Insulating, Caulking, and Sealing Joints.

SN 235,910. Frank Paxton Lumber Company, Kansas City, Mo. Filed Jan. 6, 1966.

PAX-SHUTTER

Owner of Reg. Nos. 602,887, 784,669, and others.
For Shutters for Exterior or Interior Use With Doors and Windows.
First use Dec. 4, 1965.

SN 236,294. Serendipity Homes, Inc., Gardena, Calif. Filed Jan. 12, 1966.

SERENDIPITY

For Prefabricated Homes.
First use Apr. 8, 1963.

SN 237,054. United States Plywood Corporation, New York, N.Y. Filed Jan. 21, 1966.

HARDCORE

Owner of Reg. No. 579,282.
For Wood and Wood Products, i.e., Laminated Wood, Veneers, Hardboard, and Fibrous Boards.
First use Dec. 16, 1965.

SN 237,140. Masonite Corporation, Chicago, Ill. Filed Jan. 24, 1966.

BENELEX

Owner of Reg. No. 503,850.
For Construction Material, and More Specifically Hardboard Panels for Various Construction Purposes Such as Counter Tops, Spinning Chucks for Metals, Flooring, Neutron Shielding, Jigs, Fixtures, Templates, Vacuum Forming Dies, Match Plates in Foundries, X-Ray Table Tops, Wall Hardboard Panels Requiring High Density Material, Wear Surfaces for Machinery, and the Like.
First use on or about Aug. 13, 1946.

SN 237,330. General Refractories Company, Philadelphia, Pa. Filed Jan. 26, 1966.

PRCO

For Refractory Brick.
First use 1933.

SN 237,354. Philippe Jaulmes, Montpellier, Herault, France. Filed Jan. 26, 1966.

PANRAMA

Owner of French Reg. No. 2,377, dated Oct. 4, 1963 (Montpellier); Natl. Inst. No. 213,376.
For Prefabricated Motion Picture Theatres, Including the Screen Therefor, Sold as a Part of the Prefabricated Theatre.

SN 240,156. Continental Wall Panel Mfg. Co., Gardena, Calif. Filed Mar. 4, 1966.

VINO BOND

For Vinyl-Metal Laminated Sheets for General Industrial Use.
First use Dec. 20, 1965.

SN 241,940. Soule Steel Company, San Francisco, Calif. Filed Mar. 25, 1966.

TEMP-CON

For Building Construction Materials—Namely, Insulated Wall Panels.
First use July 1965.

SN 241,988. Decora, Inc., Cincinnati, Ohio. Filed Mar. 28, 1966.



For Seamless Plastic Composition for Floor, Wall, and Like Surfaces.
First use on or about Nov. 1, 1965.

SN 242,210. H. L. Birum Corporation, Lambertville, N.J. Filed Mar. 30, 1966.

MAR-V-WALL

For Interior Non-Load Bearing Partitioning for Commercial Construction, Comprising Non-Combustible Metallic Frames, Metallic and Plastic Trim and Non-Metallic Wallboard Panels.
First use December 1965.

SN 244,037. Solarflex Manufacturing Co., Inc., Houston, Tex. Filed Apr. 21, 1966.

GEOLITE

For Spray-Type Monolithic Structural Surface Insulation for Roofs.
First use at least as early as Dec. 1, 1965.

SN 244,169. Marine Engineering & Equipment Company, McAlester, Okla. Filed Oct. 24, 1965.

MEECOlog

Owner of Reg. No. 821,427.
For Formed Expanded Polystyrene Flotation Members Used in Construction Flotation Products.
First use on or about Sept. 1, 1961.

SN 244,476. Essex Chemical Corporation, Clifton, N.J. Filed Apr. 28, 1966.

BETATOP

The lining shown in the drawing is intended as shading only and does not represent any particular color. The term "Top" in the mark is disclaimed apart from the mark as shown.

For Composition for Resurfacing Concrete Floors, Walkways, and Stairs.

First use Sept. 9, 1964.

SN 245,069. Expandite Limited, London, England. Filed May 6, 1966.

PC4

For Cold Caulking Compound Cord.
First use November 1958; in commerce Aug. 25, 1964.

SN 245,632. Triangle Aluminum Industries, Inc., Dallas, Tex. Filed May 13, 1966.



Applicant disclaims the word "Deluxe" apart from the mark as shown. The mark shown in the drawing is lined for red, but color is not claimed as a feature of the mark.

For Aluminum Siding.
First use Feb. 15, 1966.

SN 246,187. Los Angeles Tile Jobbers, Inc., Los Angeles, Calif. Filed May 20, 1966.

GRANADA

For Ceramic Tile.
First use June 28, 1964.

SN 246,303. Forrest Industries, Inc., Dillard, Ore. Filed May 23, 1966.



The letter part of the mark consists of a consolidation of the capital letter "F" and the small letter "i."

For Wood Particle Board.
First use October 1961.

SN 247,089. Paul Wattelez, d.b.a. Etablissements Wattelez, Paris, France. Filed June 1, 1966.

ISOLFOR

Owner of French Reg. No. 527,848, dated Feb. 3, 1965 (Seine); Natl. Inst. No. 241,903.
For Brackets and Frames for Mounting Panels, Glass Panes and Like Articles, and Hardware Associated Therewith.
First use at least as early as January 1965; in commerce at least as early as April 1966.

SN 247,229. The Howell Manufacturing Company, Paoli, Pa. Filed June 3, 1966.

"HOW-ELL-DOR"

Owner of Reg. No. 574,224.
For Overhead Garage Doors.
First use Nov. 27, 1939.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 226,941. The Plastex Company, Columbus, Ohio. Filed Sept. 1, 1965.

Measure Marked

For Extruded Plastic Pipe.
First use prior to Jan. 1, 1954.

SN 236,966. Celanese Corporation, New York, N.Y., by change of name from Celanese Corporation of America, New York, N.Y. Filed Jan. 21, 1966.

COLLECT

For Plastic Pipe and Fittings.
First use Dec. 29, 1965.

SN 243,253. Metalex Corporation, Libertyville, Ill. Filed Apr. 12, 1966.

ALUMA MESH

Applicant disclaims the word "Mesh."
For Expanded Aluminum Hardware Cloth.
First use Oct. 19, 1965.

Class 14—Metals and Metal Castings and Forgings

SN 243,416. Diversified Metals Corporation, Hazelwood, Mo. Filed Apr. 14, 1966.

ELECTROBRIQ

For Metal Briquettes.
First use Mar. 19, 1966.

SN 243,417. Diversified Metals Corporation, Hazelwood, Mo. Filed Apr. 14, 1966.

BRIQLETS

For Metal Briquettes.
First use Feb. 15, 1966.

SN 243,418. Diversified Metals Corporation, Hazelwood, Mo. Filed Apr. 14, 1966.

ALUMABRIQ

For Metal Briquettes.
First use Mar. 1, 1966.

SN 243,702. National Standard Company, Niles, Mich. Filed Apr. 18, 1966.

ROCKET

For Wire.
First use Sept. 30, 1965.

Class 15—Oils and Greases

SN 234,944. Sloan Marketing Corp., Ardmore, Pa. Filed Dec. 20, 1965.

TEF-LUBE

For Dry Spray on Protective Lubricant for Precision Equipment, Such as, Business Machines, Camera Tracks, Projectors, and the Like.
First use Dec. 13, 1965.

SN 241,829. Tietjen & Co., Bremen, Germany. Filed Mar. 24, 1966.

WAXILIT

Owner of German Reg. No. 805,038, dated Mar. 30, 1965.
For Agent in the Nature of a Lubricant for Improving the Slidability of Parts in the Manufacture of Wooden, Plastic, or Metal Articles, Preferably for Making Slidable the Tools and the Supporting Surfaces of Machines.

SN 243,946. Atlantic Richfield Company, Philadelphia, Pa., by change of name from The Atlantic Refining Company, Philadelphia, Pa. Filed Apr. 21, 1966.

ULTRAX

For Petroleum Waxes.
First use July 9, 1934.

SN 244,692. Sol Epstein, Los Angeles, Calif. Filed May 2, 1966.

GAG FLICKERS

For Wax Candles in Novelty Glass Containers.
First use Jan. 13, 1966.

SN 244,856. Sun Oil Company, Philadelphia, Pa. Filed May 3, 1966.

SUNFLEET

Owner of Reg. Nos. 548,922, 781,961, and others.
For Petroleum-Based Lubricants.
First use Sept. 9, 1964.

SN 256,280. Gulf Oil Corporation, Pittsburgh, Pa. Filed Oct. 12, 1966.

GULF FLEET

Owner of Reg. No. 764,690.
For Lubricating Oil.
First use Dec. 2, 1965.

Class 16—Protective and Decorative Coatings

SN 220,186. Artex Hobby Products, Inc., Lima, Ohio. Filed June 2, 1965.

GEMTEX METALLIC

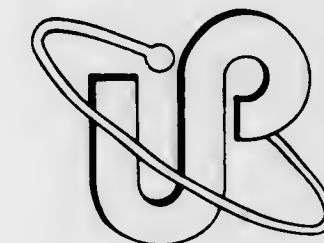
Applicant disclaims the use of the word "Metallic" apart from the mark as shown.
For Metallic Paint Packaged in Ball Point Tube Dispensers for Decorating and Marking Fabrics, Metal, Glass, Wood, Paper, and the Like.
First use July 16, 1962.

SN 225,354. K. J. Quinn & Co., Inc., Malden, Mass. Filed Aug. 9, 1965.

Q-THANE

Owner of Reg. No. 705,127.
For Oil Free Moisture Curing Polyurethane Floor and Wall Coating Which Protects Against Abrasion and Chemical Attack.
First use Apr. 27, 1965.

SN 230,212. Union Petrochemical Company, Inc., Sherman Oaks, Calif. Filed Oct. 14, 1965.



The mark includes the integrated letters "U" and "P," one upright leg of the "U" forming the upright leg of the "P" and a slanted ring integrated with said letters.
For Waterproofing Preservative Applied as a Waterproofing Coating to Surfaces of Concrete, Masonry, Bricks, Wood, and the Like.
First use June 15, 1965.

SN 230,213. Union Petrochemical Company, Inc., Sherman Oaks, Calif. Filed Oct. 14, 1965.

UTANOL

For Ingredient for Waterproofing Preservative Applied to Surfaces of Concrete, Masonry, Bricks, Wood, and the Like, Sold as a Part of a Waterproofing Coating.
First use June 15, 1965.

SN 239,298. National Expansion Joint Co., Oakland, Calif. Filed Feb. 7, 1967.

GLAS-TOP

For Pigmented Roof Coatings.
First use Oct. 17, 1963.

SN 241,609. Geo. D. Wetherill & Co., Inc., Philadelphia, Pa.
Filed Mar. 22, 1966.

CRAFT-TEX

For Exterior Latex Finish Paint.
First use Jan. 18, 1966.

SN 241,945. Tintex Corporation, Jamaica, N.Y. Filed Mar.
25, 1966.

TINTEX

Owner of Reg. No. 112,936.
For Spray Enamel Paint.
First use Aug. 18, 1965.

SN 245,642. West Paint & Varnish Company, Everett, Mass.
Filed May 13, 1966.

touraine

The mark comprises an endless band or a band of indeter-
minated length carrying a droplet, which forms a "dot" for
the "t" in the word "Touraine." Owner of Reg. Nos. 559,259,
594,786, and 687,082.

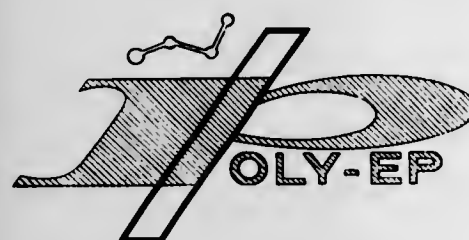
For Interior and Exterior Oil and Latex Base Paints.
First use April 1958.

SN 245,678. Center-Line Products Co., Los Angeles, Calif.
Filed May 16, 1966.

CENTER-LINE

For Oleoresinous Paints.
First use Apr. 26, 1966.

SN 246,117. The Valspar Corporation, Rockford, Ill. Filed
May 19, 1966.



No claim is made to the atomic chain insignia apart from
the mark as shown. The drawing is lined for the color green,
but no claim is made to color. Owner of Reg. Nos. 622,556,
690,096, and 702,464.

For Two-Component Epoxy Protective and Decorative
Coatings.

First use Mar. 15, 1958.

SN 255,759. Acorn Chemical Company, Cleveland, Ohio.
Filed Oct. 5, 1966.

GALVEEN

For Metal Paint.
First use May 12, 1964.

Class 17—Tobacco Products

SN 241,233. Camacho Cigars, Inc., Miami, Fla. Filed Mar.
17, 1966.



The Latin words "E Pluribus Unum" mean "one out of
many"; the Latin words "Pax et Justitia" mean "peace and
justice."

For Cigars.
First use Sept. 8, 1963.

SN 262,746. Philip Morris Incorporated, New York, N.Y.
Filed Jan. 18, 1967.

MOD

For Cigarettes.
First use Jan. 6, 1967.

Class 18—Medicines and Pharmaceutical Preparations

SN 251,279. Ciba Limited, Basel, Switzerland. Filed July
29, 1966.

COSUMIX

Owner of Swiss Reg. No. 198,832, dated July 5, 1963.
For Anti-Bacterial Preparation for Veterinary Use.

SN 251,283. Ciba Limited, Basel, Switzerland. Filed July
29, 1966.

BRADONIT

Owner of Swiss Reg. No. 123,605, dated Jan. 30, 1948.
For Antiseptic Preparation—Namely, Disinfectant.

SN 251,286. Ciba Limited, Basel, Switzerland. Filed July
29, 1966.

OSTRILAN

Owner of Swiss Reg. No. 207,193, dated Nov. 26, 1964.
For Veterinary Preparation for the Treatment of Sterility.

SN 253,751. Charles E. Frosst & Co., Montreal, Quebec,
Canada. Filed Sept. 2, 1966.

TRULFACILLIN

Owner of Canadian Reg. No. 33,829, dated Nov. 9, 1949;
and U.S. Reg. Nos. 552,543 and 566,563.
For Sulfonamide Pharmaceutical Preparations.
First use Nov. 3, 1949; in commerce Nov. 1, 1950.

SN 253,752. Charles E. Frosst & Co., Montreal, Quebec,
Canada. Filed Sept. 2, 1966.

MEGACILLIN

Owner of Canadian Reg. No. 103,567, dated June 15, 1956.
For Antibiotic Pharmaceutical Preparations.

SN 255,401. International Minerals & Chemical Corporation,
Skokie, Ill. Filed Sept. 29, 1966.

MOLASSA-FERM

For Animal Feed Supplement Consisting of a Mixture of
High-Brix Molasses and Condensed Extracted Glutamic Acid
Fermentation Product.
First use Aug. 2, 1966.

SN 260,993. A. H. Robins Company, Incorporated, Rich-
mond, Va. Filed Dec. 14, 1966.

ROBITABS

For Antitussive and/or Expectorant Pharmaceutical Prepa-
ration.
First use Nov. 7, 1966.

SN 262,137. The Dow Chemical Company, Midland, Mich.
Filed Jan. 9, 1967.

TUSSEND

For Cough Medication.
First use Nov. 4, 1966.

SN 262,138. The Dow Chemical Company, Midland, Mich.
Filed Jan. 9, 1967.

2/G

For Cough Medication.
First use Nov. 29, 1966.

SN 262,906. Thompson Medical Company, Inc., New York,
N.Y. Filed Jan. 20, 1967.

SILHOUETTE

For Appetite Control Preparation.
First use Jan. 3, 1967.

SN 262,997. Texas Pharmacal Company, San Antonio, Tex.
Filed Jan. 23, 1967.

CANCORT

For Antibiotic Cream.
First use Dec. 27, 1966.

SN 263,154. Chas. Pfizer & Co., Inc., New York, N.Y. Filed
Jan. 24, 1967.

SUPER MASTOL

The word "Super" is disclaimed apart from the mark as
shown. Owner of Reg. Nos. 426,429 and 664,813.
For Antibiotic Hormone Preparation for Veterinary Use.
First use in or before October 1955.

SN 263,428. American Home Products Corporation, New
York, N.Y. Filed Jan. 27, 1967.

QUMULIN

For Analgesic Preparation.
First use Jan. 5, 1967.

Class 19—Vehicles

SN 231,283. Superior Industries, Van Nuys, Calif. Filed
Oct. 22, 1965.

THE "500"

For Steering Wheels for Automotive Vehicles.
First use Aug. 6, 1965.

SN 235,409. Charles F. Lawley, West Wyoming, Pa. Filed
Dec. 28, 1965.



For Camping Trailers.
First use Oct. 16, 1965.

SN 242,893. General Motors Corporation, Detroit, Mich.
Filed Apr. 7, 1966.

CAMARO

For Automobiles.
First use Apr. 1, 1966.

SN 245,169. Delta Homes Corp., Elkhart, Ind. Filed May
9, 1966.

DELTA

For Mobile Homes.
First use Apr. 26, 1966.

SN 262,083. Marubeni-Iida Co., Ltd., Higashi-ku, Osaka,
Japan. Filed Jan. 9, 1967.

BENNY

For Bicycles and Parts Therefor.
First use as early as December 1963; in commerce June 27,
1966.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 220,467. Condec Corporation, Stamford, Conn. Filed
June 7, 1965.



For Mechanical, Electro-Mechanical, and Electronic Con-
trols and Instrument Devices—Namely, Transducers, Pres-
sure Switches, and Electronic Power Supplies; and Electric
Power Generating and Transmission Equipment—Namely,
Motors, Generators, Engine-Generator Sets, Thermionic Elec-
tric Generating Units, and Self-Propelled Electric Power
Plants.

First use on or about May 1, 1965.

SN 226,528. General Radio Company, West Concord, Mass. Filed Aug. 26, 1965.

GR900

Owner of Reg. Nos. 192,285, 531,134, and 746,850.
For Electrical Transmission Line Components Including Coaxial Cable Connectors; Connector Adaptors, Flanges, Plugs and Jacks; Open-Circuit, Resistive and Short-Circuit Termination Connectors; Transmission Line Matching and Standing Wave Tuners; Precision Air Transmission Line and Standard Impedance Line Sections; Slotted Lines; Transmission Line Connector Kits; Precision Inner- and Outer-Conductor Rods and Tubes; and Transmission Line Coupling Tools and Hardware.
First use in or about September 1964.

SN 228,519. R. B. Denison Manufacturing Company, Bedford, Ohio. Filed Sept. 24, 1965.

PROXSWITCH

Owner of Reg. No. 608,247.
For Electric Switches, Particularly Electric Limit Switches.
First use Aug. 5, 1965.

SN 229,124. Prescolite Manufacturing Corporation, San Leandro, Calif. Filed Oct. 1, 1965.

PROFILE

For Trim Rings and Trim Frames for Recessed Electric Lighting Fixtures.
First use Sept. 13, 1965.

SN 229,734. Aquariums Incorporated, Maywood, N.J. Filed Oct. 11, 1965.

ECONOMATIC

For Electrical Aquarium Heater.
First use in or about July 1964.

SN 229,735. Aquariums Incorporated, Maywood, N.J. Filed Oct. 11, 1965.

DUOMATIC

For Electric Aquarium Heater.
First use in or about December 1960.

SN 229,952. Corning Glass Works, Corning, N.Y. Filed Oct. 12, 1965.



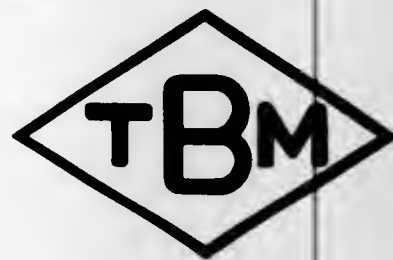
Owner of Reg. Nos. 417,297, 613,510, and others.
For Glass Articles—Namely, Bushings for Electrical Apparatus; Insulating Parts of Electronic Devices; Electrical Insulators; Electrode Tubing and Rollers, Housings, Windows, Covers, Enclosures and Panels for Electrical and Electronic Apparatus; Lightning Arrestor Bodies; and Radiation Shields.
First use at least as early as Oct. 1, 1962.

SN 237,547. Electrolock, Inc., Chagrin Falls, Ohio. Filed Jan. 28, 1966.



For Electric Insulation Materials.
First use on or about Dec. 20, 1965.

SN 239,345. Tsubame Radio Co., Ltd., Ota-ku, Tokyo, Japan. Filed Feb. 21, 1966.



For Volume Control Apparatus—Namely, Resistances, Switches, Variable Condensers, and Parts and Fittings Therefor.
First use July 13, 1954; in commerce Feb. 3, 1960.

SN 241,761. Coors Porcelain Company, Golden, Colo. Filed Mar. 24, 1966.

MLD

For Ceramic Casings With Integral Electrical Leads for Electrical Circuit Components.
First use Feb. 21, 1966.

SN 247,859. Electronic Engineering Company of California, Santa Ana, Calif. Filed June 13, 1966.

MICROSTICK

For Interconnectors for Integrated Circuits and for Encapsulated Integrated Circuits.
First use May 18, 1966.

SN 249,507. Crown Controls Corporation, New Bremen, Ohio. Filed July 5, 1966.

COLOROTOR

For Antenna Rotators for Radio and Television Antennas and Accessories Therefor, Including Electrical Coupling Apparatus, Insulators, Lead-In Wire, Mounting Hardware and Boosters for Television Receivers; Antenna Filters, Antenna Connecting Goods, Transmission Lines, Transmission Line Mounts, Lightning Arrestors, Ground Rods, Aluminum Ground Wire, Antenna Kits, Electrical Wire, Aluminum and Steel Mastings and Tubing, Antenna Towers and Antenna Chimney Mounts.
First use June 2, 1966.

SN 256,772. Sage Laboratories, Inc., Natick, Mass. Filed Oct. 19, 1966.

M-LINE

For Microwave Components—Namely, Hybrids, Mixers, Couplers, and the Like.
First use at least as early as Sept. 26, 1966, on couplers.

SN 259,064. Vernitron Corporation, Farmingdale, N.Y. Filed Nov. 21, 1966.

TORQSYN

For Servomechanism Assembly.
First use Sept. 26, 1966.

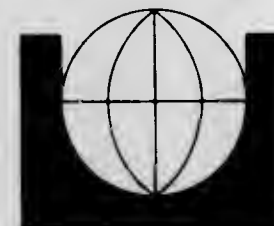
Class 22—Games, Toys, and Sporting Goods

SN 217,625. W. Goebel Porzellanfabrik Oeslau und Wilhelmsheld, Oeslau, near Coburg, Bavaria, Germany. Filed Apr. 29, 1965.

MAINZELMÄNNCHEN

For Dolls.
First use March 1964; in commerce June 1964.

SN 229,828. MCA Inc., Universal City, Calif. Filed Oct. 11, 1965.



For Toys—Namely, Rubber Bricks and Rocks.
First use at least as early as Sept. 3, 1965.

SN 230,754. Tapatco, Inc., Fairfield, Calif., assignee of The American Pad & Textile Company, Pittsburgh, Pa. Filed Oct. 21, 1965.

YOU CAN'T BUY BETTER . . . TO SAVE YOUR LIFE

Owner of Reg. No. 703,708.
For Life Preservers and Life Vests, Water Skiing Belts, Floats, Buoys, and Floatable Water Cushions.
First use Feb. 13, 1952, on cushions.

SN 237,230. La Boule Obut, Saint-Étienne, Loire, France. Filed Jan. 25, 1966.



For Bowling Balls.
First use 1962; in commerce 1962.

SN 241,565. Williams Electronic Manufacturing Corporation, Chicago, Ill. Filed Mar. 21, 1966.



The English translation of "Billiard" is "billiards."
For Coin Operated Game Amusement Devices—Namely, Pinball Machines, Simulated Bowling Games, and Simulated Gun Games.
First use on or about Mar. 16, 1965.

SN 243,666. The House of Ideas, Inc., Spencer, Ohio. Filed Apr. 18, 1966.

WOULD YOU BELIEVE?

For Equipment Sold as a Unit for Playing a Quiz Game.
First use Apr. 6, 1966.

SN 245,307. Gould, Cargill & Company, Incorporated, Minneapolis, Minn. Filed May 10, 1966.



For Boomerang Type Toy.
First use Apr. 20, 1966.

SN 245,469. Irving E. Fishman, North Hollywood, Calif. Filed May 12, 1966.

MILLENNIUM THREE

For Chessmen and Chessboards.
First use January 1966.

SN 245,590. Fred A. Huffman Mfg. Inc., Farmington, N. Mex. Filed May 13, 1966.



For Toy Vehicle.
First use Mar. 31, 1966.

SN 245,674. Joseph C. Bode, d.b.a. Shock-O-Matic Company, Aurora, Ill. Filed May 16, 1966.

SHOCK-O-MATIC

For Cue Sticks Used in Billiards.
First use Nov. 10, 1965.

SN 245,868. United States Rubber Company, New York, N.Y. Filed May 17, 1966.

CART-A-COURT

For Portable Matting Designed To Be Spread on a Substrate Such as a Gym Floor and Used as a Playing Surface in Tennis or Similar Games.
First use Mar. 30, 1966.

SN 246,291. Dunlop Tire and Rubber Corporation, Buffalo, N.Y. Filed May 23, 1966.

MAXLIFE

Owner of Reg. No. 659,542.
For Tennis Balls.
First use Nov. 27, 1959.

SN 260,214. Mattel, Inc., Hawthorne, Calif. Filed Dec. 7, 1966.

BABY GO-WALK

No claim of exclusive right, apart from the mark as shown, is made to "Baby" for the goods recited.
For Dolls, Doll Clothing, and Doll Accessories.
First use Nov. 14, 1966.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 156,856. Anderson Electric Corporation, Leeds, Ala. Filed Nov. 8, 1962.



For Special Tools for Applying Electrical Clamps, Electrical Connectors, and Electrical Fittings.
First use July 1, 1956.

SN 227,168. Morton Engineering, Inc., Omaha, Nebr. Filed Sept. 3, 1965.



For Die Casting Machines.
First use June 22, 1965.

SN 227,882. The Springfield Machine Tool Company, Springfield, Ohio. Filed Sept. 15, 1965.

OPRO-TURN

For Automatic Lathes Which Can Be Programmed by the Operator, and Parts Thereof.
First use Aug. 24, 1965.

SN 227,961. Schloemann Aktiengesellschaft, Dusseldorf, Germany. Filed Sept. 16, 1965.

BITRUDER

Owner of German Reg. No. 771,718, dated Mar. 20, 1963.
For Machines or Apparatus for Extruding Liquid, Viscous, Kneadable, Powdery, Granular and Granulate-Like Materials, and Parts of Such Machines and Apparatus.

SN 231,759. Hart-Carter Company, Minneapolis, Minn. Filed Oct. 28, 1965.



For Crop Harvesters and Crop Harvesting Equipment—Namely, Sieves, Chaffers, Augers and Auger Flighting, Pick-Up Reels, Conveyors, Green Crop Loaders, Cutters, and Floating Cutter Bars; Grain and Seed Treating Machinery Including Grain Cleaners and Separators, Continuous Flow Horizontal, Vertical, and Centrifugal Driers, and Automatic Feeders and Parts Thereof; Mill Machinery—Namely, Grain Scalpers, Grain Aspirators, Bucket Elevators, Pneumatic Conveyors, Dust Collectors and Air Scrubbers, and Parts Thereof.
First use Feb. 1, 1965.

SN 231,955. Monogram Industries, Inc., Monterey Park, Calif. Filed Nov. 1, 1965.

SPEED RUNNER

For Power-Operated Hand Tools for Applying and Extracting Nut-Type Fasteners.
First use Sept. 30, 1965.

SN 236,607. Inland Manufacturing Company, Omaha, Nebr. Filed Jan. 17, 1966.



Owner of Reg. No. 524,825.
For Abrasive Blasting Equipment, Parts Cleaning and Surface Conditioning Equipment, Dust Collectors, Combination Reclaimers and Dust Collectors, Combination Parts Cleaning and Surface Conditioning, Reclaimer and Dust Collector Equipment, and Accessories and Parts Thereof.
First use Nov. 18, 1964.

SN 236,792. Walker Manufacturing Company, Racine, Wis. Filed Jan. 18, 1966.

LO-SONE

For Internal Combustion Engine Exhaust Systems—Namely, Mufflers.
First use Dec. 17, 1965.

SN 237,392. Sperry Rand Corporation, New York, N.Y. Filed Jan. 26, 1966.

REMINGTON

Owner of Reg. Nos. 368,774 and 372,566.
For Electric Carving Knives.
First use Oct. 26, 1965.

SN 238,680. Vaughan & Bushnell Mfg. Co., Chicago, Ill. Filed Feb. 11, 1966.

PRO-GRIP

For Striking Tools Including Claw Hammers.
First use Oct. 29, 1965.

SN 238,898. Tavano S.A., Geneva, Switzerland. Filed Feb. 15, 1966.

elinasuper *

Without prejudice to any of its common law rights, applicant disclaims the representation of an asterisk apart from the mark as shown. Priority claimed under Sec. 44(d) on Swiss Reg. No. 214,457, dated Oct. 14, 1965. Owner of U.S. Reg. Nos. 356,537 and 785,553.

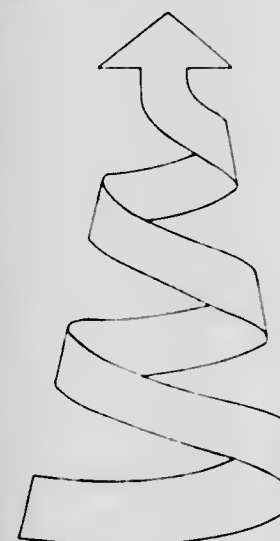
For Sewing Machines and Parts Thereof, and Containers and Articles of Furniture Forming Receptacles for and Parts of Sewing Machines.

SN 239,420. Knox, Inc., South Walpole, Mass. Filed Feb. 23, 1966. SN 262,464. Roberts Company, Sanford, N.C. Filed Jan. 13, 1967.

SEA HARVESTER

For Winches and Hoists for Handling Lines, Nets and Trawls.
First use Feb. 7, 1966.

SN 242,019. Joy Manufacturing Company, Pittsburgh, Pa. Filed Mar. 28, 1966.



For Air Compressors.
First use Feb. 16, 1966.

SN 242,020. Joy Manufacturing Company, Pittsburgh, Pa. Filed Mar. 28, 1966.

TURBULAIRE

Owner of Reg. No. 422,157.
For Machinery—Namely, Scrubbers.
First use June 11, 1958.

SN 242,782. Sterling Alderfer Company, Akron, Ohio. Filed Apr. 6, 1966.

DYNASHELL

For Spooling Reels and Bobbins.
First use Nov. 18, 1965.

SN 253,195. Montgomery Elevator Company, Moline, Ill. Filed Aug. 26, 1966.

E.S.P.

For Control Apparatus for Automatic Electric Passenger Elevator Systems.
First use July 22, 1966.

SN 261,778. Claude Michael, Inc., Glendale, Calif. Filed Jan. 3, 1967.



For Combination Vapor Degreaser and Solvent Reclaiming Units.
First use Nov. 20, 1964.

PROMATION

For Yarn Making Machinery Including Carding, Drawing, Roving, Spinning, Twisting, and Winding Machinery.
First use Sept. 26, 1965.

Class 24—Laundry Appliances and Machines

SN 243,094. Chicago Dryer Company, Chicago, Ill. Filed Apr. 11, 1966.

CHICAGO

For Ironers and Folding Machines.
First use at least as early as July 31, 1914.

SN 261,429. Raybestos-Manhattan, Inc., Manheim, Pa. Filed Dec. 27, 1966.



Owner of Reg. Nos. 356,941, 786,765, and others.
For Covers and Pads for Ironers.
First use Oct. 18, 1966.

Class 26—Measuring and Scientific Appliances

SN 233,152. Univis, Inc., Fort Lauderdale, Fla. Filed Nov. 22, 1965.

UNISITE

Owner of Reg. Nos. 224,762 and 680,775.
For Ophthalmic Lenses.
First use Sept. 28, 1965.

SN 235,596. Tesa S.A., Renens, Switzerland. Filed Dec. 30, 1965.

TRI-O-BOR

Owner of Swiss Reg. No. 181,978, dated July 22, 1960.
For Measuring Apparatus—Namely, Inside Micrometers.

SN 235,597. Tesa S.A., Renens, Switzerland. Filed Dec. 30, 1965.

UNIMASTER

Owner of Swiss Reg. No. 181,853, dated July 27, 1960.
For Measuring Apparatus—Namely, Precision Micrometer for Measuring Inside and Outside Dimensions.

SN 237,097. Eaton Yale & Towne Inc., Cleveland, Ohio. Filed Jan. 24, 1966.

LUBRI-SCAN

For Monitoring and Control Devices Which Include a Timer and a Control Panel for Detecting, Alerting, and Controlling the Flow of Lubricant in Centralized Lubricating Systems.
First use on or about Aug. 20, 1965.

SN 239,247. Electronic Automation Systems, Inc., Grand Island, N.Y. Filed Feb. 21, 1966.

CALITEL

For Paper Thickness Measuring Equipment.
First use May 24, 1965.

SN 241,092. Symington Wayne Corporation, Salisbury, Md. Filed Mar. 15, 1966.

KOP

For Locked Operating Control System for Commodity Dispensers, Particularly Incorporating an Accounting System and, Namely, a Key-Operated System for Actuating and Recording Operation of Gasoline Dispensers.
First use Feb. 16, 1966.

SN 241,605. Ulano Products Company, Inc., Brooklyn, N.Y. Filed Mar. 22, 1966.

NYCRON

For Transfer Sheets.
First use Feb. 9, 1966.

SN 241,936. Sea & Ski Corporation, d.b.a. Renauld, Millbrae, Calif. Filed Mar. 25, 1966.



For Sunglasses.
First use Feb. 2, 1966.

SN 241,999. Fabri-Tek Incorporated, Minneapolis, Minn. Filed Mar. 28, 1966.

BI-TRAN

For Computers Used in Teaching Computer Techniques.
First use Sept. 14, 1965.

SN 242,894. General Motors Corporation, Detroit, Mich. Filed Apr. 7, 1966.

421

For Battery Testers.
First use Jan. 26, 1966.

SN 252,848. Hanover Instrument Co., Cleveland, Ohio. Filed Aug. 22, 1966.

DELTA-P

For Flowmeters.
First use July 29, 1966; in June 1962 in a different display.

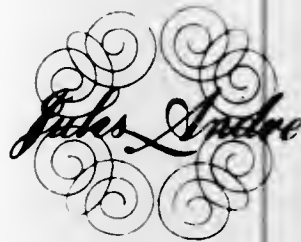
SN 256,014. Sperry Rand Corporation, New York, N.Y. Filed Oct. 7, 1966.

REMSTAR

For Information Retrieval System Utilizing Closed-Circuit Television Components in Conjunction With Electro-Mechanical Filing Equipment.
First use June 30, 1966.

Class 27 — Horological Instruments

SN 234,750. The Hollandia Company, Inc., New York, N.Y. Filed Dec. 16, 1965.



The name "Jules Andre" is wholly fictitious.
For Watches.
First use Oct. 1, 1965.

SN 243,401. Benrus Watch Company, Inc., New York, N.Y. Filed Apr. 14, 1966.



Applicant disclaims the words, "Companion Watch to," and the words "Sold and Serviced Around the World." Owner of Reg. No. 610,671.
For Watches.
First use Jan. 2, 1966.

SN 244,644. Accro Watch Co., Inc., New York, N.Y. Filed May 2, 1966.

ACCRO

For Watches, Watch Dials, Watch Movements, Watch Cases, and Parts Thereof.
First use July 1924.

Class 28 — Jewelry and Precious-Metal Ware

SN 242,903. John P. Luker, Houston, Tex. Filed Apr. 7, 1966.

LUROC

For Synthetic Gems.
First use Oct. 3, 1965.

Class 29 — Brooms, Brushes, and Dusters

SN 243,185. Robert Simmons, New York, N.Y. Filed Apr. 11, 1966.

ACRYLETTE

For Paint Brushes.
First use March 1966.

Class 32 — Furniture and Upholstery

SN 231,096. Formco, Inc., Cincinnati, Ohio. Filed Oct. 22, 1965.

Lexington

For Colonial, Laminated-Plastic Covered or Wood Vanity.
First use May 10, 1964.

SN 239,504. Formco, Inc., Cincinnati, Ohio. Filed Feb. 24, 1966.

Royal Provincial

For Modern, Laminated, Plastic Covered Vanities and Modern, Wood Vanities.
First use Dec. 1, 1965.

SN 246,209. Supreme Steel Equipment Corporation, Brooklyn, N.Y. Filed May 20, 1966.

CONSERV-A-SCAN

Owner of Reg. Nos. 665,385, 705,989, and 728,537.
For Office Filing Cabinets Preferably Equipped With an Electro-Optical File Locating Device.
First use May 13, 1966.

SN 249,351. Owens-Illinois, Inc., Toledo, Ohio. Filed June 30, 1966.

CER-VIT

Owner of Reg. Nos. 736,948 and 765,283.
For Mirrors and Mirror Blanks.
First use Mar. 17, 1966.

SN 249,478. Acoustics Development Corporation, Northbrook, Ill. Filed July 5, 1966.

SECURI-TEL

For Telephone Booths, and Panels for Use in Telephone Booths.
First use Dec. 6, 1961.

SN 250,361. Drexel Enterprises, Inc., Drexel, N.C. Filed July 15, 1966.

CONNOTATION

For Bedroom, Dining Room, Living Room, and Occasional Furniture.
First use Mar. 30, 1966.

SN 250,946. Federated Department Stores, Inc., Brooklyn, N.Y. Filed July 25, 1966.

HEIGHTS

For Mattresses.
First use July 1, 1965.

SN 250,947. Federated Department Stores, Inc., Brooklyn, N.Y. Filed July 25, 1966.

PARK WEST

Owner of Reg. No. 397,805.
For Mattresses.
First use July 1, 1965.

SN 251,000. Quaker Maid Kitchens, Inc., Leesport, Pa. Filed July 25, 1966.

MIRACLE CORNER

For Kitchen Cabinets.
First use Mar. 2, 1965.

SN 251,388. Congoleum-Nairn Inc., Kearny, N.J. Filed Aug. 1, 1966.

METAPHOR

For Tables.
First use March 1962.

SN 251,389. Congoleum-Nairn Inc., Kearny, N.J. Filed Aug. 1, 1966.

SINCERE

For Tables.
First use July 1962.

SN 251,886. Burris Manufacturing Company, Incorporated, Lincolnton, N.C. Filed Aug. 8, 1966.

GO-GO LOUNGER

The word "Lounger" is disclaimed apart from the mark as a whole.
For Chairs.
First use July 26, 1966.

SN 253,495. Cel-U-Dex Inc., New Windsor, Newburgh, N.Y. Filed Aug. 31, 1966.

DAPT-A-FILE

For Rotary Desk Card File.
First use July 25, 1966.

SN 254,801. Quaker Maid Kitchens, Inc., Leesport, Pa. Filed Sept. 20, 1966.

CAMELOT

For Doors and Drawers for Kitchen Cabinets.
First use Aug. 30, 1966.

SN 255,620. Hamilton Cosco, Inc., Columbus, Ind. Filed Oct. 3, 1966.

CANTATA

For Folding Tables and Chairs.
First use Sept. 7, 1966.

SN 255,953. American Seating Company, Grand Rapids, Mich. Filed Oct. 7, 1966.

ALERT

For Classroom Furniture Comprising Chairs, Desks, Combination Chair-Desks, and Tablet Arm Chairs and Tables.
First use on or before Sept. 15, 1966.

SN 256,298. Mitchell Manufacturing Company, Milwaukee, Wis. Filed Oct. 12, 1966.

SATURNA

For Tables.
First use Apr. 9, 1965.

SN 258,601. Speedrack, Inc., Skokie, Ill. Filed Nov. 14, 1966.



For Storage Racks.
First use Apr. 25, 1966.

SN 258,876. American Furniture Co., Inc., Martinsville, Va. Filed Nov. 17, 1966.

QUORUM

For Bedroom, Dining Room, Living Room, and Upholstered Furniture.
First use on or about Aug. 8, 1966.

SN 259,331. Gordon E. Mycue, St. Paul, Minn. Filed Nov. 23, 1966.

GEM-DESK

The word "Desk" is disclaimed apart from the mark as shown.
For Collapsible Desk Removably Attachable to a Chair.
First use Oct. 3, 1966.

SN 259,388. American Seating Company, Grand Rapids, Mich. Filed Nov. 25, 1966.

DEXLON

For Chair Seats and Backs Molded of Plastic Material.
First use on or before Oct. 28, 1966.

SN 259,841. Lear Siegler, Inc., Detroit, Mich. Filed Dec. 1, 1966.

SACK KING

For Beds.
First use Oct. 20, 1966.

SN 261,389. Robert S. Pankowski, d.b.a. The Arpy Company, La Porte, Ind. Filed Dec. 23, 1966.

UPPEE

For Foot Stools.
First use Dec. 14, 1966.

SN 263,236. Drexel Enterprises, Inc., Drexel, N.C. Filed Jan. 25, 1967.

PLAUDIT

For Bedroom, Dining Room, Living Room, and Office Furniture.
First use Sept. 23, 1966.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 238,399. CRS Industries, Inc., Philadelphia, Pa. Filed Feb. 9, 1966.

EQUA/FLO

For Portable Clean Rooms.
First use Jan. 27, 1966.

SN 241,914. Mid-States Welder Manufacturing Company, Chicago, Ill. Filed Mar. 25, 1966.

DURA-TRAN

For Electric Welders.
First use 1962.

SN 241,915. Mid-States Welder Manufacturing Company, Chicago, Ill. Filed Mar. 25, 1966.

POWER-TRAN

For Electric Welders.
First use 1960.

SN 241,916. Mid-States Welder Manufacturing Company, Chicago, Ill. Filed Mar. 25, 1966.

MAGNA-TRAN

For Electric Welders.
First use 1958.

SN 241,919. Mid-States Welder Manufacturing Company, Chicago, Ill. Filed Mar. 25, 1966.

MID-STATES

For Electric Welding Equipment.
First use 1948.

SN 258,864. Ferro Corporation, Cleveland, Ohio. Filed Nov. 17, 1966.

ADAPT-O-FLANGE

For Flanges for Electric Water Heater Elements.
First use Aug. 1, 1966.

SN 261,432. Eldon Industries, Inc., Hawthorne, Calif. Filed Dec. 27, 1966.

SUZIE

For Soldering Irons.
First use Dec. 8, 1966.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 229,798. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Oct. 11, 1965.

CHEM-FLO

For Hose Made Wholly or Principally of Rubber.
First use Apr. 27, 1965.

SN 260,896. United States Steel Corporation, Pittsburgh, Pa. Filed Dec. 15, 1966.

PITON

For Steel Wire Tire Traction Inserts.
First use Dec. 6, 1966.

Class 36 — Musical Instruments and Supplies

SN 228,059. John A. Masters, d.b.a. Johnny Masters Orchestra, Miami, Fla. Filed Sept. 17, 1965.



The word "Music" is disclaimed apart from the mark as shown. The drawing is lined for silver.
For Phonograph Records.
First use June 7, 1965.

SN 233,569. Anaplex, Incorporated, Overland Park, Kans. Filed Nov. 30, 1965.



The word "Systems" is disclaimed except in combination in the mark and design substantially as shown.
For Electronic Equipment and Systems—Namely, Sound Recording Producing Equipment Used in Dictation and Transcription.
First use on or about Sept. 4, 1965.

SN 239,163. Makaha Records, Inc., Honolulu, Hawaii. Filed Feb. 18, 1966.



For Phonograph Records.
First use on or about June 1, 1963.

Class 37 — Paper and Stationery

SN 215,650. Price Bros. Plastics Corp., Worcester, Mass. Filed Apr. 2, 1965.

TIGERTAIL

For Notebooks and Albums.
First use on or about Feb. 1, 1965.

SN 231,221. Professional Printing Company, Inc., Melville, N.Y. Filed Oct. 22, 1965.



For Envelopes, Billing Stationery, and Thermocopy Paper.
First use in or about 1958.

SN 233,685. Checks Incorporated, New York, N.Y. Filed Dec. 1, 1965.

CHEX-IN-ROLLS

Owner of Reg. Nos. 420,774 and 423,381.
For Check Blanks Wound in Rolls With One or More Copy Strips and Strips of Carbon Paper Interleaved Therewith.
First use June 1, 1944.

SN 238,206. Fleming & Sons, Inc., Dallas, Tex. Filed Feb. 7, 1966.

WALLRITE

Owner of Reg. Nos. 321,833 and 389,620.
For Wall Paper.
First use on or about Sept. 1, 1933.

SN 238,588. Wolfgang Dabisch, d.b.a. Tipp-Ex Fabrication, Eltville (Rhine), Germany. Filed Feb. 10, 1966.

COP-EX

For Typewriter Correction Paper in Sheet Form.
First use May 1960; in commerce May 1960.

SN 243,845. Checks Incorporated, New York, N.Y. Filed Apr. 20, 1966.



All rights to registration of the word "Checks" and the word "Incorporated" apart from the mark as shown are disclaimed. Owner of Reg. Nos. 420,774 and 423,381.
For Check Blanks Wound in Rolls With One or More Copy Strips and Strips of Carbon Paper Interleaved Therewith.
First use Mar. 20, 1936.

SN 244,517. Richard J. O'Malley Associates, Chicago, Ill. Filed Apr. 28, 1966.

EZE ORDER

For Direct Mailing Piece—Namely, a Combination Mail Order Form and Envelope.
First use Apr. 15, 1966.

SN 245,583. Facelle Company Limited, Toronto, Ontario, Canada. Filed May 13, 1966.



Owner of U.S. Reg. Nos. 270,416 and 769,571.
For Facial Tissues.
First use in about July 1965; in commerce on about Jan. 31, 1966.

SN 245,584. Facelle Company Limited, Toronto, Ontario, Canada. Filed May 13, 1966.



Owner of U.S. Reg. Nos. 270,416 and 769,571.
For Facial Tissues, Bathroom Tissues, Paper Towels, and Paper Napkins.
First use in about March 1963 on facial tissues; in commerce on about June 3, 1965.

SN 249,717. Beckley-Cardy Company, Chicago, Ill. Filed July 7, 1966.



For Felt Eraser Used To Erase Chalkmarks and Other Marks From Chalkboards and Related Surfaces.
First use Dec. 31, 1947.

SN 251,607. Brown Company, Berlin, N.H. Filed Aug. 3, 1966.



For Index and Bond Paper.
First use Mar. 31, 1966.

SN 251,687. The Paper Supply Company, Baltimore, Md. Filed Aug. 4, 1966.



Applicant claims exclusive right to use the slogan "The House of Standard Lines" as a part of its mark, but not otherwise.

For Paper and Stationery Supplies—Namely, Writing, Printing, Book, Thin, and Text Paper.
First use at least as early as 1948.

SN 251,693. American Envelope Company, Chicago, Ill. Filed Aug. 4, 1966.



For Envelopes.
First use on or about Apr. 4, 1929.

SN 251,992. Bergstrom Paper Company, Neenah, Wis. Filed Aug. 9, 1966.

ODIN ELECTROSTATIC

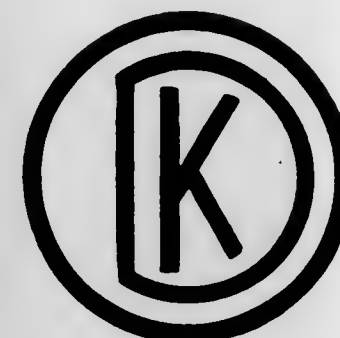
No claim is made to the word "Electrostatic" apart from the mark as shown. Owner of Reg. No. 189,281.
For Electrostatic Copy Paper.
First use July 15, 1966.

SN 252,365. Edgemark Company, Asheville, N.C. Filed Aug. 15, 1966.

EDGEMARK

For Accounting Forms.
First use October 1961.

SN 253,148. David Kahn, Inc., North Bergen, N.J. Filed Aug. 25, 1966.



The mark consists of the letters "DK" within a circle design.

For Writing Instruments and Parts Therefor and Related Items—Namely, Writing and Marking Pens and Pencils and Parts Therefor Including Fountain Pens, Ink Cartridge Pens, Felt and Absorbent Tip Marking Pens, Ball Point Pens, Desk Pens, Mechanical Pencils, Pen and Pencil Sets, Pen Points, Replacement Cartridges and Refills for Ball Point Pens, Ink Cartridge Pens and Marking Pens, Erasers and Pencil Leads.
First use 1928 on pens and pencils.

SN 253,275. Bergstrom Paper Company, Neenah, Wis. Filed Aug. 29, 1966.



The mark consists of a background design formed of individual relatively large diamonds in vertical and horizontal rows, each relatively large diamond having a smaller diamond therein.

For Blank Sheets Used in the Preparation of Negotiable Instruments and Check Vouchers.

First use on or about Nov. 29, 1932.

SN 254,632. Sceni-Check, Inc., Seattle, Wash. Filed Sept. 16, 1966.

SCENI-CHECK

For Negotiable Instruments—Namely, Bank Checks.
First use Jan. 10, 1966.

SN 256,628. The Sorg Paper Company, Middletown, Ohio. Filed Oct. 18, 1966.

"COPYREEL 150"

For Bond-Type Papers.
First use Aug. 19, 1966.

SN 258,454. Eby Chemical Company, d.b.a. Ecco, Harrisburg, Pa. Filed Nov. 14, 1966.

INK-A-DOT

The term "Ink" is disclaimed apart from the mark as shown.

For Ink Markers.
First use Oct. 12, 1966.

Class 38—Prints and Publications

SN 235,755. Owens-Illinois, Inc., Toledo, Ohio. Filed Dec. 29, 1965.

THE RIGHT BOX

For Series of Pamphlets.
First use Mar. 15, 1963.

SN 237,737. The Polled Hereford Country Press, Inc., Knoxville, Tenn. Filed Feb. 1, 1966.

POLLED HEREFORD COUNTRY

No claim is made to the words "Polled Hereford" apart from the mark as shown.
For Monthly Magazine.
First use Dec. 30, 1965.

Class 39—Clothing

SN 235,088. Atlas Underwear Corporation, Piqua, Ohio. Filed Dec. 22, 1965.

PLY-NET

For Raschel-Type Thermal Underwear.
First use Nov. 23, 1965.

SN 235,180. Givenchy (Societe Anonyme), Paris, France. Filed Dec. 23, 1965.

GIVENCHY

Priority claimed under Sec. 44(d) on French Reg. No. 539,692, dated Aug. 2, 1965.

For Dresses, Cloaks, Capes, Skirts, Jackets, Suits, Two-Piece Costumes or Suits, Coats, Sweaters, Bodices, Pullovers, House-Gowns, Slips, Combination Underwear, Petticoats, Corsets, Sheath Corsets, Bust-Bodices, Brassieres, Undershirts, Underwear, Bathing Suits, Jodphurs, Knickers, Stockings, Ties, Scarves, Square Shawls, Hats, Caps, Gloves, and Slippers.

First use February 1952; in commerce February 1952.

SN 235,637. Edlen Herman Products, Inc., d.b.a. Seegull Manufacturing Company, Jenkintown, Pa. Filed Jan. 3, 1966.



Owner of Reg. Nos. 418,998, 419,206, and 419,510.
For Men's Underwear Shorts, Children's Shorts, and Gym Shorts.
First use on or about Jan. 6, 1964; on or about July 1, 1918, as to "Seegull" on men's underwear.

SN 237,924. G. H. Bass & Co., Wilton, Maine. Filed Feb. 3, 1966.

Bass
SUGARLOAFER

Owner of Reg. No. 598,803.
For Boots, Known as After-Ski Boots, the Same Being Generally Lined With Fleece, Nylon Pile, Leather, and/or Other Insulating Materials.
First use April 1961.

SN 240,301. Hudson Hosiery Company, Charlotte, N.C. Filed Mar. 7, 1966.

DEBBIE BLAKE

The name "Debbie Blake" is fanciful.
For Ladies' Hosiery.
First use Feb. 18, 1966.

SN 242,617. Kureha Spinning Company Limited, Higashi-ku, Osaka, Japan. Filed Apr. 4, 1966.

CRECREASE

For Clothing for Men, Women, and Children—Namely, Suits, Uniforms, Jackets, Coats, Overcoats, Topcoats, Raincoats, Mantles, Sweaters, Vests, Collars, Sleeping Apparel, Bathrobes, Kimonos, Shirts, Slacks, Stockings, Gloves, Mufflers, Shawls, Hats, Ties, Caps, Skirts; Men's and Boys' Trousers; Women's Dresses, Foundation Garments, Chemises, Slips, Petticoats, Brassieres, Skirts, Blouses, Cuffs, Scarfs, Neckerchiefs, Night Caps, Skull Caps, and Handkerchiefs.
First use Feb. 10, 1965; in commerce June 1, 1965.

SN 245,396. Exmoor Knitwear Co., Inc., Haverstraw, N.Y. Filed May 11, 1966.

WHIZRIBS

For Sweaters.
First use Apr. 8, 1966.

SN 247,339. H. Daroff & Sons, Inc., Philadelphia, Pa. Filed June 6, 1966.

STA-BAND

For Waistbands, Waistband Stiffeners, and Trousers Made With Said Waistbands and Stiffeners.
First use on or about Apr. 15, 1963.

SN 247,475. Arnold Constable Corporation, New York, N.Y. Filed June 7, 1966.

Arnold constable

The name "Arnold Constable" is the name of the founder of applicant's corporation, now long since deceased. Owner of Reg. No. 338,454.

For Women's, Children's, and Girls' Dresses, Suits, Hats, Shoes of Leather, Hosiery, Underwear, and Night Gowns; and Men's and Boys' Suits, Outer and Under Shirts and Shorts, Sox, Hats, Shoes of Leather, and Pajamas.
First use 1936.

SN 247,543. Vargish Knitwear Co., Union City, N.J. Filed June 7, 1966.

THE PROPER LOOK

For Women's Woolen Sweaters, Skirts, Slacks, and Shells.
First use May 20, 1966.

SN 247,833. Regal Accessories, Inc., Long Island City, N.Y. Filed June 10, 1966.

REGAL RANCHER

For Ladies' Sportswear—Namely, Pants, Shirts, and Blouses.
First use May 16, 1966.

SN 248,519. Phoenix, Inc., New York, N.Y. Filed June 20, 1966.

KNIT-LITE

For Men's Suits and Sport Coats.
First use May 25, 1966.

SN 248,520. Phoenix, Inc., New York, N.Y. Filed June 20, 1966.

FEATHER-ICE

For Men's Suits and Sport Coats.
First use May 25, 1966.

SN 248,713. The H. D. Lee Company, Incorporated, Kansas City, Mo. Filed June 22, 1966.

TECH-TWILL

For Trousers and Slacks.
First use June 1, 1966.

SN 248,807. Hortex Manufacturing Co., Inc., El Paso, Tex. Filed June 23, 1966.

SPLINTERS

For Boys' Slacks.
First use November 1964.

SN 250,563. Commonwealth Shoe & Leather Co. Inc., d.b.a. London Character Shoes, Whitman, Mass. Filed July 19, 1966.

LONDON

Owner of Reg. Nos. 136,518, 760,751, and others.
For Shoes for Men, Women, and Children.
First use 1907.

SN 251,959. The Servus Rubber Company, Rock Island, Ill. Filed Aug. 8, 1966.

HUSTLER

For Footwear, Chiefly Footwear Made From Fabrics, Rubber, Synthetic Plastics, and/or Combinations of Any Such Materials.
First use July 13, 1966.

SN 252,565. Joseph Geller, Inc., Boston, Mass. Filed Aug. 17, 1966.

UPPER CRUST

For Ladies' Apparel—Namely, Shoes, Skirts, Sweaters, Dresses, Handbags, Suits, Slacks, Hosiery, Blouses, Raincoats, Hats, Gloves, Scarves, and Ties.
First use July 12, 1966.

SN 252,636. Adolph Blank, Incorporated, New York, N.Y. Filed Aug. 18, 1966.

MARTINO

For Coats, Suits, and Costumes.
First use Apr. 26, 1966.

SN 252,795. Aldens, Inc., Chicago, Ill. Filed Aug. 22, 1966.

GLENSHIRE

Owner of Reg. No. 422,911.
For Men's and Boys' Jackets, Shirts, Hosiery, Underwear, and Pajamas.
First use Jan. 15, 1940.

SN 252,994. Johnson & Johnson, New Brunswick, N.J. Filed Aug. 24, 1966.

CARESS

Owner of Reg. Nos. 736,487 and 756,496.
For Diapers.
First use May 8, 1966.

SN 256,502. Hagggar Company, Dallas, Tex. Filed Oct. 17, 1966.

Forever Prest Plus



Without waiver of common law rights applicant disclaims the words "Forever Prest" and the representation of the goods apart from the mark shown. Owner of Reg. Nos. 524,051, 751,773, and others.
For Men's and Boys' Clothing—Namely, Slacks.
First use on or about Aug. 22, 1966.

SN 257,840. Figure Builders Foundations, Inc., New York, N.Y. Filed Nov. 3, 1966.

Florentine

The lining shown on the drawing represents the lining on the specimens.
For Foundation Garments, Girdles, Panty Girdles, and Garter Belts.
First use Aug. 29, 1966.

SN 258,024. Alfred Shaheen Ltd., Honolulu, Hawaii. Filed Nov. 7, 1966.



For Women's Jackets, Shirts, Tunics, Pants, Dresses, Coats, Skirts, and Shorts.
First use Oct. 1, 1966.

SN 258,755. Melville Shoe Corporation, New York, N.Y. Filed Nov. 16, 1966.

SUNSET STRAPS

No registration rights are claimed for the word "Straps" apart from the complete mark, and applicant does not waive common-law or other rights in said word.
For Women's Shoes.
First use Nov. 1, 1966.

SN 260,703. Mister Trio Uniforms Inc., New York, N.Y. Filed Dec. 14, 1966.



The word "Fashion" is disclaimed apart from the mark as shown. Owner of Reg. No. 816,664.
For Men's and Women's Launderable Uniforms as Jackets, Coats, Blouses, Skirts, Dresses, Such as Are Used by Doctors, Nurses, Dentists, Barbers, Beauticians, etc.
First use Apr. 1, 1966.

SN 261,615. Maidenform, Inc., New York, N.Y. Filed Dec. 29, 1966.

EVERMORE

Owner of Reg. Nos. 556,814, 737,581, and 767,626.
For Foundation Garments.
First use Dec. 14, 1966.

SN 261,616. Maidenform, Inc., New York, N.Y. Filed Dec. 29, 1966.

SLIPPER SHELL

For Foundation Garments.
First use Dec. 14, 1966.

SN 263,235. Camp and McInnes, Inc., Reading, Pa. Filed Jan. 25, 1967.

MIDDIES

For Men's Hosiery.
First use Aug. 8, 1966.

Class 40—Fancy Goods, Furnishings, and Notions

SN 244,885. Consolidated Millinery Company, Chicago, Ill. Filed May 4, 1966.

RENAE

For Wigs.
First use Mar. 24, 1966.

SN 262,145. Fashion Tress, Inc., Miami Beach, Fla. Filed Jan. 9, 1967.

INTERNATIONAL

For Ladies' Wigs and Hair Pieces.
First use on or about Dec. 1, 1966.

SN 262,994. Stratford, Inc., Minneapolis, Minn. Filed Jan. 23, 1967.

STRATFORD

For Wigs.
First use July 1, 1966.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 239,102. AAA Fabrics, Inc., Chelsea, Mass. Filed Feb. 18, 1966.

STYLETONE

For Sheet Plastic, Mattress Covers and Table Covers.
First use April 1965.

SN 241,199. Technical Textile Company, New York, N.Y. Filed Mar. 16, 1966.

NYL-O-STRETCH

Owner of Reg. No. 763,999.
For Fabrics Composed of Silk, Woolen, Cotton, Synthetics, or Any Combination Thereof.
First use Aug. 3, 1965.

SN 246,617. Max P. Steinway, Detroit, Mich. Filed May 25, 1966.

CARAVELLE

For Carpets and Carpeting in Roll and Rug Form.
First use Mar. 26, 1966.

SN 250,773. Savoy Drapery Corp., New York, N.Y. Filed July 21, 1966.

SAV-ON-IZED

For Lined Window Draperies Insulated Against Heat and Cold.
First use May 11, 1966.

SN 252,529. Albany Felt Company, Albany, N.Y. Filed Aug. 17, 1966.

DURATAIN

For Synthetic Fabric Used for Dust Collection or Fume Filtration, Such as in Fume Bags and/or Dust Bags.
First use on or about Dec. 1, 1964.

SN 253,009. Burlington Industries, Inc., New York, N.Y. Filed Aug. 24, 1966.

EL GRECO

For Textile Fabrics in the Piece Suitable for Use in the Manufacture of Men's and Boys' Suits, Coats, and Slacks.
First use November 1960.

SN 253,498. Deering Milliken, Inc., New York, N.Y. Filed Aug. 31, 1966.

BUCKS HEAD

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers, and Combinations Thereof.
First use in or about 1884.

SN 253,499. Deering Milliken, Inc., New York, N.Y. Filed Aug. 31, 1966.

BOWKNOT

Owner of Reg. No. 217,596.
For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers, and Combinations Thereof.
First use on or about Aug. 2, 1966.

SN 254,161. Hilton Clothes, Inc., New York, N.Y. Filed Sept. 9, 1966.

CASTLEREAGH

Owner of Reg. No. 541,149.
For Fabrics for Use in Making Suits, Jackets, Slacks, and Topcoats.
First use at least as early as August 1950.

SN 254,414. B. E. Williams, La Grange Park, Ill. Filed Sept. 13, 1966.

TWO HUNDRED (200) TRIPPER

For Beef Shrouds.
First use Apr. 20, 1966.

SN 256,408. Sure-Fit Products Company, Bethlehem, Pa. Filed Oct. 14, 1966.

SURE-VAL

For Upholstery Fabrics.
First use Oct. 1, 1966.

Class 43—Thread and Yarn

SN 253,107. American Enka Corporation, Enka, N.C. Filed Aug. 25, 1966.

VARILINE

For Synthetic Yarns.
First use Aug. 18, 1966.

SN 253,298. Fiberchem, Inc., Seattle, Wash. Filed Aug. 29, 1966.



For Fiber Glass Thread and Yarn.
First use Mar. 25, 1956.

SN 253,955. Compagnie Francaise de Bonneterie, Paris, France. Filed Sept. 7, 1966.

REFUGE

Owner of French Reg. No. 516,989, dated Oct. 31, 1963 (Seine); Natl. Inst. No. 214,019.
For Yarns and Threads.

SN 253,956. Compagnie Francaise de Bonneterie, Paris, France. Filed Sept. 7, 1966.

MAMY

Owner of French Reg. No. 424,265, dated Dec. 11, 1952 (Paris); Natl. Inst. No. 2,761.
For Woolen Yarns.

Class 44—Dental, Medical, and Surgical Appliances

SN 247,801. Joerns Furniture Company, Stevens Point, Wis. Filed June 10, 1966.

MONO-TROL

For Hospital Bed With Manual Elevation Control.
First use Jan. 10, 1966.

SN 248,012. Samuel Bonat & Bro., Inc., West Paterson, N.J. Filed June 14, 1966.

BEL AIRE

For Hair Dryers.
First use May 5, 1966.

Class 45—Soft Drinks and Carbonated Waters

SN 244,128. Monarch Citrus Products Company, Doraville, Ga. Filed Apr. 22, 1966.



For Soft Drinks and Concentrates for Making Soft Drinks.
First use Mar. 8, 1966.

Class 46—Foods and Ingredients of Foods

SN 207,374. E & H Corporation, Tulsa, Okla. Filed Dec. 3, 1964.

COOK 'N SEASON

For All-Purpose Food Seasoning.
First use June 4, 1963.

SN 208,152. West Indies Food & Packing, Inc., Miami, Fla. Filed Dec. 14, 1964.



The drawing is lined for red, but no claim is made to color.
For Guava Paste.
First use May 1, 1964.

SN 209,284. Masso Hermanos, S.A., Vigo, Pontevedra, Spain. Filed Jan. 4, 1965.

MAROLA

Owner of Spanish Reg. No. 108,490, dated July 9, 1936.
For Canned Meat, Vegetables, Fish, and Shellfish in Preserved or Paste Form.

SN 209,824. Victory Beef Co., Paterson, N.J. Filed Jan. 12, 1965.

BEEF-DELITE

For Frozen Cubed Beef.
First use Jan. 8, 1964.

SN 209,825. Victory Beef Co., Paterson, N.J. Filed Jan. 12, 1965.

VEAL-DELITE

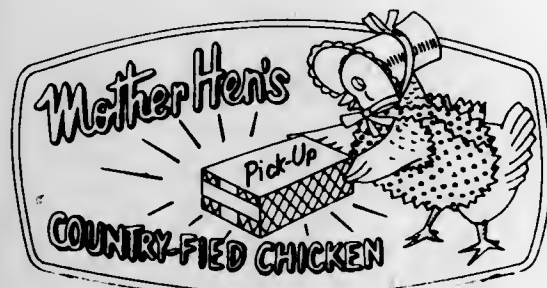
For Frozen Breaded Veal Steaks and Breaded Veal Choppettes, and Italian Brand Breaded Veal Steaks.
First use Jan. 8, 1964.

SN 220,889. White Tower Management Corporation, Stamford, Conn. Filed June 10, 1965.

MOTHER HEN'S

No claim is made of the exclusive use of the word "Hen's" apart from the mark as shown.
For Cooked Chicken.
First use Apr. 15, 1965.

SN 220,890. White Tower Management Corporation, Stamford, Conn. Filed June 10, 1965.



No claim is made of the exclusive use of the words "Hen's," "Pick-Up," and "Chicken" apart from the mark as shown. For Cooked Chicken. First use Apr. 15, 1965.

SN 226,866. Tonnema N.V., Sneek, Netherlands. Filed Aug. 31, 1965.



For Chocolate Mints. First use January 1965; in commerce January 1965.

SN 227,032. Honeysuckle Corporation, New York, N.Y. Filed Sept. 2, 1965.

HONEYSUCKLE

For Meat Food Products—Namely, Smoked, Boneless and Canned Hams. First use Jan. 15, 1950. Subj. to Intf. with SN 198,162.

SN 228,412. South African Co-Operative Citrus Exchange, Limited, Pretoria, Transvaal, Republic of South Africa. Filed Sept. 22, 1965.

OUTSPAN

Owner of South African Reg. No. 1,876/49, dated Aug. 11, 1949. For Fresh, Pasteurized, Chilled, Frozen, Single Strength and Concentrated Fruit Juices, Fresh, Dried, Crystallized, Canned and Bottled Fruits, Candied Peel, Dried Citrus Peel Used as Animal Feed, Fruit Juice Powders and Crystals, Jams, Preserves, Marmalades, Jellies, and Citrus Oils for Food Purposes.

SN 228,701. Kent Feeds, Inc., Muscatine, Iowa. Filed Sept. 27, 1965.

PRODUCTIONIZED-SEASONIZED

For Poultry Feeds. First use on or about Aug. 17, 1965.

SN 231,313. John Corbitt, d.b.a. Turner County Frozen Foods, Sycamore, Ga. Filed Oct. 22, 1965.

John's Georgia Style

No registration rights are claimed for the words "Georgia Style" apart from the mark shown, but the applicant waives none of its common law rights in the mark shown or any feature thereof.

For Barbecue Sauce. First use on or about Aug. 11, 1965.

SN 232,710. Charles Richard Meier, Madison, Wis. Filed Nov. 15, 1965.

POPCORN

For Fresh Frozen Shrimp Breaded With Material Other Than Popcorn. First use July 29, 1965.

SN 233,924. Mark III Enterprises, Inc., San Francisco, Calif. Filed Dec. 3, 1965.

WINAMINT

Owner of Reg. Nos. 770,059, 776,296, and 784,910. For Candy. First use Oct. 1, 1965.

SN 233,925. Mark III Enterprises, Inc., San Francisco, Calif. Filed Dec. 3, 1965.

SENTIMINTS

Owner of Reg. Nos. 770,059, 776,296, and 784,910. For Candy. First use July 28, 1965.

SN 233,926. Mark III Enterprises, Inc., San Francisco, Calif. Filed Dec. 3, 1965.

HAVAMINT

Owner of Reg. Nos. 770,059, 776,296, and 784,910. For Candy. First use July 28, 1965.

SN 233,927. Mark III Enterprises, Inc., San Francisco, Calif. Filed Dec. 3, 1965.

INVESTMINTS

Owner of Reg. Nos. 770,059, 776,296, and 784,910. For Candy. First use July 26, 1965.

SN 233,928. Mark III Enterprises, Inc., San Francisco, Calif. Filed Dec. 3, 1965.

SHIPMINTS

Owner of Reg. Nos. 770,059, 776,296, and 784,910. For Candy. First use July 28, 1965.

SN 233,929. Mark III Enterprises, Inc., San Francisco, Calif. Filed Dec. 3, 1965.

REPLACEMENTS

Owner of Reg. Nos. 770,059, 776,296, and 784,910. For Candy. First use July 21, 1965.

SN 240,760. Milk Proteins, Inc., Detroit, Mich. Filed Mar. 11, 1966.

COFFEE TOP

For Non-Dairy Coffee Whitener. First use on or about Jan. 31, 1966.

SN 241,071. Joseph J. McGuigan, d.b.a. Dormack Health Foods, Sherman Oaks, Calif. Filed Mar. 15, 1966.

nuPROchol

For Health Food—Namely, a Protein Dietary Supplement. First use at least as early as March 1961.

SN 241,576. Arnold Bakers, Inc., Greenwich, Conn. Filed Mar. 22, 1966.

Giraffe!

For Bread. First use Aug. 6, 1965.

SN 241,854. Blumenthal Bros. Chocolate Co., Philadelphia, Pa. Filed Mar. 25, 1966.

ALMONDEERES

For Candy. First use Aug. 25, 1963.

SN 245,765. Sweet Sue Kitchens Inc., Athens, Ala. Filed May 16, 1966.

Sweet Sue

Owner of Reg. No. 610,474. For Canned Prepared Chicken Products—Namely, Barbecued Chicken, Chicken Parts With Rice, Chicken Dumplings, Chicken Stew, and Boned Chicken. First use 1953.

SN 246,123. HCA Food Corporation, Baltimore, Md. Filed Apr. 25, 1966.

CARY'S

Owner of Reg. No. 740,285. For Maple Syrup. First use about June 1923.

SN 249,425. General Foods Corporation, White Plains, N.Y. Filed July 1, 1966.

ELECTRA

For Coffee. First use May 11, 1966.

SN 249,499. Calumet Cheese Co., Inc., Hilbert, Wis. Filed July 5, 1966.

SUPPER CLUB

For Cheese. First use May 9, 1966.

SN 256,872. Shenandoah Valley Produce Co., Inc., New York, N.Y. Filed Oct. 20, 1966.

Shenandoah

Owner of Reg. No. 814,629. For Frozen and Refrigerated Poultry. First use as early as March 1965.

SN 259,057. Grain Processing Corporation, Muscatine, Iowa. Filed Nov. 21, 1966.

SOLULAC

For Livestock and Poultry Feed Supplements of a Food Nature. First use February 1954.

SN 259,982. Texas Meat Packers, Inc., Dallas, Tex. Filed Dec. 2, 1966.

WINKING CHEF

For Barbecue Sauce, and Frozen Steaks, Gravy and Sliced Beef, Chopped Sirlion, Barbecued Chicken, Barbecued Ribs, Barbecued Sliced Beef, and Barbecued Chopped Beef. First use Aug. 29, 1966.

SN 259,987. The Quaker Oats Company, Chicago, Ill. Filed Dec. 5, 1966.

SOUPERFISH

Owner of Reg. Nos. 764,031, 773,774, and 809,349. For Crackers. First use Nov. 4, 1966.

SN 260,908. M. S. Cowen Company, San Francisco, Calif. Filed Dec. 16, 1966.

BAY PRIDE

Owner of Reg. Nos. 553,800 and 725,174. For Canned Shrimp, Frozen Shrimp, and Frozen Frog Legs. First use Oct. 4, 1938, on Canned Shrimp.

SN 261,351. John Morrell & Co., Chicago, Ill. Filed Dec. 23, 1966.

BIG FRANK

Owner of Reg. No. 820,115.
For Sliced Bacon.
First use Mar. 7, 1966.

SN 263,643. Van Den Berghs (Export) Limited, London, England. Filed Jan. 31, 1967.

BLUE BAND

Owner of British Reg. No. 824,490, dated Aug. 22, 1961.
For Margarine for Export.

Class 48—Malt Beverages and Liquors

SN 238,814. Whitbread and Company Limited, London, England. Filed Feb. 14, 1966.



Priority claimed under Sec. 44(d) on British Reg. No. 885,947, dated Oct. 22, 1965. Owner of U.S. Reg. Nos. 723,948 and 727,782.
For Beer.

SN 249,985. Highlander Brewing Co., Seattle, Wash. Filed July 11, 1966.

RHEINLANDER

Owner of Reg. No. 810,643.
For Beer.
First use 1934.

Class 49—Distilled Alcoholic Liquors

SN 235,407. J. T. S. Brown's Son Company, Cincinnati, Ohio. Filed Dec. 28, 1965.



Owner of Reg. No. 363,915.
For Blended Scotch Whisky.
First use Dec. 14, 1965.

SN 243,168. Charles Rosenblum, d.b.a. Stuart Lloyd Co., New York, N.Y. Filed Apr. 11, 1966.

GRAND DUKE

For Vodka.
First use June 1954.

SN 245,164. Continental Distilling Corporation, Philadelphia, Pa. Filed May 9, 1966.

CONTINENTAL'S

Owner of Reg. Nos. 55,232 and 745,217.
For Whiskey.
First use at least as early as April 1960; at least as early as March 1956 as to "Continental."

SN 261,424. James B. Beam Distilling Co., Chicago, Ill. Filed Dec. 27, 1966.



For Liqueurs.
First use Jan. 9, 1934.

Class 50—Merchandise Not Otherwise Classified

SN 237,020. Puckett Supply Company, Inc., Greensboro, N.C. Filed Jan. 21, 1966.

ROYAL EMERALD

For Grave Site Artificial Grass Carpeting.
First use Sept. 7, 1965.

SN 244,198. C. Brooks Dirosa, Fallsington, Pa. Filed Apr. 25, 1966.



For Novelty Items—Namely, Coffee Mugs, Ash Trays, Cigarette Boxes, and Spoon Rests.
First use May 9, 1965.

SN 246,709. Ginny Morrow, La Canada, Calif. Filed May 26, 1966.



The words "Fleurs Glacée de" are disclaimed apart from the mark as shown. The French words "Fleurs Glacée de Ginny" are translated as "glazed flowers by Ginny."
For Artificial Flowers.
First use May 1, 1963.

SN 247,248. National Soda Straw Company, Chicago, Ill. Filed June 3, 1966.



For Drinking Straws.
First use Apr. 13, 1966.

SN 254,488. Gordon Sales Management Company, Chicago, Ill. Filed Sept. 15, 1966.



Applicant disclaims the word "Christmas" apart from the mark as a whole and without relinquishing any of its common law rights.

For Artificial Christmas Trees.
First use Sept. 9, 1964.

SN 260,377. Bee-Zee Corporation, Pompano Beach, Fla. Filed Dec. 9, 1966.



For Coat Hanger Covers.
First use Nov. 16, 1966.

Class 51—Cosmetics and Toilet Preparations

SN 219,098. Yardley of London, Inc., Totowa, N.J. Filed May 17, 1965.

THE ITALIAN LOOK

For Lipstick, Rouge, Powder, Cologne, Cosmetic Foundation, and Eye Shadow.
First use May 6, 1965.

SN 219,099. Yardley of London, Inc., Totowa, N.J. Filed May 17, 1965.

THE PARIS LOOK

For Lipstick, Rouge, Powder, Cologne, Cosmetic Foundation, and Eye Shadow.
First use May 6, 1965.

SN 219,100. Yardley of London, Inc., Totowa, N.J. Filed May 17, 1965.

THE SPANISH LOOK

For Lipstick, Rouge, Powder, Cologne, Cosmetic Foundation, and Eye Shadow.
First use May 6, 1965.

TM 837 O.G.—5

SN 219,101. Yardley of London, Inc., Totowa, N.J. Filed May 17, 1965.

THE TOKYO LOOK

For Lipstick, Rouge, Powder, Cologne, Cosmetic Foundation, and Eye Shadow.
First use May 6, 1965.

SN 240,472. Eduard J. Pawlata, Vienna, Austria. Filed Mar. 8, 1966.



Owner of Austrian Reg. No. 8,501, dated Oct. 17, 1936.
For Sun-Tan Lotions.

SN 242,940. Tom Cat, New York, N.Y. Filed Apr. 7, 1966.

TOM CAT

For Colognes, Bath Oils, After Shave Lotions, Shaving Creams, Deodorants, Hair Tonics, Talcum Powders, Skin Creams, and Lotions.
First use Feb. 23, 1966.

SN 243,126. Marie Ganée, Ltd., New York, N.Y. Filed Apr. 11, 1966.

A LA NUE

For Cosmetics—Namely, Depilatories.
First use Feb. 12, 1966.

SN 243,469. Nina, Inc., Paris, Tenn. Filed Apr. 14, 1966.

MULTICREME

For Cosmetic Cream.
First use Mar. 17, 1966.

SN 243,602. Trylon Products Corporation, Chicago, Ill. Filed Apr. 15, 1966.

TEN SHILLING

For Personal Deodorant.
First use Mar. 22, 1966.

SN 246,648. Bristol-Myers Company, New York, N.Y. Filed May 26, 1966.

ASSURE

Owner of Reg. Nos. 699,148 and 710,463.
For Cosmetics and Toilet Preparations—Namely, Feminine Shaving Lotion.
First use Apr. 27, 1966.

SN 246,706. Maurice Fabricant, New York, N.Y. Filed May 28, 1966.

MAGIC CHARME

For Perfume and Toilet Water.
First use July 1, 1951.

SN 249,078. Irma Shorell, Inc., New York, N.Y., assignee of Shorell Products, Inc., New York, N.Y. Filed June 27, 1966.

Irma Shorell's FORMULA

The notation "Irma Shorell's" is the possessive form of the name of a living person whose consent is of record. Applicant disclaims any rights in the descriptive word "Formula" apart from the mark as shown. Owner of Reg. No. 793,778.

For Cosmetic Creams and Lotions.
First use Feb. 9, 1966.

SN 249,880. Irma Shorell, Inc., New York, N.Y., assignee of Shorell Products, Inc., New York, N.Y. Filed July 8, 1966.

Irma Shorell's Formula Y25

The notation "Irma Shorell's" is the possessive form of the name of a living person whose consent is of record. The descriptive word "Formula" is disclaimed apart from the mark as shown. Owner of Reg. No. 793,778.

For Cosmetic Creams and Lotions.
First use June 24, 1966.

SN 252,467. Cosmetically Yours, Inc., Yonkers, N.Y. Filed Aug. 16, 1966.

WET & WILD

For Liquid Make-Up.
First use June 17, 1966.

SN 253,018. Cosmetically Yours, Inc., Yonkers, N.Y. Filed Aug. 24, 1966.

SHOWCASE

For Liquid Make-Up.
First use July 26, 1966.

SN 254,013. Organon Inc., West Orange, N.J. Filed Sept. 8, 1966.

EDOCIL

For Cosmetics—Namely, Moisturizing Cream.
First use Aug. 22, 1966.

SN 256,792. Alberto-Culver Company, Melrose Park, Ill. Filed Oct. 20, 1966.

FDS

For Deodorants.
First use Aug. 2, 1966.

SN 259,286. Shulton, Inc., Clifton, N.J. Filed Nov. 23, 1966.

SO dry

For Anti-Perspirant Deodorant.
First use Nov. 11, 1966.

SN 260,220. Deltrol Corp., d.b.a. Campbell Products Co., Bellwood, Ill. Filed Dec. 7, 1966.



For Shave Cream.
First use 1950.

Class 52—Detergents and Soaps

SN 241,645. Helene Curtis Industries, Inc., Chicago, Ill. Filed Mar. 23, 1966.

ARTISTIQUE

For Hair Shampoo.
First use on or about Jan. 28, 1966.

SN 243,620. Amway Corporation, Ada, Mich. Filed Apr. 18, 1966.

MAGIC FOAM

The word "Foam" is disclaimed apart from the mark.
For Rug and Upholstery Shampoo and Spot Remover.
First use on or about Mar. 12, 1966.

SN 244,970. C-Z Chemical Company, Inc., Beloit, Wis. Filed May 5, 1966.

SUPER MARVEL DIP

The word "Dip" is disclaimed apart from the mark as shown.
For Liquid Glass Cleaner.
First use Apr. 19, 1958.

SN 246,124. Economics Laboratory, Inc., St. Paul, Minn. Filed May 18, 1966.

AIM

For Detergent for Pipeline and Tank Cleaning in the Dairy Field.
First use Sept. 23, 1965.

SN 249,314. Economics Laboratory, Inc., St. Paul, Minn. Filed June 30, 1966.

ELECTRA-SOL

Owner of Reg. No. 510,293.
For Dishwashing Compound for Use in Dishwashing Machines.
First use Sept. 10, 1947.

SN 250,777. Sterling Drug Inc., New York, N.Y. Filed July 21, 1966. SN 258,650. Sterling Drug Inc., New York, N.Y. Filed Nov. 15, 1966.



The drawing is lined for the colors blue and yellow. Owner of Reg. Nos. 53,937, 806,218, and others.

For General Purpose Cleaner With Disinfecting Properties.
First use at least as early as April 1966; 1890, as to "Lysol."



The drawing is lined for the colors yellow, blue, and red. No claim of exclusive use is made to the words "Disinfectant" or "Cleaner," per se. Owner of Reg. Nos. 53,937, 806,218, and others.

For General Purpose Cleaner With Disinfecting Properties.
First use at least as early as March 1966; 1890 as to the word "Lysol."

SERVICE MARKS

Class 100—Miscellaneous

SN 236,351. Automation Sciences, Inc., New York, N.Y. Filed Jan. 13, 1966.

DATATEMP

For Furnishing Temporary Employees in the Field of Data Processing and Programming.
First use Mar. 3, 1964.

SN 240,209. Sheraton Corporation of America, Boston, Mass. Filed Mar. 4, 1966.

ROYAL HAWAIIAN

For Hotel and Restaurant Services.
First use June 30, 1959.

SN 247,473. Araway Ltd., Winnipeg, Manitoba, Canada. Filed June 7, 1966.

ARAWAY

For Reservation Service for Motels and Hotels.
First use Feb. 16, 1966; in commerce Feb. 16, 1966.

SN 255,754. Red Garter, Green Brook, N.J. Filed Oct. 5, 1966.

OLD STRAW HAT

For Cafe and Cabaret Services.
First use Aug. 25, 1966.

SN 263,696. Thomas Wallace Quinn, Villanova, Pa. Filed Jan. 31, 1967.



For Advisory Service to Management Regarding Domestic and Foreign Patent and Trademark Matters.
First use on or about Jan. 21, 1967.

Class 101—Advertising and Business

SN 210,788. International Silk Association (U.S.A.) Inc. New York, N.Y. Filed Jan. 27, 1965.

ONLY SILK IS SILK

For Association Services in Advertising and Otherwise Promoting the Sale and Use of Pure-Silk Products.
First use Dec. 11, 1961.

SN 225,499. Our Baby's First Seven Years, Chicago, Ill. Filed Aug. 11, 1965.

BLESSED EVENT

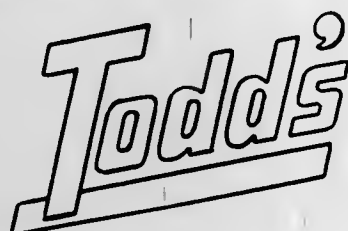
For Issuance of a Baby Record Book Supported by Sponsors Secured by the Applicant for the Purposes of Creating Good Public Relations and for Facilitating Fund Raising for Hospitals.
First use June 27, 1965.

SN 226,231. H. R. Gibson, Sr., d.b.a. Gibson Products Co., Seagoville, Tex. Filed Aug. 23, 1965.

GIBSON'S

For Retail Department Store Services.
First use Oct. 20, 1960.

SN 230,544. Jewell Corp., d.b.a. Todd's, Washington, D.C. Filed Oct. 19, 1965.



For Repairing and Servicing of Cameras, Toys, Records, Jewelry, Radios, and Other Major and Small Electrical Appliances, and Housewares.
First use Nov. 30, 1953.

SN 234,689. Ultronic Systems Corp., Pennsauken, N.J. Filed Dec. 15, 1965.

VALIDATOR

For Establishing Charge Plate or Credit Card Systems, and Installing Data Processing Equipment Associated Therewith, for Retail Stores and Other Businesses Which Extend Credit.
First use April 1965.

SN 238,512. Garamond Pridemark Press, Inc., Baltimore, Md. Filed Feb. 10, 1966.



For Printing Services.
First use on or about Aug. 1, 1963.

SN 243,343. Mystic Seaport Stores, Inc., Mystic, Conn. Filed Apr. 13, 1966.

SEAPORT STORES

Applicant disclaims the word "Stores" apart from the mark as shown without waiving any of its common law rights thereto.

For Retail Mail Order, Gift and Variety Store Services.
First use in or about January 1955.

SN 245,400. Harvest Markets, Inc., Buffalo, N.Y. Filed May 11, 1966.

HARVEST-THE BEST

For Retail Grocery Services.
First use May 2, 1966; July 16, 1958, as to the word "Harvest."

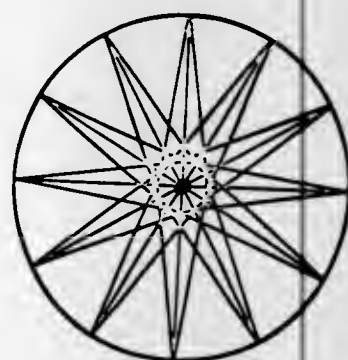
Class 102 — Insurance and Financial

SN 203,696. Shearson, Hammill & Co., Incorporated, New York, N.Y. Filed Oct. 9, 1964.



For Stock Brokerage Services.
First use Dec. 5, 1962.

SN 227,228. Pacific Finance Corporation, Los Angeles, Calif., assignee of Atlas Finance Company, Inc., d.b.a. Atlas Finance Company, Atlanta, Ga. Filed Sept. 7, 1965.



For Personal Loan Services.
First use July 1, 1959.

SN 248,202. American Security and Trust Company, Washington, D.C. Filed June 16, 1966.

**AMERICAN SECURITY
AND TRUST COMPANY**

Owner of Reg. No. 669,094.
For Banking Services.
First use Mar. 29, 1966.

SN 248,575. Calvin Bullock, Ltd., New York, N.Y. Filed June 21, 1966.

FUNDSURANCE

For Mutual Fund Combined With Life Insurance Investment Service.
First use Dec. 29, 1965.

SN 263,508. The Colonial Fund, Inc., Boston, Mass. Filed Jan. 30, 1967.



For Financial Services—Namely, Investing the Funds of Others.
First use Jan. 24, 1958.

Class 103 — Construction and Repair

SN 232,676. D-150 Incorporated, Los Angeles, Calif. Filed Nov. 15, 1965.

DIMENSION 150

For Services Rendered in the Field of Motion Pictures—Namely, Designing for Others of Projection Systems and Aiding in the Installation Thereof, and Supplying Components Therefor; and for Providing to Others Advice and Assistance in Photographic Systems for Motion Pictures, Including Supplying Lenses and Other Components for Said Photographic Systems.
First use on or before Dec. 31, 1960.

SN 249,217. Brake Align Service and Supply Co., Arlington Heights, Ill. Filed June 29, 1966.

BRAKE ALIGN

For Repairing, Adjusting, Servicing and Testing of Trucks and Other Automotive Vehicles, Including Parts Thereof and Equipment Therefor, and Road Service for Automotive Vehicles.
First use on or about July 1, 1962.

Class 104 — Communication

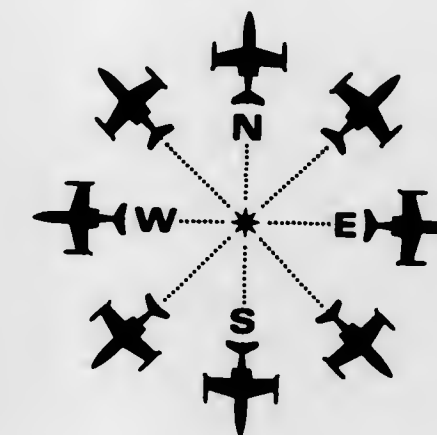
SN 233,760. Trigg-Vaughn Stations, Inc., Denver, Colo. Filed Dec. 1, 1965.

COLORSOUND

For Radio Broadcasting Services.
First use Oct. 22, 1965.

Class 105 — Transportation and Storage

SN 212,298. Executive Jet Aviation, Inc., Columbus, Ohio, by change of name from Executive Jet Airways, Inc., Columbus, Ohio. Filed Feb. 18, 1965.



For Furnishing a Private Contract Service for Jet Air Transportation of Persons.
First use October 1964.

SN 233,839. Southern Railway Company, Richmond, Va. Filed Dec. 2, 1965.

SUPER-CUSHION

For Railroad Freight Transportation Services.
First use June 1961.

SN 233,841. Southern Railway Company, Richmond, Va. Filed Dec. 2, 1965.

BIG JOHN

For Railroad Freight Transportation Services.
First use February 1962.

Class 106 — Material Treatment

SN 236,045. Berkey Photo, Inc., New York, N.Y. Filed Jan. 10, 1966.



For Photofinishing Services Including Development of Black and White Films and Color Films; Prints and Enlargements in Black and White and Color; Slide Duplication, Slide Mounting; Copying of Black and White and Color Transparencies.
First use December 1964.

SN 244,629. Synthetics Finishing Corporation, Philadelphia, Pa. Filed Apr. 29, 1966.

SKINBAC

Owner of Reg. No. 698,737.
For Application of Coating and Impregnating Materials to Textile Fabrics.
First use Apr. 5, 1966.

Class 107—Education and Entertainment

SN 204,533. Lydia P. B. Zink, Baltimore, Md. Filed Oct. 21, 1964.

PAK

For Educational Services—Namely, Teaching Others to Read.
First use Sept. 12, 1963.

SN 218,535. Childhood Productions, Inc., New York, N.Y. Filed May 11, 1965.



The word "Productions" is disclaimed apart from the mark as a whole.
For Distribution of Motion Picture Films.
First use Jan. 11, 1965.

SN 234,669. Herbie Rose, d.b.a. Herbie Rose Orchestra, New York, N.Y. Filed Dec. 15, 1965.



For Orchestral Musical Entertainment.
Filed January 1964.

SN 235,588. Scripps-Howard Broadcasting Company, d.b.a. Television Stations WEWS, Cincinnati, Ohio. Filed Dec. 30, 1965.

UPBEAT

For Title of a Television Program.
First use Oct. 9, 1965.

SN 237,992. Alan S. Michalowski, d.b.a. Alan Michals, New Britain, Conn. Filed Feb. 3, 1966.

THE UGLY AMERICANS

For Entertainment services—Namely, Musical Renditions of a Rock and Roll Band.
First use Sept. 24, 1965.

SN 241,758. Chartbuster Music Corporation, Washington, D.C. Filed Mar. 24, 1966.

WILLIE & THE HAND JIVES

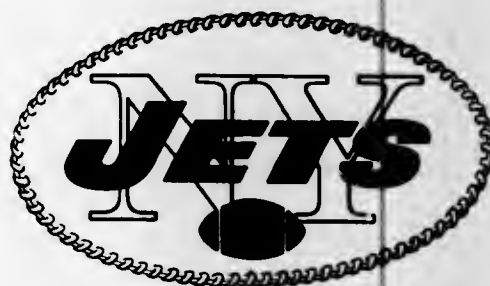
For Entertainment Services—Namely, Vocal and Instrumental Group Exhibitions and Performances Presented Through the Medium of Radio, Television, and Personal Appearances.
First use on or about Jan. 1, 1964.

SN 247,432. Young Americans for Freedom, Inc., Washington, D.C. Filed June 6, 1966.



For Educational Services—Namely, Furthering the Influence of Conservative Philosophy and Policies by Aiding in the Organization of Groups Having Conservative Beliefs; Organizing and Sponsoring Rallies, Seminars, Debates and Conventions; and Providing Materials and Services to Conservative Clubs, Including Films, Books, Speakers, Study Programs and Reports.
First use at least as early as Aug. 27, 1965.

SN 256,699. Gotham Football Club, Inc., New York, N.Y. Filed Oct. 19, 1966.



Without waiving its common law rights herein, no claim is made to the designation "NY" or the representation of the football, apart from the mark as shown.

For Entertainment Service in the Nature of Football Exhibitions, Some of Which Are Rendered Through the Medium of Radio and Television Broadcasts.
First use at least as early as May 1963.

SN 261,959. Louis C. Sudler, Chicago, Ill. Filed Jan. 5, 1967. SN 262,544. Baltimore Baseball Club, Inc., Baltimore, Md. Filed Jan. 16, 1967.

ARTISTS' SHOWCASE

For Entertainment Services in the Form of a Television Program.
First use on or about Nov. 6, 1960.

SN 262,541. Baltimore Baseball Club, Inc., Baltimore, Md. Filed Jan. 16, 1967.



For Entertainment Services in the Nature of Baseball Exhibitions, Some of Which Services Are Rendered Through the Media of Radio and Television Broadcasts.
First use Feb. 24, 1966.

SN 262,542. Baltimore Baseball Club, Inc., Baltimore, Md. Filed Jan. 16, 1967.

ORIOLES

For Entertainment Services in the Nature of Baseball Exhibitions, Some of Which Services Are Rendered Through the Media of Radio and Television Broadcasts.
First use 1893.

SN 262,543. Baltimore Baseball Club, Inc., Baltimore, Md. Filed Jan. 16, 1967.



For Entertainment Services in the Nature of Baseball Exhibitions, Some of Which Services Are Rendered Through the Media of Radio and Television Broadcasts.
First use Feb. 24, 1966.



For Entertainment Services in the Nature of Baseball Exhibitions, Some of Which Services Are Rendered Through the Media of Radio and Television Broadcasts.
First use Apr. 12, 1966.

SN 262,545. Baltimore Baseball Club, Inc., Baltimore, Md. Filed Jan. 16, 1967.



For Entertainment Services in the Nature of Baseball Exhibitions, Some of Which Services Are Rendered Through the Media of Radio and Television Broadcasts.
First use Nov. 3, 1966.

SN 262,546. Baltimore Baseball Club, Inc., Baltimore, Md. Filed Jan. 16, 1967.



For Entertainment Services in the Nature of Baseball Exhibitions, Some of Which Services Are Rendered Through the Media of Radio and Television Broadcasts.
First use January 1954.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1—Raw or Partly Prepared Materials

- 827,039. SETACEGEITE. Compagnie Generale d'Electricite. SN 211,873. Pub. 1-24-67. Filed 2-12-65.
827,040. PROSTAR. Pro-Phy-Lac-Tic Brush Company, assignee of E. B. & A. C. Whiting Company. SN 212,205. Pub. 8-10-65. Filed 2-17-65.
827,041. ENCAP. Hooker Chemical Corporation. SN 225,156. Pub. 1-24-67. Filed 8-6-65.
827,042. MOON VALLEY. Marion B. Mulford. SN 231,923. Pub. 1-24-67. Filed 11-1-65.
827,043. PAX. Utah Cooperative Association. SN 235,443. Pub. 1-24-67. Filed 12-28-65.
827,044. GOLD RIVER. International Pulp Sales Company. SN 239,773. Pub. 1-24-67. Filed 2-28-66.
827,045. INSULL-S AND DESIGN. Bellance Upholstery Supply Co., Inc. SN 244,029. Pub. 1-24-67. Filed 4-21-66.
827,046. JET BLACK MINK AND DESIGN. Floyd R. Marsh, d.b.a. Marsh Fur Farm. SN 247,710. Pub. 1-24-67. Filed 6-9-66.

Class 2—Receptacles

- 827,047. KAN KEG. National Can Corporation. SN 212,897. Pub. 1-24-67. Filed 2-26-65.
827,048. ADBAG AND DESIGN. Hugon Corporation, by change of name from Hudson General Paper Corporation. SN 223,891. Pub. 11-15-66. Filed 7-21-65.
827,049. PRO-KLEEN. Pro-Phy-Lac-Tic Brush Company. SN 231,700. Pub. 1-24-67. Filed 10-27-65.
827,050. PRESTIGE PLASTIC. United States Box Crafts, Inc. SN 232,434. Pub. 1-24-67. Filed 11-9-65.
827,051. BOB-ROBIN. Bertram H. Harris. SN 232,780. Pub. 1-24-67. Filed 11-16-65.
827,052. C-53. Whitehouse Products, Inc. SN 233,204. Pub. 1-24-67. Filed 11-23-65.
827,053. I. Nilson Corporation. SN 235,306. Pub. 1-24-67. Filed 12-27-65.
827,054. PARK AVENUE. Plastics Manufacturing Company. SN 236,775. Pub. 1-24-67. Filed 1-18-66.
827,055. COLUMBIAN. Columbian Steel Tank Company. SN 242,563. Pub. 1-24-67. Filed 4-4-66.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

- 827,056. SAFE-LOCK. Leeds Travelwear, Inc. SN 216,315. Pub. 1-24-67. Filed 4-12-65.
827,057. OXFORD AND DESIGN. Noymer Manufacturing Company. SN 219,134. Pub. 1-24-67. Filed 5-18-65.
827,058. SULKA. A. Sulka & Company. SN 241,816. Pub. 1-24-67. Filed 3-24-66.
827,059. A. SULKA & COMPANY. A. Sulka & Company. SN 241,819. Pub. 1-24-67. Filed 3-24-66.

Class 5—Adhesives

- 827,060. INTER-POXY. International Paint Company, Inc. SN 232,211. Pub. 1-24-67. Filed 11-5-65.

TM 90

- 827,061. PERMATEX. Permatex Company, Inc. SN 240,947. Pub. 1-24-67. Filed 3-14-66.

Class 6—Chemicals and Chemical Compositions

- 827,062. BAB-O 4 IN 1. Purex Corporation, Ltd., assignee of B. T. Babbitt, Inc. SN 213,088. Pub. 1-24-67. Filed 3-2-65.
827,063. REGIS. Regis Chemical Co. SN 214,170. Pub. 1-11-66. Filed 3-15-65.
827,064. SALTSHAKER. K. J. Quinn & Co., Inc. SN 229,373. Pub. 1-24-67. Filed 10-5-65.
827,065. ROSA-SPRA. Moser Paper Company. SN 231,186. Pub. 1-24-67. Filed 10-22-65.
827,066. SUPERIOR FEATURE BUILDER AND DESIGN. Moser Paper Company. SN 231,188. Pub. 1-24-67. Filed 10-22-65.
827,067. COROLAN. Electro-Catheter Corporation. SN 233,479. Pub. 1-24-67. Filed 11-29-65.
827,068. BONDERIZE. Hooker Chemical Corporation. SN 249,766. Pub. 1-24-67. Filed 7-7-66.
827,069. 2000 LINE. Hooker Chemical Corporation. SN 249,767. Pub. 1-24-67. Filed 7-7-66.
827,070. SIGMACELL. Sigma Chemical Company. SN 249,805. Pub. 1-24-67. Filed 7-7-66.
827,071. PEPTON. American Cyanamid Company. SN 249,824. Pub. 1-24-67. Filed 7-8-66.
827,072. VEN-VAT. Ventron Corporation. SN 249,893. Pub. 1-24-67. Filed 7-8-66.
827,073. BI-CAL. Merck & Co., Inc. SN 250,009. Pub. 1-24-67. Filed 7-11-66.

Class 7—Cordage

- 827,074. TOWEROPE. British Ropes Corporation. SN 208,344. Pub. 1-24-67. Filed 11-17-64.

Class 9—Explosives, Firearms, Equipments, and Projectiles

- 827,075. CAMEL BRAND. Tang Kuen Hung, d.b.a. Wang Yick Fireworks Company. SN 171,052. Pub. 1-24-67. Filed 6-14-63.
827,076. GUN TAMER 25. St. Louis Precision Products, Inc. SN 234,682. Pub. 1-24-67. Filed 12-13-65.
827,077. SPACE AGE ETC. AND DESIGN. L. W. Loyd Company, Inc. SN 239,779. Pub. 1-24-67. Filed 2-28-66.
827,078. GLENFIELD. The Marlin Firearms Company. SN 243,792. Pub. 1-24-67. Filed 4-19-66.

Class 10—Fertilizers

- 827,079. KM KERR MCGEE AND DESIGN. Kerr-McGee Corporation, by change of name from Kerr-McGee Oil Industries, Inc. SN 229,255. Pub. 1-24-67. Filed 10-4-65.

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- 827,080. NEW LEAF (DESIGN). Continental Oil Company, assignee of American Agricultural Chemical Company. SN 230,478. Pub. 1-24-67. Filed 10-19-65.
827,081. POLY-N. Allied Chemical Corporation. SN 232,890. Pub. 1-24-67. Filed 11-18-65.
827,082. COUNTRY SQUIRE. Lee O. Karp, d.b.a. Country Squire Fertilizers. SN 234,435. Pub. 1-24-67. Filed 12-13-65.
827,083. AXIPON. International Minerals & Chemical Corporation. SN 236,264. Pub. 1-24-67. Filed 1-12-66.
827,084. REGIMATE. International Minerals & Chemical Corporation. SN 236,265. Pub. 1-24-67. Filed 1-12-66.
827,085. POWR-FLO. Armour Agricultural Chemical Company. SN 244,070. Pub. 1-24-67. Filed 4-22-66.
827,086. YIELD-POWE. Tennessee Corporation. SN 244,768. Pub. 1-24-67. Filed 5-2-66.

Class 12—Construction Materials

- 827,087. GLID-CRETE. The Glidden Company. SN 231,109. Pub. 1-24-67. Filed 10-22-65.
827,088. BLOCKAID. The Glidden Company. SN 231,113. Pub. 1-24-67. Filed 10-22-65.
827,089. T-WALL. Pittsburgh Plate Glass Company. SN 233,281. Pub. 1-24-67. Filed 11-24-65.
827,090. STYLIZED S. Swift Industries, Inc. SN 233,651. Pub. 1-24-67. Filed 11-30-65.
827,091. K-13 AND DESIGN. Mfg. & Building Insulators of Texas, Inc. SN 234,049. Pub. 1-24-67. Filed 12-6-65.
827,092. MISCELLANEOUS DESIGN. Richardson Homes Corporation, d.b.a. Closing Offices of America. SN 234,847. Pub. 1-24-67. Filed 12-17-65.
827,093. TYL-ON AND DESIGN. Day & Campbell Limited. SN 236,181. Pub. 1-24-67. Filed 1-11-66.
827,094. INSUL-CON. Otto Buehner and Company. SN 244,963. Pub. 1-24-67. Filed 5-5-66.
827,095. INSUL-LAP. Glaros Products, Inc. SN 246,169. Pub. 1-24-67. Filed 5-20-66.
827,096. WITHDRAWN.
827,097. STOCKADE. Diamond Alkali Company. SN 257,910. Pub. 1-24-67. Filed 11-4-66.
827,098. CASAVIN. Diamond Alkali Company. SN 257,911. Pub. 1-24-67. Filed 11-4-66.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

- 827,099. MR. HAPPY AND DESIGN. John C. Amell, d.b.a. AB Co. SN 232,268. Pub. 1-24-67. Filed 11-8-65.

Class 14—Metals and Metal Castings and Forgings

- 827,100. INDEX AND DESIGN. Index-Werke K.G. Hahn & Tesky. MULTIPLE CLASS (Classes 14 and 23). SN 184,071. Pub. 1-24-67. Filed 1-6-64.
827,101. MISCELLANEOUS DESIGN. The International Nickel Company, Inc. SN 240,305. Pub. 1-24-67. Filed 3-7-66.

Class 15—Oils and Greases

- 827,102. STP AND DESIGN. Studebaker Corporation. SN 244,934. Pub. 1-24-67. Filed 5-4-66.

Class 16—Protective and Decorative Coatings

- 827,103. WONDER-1-COAT. Devoe & Reynolds Company, Inc. SN 230,799. Pub. 1-24-67. Filed 10-21-65.
827,104. GLID-N-DURE. The Glidden Company. SN 236,252. Pub. 1-24-67. Filed 1-12-66.
827,105. TEFLON. E. I. du Pont de Nemours and Company. SN 257,736. Pub. 1-24-67. Filed 11-2-66.

Class 18—Medicines and Pharmaceutical Preparations

- 827,106. VITRANIDE. John A. Ericson, d.b.a. Vitranide Company. SN 226,524. Pub. 1-24-67. Filed 8-26-65.
827,107. AMDAL. Abbott Laboratories. SN 229,709. Pub. 1-24-67. Filed 10-11-65.
827,108. EVE OF ROMA. Eve Elmes, d.b.a. Eve of Roma. MULTIPLE CLASS (Classes 18 and 51). SN 234,016. Pub. 1-24-67. Filed 12-6-65.
827,109. W AND DESIGN. U.S. Ethicals Inc. SN 235,055. Pub. 1-24-67. Filed 12-17-65.
827,110. VP. Kiefer-Stewart Company, Inc., d.b.a. Value Plus. SN 235,197. Pub. 1-24-67. Filed 12-23-65.
827,111. VALUE PLUS. Kiefer-Stewart Company, Inc., d.b.a. Value Plus. SN 235,199. Pub. 1-24-67. Filed 12-23-65.
827,112. TETRASPECT. Orbit Pharmaceutical, Inc. SN 235,701. Pub. 1-24-67. Filed 1-3-66.
827,113. ORBIPEC. Orbit Pharmaceutical, Inc. SN 235,702. Pub. 1-24-67. Filed 1-3-66.
827,114. ORBIGESIC. Orbit Pharmaceutical, Inc. SN 235,704. Pub. 1-24-67. Filed 1-3-66.
827,115. ARTHOGESIC. Cole Pharmacal Company, Inc., d.b.a. Cole Chemical Co. and/or Cole Chemical Company. SN 238,051. Pub. 1-24-67. Filed 2-4-66.
827,116. DEEPCOOL. Lever Brothers Company. SN 240,008. Pub. 1-24-67. Filed 3-2-66.
827,117. WHAT GOES ON. Chas. Pfäfer & Co., Inc. SN 240,775. Pub. 1-24-67. Filed 3-11-66.
827,118. BPN. The Norwich Pharmacal Company. SN 252,123. Pub. 1-24-67. Filed 8-10-66.
827,119. L'IV-OK. Pharmaceutical Specialties, Inc. SN 252,129. Pub. 1-24-67. Filed 8-10-66.
827,120. FLEET AND DESIGN. C. B. Fleet Company, Incorporated. SN 252,238. Pub. 1-24-67. Filed 8-12-66.

Class 19—Vehicles

- 827,121. KERSEY AND DESIGN. "Automatic" Sprinkler Corporation of America, d.b.a. Kersey Manufacturing Company, Inc. MULTIPLE CLASS (Classes 19 and 21). SN 231,794. Pub. 1-24-67. Filed 10-29-65.
827,122. UWT. Rockwell-Standard Corporation. SN 237,593. Pub. 1-24-67. Filed 1-28-66.

Class 21—Electrical Apparatus, Machines, and Supplies

- 827,121. (See Class 19 for this trademark.)
827,123. PE ETC. AND DESIGN. Power Engineering, Inc. SN 212,678. Pub. 1-24-67. Filed 2-24-65.
827,124. LADYBUG. Tensor Corporation. SN 227,625. Pub. 1-24-67. Filed 9-10-65.
827,125. B. Bourns, Inc. SN 281,038. Pub. 1-24-67. Filed 10-22-65.
827,126. GRAYRACK. Graybar Electric Company, Inc. SN 241,457. Pub. 1-24-67. Filed 8-21-66.

Class 22 — Games, Toys, and Sporting Goods

- 827,127. PIANETTA. Guild Musical Instrument Corporation. SN 176,440. Pub. 11-3-64. Filed 9-6-63.
- 827,128. KING PUTT AND DESIGN. King Products Corporation. SN 226,248. Pub. 1-24-67. Filed 8-23-65.
- 827,129. BEL-AIR. Bel-Air Pools, Inc. SN 228,874. Pub. 1-24-67. Filed 9-29-65.
- 827,130. SPHAIRIEE. Bob Maybee. SN 229,020. Pub. 1-24-67. Filed 9-30-65.
- 827,131. VIPER. Classic Industries, Inc. SN 233,877. Pub. 1-24-67. Filed 12-3-65.
- 827,132. FIRESIDE FOOTBALL. Howard B. Tewinkle. SN 234,854. Pub. 1-24-67. Filed 12-17-65.
- 827,133. FRANCIE. Mattel, Inc. SN 235,113. Pub. 1-24-67. Filed 12-22-65.
- 827,134. GO-PLAY. Mattel, Inc. SN 236,116. Pub. 1-24-67. Filed 1-10-66.
- 827,135. AIR-BUOY. Outboard Marine Corporation. SN 238,003. Pub. 1-24-67. Filed 2-3-66.
- 827,136. PIZZA. Ed-U-Cards Mfg. Corp. SN 238,200. Pub. 1-24-67. Filed 2-7-66.
- 827,137. HOBO JOE'S AND DESIGN OF HOBO ETC. Hobo Joe's, Inc. MULTIPLE CLASS (Classes 22 and 30). SN 238,476. Pub. 1-24-67. Filed 2-10-66.
- 827,138. GNIKAB. Jason March Ventures, Inc. SN 238,876. Pub. 1-24-67. Filed 2-15-66.
- 827,139. COURTMASTER. Western Import Inc. SN 240,375. Pub. 1-24-67. Filed 3-7-66.
- 827,140. TRAIL BLAZER. Colt's Inc. SN 241,636. Pub. 1-24-67. Filed 3-23-66.
- 827,141. SUPER MAGNUM. Bear Archery Company. SN 247,565. Pub. 1-24-67. Filed 6-8-66.
- 827,142. MAGNUM. Bear Archery Company. SN 247,566. Pub. 1-24-67. Filed 6-8-66.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

- 827,100. (See Class 14 for this trademark.)
- 827,143. AUTO BIND AND DESIGN. Auto-Bind Corporation. SN 208,430. Pub. 1-24-67. Filed 12-18-64.
- 827,144. WICKETEER. Park-Air Corp. SN 214,999. Pub. 1-24-67. Filed 3-25-65.
- 827,145. PULLER-PUMP AND DESIGN. Puller Pump Company. SN 226,164. Pub. 1-24-67. Filed 8-20-65.
- 827,146. "GIVE 'EM AIR!" P. K. Lindsay Company, Inc. SN 230,855. Pub. 1-24-67. Filed 10-21-65.
- 827,147. HUDSON BAY. Herter's Inc. SN 231,124. Pub. 1-24-67. Filed 10-22-65.

Class 26 — Measuring and Scientific Appliances

- 827,148. MISCELLANEOUS DESIGN. Sylvania Electric Products Inc. SN 234,152. Pub. 1-24-67. Filed 12-7-65.
- 827,149. NOVA STAR AND DESIGN. Nova-Tech, Incorporated. SN 237,734. Pub. 1-24-67. Filed 2-1-66.
- 827,150. TELECOPIER. Xerox Corporation. SN 257,741. Pub. 1-24-67. Filed 11-2-66.

Class 27 — Horological Instruments

- 827,151. REDDY KILOWATT AND DESIGN. Reddy Kilowatt, Inc. SN 219,140. Pub. 12-6-66. Filed 5-18-65.

Class 28 — Jewelry and Precious-Metal Ware

- 827,152. SORRENTO. Uncas Manufacturing Company. SN 237,763. Pub. 1-24-67. Filed 2-1-66.
- 827,153. SULKA. A. Sulka & Company. SN 241,817. Pub. 1-24-67. Filed 3-24-66.
- 827,154. A. SULKA & COMPANY. A. Sulka & Company. SN 241,820. Pub. 1-24-67. Filed 3-24-66.

Class 30 — Crockery, Earthenware, and Porcelain

- 827,137. (See Class 22 for this trademark.)

Class 32 — Furniture and Upholstery

- 827,155. MAGNA CARTA ETC. AND DESIGN. Stanley Furniture Company, Inc. SN 244,761. Pub. 1-24-67. Filed 5-2-66.
- 827,156. ZIP-A-WAY. Paramount Bedding Corporation. SN 245,338. Pub. 1-24-67. Filed 5-10-66.

Class 34 — Heating, Lighting, and Ventilating Apparatus

- 827,157. KICH-N-VENTLESS. Home Metal Products Company. SN 157,905. Pub. 1-24-67. Filed 11-26-62.
- 827,158. HUDSON BAY. Herter's Inc. SN 231,125. Pub. 1-24-67. Filed 10-22-65.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

- 827,159. YELLOW STRIPE ON SHOULDER OF TREAD OF TIRE (DESIGN). Super Recap Tire Co. SN 234,950. Pub. 1-24-67. Filed 12-20-65.
- 827,160. VICRON. Atlas Supply Company. SN 238,152. Pub. 1-24-67. Filed 2-7-66.

Class 36 — Musical Instruments and Supplies

- 827,161. GARRARD. Garrard Engineering Limited. SN 221,261. Pub. 1-24-67. Filed 6-16-65.
- 827,162. ABC AND DESIGN. ABC Records, Inc., by change of name from ABC-Paramount Records, Inc. SN 227,112. Pub. 11-29-66. Filed 9-3-65.
- 827,163. THE VIRTUOSO. The Command Company. SN 229,637. Pub. 1-24-67. Filed 10-8-65.
- 827,164. SILVER FLAIR. The Seeburg Corporation, assignee of The H. N. White Company, Inc. SN 230,728. Pub. 1-24-67. Filed 10-20-65.
- 827,165. FLAIR. The Seeburg Corporation, assignee of The H. N. White Company, Inc. SN 230,729. Pub. 12-27-66. Filed 10-20-65.
- 827,166. VIKING. The Fred. Gretsch Mfg. Co. SN 258,020. Pub. 1-24-67. Filed 11-7-66.

Class 37 — Paper and Stationery

- 827,167. MISCELLANEOUS DESIGN. A. T. Cross Company. SN 166,073. Pub. 10-12-65. Filed 4-4-63.
- 827,168. GO PORT. Ellingsworth Mfg. Co. SN 238,412. Pub. 1-24-67. Filed 2-9-66.
- 827,169. INSTA-WRAP. Heidi-Swiss Corporation, d.b.a. Heidi-Swiss Corp. SN 239,772. Pub. 1-24-67. Filed 2-28-66.
- 827,170. TWIN BRITE. Packaging Corporation of America. SN 243,009. Pub. 1-24-67. Filed 4-8-66.
- 827,171. HAMMERBRITE. The Hamersley Manufacturing Co. SN 248,036. Pub. 1-24-67. Filed 6-14-66.
- 827,172. MINI-LINE. Magic Marker Corporation. SN 248,876. Pub. 1-24-67. Filed 6-24-66.
- 827,173. COMPLIANCE. The Paper Supply Company. SN 249,890. Pub. 1-24-67. Filed 7-1-66.
- 827,174. FREE N' EASY. Standard Manifold Company. SN 258,025. Pub. 1-24-67. Filed 11-7-66.

Class 38 — Prints and Publications

- 827,175. AWWA (IN WATERDROP). The American Water Works Association. SN 198,816. Pub. 1-24-67. Filed 5-13-64.
- 827,176. DIAMOND TATLER. Tatler Publishing Company. SN 222,432. Pub. 1-24-67. Filed 6-30-65.
- 827,177. EE AND DESIGN. Editors and Engineers, Ltd. SN 224,081. Pub. 1-24-67. Filed 7-23-65.
- 827,178. NATIONAL AUTOMOTIVE DIRECTORY. W. R. C. Smith Publishing Company. SN 226,185. Pub. 1-24-67. Filed 8-20-65.
- 827,179. REINA CHRISTINA. Reina Christina Cosmetique S.a.r.l. MULTIPLE CLASS (Classes 38 and 51). SN 226,397. Pub. 1-24-67. Filed 8-25-65.
- 827,180. DD AND ARROW DESIGN. Data Digests, Inc. SN 228,657. Pub. 1-24-67. Filed 9-27-65.
- 827,181. MAC AND DESIGN. Mail Advertising Corporation of America, Inc. SN 231,919. Pub. 1-24-67. Filed 11-1-65.
- 827,182. PROGRESS. Unilever Limited. SN 235,441. Pub. 1-24-67. Filed 12-28-65.
- 827,183. LIVRETE TRIMESTRAL DE CIENCIA CRISTA. The Christian Science Publishing Society. SN 235,491. Pub. 1-24-67. Filed 12-29-65.
- 827,184. MEDICAL OPINION & REVIEW. Medical Opinion and Review, Inc. SN 237,144. Pub. 1-24-67. Filed 1-24-66.
- 827,185. ESD — EDUCATIONAL SYSTEMS DEVELOPMENT AND DESIGN. Howard and Smith, Inc. SN 237,346. Pub. 1-24-67. Filed 1-26-66.
- 827,186. EQUITY FOLLOWS THE LAW AND DESIGN. Equity Publishing Corporation. SN 237,827. Pub. 1-24-67. Filed 2-2-66.
- 827,187. ALKOTO-MAGYAR AND BRIDGE DESIGN. Géza Korda. SN 237,845. Pub. 1-24-67. Filed 2-2-66.
- 827,188. MARKETLINE. Westervelt-Renhouse, Inc. SN 238,813. Pub. 1-24-67. Filed 2-15-66.
- 827,189. WALT DISNEY COMICS. Walt Disney Productions. SN 239,478. Pub. 1-24-67. Filed 2-23-66.
- 827,190. AAA HOST MARK AND DESIGN. The American Automobile Association (Incorporated). SN 240,053. Pub. 1-24-67. Filed 3-3-66.
- 827,191. MANAGEMENT FORUM. Inter-Continental Motors Corporation. SN 240,304. Pub. 1-24-67. Filed 3-7-66.
- 827,192. TRAVELERS DIRECTORY SERVICE. Travelers Directory Services, Inc. SN 249,472. Pub. 1-24-67. Filed 7-5-66.
- 827,193. INTERNATIONAL FRANCHISE ASSOCIATION. International Franchise Association, Inc. SN 254,963. Pub. 1-24-67. Filed 9-23-66.

Class 39 — Clothing

- 827,194. SUNNYBROOK. Sunnybrook Sportswear, Inc. SN 204,520. Pub. 1-24-67. Filed 10-21-64.
- 827,195. DE MARCO CREATIONS AND DESIGN. The Rite Neckwear Company, Inc. SN 205,627. Pub. 1-24-67. Filed 11-5-64.
- 827,196. GLEN ABBEY. Glen Abbey Limited. SN 209,220. Pub. 1-24-67. Filed 10-22-64.
- 827,197. SEA N SKI AND DESIGN. Sea & Ski Corporation, assignee of Maro Industries, Inc. SN 221,939. Pub. 1-24-67. Filed 6-24-65.
- 827,198. POSE AND DESIGN. Robert Y. Powell. SN 229,548. Pub. 1-24-67. Filed 10-7-65.
- 827,199. GLACIER. Anderson & Thompson Ski Co., Inc. SN 230,492. Pub. 1-24-67. Filed 10-19-65.
- 827,200. BROLLY MALE. McGregor-Doniger Inc. SN 239,426. Pub. 1-24-67. Filed 2-23-66.
- 827,201. MONO LOOP. Hit Sales Corporation. SN 241,591. Pub. 1-24-67. Filed 3-8-66.
- 827,202. SAVVY. Trau & Loevner, Inc. SN 242,762. Pub. 1-24-67. Filed 4-5-66.
- 827,203. FERVEL. Frederick W. Donnelly & Son, Inc. SN 242,889. Pub. 1-24-67. Filed 4-7-66.
- 827,204. OOM. Marlene Industries Corporation. SN 243,690. Pub. 1-24-67. Filed 4-18-66.
- 827,205. FASTEN-AIDS. Potomac Engineering Corporation. SN 243,709. Pub. 1-24-67. Filed 4-18-66.
- 827,206. SUNBEAM. Spalding Knitting Mills. SN 243,923. Pub. 1-24-67. Filed 4-20-66.
- 827,207. RUSS. Russ Togs, Inc. SN 244,254. Pub. 1-24-67. Filed 4-25-66.
- 827,208. TRUVALENE. Truval Shirt Company, Inc. SN 244,542. Pub. 1-24-67. Filed 4-28-66.
- 827,209. EDWARD WESLEY. Garland Corporation. SN 244,698. Pub. 1-24-67. Filed 5-2-66.
- 827,210. EDWARD WYLDE. Garland Corporation. SN 244,699. Pub. 1-24-67. Filed 5-2-66.
- 827,211. STOCK-O-MATIC. Mister Pants, Inc. SN 247,138. Pub. 1-24-67. Filed 6-2-66.
- 827,212. QUICKSILVER. William B. Kessler, Inc. SN 247,364. Pub. 1-24-67. Filed 6-6-66.
- 827,213. THE AFFLUENT LOOK. William B. Kessler, Inc. SN 247,365. Pub. 1-24-67. Filed 6-6-66.
- 827,214. DUELLE. Superba Cravats, Inc. SN 247,538. Pub. 1-24-67. Filed 6-7-66.
- 827,215. HOT LINE. Triton Manufacturing Company, Inc. SN 248,846. Pub. 1-24-67. Filed 6-21-66.

Class 40 — Fancy Goods, Furnishings, and Notions

- 827,216. CLIP-ALL. Howard K. Lang, d.b.a. Custom Monogram Company. SN 230,401. Pub. 1-24-67. Filed 10-18-65.
- 827,217. MINI-COMB. Vulcanized Rubber and Plastics Company, Incorporated. SN 230,591. Pub. 1-24-67. Filed 10-19-65.
- 827,218. BAILEY'S AND DESIGN. Bailey's Beautician Supply Co. MULTIPLE CLASS (Classes 40, 51, and 52). SN 234,614. Pub. 1-24-67. Filed 12-15-65.
- 827,219. SLIK-SLAK. Akim Engineering Company, Inc. SN 236,870. Pub. 1-24-67. Filed 1-20-66.
- 827,220. LE BARON. Le Baron International, Inc. SN 243,997. Pub. 1-24-67. Filed 4-21-66.
- 827,221. CYNDREL. Heavenly Creations, Inc. SN 244,584. Pub. 1-24-67. Filed 4-29-66.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

- 827,222. FAB-N-TRIM. Fab-N-Trim, Inc. SN 242,230. Pub. 1-24-67. Filed 3-30-66.
 827,223. INTERPOL AND DESIGN. Samuel J. Aronsohn, Inc. SN 249,491. Pub. 1-24-67. Filed 7-5-66.
 827,224. STARSFUND. Dan River Mills, Incorporated. SN 249,846. Pub. 1-24-67. Filed 7-8-66.
 827,225. ARDOWN. Fieldcrest Mills, Inc. SN 249,853. Pub. 1-24-67. Filed 7-8-66.
 827,226. PINDYCK AND DESIGN. Charles Pindyck, Inc. SN 249,875. Pub. 1-24-67. Filed 7-8-66.
 827,227. POLY DI PARVIA. Cone Mills Corporation. SN 257,832. Pub. 1-24-67. Filed 11-3-66.
 827,228. POWER STRATE. Deering Milliken, Inc. SN 257,908. Pub. 1-24-67. Filed 11-4-66.

Class 43—Thread and Yarn

- 827,229. WASH FIT AND DESIGN. Spinnerin Yarn Co., Inc. SN 249,808. Pub. 1-24-67. Filed 7-7-66.

Class 44—Dental, Medical, and Surgical Appliances

- 827,230. SIMPLICITY. Brother International Corporation. SN 233,577. Pub. 1-24-67. Filed 11-30-65.
 827,231. S (BLOCK LETTER). American Optical Company. SN 244,954. Pub. 1-24-67. Filed 5-5-66.
 827,232. VIVOSTAR. Williams Gold Refining Co., Inc. SN 245,645. Pub. 1-24-67. Filed 5-13-66.

Class 45—Soft Drinks and Carbonated Waters

- 827,233. SLEETEE. Marlan Company. MULTIPLE CLASS (Classes 45 and 46). SN 232,258. Pub. 1-24-67. Filed 11-8-65.

Class 46—Foods and Ingredients of Foods

- 827,233. (See Class 45 for this trademark.)
 827,234. FARANDOLE. Onlevay S.A. SN 123,830. Pub. 10-1-63. Filed 7-12-61.
 827,235. HONEY SUCKLE WHITE AND DESIGN. Ralston Purina Company. SN 178,733. Pub. 12-15-64. Filed 10-10-63.
 827,236. BROOKS AND FANCIFUL. B. Brooks Foods, Inc. SN 187,552. Pub. 1-24-67. Filed 2-27-64.
 827,237. FULVI AND DESIGN. Fulvi S.p.A. SN 187,861. Pub. 1-24-67. Filed 3-3-64.
 827,238. JOEY BOY AND DESIGN. Joseph Korelko, d.b.a. J.K. Packing Company. SN 205,841. Pub. 1-24-67. Filed 11-9-64.
 827,239. RED WAGON. Boyd Coffee Company, d.b.a. Boyd Company. SN 207,108. Pub. 1-24-67. Filed 11-30-64.
 827,240. PRIX DE CHEF. Jamaica Food Company. SN 213,681. Pub. 1-24-67. Filed 3-9-65.
 827,241. FREELoader. Stewart In-Fra-Red, Inc., d.b.a. Stewart In-Fra-Red Commissary. SN 214,929. Pub. 1-24-67. Filed 3-24-65.

- 827,242. FRANKIES OUR KEENER WIENER AND DESIGN. Superior's Brand Meats Inc. SN 216,353. Pub. 1-24-67. Filed 4-12-65.
 827,243. CHEREFRESH. Wisconsin Foods, Inc. SN 224,674. Pub. 1-24-67. Filed 7-30-65.
 827,244. PEPPERMINT TWIST. Philip Morris Incorporated, d.b.a. Clark Gum Co. SN 226,075. Pub. 1-24-67. Filed 8-19-65.
 827,245. CHEF IN A BAG. Holaday Industries, Inc., assignee of Jean's Food Service, Inc. SN 228,258. Pub. 1-24-67. Filed 9-21-65.
 827,246. LORD-MOTT'S. Duffy-Mott Company, Inc., assignee of Lord-Mott Company, Inc. SN 231,693. Pub. 1-24-67. Filed 10-27-65.
 827,247. SCAT AND DESIGN. Arko Foods, Inc. SN 232,511. Pub. 1-24-67. Filed 11-12-65.
 827,248. FROST'N MATE. Frost-N-Mate, Inc. SN 232,689. Pub. 1-24-67. Filed 11-15-65.
 827,249. MORINAGA HI-CROWN AND DESIGN. Morinaga Confectionery Company Limited. SN 232,927. Pub. 1-24-67. Filed 11-18-65.
 827,250. PINOCCHIO. Escalon Packers, Inc. SN 234,550. Pub. 1-24-67. Filed 12-14-65.
 827,251. MISCELLANEOUS DESIGN. Robert H. Schroer, d.b.a. Bob's Produce Ranch. SN 234,708. Pub. 1-24-67. Filed 12-14-65.
 827,252. OLD SYB'S. Old Syb's Inc. SN 236,506. Pub. 1-24-67. Filed 1-14-66.
 827,253. WHEAST. Knudsen Creamery Co. of California. SN 237,358. Pub. 1-24-67. Filed 1-26-66.
 827,254. ADAMS & BROOKS. Adams and Brooks, Inc. SN 237,777. Pub. 1-24-67. Filed 2-1-66.
 827,255. BETTY ALDEN. First National Stores, Inc. SN 237,949. Pub. 1-24-67. Filed 2-3-66.
 827,256. NIFTY-NUT. King Kelly Marmalade Co., Inc., d.b.a. King Kelly Foods. SN 238,247. Pub. 1-24-67. Filed 2-7-66.
 827,257. COACH AND FOUR (DESIGN). S. B. Thomas, Inc. SN 238,317. Pub. 1-24-67. Filed 2-7-66.
 827,258. THOMAS'. S. B. Thomas, Inc. SN 238,318. Pub. 1-24-67. Filed 2-7-66.
 827,259. CARUSO AND DESIGN. Caruso Foods Inc. SN 238,341. Pub. 1-24-67. Filed 2-8-66.
 827,260. S.R. TAPIOCA FLOUR. Morningstar-Palsley, Inc. SN 238,552. Pub. 1-24-67. Filed 2-10-66.
 827,261. AMBER-BRU. Corn Products Company. SN 238,837. Pub. 1-24-67. Filed 2-15-66.
 827,262. TIFFIN COOKIES AND DESIGN. National Biscuit Company. SN 239,297. Pub. 1-24-67. Filed 2-21-66.
 827,263. HIC-O-REE AND DESIGN. Cheese Smokers, Inc. SN 239,722. Pub. 1-24-67. Filed 2-28-66.
 827,264. COVE VALLEY ETC. AND DESIGN. Cove Valley Packers, Inc. SN 239,737. Pub. 1-24-67. Filed 2-28-66.
 827,265. VALDOR AND DESIGN. Lakeland Grocery Co. SN 240,309. Pub. 1-24-67. Filed 3-7-66.
 827,266. SLIM-TRIM. Clement Pappas and Company, Inc. SN 240,644. Pub. 1-24-67. Filed 3-10-66.
 827,267. RITE-WEX. Dally Diet Pet Food Co., d.b.a. Rite-Wey Pet Food Co. SN 241,870. Pub. 1-24-67. Filed 3-25-66.
 827,268. GO-GO. Wellworth Pickle Company. SN 243,276. Pub. 1-24-67. Filed 4-12-66.
 827,269. POP-A-ROLL. Tootale Roll Industries, Inc., by change of name from The Sweets Company of America, Incorporated, d.b.a. The Sweets Company of America, Inc. SN 243,598. Pub. 1-24-67. Filed 4-15-66.
 827,270. SMILE WITH SKOOKUM. Skookum Packers Association, Inc. SN 244,259. Pub. 1-24-67. Filed 4-25-66.
 827,271. SKOOKUM. Skookum Packers Association, Inc. SN 244,260. Pub. 1-24-67. Filed 4-25-66.
 827,272. INDIAN HEAD (DESIGN). Skookum Packers Association, Inc. SN 244,261. Pub. 1-24-67. Filed 4-25-66.
 827,273. SKOOKUM AND DESIGN. Skookum Packers Association, Inc. SN 244,262. Pub. 1-24-67. Filed 4-25-66.

Class 51—Cosmetics and Toilet Preparations

- 827,274. GOOD DAY. S and W Fine Foods, Inc., d.b.a. Equitable Cash Grocery Co. SN 244,529. Pub. 1-24-67. Filed 4-28-66.
 827,275. BUCKEYE-COWLIKE. The Buckeye Cellulose Corporation. SN 253,471. Pub. 1-24-67. Filed 8-31-66.
 827,276. PAVFRI. Pacific Vegetable Oil Corporation. SN 254,360. Pub. 1-24-67. Filed 9-13-66.

Class 47—Wines

- 827,277. RESERVE DU PATRON. H. Sichel Sons, Inc., assignee of Sichel & Fils Freres. SN 227,526. Pub. 1-24-67. Filed 9-9-65.
 827,278. PARKDALE. The Parkdale Wines, Limited. SN 233,816. Pub. 1-24-67. Filed 12-2-65.
 827,279. TINGLE. Sam Jasper Winery. SN 241,066. Pub. 1-24-67. Filed 3-15-66.

Class 48—Malt Beverages and Liquors

- 827,280. GENJI. Toyo Jozo Co., Ltd. SN 237,052. Pub. 1-24-67. Filed 1-21-66.

Class 49—Distilled Alcoholic Liquors

- 827,281. TAM O'SHANTER. Lang Brothers Limited. SN 232,491. Pub. 1-24-67. Filed 9-20-65.
 827,282. BRENTON CLUB. J. T. S. Brown's Son Company, d.b.a. Brenton Club Distilling Company. SN 237,811. Pub. 1-24-67. Filed 2-2-66.
 827,283. TENNESSEE WALKING HORSE. Tennessee Walking Horse Company, assignee of Tennessee Dickel Distilling Co. SN 240,159. Pub. 12-6-66. Filed 3-4-66.
 827,284. BALALAIKA. Toddhunter-Mitchell & Co., Ltd. SN 240,215. Pub. 1-24-67. Filed 3-4-66.
 827,285. HEATHER CREAM. John Gross and Company. SN 242,125. Pub. 1-24-67. Filed 3-29-66.
 827,286. LONDON'S CLUB. London & Company, Inc. SN 244,993. Pub. 1-24-67. Filed 5-5-66.
 827,287. GRIFFIN AND DESIGN. R. Stevenson, Taylor & Company Limited. SN 257,565. Pub. 1-24-67. Filed 10-31-66.

Class 50—Merchandise Not Otherwise Classified

- 827,288. STORK (DESIGN). Riegel Textile Corporation. SN 211,930. Pub. 1-24-67. Filed 2-12-65.
 827,289. DOOR NOBBLES. Pyramid Leather Goods Co., Inc. SN 228,072. Pub. 1-24-67. Filed 9-17-65.
 827,290. REXCEL. Rexall Drug and Chemical Company, d.b.a. Rexall Chemical Company. SN 237,032. Pub. 1-24-67. Filed 1-21-66.
 827,291. "TRANSMOBILES" AND DESIGN. Beckley-Cardy Company. SN 241,422. Pub. 1-24-67. Filed 3-21-66.
 827,292. BRUSH STROKE. Craft Master Corporation. SN 241,984. Pub. 1-24-67. Filed 3-28-66.
 827,293. PINSEAL. The Pam Company. SN 250,510. Pub. 1-24-67. Filed 7-18-66.
 827,294. FUNNYKINS. Harold B. Stade, d.b.a. Stade's Signs. SN 250,775. Pub. 1-24-67. Filed 7-21-66.
 827,295. INFORMA-PLATE. Toledo Scale Corporation. SN 251,020. Pub. 1-24-67. Filed 7-25-66.

- 827,108. (See Class 18 for this trademark.)
 827,179. (See Class 38 for this trademark.)
 827,218. (See Class 40 for this trademark.)
 827,296. GO CURVI. Paula Payne Products Company. SN 228,271. Pub. 1-24-67. Filed 9-21-65.
 827,297. LAUNCH! Mary Agnes Schroeder. SN 228,943. Pub. 1-24-67. Filed 9-29-65.
 827,298. LOVUE. Shaklee Products. SN 231,497. Pub. 1-24-67. Filed 10-23-65.
 827,299. LE MANS. Clairrol Incorporated. SN 231,732. Pub. 1-24-67. Filed 10-28-65.
 827,300. SCENTOMANDER. Gold Seal Company. SN 236,253. Pub. 1-24-67. Filed 1-12-66.
 827,301. VANDA. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics. SN 236,289. Pub. 8-30-66. Filed 1-12-66.
 827,302. CHARLE K. MARI. Riverton Laboratories Incorporated, d.b.a. Riverton Cosmetic Laboratories. SN 238,568. Pub. 1-24-67. Filed 2-10-66.
 827,303. WHAT GOES ON. Chas. Pfister & Co., Inc. SN 240,774. Pub. 1-24-67. Filed 3-11-66.
 827,304. RISE AND SHINE. Carter-Wallace, Inc. SN 241,753. Pub. 1-24-67. Filed 3-24-66.
 827,305. YOUNG MAN BY RISE. Carter-Wallace, Inc. SN 241,754. Pub. 1-24-67. Filed 3-24-66.
 827,306. GOOD LOOKS. Carter-Wallace, Inc. SN 241,756. Pub. 1-24-67. Filed 3-24-66.
 827,307. JELVYN ETC. AND DESIGN. Adams National Industries (Pty.) Ltd. SN 254,088. Pub. 1-24-67. Filed 9-9-66.

Class 52—Detergents and Soaps

- 827,218. (See Class 40 for this trademark.)
 827,308. N-ERGY AND DESIGN. Panther Chemical Co., Inc. SN 220,020. Pub. 3-8-66. Filed 5-28-65.
 827,309. CAMCO. Camco Chemical Co. SN 221,990. Pub. 6-14-66. Filed 6-25-65.
 827,310. CROWN MAGIC. Amole, Incorporated. SN 238,381. Pub. 1-24-67. Filed 2-9-66.
 827,311. SHOWER POWER. Carter-Wallace, Inc. SN 241,752. Pub. 1-24-67. Filed 3-24-66.
 827,312. SHOWER POWER. Carter-Wallace, Inc. SN 241,755. Pub. 1-24-67. Filed 3-24-66.
 827,313. WESLEAF. West Chemical Products, Inc. SN 246,504. Pub. 1-24-67. Filed 5-24-66.
 827,314. ZIM. Castoleum Corporation, d.b.a. The Castoleum Corporation. SN 247,006. Pub. 1-24-67. Filed 6-1-66.
 827,315. INCREDIBLE AND DESIGN. Apex Distributing Co. SN 247,305. Pub. 1-24-67. Filed 6-8-66.
 827,316. ACTICLORIN. Colgate-Palmolive Company. SN 247,333. Pub. 1-24-67. Filed 6-8-66.
 827,317. SKY-RITE. Winfield Brooks Company, Inc. SN 247,745. Pub. 1-24-67. Filed 6-9-66.
 827,318. 2000 LINE. Hooker Chemical Corporation. SN 249,765. Pub. 1-24-67. Filed 7-7-66.

Service Marks

Class 100—Miscellaneous

- 827,319. SIZZLER STEAK HOUSE. Sizzlers, Inc. SN 180,454. Pub. 12-22-64. Filed 11-4-63.
 827,320. LEASEWAY. Leaseway Transportation Corp. MULTIPLE CLASS (Classes 100 and 105). SN 209,278. Pub. 1-24-67. Filed 1-4-65.
 827,321. TOM ROSS' CHARCOAL HEARTH AND DESIGN. Thomas G. Ross. SN 218,577. Pub. 1-24-67. Filed 5-11-65.

- 827,322. TOM ROSS' CHARCOAL HEARTH. Thomas G. Ross. SN 218,578. Pub. 1-24-67. Filed 5-11-65.
- 827,323. TRAVEL RESEARCH INTERNATIONAL, INC. AND DESIGN. Travel Research International, Inc. SN 226,394. Pub. 1-24-67. Filed 8-24-65.
- 827,324. HERFY'S. Leonal P. Gardner, d.b.a. Herfy's Drive-Ins. SN 229,649. Pub. 1-24-67. Filed 10-8-65.
- 827,325. DACAD. Loral Corporation. SN 232,923. Pub. 1-24-67. Filed 11-18-65.
- 827,326. DACAT. Loral Corporation. SN 232,924. Pub. 1-24-67. Filed 11-18-65.
- 827,327. NMRA. The National Model Railroad Association, Inc. SN 233,726. Pub. 1-24-67. Filed 12-1-65.
- 827,328. VEFAC. WOFAC Corporation. SN 235,146. Pub. 1-24-67. Filed 12-22-65.
- 827,329. ONE WORLD OF FINE HOTELS. Hotel Corporation of America. SN 240,175. Pub. 1-24-67. Filed 3-4-66.
- 827,330. HYATT LODGES AND DESIGN. Hyatt Corporation of America. SN 254,168. Pub. 1-24-67. Filed 9-9-66.

Class 101 — Advertising and Business

- 827,331. TG AND DESIGN. Tyler Griffin Company. SN 202,367. Pub. 1-24-67. Filed 9-22-64.
- 827,332. AD-SERV-ELOPE. First Financial Advertising Group. SN 202,922. Pub. 1-24-67. Filed 9-29-64.
- 827,333. UNITED DRUG STORES. Marshall Riconosciuto, d.b.a. United Drug Stores. SN 218,029. Pub. 1-24-67. Filed 5-4-65.
- 827,334. WORTH MART. F. W. Woolworth Co. SN 227,535. Pub. 1-24-67. Filed 9-9-65.
- 827,335. CARS. Computerized Automotive Reporting Service, Inc. SN 228,641. Pub. 1-24-67. Filed 9-27-65.
- 827,336. PMOC. HMH Publishing Co., Inc. SN 229,347. Pub. 1-24-67. Filed 10-5-65.
- 827,337. TEMPORARILY YOURS. Charlotte B. Reid, d.b.a. Shotel Reid and Temporarily Yours. SN 232,478. Pub. 1-24-67. Filed 11-10-65.
- 827,338. AUDIAC AND DESIGN. Audioc, Inc., d.b.a. Audio Instruments Associates Co. SN 234,990. Pub. 1-24-67. Filed 12-21-65.
- 827,339. EXTRACORPOREAL MSC AND DESIGN. Extracorporeal and Medical Specialties Company, Inc. SN 235,176. Pub. 1-24-67. Filed 12-23-65.
- 827,340. VP. Kiefer-Stewart Company, Inc., d.b.a. Value Plus. SN 235,198. Pub. 1-24-67. Filed 12-23-65.
- 827,341. VALUE PLUS. Kiefer-Stewart Company, Inc., d.b.a. Value Plus. SN 235,200. Pub. 1-24-67. Filed 12-23-65.
- 827,342. MORE AND DESIGN. The E. F. MacDonald Company. SN 237,575. Pub. 1-24-67. Filed 1-28-66.

Class 102 — Insurance and Financial

- 827,343. DIEBOLD VUE-MATIC. Diebold, Incorporated. SN 207,027. Pub. 1-24-67. Filed 11-27-64.
- 827,344. BILLFIGHTING. Citizens Loan & Thrift Co., assignee of Citizens Insurance Agency. SN 215,330. Pub. 1-24-67. Filed 3-30-65.
- 827,345. CPHS AND DESIGN. California Pharmaceutical Services, Inc. SN 218,962. Pub. 1-24-67. Filed 5-17-65.
- 827,346. E. J. KORVETTE ETC. AND DESIGN. E. J. Korvette, Inc. SN 232,787. Pub. 1-24-67. Filed 11-16-65.
- 827,347. HFC AND DESIGN. Household Finance Corporation. SN 236,486. Pub. 1-24-67. Filed 1-14-66.
- 827,348. HFC. Household Finance Corporation. SN 236,487. Pub. 1-24-67. Filed 1-14-66.
- 827,349. MLS ETC. AND DESIGN. National Association of Real Estate Boards. SN 238,657. COLLECTIVE MARK. Pub. 1-24-67. Filed 2-11-66.

Class 103 — Construction and Repair

- 827,350. OFF-HOURS SERVICE AND DESIGN. Shepherd Machinery Co. SN 198,672. Pub. 1-24-67. Filed 7-28-64.
- 827,351. TV SHOP ON WHEELS AND DESIGN. Royce's Mobile TV Service, Inc. SN 214,288. Pub. 1-24-67. Filed 3-16-65.
- 827,352. KM AND DESIGN. Kerr-McGee Corporation, by change of name from Kerr-McGee Oil Industries, Inc. SN 229,257. Pub. 1-24-67. Filed 10-4-65.
- 827,353. KM KERR MCGEE AND DESIGN. Kerr-McGee Corporation, by change of name from Kerr-McGee Oil Industries, Inc. SN 229,258. Pub. 1-24-67. Filed 10-4-65.
- 827,354. SANITONE CERTIFIED MASTER DRYCLEANER AND DESIGN. Emery Industries, Inc. SN 232,686. Pub. 1-24-67. Filed 11-15-65.
- 827,355. LAWN-A-MAT. Lawn-A-Mat Chemical and Equipment Corp. SN 234,127. Pub. 1-24-67. Filed 12-7-65.

Class 104 — Communication

- 827,356. MISCELLANEOUS DESIGN. William F. Huffman Radio, Inc. SN 241,593. Pub. 1-24-67. Filed 3-22-66.

Class 105 — Transportation and Storage

- 827,320. (See Class 100 for this trademark.)
- 827,357. T.I.M.E. FREIGHT, INC. T.I.M.E. Freight, Inc. SN 208,408. Pub. 1-24-67. Filed 12-17-64.
- 827,358. U-HAUL AND DESIGN. Arcom, Inc. SN 208,429. Pub. 1-24-67. Filed 12-18-64.
- 827,359. MEDITERRANEAN HOLIDAY. Columbia Tours, Inc. SN 231,540. Pub. 1-24-67. Filed 10-24-65.

Class 106 — Material Treatment

- 827,360. WINDSOR. Windsor Plastics, Inc. SN 227,199. Pub. 1-24-67. Filed 9-3-65.

Class 107 — Education and Entertainment

- 827,361. OUTRIGGER CANOE CLUB AND DESIGN. Outrigger Canoe Club. SN 237,586. Pub. 1-24-67. Filed 1-28-66.
- 827,362. THE OUTCASTS. The Outcasts. SN 239,653. Pub. 1-24-67. Filed 2-25-66.

Collective Membership Marks

Class 200

- 827,363. EMBLEM (DESIGN). Church of the United Hebrew-Christian Brotherhood. SN 215,944. Pub. 1-24-67. Filed 4-7-65.
- 827,364. R (DESIGN). The Republican Party of Iowa. SN 223,349. Pub. 1-24-67. Filed 7-14-65.
- 827,365. ICS AND SCROLL (DESIGN). Impresario Cultural Society. SN 239,629. Pub. 1-24-67. Filed 2-25-66.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 2 — Receptacles

- 827,366. Hedwin Corporation, New York, N.Y. SN 240,296. Filed P.R. 3-7-66; Am. S.R. 2-16-67.

PAYLINER

For Plastic Liners for Pails, Drums, and the Like.
First use Jan. 24, 1966.

Class 6 — Chemicals and Chemical Compositions

- 827,367. Milchem Incorporated, Houston, Tex. SN 225,181. Filed P.R. 8-6-65; Am. S.R. 2-9-67.

FOAMBRAK

For Chemical Composition Which Is an Antifoaming Agent and Is Suitable for Use in Oil and Gas Wells To Control, Prevent or Reduce Foaming of Liquids Therein.
First use May 19, 1965.

- 827,368. Stero Chemical Mfg. Co., d.b.a. Chill-Master Jr. Corp., San Francisco, Calif. SN 237,887. Filed P.R. 2-2-66; Am. S.R. 2-13-67.

KAN-O-FROST

For Pressurized Liquid Gas for Drinking Glass Frosters.
First use Dec. 15, 1965.

Class 8 — Smokers' Articles, Not Including Tobacco Products

- 827,369. Kanamaru Shoten, Ltd., Daito-ku, Tokyo, Japan. SN 228,694. Filed P.R. 9-27-65; Am. S.R. 8-9-66.

HAMILTON

Owner of Japanese Reg. No. 510,939, dated Dec. 5, 1957.
For Gas Lighters for Smokers' Use.
First use 1957; in commerce May 18, 1961.

Class 11 — Inks and Inking Materials

- 827,370. Chromex Chemical Corporation, Brooklyn, N.Y. SN 234,539. Filed P.R. 12-14-65; Am. S.R. 2-8-67.

AQUA-CHROME

For Water Based Ink for Use in Markers.
First use Oct. 1, 1965.

Class 12 — Construction Materials

- 827,371. Alsida, Inc., Akron, Ohio. SN 225,248. Filed P.R. 8-9-65; Am. S.R. 1-23-67.

super-pvc

For Aluminum Siding With an Organic Protective Coating Thereon and the Accessories Sold Therewith.
First use June 3, 1965.

- 827,372. General Refractories Company, Philadelphia, Pa. SN 237,214. Filed P.R. 1-25-66; Am. S.R. 2-7-67.

KROMESPRAY

For Refractory Hot Patching Gun Mix.
First use Feb. 2, 1962.

- 827,373. United States Plywood Corporation, New York, N.Y. SN 240,681. Filed P.R. 3-10-66; Am. S.R. 1-18-67.

Patina

For Wood and Lumber Products, i.e., Plywood.
First use May 13, 1965.

- 827,374. Sauna Rooms, Inc., Paterson, N.J. SN 241,277. Filed P.R. 3-17-66; Am. S.R. 12-19-66.

The Scandinavian By Sauna Rooms Inc.

For Prefabricated Building Structure or a Shed-Like Enclosure for the Elements Comprising a Sauna Bath-Room.
First use Mar. 12, 1965.

Class 16 — Protective and Decorative Coatings

- 827,375. The Mighty-Mix Company, Minneapolis, Minn. SN 236,502. Filed P.R. 1-14-66; Am. S.R. 1-16-67.

"EPOXY-ACTION"

For Masonry Primer for Use in a Two-Coat Masonry Waterproof Coating Involving Chemical Reaction Between the Primer and Final Coat.
First use Dec. 17, 1965.

- 827,376. Lehman Bros. Corp., Jersey City, N.J. SN 237,848. Filed P.R. 2-2-66; Am. S.R. 1-17-67.

Tomorrow's Paint Today

For Paint Enamels.
First use Jan. 3, 1966.

- 827,377. R. B. Harwood Products, Inc., d.b.a. Bennett Sales Company, Chicago, Ill. SN 244,554. Filed P.R. 4-29-66; Am. S.R. 2-3-67.

ANTECKIT

For Wood Finish Kits.
First use Feb. 1, 1966.

Class 19—Vehicles

827,378. The Goodyear Tire & Rubber Company, Akron, Ohio. SN 230,149. Filed P.R. 10-14-65; Am. S.R. 1-25-67.

Super-Cushion

For Shock Absorbers.
First use July 27, 1965.

Class 21—Electrical Apparatus, Machines, and Supplies

827,379. Midland International Corporation, North Kansas City, Mo. SN 235,786. Filed P.R. 1-4-66; Am. S.R. 1-3-67.

CALL SIGNAL

For Walkie-Talkie Radio Sets.
First use Aug. 24, 1965.

827,380. 3D Studios, Minneapolis, Minn. SN 238,017. Filed P.R. 2-3-66; Am. S.R. 2-10-67.

AD-LITER

For Electrically Lighted Advertising Displays.
First use Feb. 1, 1966.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

827,381. Chore-Time Equipment, Inc., Milford, Ind. SN 209,585. Filed P.R. 1-8-65; Am. S.R. 2-16-67.

FLEX AUGER

For Automatic Poultry Feeders.
First use March 1964.

827,382. Midwest Industries, Inc., Ida Grove, Iowa. SN 214,002. Filed P.R. 3-12-65; Am. S.R. 8-1-66.

LIFT HARROW

For Harrows.
First use Jan. 5, 1965.

Class 25—Locks and Safes

827,383. H. Greenwald Mfg. Co., Inc., Brooklyn, N.Y. SN 235,100. Filed P.R. 12-22-65; Am. S.R. 2-16-67.

SET-A-CODE

For Locks and Keys for Same.
First use Nov. 24, 1965.

Class 26—Measuring and Scientific Appliances

827,384. Plastic Reel and Core Company, Incorporated, Weehawken, N.J. SN 225,811. Filed P.R. 8-16-65; Am. S.R. 2-15-67.

REEL-PAKS

For Reels and Cans for Motion Picture Films.
First use Jan. 20, 1962.

Class 29—Brooms, Brushes, and Dusters

827,385. I. Sekine Company, Inc., New York, N.Y. SN 236,261. Filed P.R. 1-12-66; Am. S.R. 2-2-67.

PUFF-N-FLUFF

For Hairbrushes.
First use Dec. 14, 1963.

Class 32—Furniture and Upholstery

827,386. Pearl-Wick Corporation, Long Island City, N.Y. SN 235,931. Filed P.R. 1-6-66; Am. S.R. 2-16-67.

SHELF-N-DOR

For Bathroom Cabinets.
First use Sept. 7, 1965.

Class 37—Paper and Stationery

827,387. Fraser Paper, Limited, Madawaska, Maine. SN 236,080. Filed P.R. 1-10-66; Am. S.R. 1-26-67.

KOPY KLEAR OPAKE

For Business Form Paper, Known Sometimes as Register Bond and/or Fanfold.
First use May 5, 1965.

827,388. The Paper Supply Company, Baltimore, Md. SN 252,621. Filed P.R. 8-18-66; Am. S.R. 2-6-67.

HOUSE OF STANDARD LINES

For Paper and Stationary Supplies—Namely, Writing, Printing, Book, Thin and Text Paper.
First use at least as early as 1934.

Class 38—Prints and Publications

827,389. Farm Journal, Inc., Philadelphia, Pa. SN 231,086. Filed P.R. 10-22-65; Am. S.R. 2-6-67.

THE MAGAZINE OF AMERICAN AGRICULTURE

For Monthly Magazine.
First use Oct. 16, 1965.

827,390. Moderne Card Co., Inc., d.b.a. Moderne Card Co., Chicago, Ill. SN 235,319. Filed P.R. 12-27-65; Am. S.R. 2-9-67.



For Greeting Cards.
First use Nov. 15, 1965.

827,391. Magazines for Industry, Inc., New York, N.Y. SN 235,515. Filed P.R. 12-29-65; Am. S.R. 2-6-67.

SOFT SERVE & DRIVE-IN FIELD

For Bi-Monthly Magazine.
First use Oct. 5, 1965.

827,392. Norman D. Stuckey, Fairborn, Ohio. SN 236,853. Filed P.R. 1-10-66; Am. S.R. 2-6-67.

NATIONAL APARTMENT DIRECTORY

For Apartment Rental Listing Directories.
First use Feb. 10, 1965.

827,393. Weather Trends, Inc., New York, N.Y. SN 240,135. Filed P.R. 3-3-66; Am. S.R. 2-1-67.

WEATHER TRENDS

For Monthly Bulletin Containing Monthly Weather Forecasts.
First use Feb. 24, 1956.

Class 42—Knitted, Netted, and Textile

827,394. Deering Milliken, Inc., New York, N.Y. SN 249,307. Filed P.R. 6-30-66; Am. S.R. 2-8-67.

HADLEY

For Textile Fabrics Made of Wool, Cotton and Synthetic Fibers and Combinations Thereof.
First use 1900.

827,395. Concord Fabrics Inc., New York, N.Y. SN 249,842. Filed P.R. 7-8-66; Am. S.R. 2-6-67.

TRADITIONAL PRINTS BY CONCORD

For Textile Fabrics Made of Cotton and/or Synthetic Fibers.
First use July 15, 1965.

TM 887 O.G.—6

827,396. Concord Fabrics Inc., New York, N.Y. SN 249,843. Filed P.R. 7-8-66; Am. S.R. 2-6-67.

TRADITIONAL WEAVES BY CONCORD

For Textile Fabrics Made of Cotton and/or Synthetic Fibers.
First use July 15, 1965.

Class 44—Dental, Medical, and Surgical Appliances

827,397. Dorr J. Hinman, d.b.a. Jonpeg Engineering Company, Grosse Pointe Farms, Mich. SN 230,537. Filed P.R. 10-19-65; Am. S.R. 2-6-67.

STEREOTONE

For Eyeglass Hearing Aids.
First use June 23, 1964.

Class 46—Foods and Ingredients of Foods

827,398. Reddi-Bacon, Inc., Los Angeles, Calif. SN 208,334. Filed P.R. 10-5-64; Am. S.R. 1-5-67.

TOAST 'N SERVE

For Sliced Precooked Bacon.
First use Sept. 16, 1964.

827,399. Richard Correa, Jr., d.b.a. Ricardo's, Council Bluffs, Iowa. SN 217,175. Filed P.R. 4-23-65; Am. S.R. 2-21-66.

THE SAUCE WITH THE FLAVOR

For Mexican Foods—Namely, Taco Sauces.
First use Apr. 1, 1964.

827,400. Philip Morris Incorporated, d.b.a. Clark Gum Co., New York, N.Y. SN 224,316. Filed P.R. 7-27-65; Am. S.R. 2-8-67.

ICY MINT

For Chewing Gum.
First use Aug. 28, 1964.

827,401. National Fruit Canning Company, Seattle, Wash. SN 228,068. Filed P.R. 9-17-65; Am. S.R. 2-15-67.

CHEHALIS

For Frozen Vegetables.
First use Sept. 1, 1936.

827,402. Vitamin Products Company, d.b.a. Therapeutic Foods Company, Milwaukee, Wis. SN 230,970. Filed P.R. 10-21-65; Am. S.R. 2-3-67.

BETAFOOD

For Food for Special Dietary Use—Namely, a Wafer Composed of Soluble Components of Green Beet Leaf Juice.
First use Jan. 21, 1944.

827,403. John H. Greene, d.b.a. Heavenly Fried Chicken, Campton, N.H. SN 231,117. Filed P.R. 10-22-65; Am. S.R. 1-23-67.

FLAVORBREADING

For Concentrated Breading Mixture for Application to Chicken Parts for Deep Fat Frying.
First use May 20, 1964.

827,404. Reddi-Bacon, Inc., Los Angeles, Calif. SN 236,781. Filed 1-18-66.

REDDI-T'SERVE

For Sliced Precooked Bacon.
First use Sept. 16, 1964.

827,405. Stefano Pernigotti & Figlio S.p.A., Novi Ligure, Italy. SN 236,852. Filed 1-19-66.

PERNIGOTTI

Priority claimed under Sec. 44(d) on Italian application filed July 24, 1965; Reg. No. 172,562, dated Oct. 29, 1965.
For Preserved, Dried and Cooked Fruits and Vegetables; Jellies; Jams; Edible Oils and Fats; Coffee, Tea, Cocoa, Sugar, Rice, Tapioca, Sago, and Coffee Substitutes; Cereals; Flour, Bread, Biscuits, Cakes, Pastry; Chocolate; Chocolate, Caramel, and Rock (Torrone) Candies; Ices and Ice Cream; Honey, Treacle; Yeast; Baking Powder; Mustard, Pepper, Vinegar, Sauce, and Spices.

Class 51 — Cosmetics and Toilet Preparations

827,406. Chas. Pfizer & Co., Inc., New York, N.Y. SN 228,482. Filed P.R. 9-23-65; Am. S.R. 2-3-67.

1000-WATT ROSE

For Lipsticks.
First use Apr. 29, 1965.

827,407. Chas. Pfizer & Co., Inc., New York, N.Y. SN 228,489. Filed P.R. 9-23-65; Am. S.R. 2-3-67.

HONEY TO BURN

For Lipsticks.
First use Apr. 29, 1965.

827,408. The Chattanooga Medicine Company, d.b.a. Brayten Pharmaceutical Company, Chattanooga, Tenn. SN 232,058.

DERMA-BLANCH

Filed P.R. 11-3-65; Am. S.R. 2-14-67.
For Bleaching Cream.
First use Sept. 24, 1965.

827,409. Beauty Counselors, Inc., Grosse Pointe, Mich. SN 240,845. Filed P.R. 3-14-66; Am. S.R. 2-13-67.

SUGAR PINK

For Lipstick and Nail Polish.
First use Feb. 12, 1965.

Service Marks

Class 100 — Miscellaneous

827,410. Donald C. Linn, Mount Prospect, Ill. SN 268,275. Filed P.R. 11-9-66; Am. S.R. 2-16-67.

TRADITIONAL AMERICAN SNACKS SERVED WITH A FRENCH FLAIR

For Restaurant Services.
First use on or about Aug. 16, 1962.

Class 101 — Advertising and Business

827,411. Terminal Trading Corp., New York, N.Y. SN 217,577. Filed P.R. 4-28-65; Am. S.R. 2-13-67.

OUTSIDE PAYMASTER SERVICE

For Check Cashing Service.
First use April 1962.

Class 102 — Insurance and Financial

827,412. The Travelers Indemnity Company, Hartford, Conn. SN 153,432. Filed P.R. 9-18-62; Am. S.R. 10-14-66.

BREAKDOWN INSURANCE

For Underwriting Boiler and Machinery Insurance.
First use Sept. 13, 1962.

Class 105 — Transportation and Storage

827,413. Trailer Train Company, Haverford, Pa. SN 221,766. Filed P.R. 6-22-65; Am. S.R. 1-11-67.



For Making Available a Controlled National Pool of Specialized Yet Interchangeable Railroad Flat Cars for Use by Contracting Railroads in Their Respective Trailer-on-Flat-Car and Automobile Rack Carriage Services and Similar Services.

First use November 1958.

Class 107 — Education and Entertainment

827,414. The Chicago International Film Festival, Inc., Chicago, Ill. SN 238,493. Filed P.R. 2-10-66; Am. S.R. 2-6-67.



For Promoting the Submission of Motion Picture Films for Professional Criticism and Awards.
First use Jan. 1, 1965.

TRADEMARK REGISTRATIONS RENEWED

28,936. VELOCITE. Cl. 15. 10-6-1896.	423,351. RAINCRAFT. Cl. 39. 8-27-46.
28,937. VACUOLINE. Cl. 15. 10-6-1896.	424,528. BONANZA. Cl. 46. 10-8-46.
29,568. MALT-VIVINE. Cl. 48. 2-8-1897.	424,529. TOKEN. Cl. 46. 10-8-46.
29,994. ROCHE. Cl. 18. 5-11-1897.	424,619. MASK-O-LITH. Cl. 37. 10-15-46.
59,202. POMPEIAN. Cl. 52. 1-1-07.	425,184. RAINBOW. Cl. 6. 11-5-46.
59,369. AMBERG'S. Cl. 37. 1-8-07.	425,234. GOLD CUP. Cl. 51. 11-12-46.
59,370. AMBERG'S. Cl. 37. 1-8-07.	425,247. BFC. Cl. 16. 11-12-46.
60,251. EAGLE. Cl. 46. 2-5-07.	425,521. LIQUID ENVELOPE. Cl. 16. 11-26-46.
60,289. EAGLE (DESIGN). Cl. 46. 2-5-07.	426,250. LESOTA. Cl. 23. 12-24-46.
60,647. COLEO. Cl. 52. 2-19-07.	426,390. GRAND UNION. Cl. 4. 12-24-46.
61,276. ONYX GUARANTEED STAINLESS AND DESIGN. Cl. 39. 3-12-07.	427,177. FILE CADDY. Cl. 32. 1-28-47.
62,147. WINDSOR. Cl. 7. 4-23-07.	427,247. ORDER-VELOPE. Cl. 37. 2-4-47.
62,551. TRUE TEMPER AND DESIGN. Cl. 23. 5-14-07.	427,414. STRAT-O-MASTER BY ARKWRIGHT. Cl. 21. 2-11-47.
220,426. SHADOWEIGHT GREENTREE'S AND DESIGN. Cl. 39. 11-9-26.	427,451. WEATHERALL AND DESIGN. Cl. 12. 2-11-47.
220,538. ANDALE. Cl. 34. 11-9-26.	427,481. PARCOLENE AND DESIGN. Cl. 6. 2-11-47.
220,636. UNIFRUIT. Cl. 46. 11-16-26.	427,482. UNIVERSAL. Cl. 26. 2-11-47.
220,733. LORD & TAYLOR. Cl. 42. 11-16-26.	427,494. JOHNSON'S AMERICAN ANODYNE LINIMENT. Cl. 18. 2-11-47.
221,058. LAKESIDE. Cl. 46. 11-23-26.	427,498. BUFFLAC. Cl. 18. 2-11-47.
222,001. LORD & TAYLOR. Cl. 39. 12-21-26.	427,722. ELCO. Cl. 52. 2-18-47.
222,025. BLUE DIAMOND. Cl. 46. 12-21-26.	427,752. CHIEF. Cl. 35. 2-18-47.
222,561. PETER RABBIT. Cl. 46. 1-4-27.	428,055. TOKHEIM. Cl. 26. 3-11-47.
223,558. OAKLAND. Cl. 42. 2-8-27.	428,110. "HI KIDS." Cl. 39. 3-11-47.
223,692. WHEELING CORRUGATING CO. AND DESIGN. Cl. 34. 2-8-27.	428,126. BLACK WIDOW WORM SMEAR AND DESIGN. Cl. 18. 3-11-47.
224,235. VICTOR. Cl. 21. 2-22-27.	428,249. PIONEER. Cl. 28. 3-18-47.
225,343. VICTOR. Cl. 21. 5-15-27.	428,379. P-W AND DESIGN. Cl. 19. 3-25-47.
225,391. RHODIA. Cl. 18. 3-15-27.	428,678. FEEDRI. Cl. 18. 4-1-47.
225,416. 365 AND DESIGN. Cl. 18. 3-15-27.	428,838. CARAVAN. Cl. 42. 4-8-47.
225,838. DAIRY QUEEN BRAND AND DESIGN. Cl. 46. 3-29-27.	428,882. SAILTONE. Cl. 42. 4-8-47.
225,978. GREYHOUND DOG (DESIGN). Cl. 37. 3-29-27.	429,158. FRIED OYSTERS. Cl. 46. 4-22-47.
226,290. TINY MITES. Cl. 37. 4-5-27.	429,388. DEOSAN. Cl. 6. 4-29-47.
227,046. SIMILAC. Cl. 46. 4-26-27.	429,857. HIT EM HARD AND DESIGN. Cl. 39. 5-20-47.
227,440. PEOPLES. Cl. 51. 5-3-27.	430,191. ATA AND DESIGN. Cl. 23. 6-10-47.
228,088. HORROCKSES. Cl. 42. 5-24-27.	430,319. JUST FOR FUN. Cl. 51. 6-10-47.
228,673. DURA PAK AND DESIGN. Cl. 37. 6-7-27.	430,358. LAND OF NOD. Cl. 51. 6-10-47.
228,688. GLUIT. Cl. 5. 6-7-27.	430,417. WONDERIZED. Cl. 43. 6-10-47.
228,699. MISSION AND DESIGN. Cl. 45. 6-7-27.	430,728. LEE. Cl. 39. 6-24-47.
230,395. MEXI-PEP. Cl. 46. 7-19-27.	430,729. LEE AND DESIGN. Cl. 39. 6-24-47.
230,506. CALOGREEN. Cl. 6. 7-26-27.	430,791. SEA TONE. Cl. 46. 6-24-47.
421,491. SECO. Cl. 23. 6-4-46.	430,835. DIXON. Cl. 34. 6-24-47.
	430,911. AMFILE. Cl. 32. 6-1-47.
	431,262. RICHMINE. Cl. 46. 7-15-47.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued Feb. 21, 1961

711,389. POLY-PLUG. Cl. 1.	711,502. LA NOUVELLE VAGUE. Cl. 26.
711,390. PLASTI-PLUG. Cl. 1.	711,503. STC AND DESIGN. Cl. 27.
711,398. AEOPOL. Cl. 4.	711,514. ROCK-A-LOUNGE. Cl. 32.
711,400. WREN'S. Cl. 4.	711,517. MODERN CRAFT. Cl. 32.
711,401. CLAIR-TACT. Cl. 5.	711,520. JANUS AND REPRESENTATION OF JANUS. Cl. 36.
711,408. AMBISearch. Cl. 6.	711,524. SNO-BRITE. Cl. 37.
711,410. OHIO RIVER LAY MARK VI. Cl. 7.	711,529. TIME CARDS AND DESIGN. Cl. 38.
711,413. SUPERAMICS. Cl. 12.	711,533. VOYAGER. Cl. 38.
711,415. SPACEMENTAL. Cl. 12.	711,534. BLUE INDIGO ALEUTIAN. Cl. 39.
711,419. SIGMA-K AND DESIGN. Cl. 12.	711,537. ROYAL GRENADIER. Cl. 39.
711,436. CONVALLAN. Cl. 18.	711,540. KRAWLETES. Cl. 39.
711,441. RESISTRON. Cl. 18.	711,541. TV TOPPER. Cl. 39.
711,442. TEL-I-VIS AND DESIGN. Cl. 18.	711,545. PILLOW WALKS. Cl. 39.
711,444. CHRONOTABS. Cl. 18.	711,549. CUSHIONED SUPER LINER. Cl. 39.
711,452. NUTRI-MATIC. Cl. 18.	711,551. IN V ZIP (WITH FANCIFUL V). Cl. 39.
711,455. SPORTAMINS AND DESIGN. Cl. 18.	711,554. JANE JAY. Cl. 39.
711,462. TIARA. Cl. 19.	711,557. POTTER. Cl. 39.
711,468. PYROFORM. Cl. 21.	711,560. BERMA VEST-ON. Cl. 39.
711,475. PROTECT-O-LITE. Cl. 21.	711,562. GOOD-I-KIN. Cl. 39.
711,478. POWERIGHT. Cl. 21.	711,563. QUICK-DRAW AND DESIGN. Cl. 39.
711,487. CRUSADE. Cl. 22.	711,565. FREE-LINE. Cl. 39.
711,488. POLYGRAPH BUBINA LEIPZIG AND DESIGN. Cl. 23.	711,568. NIGHTGOON. Cl. 39.
711,494. DORREAL. Cl. 23.	711,567. DOKES AND DESIGN. Cl. 39.
711,500. RAYMASTER. Cl. 26.	711,569. ORBUTAN. Cl. 39.
	711,572. MITY-DIOY AND DESIGN. Cl. 39.
	711,576. MAGICURL. Cl. 39.
	711,587. THE MARTINAIRE. Cl. 40.

711,591. TRI-LIGHT. Cl. 42.
 711,592. FLEURS DE PARIS. Cl. 42.
 711,593. ADELAIDE SOTTEE. Cl. 43.
 711,596. SNIACRILE. Cl. 43.
 711,597. KIRKLON. Cl. 43.
 711,599. HAYFERS. Cl. 46.
 711,602. THEM. Cl. 46.
 711,610. NU-DIET. Cl. 46.
 711,611. MIX-N-MATCH. Cl. 46.
 711,613. MRS. HENZ. Cl. 46.
 711,614. MADEMOISELLE. Cl. 46.
 711,615. CHEFS.OWN. Cl. 46.
 711,618. LA REGINA AND DESIGN. Cl. 46.
 711,620. GLADBROOK. Cl. 46.

711,621. HAP-P-NUT. Cl. 46.
 711,623. CAND DESIGN. Cl. 47.
 711,633. SNO-GLO. Cl. 50.
 711,634. WOOD-IMALS. Cl. 50.
 711,635. BRUSH BOY. Cl. 52.
 711,637. WISHY WASH. Cl. 52.
 711,645. THOUSANDAIRE CLUB. Cl. 102.
 711,650. MET-L-STRUT. Cl. 12.
 711,651. LO-Q. Cl. 12.
 711,657. ALHAMBRA. Cl. 32.
 711,660. LASTING WEAR IN EVERY PAIR. Cl. 39.
 711,663. LIFT RITE. Cls. 33 and 44.
 711,665. BIG WHEEL. Cl. 46.
 711,666. LINE-O-CREDIT. Cl. 102.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

62,977. FLAKE. Cl. 1. 6-4-07. The Joseph Dixon Crucible Company, Jersey City, N.J. Corrected: In the certificate, lines 3 and 18, in the heading, signature and in the statement, column 1, line 1, before "Joseph" The should be inserted.

63,528. AMERICAN GRAPHITE. Cl. 37. 6-25-07. The Joseph Dixon Crucible Company, Jersey City, N.J. Corrected: In the certificate, lines 3 and 18, in the heading, signature and in the statement, column 1, line 1, before "Joseph" The should be inserted.

657,234. MISSILE. Cl. 46. 1-14-58. Fruit Products Corporation. Consolidated Foods Corporation, doing business as Joe Lowe Company, Englewood, N.J. Amended to appear:

MISSILE

711,850. NARCO. Cl. 32. 2-28-61. The National Rose Company, Inc. National Bedding & Furniture Industries, Inc., Memphis, Tenn. Amended: In the statement, column 1, after line 1, , now by change of name National Bedding & Furniture Industries, Inc., 1700 Channel Ave., Memphis, Tenn. 38102 is inserted.

725,919. SPRA-SAFE. Cl. 15. 1-2-62. The Joseph Dixon Crucible Company, Jersey City, N.J. Corrected: In the statement, column 1, line 1, before "Joseph" The should be inserted.

727,364. PARA-SEAL. Cl. 5. 2-13-62. Red Kap Garment Company, Nashville, Tenn. Corrected: In the statement, column 1, line 1, "doing business as" should be deleted and lines 2, 3 and 4 should be deleted and *Sudekum Bldg., Nashville, Tenn.* should be inserted.

740,880. JETSTREAM AND DESIGN. Cl. 23. 11-20-62. R.E.F. Engineers Associated, Inc., doing business as Engineers Associated, Inc. and as Engineers Associated. Engineers Associated of REF, Inc., Oakland, Calif. Amended: In the statement, column 1, after line 3, , now by change of name Engineers Associated of REF, Inc., 2515 Willow St., Oakland, Calif. 94607 is inserted.

809,749. AP. Cl. 2. 10-9-63. Auto-Pak Inc., Chicago, Ill. Corrected: In the statement, column 1, line 1, "Incorporated" should be deleted and , Inc. should be inserted.

815,756. GRACIOUS LADY. Cl. 21. 9-27-66. S. W. Farber, Inc., New York, N.Y. Corrected: In the statement, column 2, lines 5 and 6, should be deleted and *First use Jan. 13, 1960; in commerce Jan. 13, 1960* should be inserted.

821,924. HT AND DESIGN. Cl. 21. 1-10-67. Hudson Tool & Die Company, Inc., Newark, N.J. Corrected: In the statement, column 1, line 3, "Melvern" should be deleted and *Malvern* should be inserted.

822,098. MR. GROOM. Cl. 51. 1-10-67. Research Packaging, Inc., New York, N.Y. Corrected: In the statement, column 1, line 1, should be deleted and *Research Packaging, Inc. (New York corporation)* should be inserted.

822,763. GLAD-HOOK. Cl. 22. 1-24-67. Chartered Enterprises, doing business as Superior Sports Specialties, San Fernando, Calif. Corrected to appear:

GLAD-HOOK

823,570. LOENCO AND DESIGN. Cl. 13. 2-7-67. Loenco, Inc., Altadena, Calif. Corrected: In the statement, column 2, line 2, "type," should be deleted and *type* should be inserted.

TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

88,026. KING WILLIAM. Cl. 37. Nekoosa-Edwards Paper Company, assignee of Rhineland Paper Company. 8-20-12. New Cert. Sec. 7(c) to Mosinee Paper Mills Company, Mosinee, Wis.

332,653. WRAPSURE. Cl. 37. Nekoosa-Edwards Paper Company. 2-18-36. New Cert. Sec. 7(c) to Mosinee Paper Mills Company, Mosinee, Wis.

390,015. KING SNOW. Cl. 37. Nekoosa-Edwards Paper Company. 9-2-41. New Cert. Sec. 7(c) to Mosinee Paper Mills Company, Mosinee, Wis.

523,504. SILA-FLEX. Cl. 22. Pacific Laminates. 4-4-59. New Cert. Sec. 7(c) to Browning Arms Company, Morgan, Utah.

542,726. SKYPOLE AND DESIGN. Cl. 22. Pacific Laminates. 5-22-51. New Cert. Sec. 7(c) to Browning Arms Company, Morgan, Utah.

548,293. KING COLD. Cl. 37. Nekoosa-Edwards Paper Company. 9-18-51. New Cert. Sec. 7(c) to Mosinee Paper Mills Company, Mosinee, Wis.

593,908. MONORAP. Cl. 37. Nekoosa-Edwards Paper Company. 8-17-54. New Cert. Sec. 7(c) to Mosinee Paper Mills Company, Mosinee, Wis.

602,663. MEDALLION AND DESIGN. Cl. 22. Pacific Laminates. 3-1-55. New Cert. Sec. 7(c) to Browning Arms Company, Morgan, Utah.

612,730. MURECO ANIMAL PRODUCTS AND DESIGN. Cl. 46. Mutual Rendering Company, Inc. 9-20-55. New Cert. Sec. 7(c) to Wilson & Co., Inc., Chicago, Ill.

661,910. MAGNUM. Cl. 22. Pacific Laminates, Incorporated. 5-13-58. New Cert. Sec. 7(c) to Browning Arms Company, Morgan, Utah.

681,438. MICRO-FLITE. Cl. 22. Laminex, Inc. 7-7-59. New Cert. Sec. 7(c) to Browning Manufacturing Company, Costa Mesa, Calif.

697,964. BRYCO. Cl. 8. Barry Products Co. 5-24-60. New Cert. Sec. 7(c) to Bryn Mawr Smokers Sundries, Inc., Chicago, Ill.

702,225. F AND ARROW DESIGN. Cl. 28. Fisher and Company. 8-2-60. New Cert. Sec. 7(c) to Robert S. Fisher and Company, Inc., Newark, N.J.

736,812. NURAP. Cl. 37. Nekoosa-Edwards Paper Company. 8-28-62. New Cert. Sec. 7(c) to Mosinee Paper Mills Company, Mosinee, Wis.

747,820. NEVIGEN NO. 10. Cl. 21. Willy H. Schlieker K.G. 4-9-63. New Cert. Sec. 7(c) to Walzwerk Neviges Gesellschaft mit beschränkter Haftung, Düsseldorf, Germany.

751,551. PILOT AND DESIGN. Cl. 19. Motive Equipment Manufacturers, Inc. 6-25-63. New Cert. Sec. 7(c) to Borg-Warner Corporation, Chicago, Ill.

INDEX OF REGISTRANTS

APRIL 11, 1967

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

- ABC-Paramount Records, Inc.: See—
ABC Records, Inc.
ABC Records, Inc., from ABC-Paramount Records, Inc., New York, N.Y. 827,162, pub. 11-29-66. Cl. 36.
A.M.S. Packing Co., Ozone Park, N.Y. 711,615, canc. Cl. 46.
Abbott Laboratories: See—
Moore & Ross, Inc.
Abbott Laboratories, North Chicago, Ill. 827,107, pub. 1-24-67. Cl. 18.
Accardi, A. Co., Boston, Mass. 711,618, canc. Cl. 46.
Acorn Paper Co.: See—
Wooster, Philip A.
Adams and Brooks, Inc., Los Angeles, Calif. 827,254, pub. 1-24-67. Cl. 46.
Adams National Industries, Durban, Republic of South Africa. 827,307, pub. 1-24-67. Cl. 51.
Adelaide Mills, Anniston, Ala. 711,593, canc. Cl. 43.
Advance Pattern Co., Inc., New York, N.Y. 711,502, canc. Cl. 26.
Aitchison Mfg. Co., to Lesota Tool Co. Inc., Albert Lea, Minn. 426,250, ren. 4-11-67. Cl. 23.
Akim Engineering Co., Inc., Williamamantic, Conn. 827,219, pub. 1-24-67. Cl. 40.
Allied Chemical Corp., New York, N.Y. 827,081, pub. 1-24-67. Cl. 10.
Allied Enterprises, Inc.: See—
Ohio Tar & Asphalt, Inc.
Alside, Inc., Akron, Ohio. 827,371. Cl. 12.
Amberg File and Index Co., Kankakee, Ill. 59,369-70, ren. 4-11-67. Cl. 37.
Amberg File and Index Co., Kankakee, Ill. 427,177, ren. 4-11-67. Cl. 32.
Amberg File and Index Co., Kankakee, Ill. 430,911, ren. 4-11-67. Cl. 32.
Amell, John C., Spokane, Wash. 827,099, pub. 1-24-67. Cl. 13.
American Agricultural Chemical Co.: See—
Continental Oil Co.
American Automobile Association, The, Washington, D.C. 827,190, pub. 1-24-67. Cl. 38.
American Crayon Co., The, Sandusky, Ohio, to The Joseph Dixon Crucible Co., Jersey City, N.J. 226,290, ren. 4-11-67. Cl. 37.
American Crayon Co., The, Sandusky, Ohio, to The Joseph Dixon Crucible Co., Jersey City, N.J. 226,688, ren. 4-11-67. Cl. 5.
American Cyanamid Co., Wayne, N.J. 827,071, pub. 1-24-67. Cl. 6.
American Dairy Queen Corp.: See—
Universal Milk Co., The.
American Fork & Hoe Co., to True Temper Corp., Cleveland, Ohio. 62,551, ren. 4-11-67. Cl. 23.
American Optical Co., Southbridge, Mass. 827,231, pub. 1-24-67. Cl. 44.
American Water Works Association, The, New York, N.Y. 827,175, pub. 1-24-67. Cl. 38.
Amole, Inc., Dayton, Ohio. 827,310, pub. 1-24-67. Cl. 52.
Andale Co.: See—
Andale Engineering Co.
Andale Engineering Co., Philadelphia, to Andale Co., Lansdale, Pa. 220,538, ren. 4-11-67. Cl. 34.
Anderson & Thompson Ski Co., Inc., Seattle, Wash. 827,199, pub. 1-24-67. Cl. 39.
Apex Distributing Co., Hopkins, Minn. 827,315, pub. 1-24-67. Cl. 52.
Appleton Cheese Co.: See—
Berst Corp., The.
Arcoa, Inc., Portland, Oreg. 827,358, pub. 1-24-67. Cl. 105.
Arkco Foods, Inc., Little Rock, Ark. 827,247, pub. 1-24-67. Cl. 46.
Arkwright, Inc., New York, N.Y. 427,414, ren. 4-11-67. Cl. 21.
Armour Agricultural Chemical Co., Atlanta, Ga. 827,085, pub. 1-24-67. Cl. 10.
Aronsohn, Samuel J., Inc., New York, N.Y. 827,223, pub. 1-24-67. Cl. 42.
Associated Dry Goods Corp.: See—
Lord & Taylor.
Atlas Supply Co., Springfield, N.J. 827,160, pub. 1-24-67. Cl. 35.
Audiac, Inc., d.b.a. Audio Instruments Associates Co., Fair Lawn, N.J. 827,338, pub. 1-24-67. Cl. 101.
Auto-Bind Corp., Atlanta, Ga. 827,143, pub. 1-24-67. Cl. 23.
"Automatic" Sprinkler Corp. of America, d.b.a. Kersey Mfg. Co., Youngstown, Ohio. 827,121, pub. 1-24-67. Multiple Class (Classes 19 and 21).
Auto-Pak Inc., Chicago, Ill. 809,749, cor. Cl. 2.
Avon Products, Inc., New York, N.Y. 430,319, ren. 4-11-67. Cl. 51.
Avon Products, Inc., New York, N.Y. 430,358, ren. 4-11-67. Cl. 51.
Babbitt, B. T., Inc.: See—
Purex Corp., Ltd.
Bailey's Beautician Supply Co., Chicago, Ill. 827,218, pub. 1-24-67. Multiple Class (Classes 40, 51, and 52).
Ballston-Stillwater Knitting Co., Inc.: See—
Ballston Knitting Co., Inc.
Barnes Co.: See—
Young, Albert.
Barry Controls Inc.: See—
Barry Wright Corp.
Barry Products Co., to Bryn Mawr Smokers Sundries, Inc., Chicago, Ill. 697,964, new cert. Cl. 8.
Barry Wright Corp., from Barry Controls Inc., Watertown, Mass. 711,651, canc. Cl. 12.
Baumert, F. X., & Co., to The Borden Co., New York, N.Y. 60,251, ren. 4-11-67. Cl. 46.
Baumert, F. X., & Co., to The Borden Co., New York, N.Y. 60,289, ren. 4-11-67. Cl. 46.
Bear Archery Co., Grayling, Mich. 827,141-2, pub. 1-24-67. Cl. 22.
Beauty Counselors, Inc., Grosse Pointe, Mich. 827,409. Cl. 51.
Beckerman, M., & Sons, Inc., New York, N.Y., from Flexline Shoe Co., Paterson, N.J. 711,545, canc. Cl. 39.
Beckley-Cardy Co., Chicago, Ill. 827,291, pub. 1-24-67. Cl. 50.
Bel-Air Pools, Inc., Royal Oak, Mich. 827,129, pub. 1-24-67. Cl. 22.
Bennett, Norman, Washington, D.C. 711,541, canc. Cl. 39.
Bennett Sales Co.: See—
Harwood, R. B., Products, Inc.
Berman, Bud, Sportswear, Inc., New York, N.Y. 711,560, canc. Cl. 39.
Berst Corp., The, d.b.a. Appleton Cheese Co., Portage, Wis. 711,665, canc. Cl. 46.
Better Finishes and Coatings, Inc., Newark, to Essex Chemical Corp., Clifton, N.J. 425,247, ren. 4-11-67. Cl. 16.
Better Finishes and Coatings, Inc., Newark, to Essex Chemical Corp., Clifton, N.J. 425,521, ren. 4-11-67. Cl. 16.
Blue Jeans Corp., Whitewater, N.C. 711,554, canc. Cl. 39.
Bob's Produce Ranch: See—
Schroer, Robert H.
Borden Co., The: See—
Baumert, F. X., & Co.
Borg-Warner Corp.: See—
Motive Equipment Manufacturers, Inc.
Bourne, Inc., Riverside, Calif. 827,125, pub. 1-24-67. Cl. 21.
Bowby, Byron J., d.b.a. Bowby Candy Co., to Bowby Candy Co., Inc., Appleton, Wis. 429,168, ren. 4-11-67. Cl. 46.
Bowby Candy Co.: See—
Bowby, Byron J.
Boyd Coffee Co., d.b.a. Boyd Co., Portland, Oreg. 827,239, pub. 1-24-67. Cl. 46.
Boyd Co.: See—
Boyd Coffee Co.
Brayten Pharmaceutical Co.: See—
Chattanooga Medicine Co., The.
Brenton Club Distilling Co.: See—
Brown's, J. T. S., Son Co.:
Brewer & Johnson: See—
Wedgeworth, Charles A.
British Ropes Corp., Elizabeth, N.J. 827,074, pub. 1-24-67. Cl. 7.
Brooks Foods, Inc., Collinsville, Ill. 827,236, pub. 1-24-67. Cl. 46.
Brother International Corp., New York, N.Y. 827,230, pub. 1-24-67. Cl. 44.
Browning Arms Co.: See—
Pacific Laminates, Inc.
Browning Mfg. Co.: See—
Laminex, Inc.
Brown's, J. T. S., Son Co., d.b.a. Brenton Club Distilling Co., Cincinnati, Ohio. 827,282, pub. 1-24-67. Cl. 49.
Bryn Mawr Sundries, Inc.: See—
Barry Products Co.
Buckeye Cellulose Corp., The, Cincinnati, Ohio. 827,275, pub. 1-24-67. Cl. 46.
Buehner, Otto, and Co., Salt Lake City, Utah. 827,094, pub. 1-24-67. Cl. 12.
California Crushed Fruit Corp., Los Angeles, Calif., to Mission of California, Inc., New Haven, Conn. 228,699, ren. 4-11-67. Cl. 45.
California Pharmaceutical Services, Inc., Los Angeles, Calif. 827,345, pub. 1-24-67. Cl. 102.
Camco Chemical Co., Fort Thomas, Ky. 827,309, pub. 6-14-66. Cl. 52.
Carnation Co., Los Angeles, Calif. 711,599, canc. Cl. 46.
Carter-Wallace, Inc., New York, N.Y. 827,304-6, pub. 1-24-67. Cl. 51.
Carter-Wallace, Inc., New York, N.Y. 827,311-12, pub. 1-24-67. Cl. 52.
Caruso Foods Inc., Brooklyn, N.Y. 827,259, pub. 1-24-67. Cl. 46.
Castoleum Corp., d.b.a. The Castoleum Corp., Yonkers, N.Y. 827,314, pub. 1-24-67. Cl. 52.
Cenol Co., Inc., Chicago, to International Minerals and Chemical Corp., Skokie, Ill. 425,184, ren. 4-11-67. Cl. 6.
Chadbourne Gotham, Inc.: See—
Lord & Taylor.
Chartered Enterprises, d.b.a. Superior Sports Specialties, San Fernando, Calif. 822,763, cor. Cl. 22.
Chattanooga Medicine Co., The, d.b.a. Brayten Pharmaceutical Co., Chattanooga, Tenn. 827,408. Cl. 51.
Cheese Smokers, Inc., New York, N.Y. 827,263, pub. 1-24-67. Cl. 46.

Cherokee Laboratories, Inc., The, Tulsa, Okla. 711,389-90, can. Cl. 1.
 Chicago International Film Festival, Inc., Chicago, Ill. 827,414, Cl. 107.
 Chicago National Bank, Chicago, Ill. 711,666, can. Cl. 102.
 Chilli-Master Jr. Corp.: See—
 Stereo Chemical Mfg. Co.
 Chore-Time Equipment, Inc., Milford, Ind. 827,381, Cl. 23.
 Christian Science Publishing Society, Boston, Mass. 827,183, pub. 1-24-67. Cl. 38.
 Chromex Chemical Corp., Brooklyn, N.Y. 827,370, Cl. 11.
 Church of the United Hebrew-Christian Brotherhood, Boston, Mass. 827,363, pub. 1-24-67. Cl. 200.
 Circle M Foods, Inc., Kansas City, Mo., from Red Dot Foods, Inc., Madison, Wis. 711,602, can. Cl. 46.
 Citizens Insurance Agency: See—
 Citizens Loan & Thrift Co.
 Citizens Loan & Thrift Co., from Citizens Loan & Thrift Co., Sioux City, Iowa. 827,344, pub. 1-24-67. Cl. 102.
 Clairol Inc., New York, N.Y. 827,299, pub. 1-24-67. Cl. 51.
 Clark, Gloria H., Hollywood, Calif. 711,566, can. Cl. 39.
 Clark Gum Co.: See—
 Morris, Philip, Inc.
 Classic Industries, Inc., Los Angeles, Calif. 827,131, pub. 1-24-67. Cl. 22.
 Cleveland Mill and Power Co., to Cleveland Mills Co., Lawadale, N.C. 827,147, ren. 4-11-67. Cl. 7.
 Cleveland Mills Co.: See—
 Cleveland Mill and Power Co.
 Cling-Surface Co.: See—
 Young, Albert B.
 Closing Offices of America: See—
 Richardson Homes Corp.
 Cole Chemical Co.: See—
 Cole Pharmaceutical Co., Inc. d.b.a. Cole Chemical Co., and/or Cole Chemical Co., St. Louis, Mo. 827,115, pub. 1-24-67. Cl. 18.
 Colfax Mineral Springs Co., Inc., Colfax, Iowa. 711,610, can. Cl. 46.
 Colgate & Co., to Colgate-Palmolive Co., New York, N.Y. 60,647, ren. 4-11-67. Cl. 52.
 Colgate-Palmolive Co.: See—
 Colgate & Co.
 Colgate-Palmolive Co., New York, N.Y. 827,316, pub. 1-24-67. Cl. 52.
 Colt's Inc., Hartford, Conn. 827,140, pub. 1-24-67. Cl. 22.
 Columbia Tours, Inc., New York, N.Y. 827,359, pub. 1-24-67. Cl. 105.
 Columbian Steel Tank Co., Kansas City, Mo. 827,055, pub. 1-24-67. Cl. 2.
 Command Co., The, Clayton, Mo. 827,163, pub. 1-24-67. Cl. 38.
 Compagnie Generale d'Electricite, Paris, France. 827,039, pub. 1-24-67. Cl. 1.
 Computerized Automotive Reporting Service, Inc., Jacksonville, Fla. 827,335, pub. 1-24-67. Cl. 101.
 Concord Fabrics Inc., New York, N.Y. 827,395-6, Cl. 42.
 Cone Mills Corp., Greensboro, N.C. 827,227, pub. 1-24-67. Cl. 42.
 Consolidated Drug Co.: See—
 Spencer, J. W.
 Consolidated Drug Corp.: See—
 Spencer, J. W.
 Consolidated Foods Corp.: See—
 Fruit Products Corp.
 Continental Nut Co., Chico, Calif. 711,611, can. Cl. 46.
 Continental Oil Co., Ponca City, Okla., from American Agricultural Chemical Co., New York, N.Y. 827,080, pub. 1-24-67. Cl. 10.
 Corn Products Co., New York, N.Y. 827,261, pub. 1-24-67. Cl. 46.
 Correa, Richard, Jr., d.b.a. Ricardo's, Council Bluffs, Iowa. 827,399, Cl. 46.
 Country Squire Fertilizers: See—
 Karp, Lee O.
 Cove Valley Packers, Inc., Orange Cove, Calif. 827,264, pub. 1-24-67. Cl. 46.
 Craft Master Corp., Toledo, Ohio. 827,292, pub. 1-24-67. Cl. 50.
 Cross, A. T., Co., Providence, R.I. 827,167, pub. 10-12-65. Cl. 37.
 Custom Monogram Co.: See—
 Lang, Howard K.
 Daily Diet Pet Food Co., d.b.a. Rite-Wey Pet Food Co., Huntington Park, Calif. 827,267, pub. 1-24-67. Cl. 46.
 Dan River Mills, Inc., Danville, Va. 827,224, pub. 1-24-67. Cl. 42.
 Data Digests, Inc., New York, N.Y. 827,180, pub. 1-24-67. Cl. 38.
 Day & Campbell Ltd., Hamilton, Ontario, Canada. 827,093, pub. 1-24-67. Cl. 12.
 Deering Milliken, Inc.: See—
 Monarch Mills
 Deering Milliken, Inc., New York, N.Y. 827,228, pub. 1-24-67. Cl. 42.
 Deering Milliken, Inc., New York, N.Y. 827,394, Cl. 42.
 Delbert, Fernand, d.b.a. Quinn & Delbert Boot & Shoe Co., Marlboro, Mass. 711,563, can. Cl. 39.
 Devoe & Reynolds Co., Inc., New York, N.Y. 827,103, pub. 1-24-67. Cl. 16.
 De Young, Joseph, Inc., Washington, D.C. 711,567, can. Cl. 39.
 Diamond Alkali Co., Cleveland, Ohio. 827,097-8, pub. 1-24-67. Cl. 12.
 Diebold, Inc., Canton, Ohio. 827,343, pub. 1-24-67. Cl. 102.
 Disney, Walt, Productions, Burbank, Calif. 827,189, pub. 1-24-67. Cl. 38.
 Diversay Corp.: See—
 Spencer, J. W.

Dixon, Joseph, Crucible Co., The: See—
 American Crayon Co., The
 Dixon, Joseph, Crucible Co., The, Jersey City, N.J. 63,528, cor. Cl. 37.
 Dixon, Joseph, Crucible Co., The, Jersey City, N.J. 430,835, ren. 4-11-67. Cl. 34.
 Dixon, Joseph, Crucible Co., The, Jersey City, N.J. 725,819, cor. Cl. 15.
 Dixon, Joseph, Crucible Co., The, Jersey City, N.J. 827,871, cor. Cl. 1.
 Donnelly, Frederick W., & Son, Inc., Trenton, N.J. 827,203, pub. 1-24-67. Cl. 39.
 Dornbusch & Co., Krefeld, Germany. 711,494, can. Cl. 23.
 Duffy-Mott Co., Inc., New York, N.Y., from Lord-Mott Co., Inc., Baltimore, Md. 827,246, pub. 1-24-67. Cl. 46.
 Du Pont de Nemours, E. I., and Co., Wilmington, Del. 827,105, pub. 1-24-67. Cl. 18.
 Eastern States Farmers' Exchange, Inc., West Springfield, Mass. 711,613, can. Cl. 46.
 Editors and Engineers, Ltd., New Augusta, Ind. 827,177, pub. 1-24-67. Cl. 38.
 Ed-U-Cards Mfg. Corp., Long Island City, N.Y. 827,136, pub. 1-24-67. Cl. 22.
 Electro-Catheter Corp., Linden, N.J. 827,067, pub. 1-24-67. Cl. 37.
 Ellingsworth Mfg. Co., Chicago, Ill. 827,168, pub. 1-24-67. Cl. 37.
 Elmes, Eve, d.b.a. Eve of Roma, Rome, Italy. 827,108, pub. 1-24-67. Multiple Class (Classes 18 and 51).
 Emery Industries, Inc., Cincinnati, Ohio. 827,354, pub. 1-24-67. Cl. 103.
 Energy Kontrols, Inc., Geneva, Ill. 711,475, can. Cl. 21.
 Engineers Associated: See—
 R.E.F. Engineers Associated, Inc.
 Engineers Associated Inc.: See—
 R.E.F. Engineers Associated, Inc.
 Engineers Associated of REF, Inc.: See—
 R.E.F. Engineers Associated, Inc.
 Equitable Cash Grocery Co.: See—
 S and W Fine Foods, Inc.
 Equity Publishing Corp., Orford, N.H. 827,186, pub. 1-24-67. Cl. 38.
 Ericson, John A., d.b.a. Vitranide Co., Youngstown, Ohio. 827,106, pub. 1-24-67. Cl. 18.
 Escalon Packers, Inc., Escalon, Calif. 827,250, pub. 1-24-67. Cl. 46.
 Esquire Sportswear Mfg. Co., New York, N.Y. 711,551, can. Cl. 39.
 Essex Chemical Corp.: See—
 Better Finishes and Coatings, Inc.
 Essex Wire Corp., Fort Wayne, Ind. 711,478, can. Cl. 21.
 Etna Chemical Co., Inc., New York, N.Y. 427,494, ren. 4-11-67. Cl. 18.
 Eva of Roma: See—
 Elmes, Eve.
 Extracorporeal and Medical Specialties Co., Inc., Medford, N.J. 827,339, pub. 1-24-67. Cl. 101.
 Fab-N-Tron, Inc., Belleville, Ill. 827,222, pub. 1-24-67. Cl. 42.
 Fant Milling Co., Sherman, from Gladiola Biscuit Co., Dallas, Tex. 712,945, can. Cl. 46.
 Farber, S. W., Inc., New York, N.Y. 815,756, cor. Cl. 21.
 Farm Journal, Inc., Philadelphia, Pa. 827,389, Cl. 38.
 Fieldcrest Mills, Inc., Spray, N.C. 827,225, pub. 1-24-67. Cl. 42.
 Fine Brands Corp., New York, N.Y. 711,621, can. Cl. 46.
 First Financial Advertising Group, Brookline, Mass. 827,332, pub. 1-24-67. Cl. 101.
 First National Stores, Inc., Soverville, Mass. 827,255, pub. 1-24-67. Cl. 46.
 Fisher and Co., to Robert S. Fisher and Co., Inc., Newark, N.J. 702,225, new cert. Cl. 28.
 Fisher, Robert S., and Co., Inc.: See—
 Fisher and Co.
 Fleet, C. B., Co., Inc., Lynchburg, Va. 827,120, pub. 1-24-67. Cl. 18.
 Flexline Shoe Co.: See—
 Beckerman, M., & Sons, Inc.
 Fraser Paper, Ltd., Madawaska, Maine. 827,387, Cl. 37.
 Frost-N-Mate, Inc., Ocala, Fla. 827,248, pub. 1-24-67. Cl. 46.
 Fruit Products Corp.: See—
 Consolidated Foods Corp., d.b.a. Joe Lowe Co., Englewood, N.J. 657,234, Am. 7(d), Cl. 46.
 Fulvi S.p.A., Nepl (Viterbo), Italy. 827,237, pub. 1-24-67. Cl. 46.
 Gable Mfg. Co., Des Moines, Iowa. 711,517, can. Cl. 32.
 Gardner, Leonal P., d.b.a. Herfy's Drive-Ins, Seattle, Wash. 827,324, pub. 1-24-67. Cl. 100.
 Garland Corp., Brockton, Mass. 827,204-10, pub. 1-24-67. Cl. 39.
 Garrard Engineering Ltd., Swindon, England. 827,161, pub. 1-24-67. Cl. 36.
 Gateway Aerosol Co.: See—
 Scioscia, Joseph.
 General Electric Co.: See—
 Victor X-Ray Corp.
 General Refractories Co., Philadelphia, Pa. 827,372, Cl. 12.
 Gladbrook Pickles, Inc., Long Beach, Calif. 711,620, can. Cl. 46.
 Gladiola Biscuit Co.: See—
 Fant Milling Co.
 Gladiola Biscuit Co., Dallas, Tex. 680,880, can. Cl. 46.
 Gladiola Biscuit Co., Dallas, Tex. 683,750, can. Cl. 46.
 Glaros Products, Inc., Pittsburgh, Pa. 827,095, pub. 1-24-67. Cl. 12.
 Glen Abbey Ltd., Dublin, Ireland. 827,196, pub. 1-24-67. Cl. 39.
 Glidden Co., The, Cleveland, Ohio. 827,087-8, pub. 1-24-67. Cl. 12.

Glidden Co., The, Cleveland, Ohio. 827,104, pub. 1-24-67. Cl. 16.
 Goedeck & Co., Memmingen, Allgau, Germany. 711,436, can. Cl. 18.
 Gold Seal Co., Bismarck, N. Dak. 827,300, pub. 1-24-67. Cl. 51.
 Goodyear Tire & Rubber Co., The, Akron, Ohio. 827,378, Cl. 19.
 Grand Union Co., The, East Paterson, N.J. 426,390, ren. 4-11-67. Cl. 4.
 Graybar Electric Co., Inc., New York, N.Y. 827,126, pub. 1-24-67. Cl. 21.
 Greene, J. H., d.b.a. Heavenly Fried Chicken, Campton, N.H. 827,403, Cl. 46.
 Green Giant Co.: See—
 Keene-Belvidere Canning Co.
 Greentree, Meyer, to Greentree's, Inc., Richmond, Va. 220,426, ren. 4-11-67. Cl. 39.
 Greentree's, Inc.: See—
 Meyer Greentree.
 Greenwald, H., Mfg. Co., Inc., Brooklyn, N.Y. 827,383, Cl. 25.
 Greisch, Fred, Mfg. Co., The, Brooklyn, N.Y. 827,166, pub. 1-24-67. Cl. 36.
 Gross, John, and Co., Baltimore, Md. 827,285, pub. 1-24-67. Cl. 49.
 Guild Musical Instrument Corp., Hoboken, N.J. 827,127, pub. 11-3-64. Cl. 22.
 HMH Publishing Co., Inc., Chicago, Ill. 827,336, pub. 1-24-67. Cl. 101.
 Hamersley Mfg. Co., The, Garfield, N.J. 827,171, pub. 1-24-67. Cl. 37.
 Harris, Bertram H., Chicago, Ill. 827,051, pub. 1-24-67. Cl. 2.
 Harwood, R. B., Products, Inc., d.b.a. Bennett Sales Co., Chicago, Ill. 827,377, Cl. 16.
 Heavenly Creations, Inc., Norfolk, Va. 827,221, pub. 1-24-67. Cl. 40.
 Heavenly Fried Chicken: See—
 Greene, J. H.
 Hedwin Corp., New York, N.Y. 827,366, Cl. 2.
 Held-Swiss Corp., d.b.a. Heidi-Swiss Corp., Chicago, Ill. 827,169, pub. 1-24-67. Cl. 37.
 Herfy's Drive-Ins: See—
 Gardner, Leonal P.
 Herter's Inc., Waseca, Minn. 827,147, pub. 1-24-67. Cl. 23.
 Herter's Inc., Waseca, Minn. 827,158, pub. 1-24-67. Cl. 34.
 Hickok Mfg. Co., Inc.: See—
 Taunton Pearl Works.
 Hinman, Dorr J., d.b.a. Jonpeg Engineering Co., Grosse Pointe Farms, Mich. 827,397, Cl. 44.
 Hit Sales Corp., New York, N.Y. 827,201, pub. 1-24-67. Cl. 39.
 Hobam, Inc.: See—
 Screen Equipment Co. Inc.
 Hobo Joe's, Inc., Scottsdale, Ariz. 827,137, pub. 1-24-67. Multiple Class (Classes 22 and 30).
 Hoffman, F.-La Roche & Cie, Basel, Switzerland, to Hoffman-La Roche Inc., Nutley, N.J. 29,994, ren. 4-11-67. Cl. 18.
 Hoffman-La Roche Inc.: See—
 Hoffman, F.-La Roche & Cie.
 Holaday Industries, Inc., Edina, Minn., from Jean's Food Service, Inc., Minneapolis, Minn. 827,245, pub. 1-24-67. Cl. 46.
 Home Metal Products Co., Dallas, Tex. 827,157, pub. 1-24-67. Cl. 34.
 Hooker Chemical Corp.: See—
 Parker Rust Proof Co.
 Hooker Chemical Corp., Niagara Falls, N.Y. 827,041, pub. 1-24-67. Cl. 1.
 Hooker Chemical Corp., Niagara Falls, N.Y. 827,068-9, pub. 1-24-67. Cl. 6.
 Hooker Chemical Corp., Niagara Falls, N.Y. 827,318, pub. 1-24-67. Cl. 52.
 Horrocks, Crewdson & Co., Ltd., Preston and Manchester, England, to Horrocks Ltd., Preston, England. 228,088, ren. 4-11-67. Cl. 42.
 Horrocks Ltd.: See—
 Horrocks, Crewdson & Co., Ltd.
 Hotel Corp. of America, Boston, Mass. 827,329, pub. 1-24-67. Cl. 100.
 Household Finance Corp., Chicago, Ill. 827,347-8, pub. 1-24-67. Cl. 102.
 Houston, John A., Co., Ltd., Toronto, Ontario, Canada. 711,468, can. Cl. 21.
 Howard and Smith, Inc., Ferndale, Mich. 827,185, pub. 1-24-67. Cl. 38.
 Hudson General Paper Corp.: See—
 Hugen Corp.
 Hudson Tool & Die Co., Inc., Newark, N.J. 821,924, cor. Cl. 21.
 Huffman, William F., Radio, Inc., Wisconsin Rapids, Wis. 827,356, pub. 1-24-67. Cl. 104.
 Hugen Corp., from Hudson General Paper Corp., Englewood, N.J. 827,048, pub. 11-15-66. Cl. 2.
 Hung, Tang K., d.b.a. Wang Yick Fireworks Co., Central, Victoria, Hong Kong. 827,075, pub. 1-24-67. Cl. 9.
 Hyatt Corp. of America, Burlingame, Calif. 827,330, pub. 1-24-67. Cl. 100.
 Ilkon Corp., Natick, Mass. 827,053, pub. 1-24-67. Cl. 2.
 Impresario Cultural Society, Lathrup Village, Mich. 827,365, pub. 1-24-67. Cl. 200.
 Index-Werke K.G. Hahn & Tesky, Esslingen (Neckar), Germany. 827,100, pub. 1-24-67. Multiple Class (Classes 14 and 23).
 Indian Head Inc.: See—
 Ulmann, Bernhard, Co., Inc.
 Infanta Knitting Mills, Rockledge, Pa. 428,110, ren. 4-11-67. Cl. 39.
 Inter-Continental Motors Corp., San Antonio, Tex. 827,191, pub. 1-24-67. Cl. 38.
 International Franchise Association, Inc., Chicago, Ill. 827,193, pub. 1-24-67. Cl. 38.
 International Minerals and Chemical Corp.: See—
 Cenol Co., Inc.
 International Minerals & Chemical Corp., Skokie, Ill. 827,083-4, pub. 1-24-67. Cl. 10.
 International Nickel Co., Inc., The, New York, N.Y. 827,101, pub. 1-24-67. Cl. 14.
 International Paint Co., Inc., New York, N.Y. 827,060, pub. 1-24-67. Cl. 5.
 International Pulp Sales Co., New York, N.Y. 827,044, pub. 1-24-67. Cl. 1.
 J. K. Packing Co.: See—
 Korelka, Joseph.
 Jamaica Food Co., Hollis, N.Y. 827,240, pub. 1-24-67. Cl. 46.
 Jason March Ventures, Inc., Kenner, La. 827,138, pub. 1-24-67. Cl. 22.
 Jasper, Sam, Winery, Manteca, Calif. 827,279, pub. 1-24-67. Cl. 47.
 Jean's Food Service, Inc.: See—
 Holaday Industries, Inc.
 Johns-Manville Corp., New York, N.Y. 711,419, can. Cl. 12.
 Jonpeg Engineering Co.: See—
 Hinman, Dorr J.
 Kaltman, Frank L., Enterprises: See—
 Kaltman, Frank L.
 Kaltman, Frank L., d.b.a. Frank L. Kaltman Enterprises, Newark, N.J. 711,520, can. Cl. 36.
 Kanamaru Shoten, Ltd., Tokyo, Japan. 827,369, Cl. 8.
 Karp, Lee O., d.b.a. Country Squire Fertilizers, Farmingdale, N.Y. 827,082, pub. 1-24-67. Cl. 10.
 Keene-Belvidere Canning Co., Belvidere, Ill., to Green Giant Co., Le Sueur, Minn. 222,561, ren. 4-11-67. Cl. 46.
 Kerr-McGee Corp., from Kerr-McGee Oil Industries, Inc., Oklahoma City, Okla. 827,079, pub. 1-24-67. Cl. 10.
 Kerr-McGee Corp., from Kerr-McGee Oil Industries, Inc., Oklahoma City, Okla. 827,352-3, pub. 1-24-67. Cl. 103.
 Kerr-McGee Oil Industries, Inc.: See—
 Kerr-McGee Corp.
 Kersey Mfg. Co.: See—
 "Automatic" Sprinkler Corp. of America.
 Kessler, William B., Inc., Hammonton, N.J. 827,212-13, pub. 1-24-67. Cl. 39.
 Kiddy Krawlers, Inc., New York, N.Y. 711,540, can. Cl. 39.
 Kiefer-Stewart Co., Inc., d.b.a. Value Plus, Indianapolis, Ind. 827,110-11, pub. 1-24-67. Cl. 18.
 Kiefer-Stewart Co., Inc., d.b.a. Value Plus, Indianapolis, Ind. 827,340-1, pub. 1-24-67. Cl. 101.
 King Kelly Foods: See—
 King Kelly Marmalade Co., Inc.
 King Kelly Marmalade Co., Inc., d.b.a. King Kelly Foods, Dairy Valley, Calif. 827,256, pub. 1-24-67. Cl. 46.
 King Products Corp., Chicago, Ill. 827,128, pub. 1-24-67. Cl. 22.
 Kirklees Ltd., Tottington, near Bury, England. 711,597, can. Cl. 43.
 Klosterbrenner A.G. Erste Badische Wein- und Edelbranntweinbrenner, Emmendingen, Germany. 711,623, can. Cl. 47.
 Knitting Co., Inc., from Ballston-Stillwater Knitting Co., Ballston Spa, N.Y. 711,660, can. Cl. 39.
 Knudsen Creamery Co. of California, Los Angeles, Calif. 827,253, pub. 1-24-67. Cl. 46.
 Korda, Geza, New York, N.Y. 827,187, pub. 1-24-67. Cl. 38.
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T.M.B. Freight, Inc., Lubbock, Tex. 827,357, pub. 1-24-67. Cl. 105.
Tatler Publishing Co., Washington, D.C. 827,176, pub. 1-24-67. Cl. 38.
Taunton Pearl Works, to Pioneer Suspender Co., Philadelphia, Pa., to Hickok Mfg. Co., Inc., Rochester, N.Y. 428,249, ren. 4-11-67. Cl. 28.
Tennessee Corp., New York, N.Y. 827,086, pub. 1-24-67. Cl. 10.
Tennessee Dickel Distilling Co.: See—
Tennessee Walking Horse Co.
Tennessee Walking Horse Co., from Tennessee Dickel Distilling Co., Tullahoma, Tenn. 827,283, pub. 12-6-66. Cl. 46.
Tensor Corp., Brooklyn, N.Y. 827,124, pub. 1-24-67. Cl. 21.
Terminal Trading Corp., New York, N.Y. 827,411. Cl. 101.
Tewinkle, Howard B., Cayuga, N.Y. 827,132, pub. 1-24-67. Cl. 22.
Therapeutic Foods Co.: See—
Vitamin Products Co.
Thomas, S. B., Inc., Long Island City, N.Y. 827,257-8, pub. 1-24-67. Cl. 46.
Thompson-Hayward Chemical Co., to Thompson-Hayward Chemical Co., Kansas City, Kans. 428,678, ren. 4-11-67. Cl. 18.
Thonet Industries, Inc., New York, N.Y. 711,663, can. Multiple Class (Classes 33 and 44).
3 D Studios, Minneapolis, Minn. 827,380. Cl. 21.
Tie Bite Neckwear Co., Inc., Asheville, N.C. 827,195, pub. 1-24-67. Cl. 39.
Time Greeting Cards, Inc., Ozone Park, N.Y. 711,520, can. Cl. 38.
Todhunter-Mitchell & Co., Ltd., Freeport, Grand Bahama. 827,284, pub. 1-24-67. Cl. 49.
Tokheim Corp.: See—
Tokheim Oil Tank & Pump Co.
Tokheim Oil Tank and Pump Co., to Tokheim Corp., Fort Wayne, Ind. 428,055, ren. 4-11-67. Cl. 26.
Toledo Scale Corp., Toledo, Ohio. 827,295, pub. 1-24-67. Cl. 50.
Tootsie Roll Industries, Inc., Hoboken, N.J., from The Sweets Co. of America, Inc., d.b.a. The Sweets Co. of America, Inc., Hoboken, N.J. 827,269, pub. 1-24-67. Cl. 46.
Toyo Joso Co., Ltd., Tagata-gun, Shizuoka-ken, Japan. 827,280, pub. 1-24-67. Cl. 48.
Toyota Motor Sales, U.S.A., Inc., Los Angeles, Calif. 711,462, can. Cl. 19.
Traller Train Co., Haverford, Pa. 827,413. Cl. 105.
Trappey, B. F., & Sons, Jeanerette, La., to B. F. Trappey's Sons, Inc., New Iberia, La. 230,395, ren. 4-11-67. Cl. 40.
Trappey's, B. F. Sons, Inc.: See—
Trappey, B. F., & Sons.
Trau & Loewner, Inc., Pittsburgh, Pa. 827,202, pub. 1-24-67. Cl. 39.
Travel Research International, Inc., New York, N.Y. 827,323, pub. 1-24-67. Cl. 100.
Travelers Directory Services, Inc., Winston-Salem, N.C. 827,192, pub. 1-24-67. Cl. 38.
Travelers Indemnity Co., The, Hartford, Conn. 827,412. Cl. 102.
Triton Mfg. Co., Inc., Fall River, Mass. 827,215, pub. 1-24-67. Cl. 39.
Troyke, Alfred A., d.b.a. Troyke Mfg. Co., to Troyke Mfg. Co., Cincinnati, Ohio. 430,191, ren. 4-11-67. Cl. 23.
Troyke Mfg. Co.: See—
Troyke, Alfred A.
True Temper Corp.: See—
American Fork & Hoe Co.
Truval Shirt Co., Inc., New York, N.Y. 827,208, pub. 1-24-67. Cl. 39.
Tyler Griffin Co., Devon, Pa. 827,331, pub. 1-24-67. Cl. 101.
Ulmann, Bernhard, Co., Inc., to Indian Head Inc., New York, N.Y. 430,417, ren. 4-11-67. Cl. 43.

Uncas Mfg. Co., Providence, R.I. 827,152, pub. 1-24-67. Cl. 28.
Unilever Ltd., Cheshire, England. 827,182, pub. 1-24-67. Cl. 38.
Unistrut Products Co., Chicago, Ill. 711,650, can. Cl. 12.
United Drug Stores: See—
Riconosciuto, Marshall.
United Fruit Co., to United Fruit Sales Corp., Boston, Mass. 220,636, ren. 4-11-67. Cl. 46.
United Fruit Sales Corp.: See—
United Fruit Co.
United States Box Crafts, Inc., Brooklyn, N.Y. 827,050, pub. 1-24-67. Cl. 2.
U.S. Ethicals Inc., Long Island City, N.Y. 827,109, pub. 1-24-67. Cl. 18.
United States Plywood Corp., New York, N.Y. 827,373. Cl. 12.
Universal Milk Co., The, New York, N.Y., to American Dairy Queen Corp., Minneapolis, Minn. 226,838, ren. 4-11-67. Cl. 46.
Utah Cooperative Association, Salt Lake City, Utah. 827,043, pub. 1-24-67. Cl. 1.
Vacuum Oil Co., Rochester, N.Y., to Mobil Oil Corp., New York, N.Y. 28,936-7, ren. 4-11-67. Cl. 15.
Val Blatz Brewing Co., to Pabst Brewing Co., Milwaukee, Wis. 29,568, ren. 4-11-67. Cl. 48.
Valley Industries Ltd., London, England. 711,898, can. Cl. 4.
Valley Development Co., Minneapolis, Minn. 711,487, can. Cl. 22.
Vanda Cosmetics: See—
Rexall Drug and Chemical Co.
Vandam, Albert H., Co., Inc., to J. P. Stevens & Co., Inc., New York, N.Y. 428,838, ren. 4-11-67. Cl. 42.
Vandam, Albert H., Co., Inc., to J. P. Stevens & Co., Inc., New York, N.Y. 428,882, ren. 4-11-67. Cl. 42.
Veh Buchbindereimaschinenwerk Leipzig, Leipzig, Germany. 711,488, can. Cl. 4-11-67.
Ventron Corp., Beverly, Mass. 827,072, pub. 1-24-67. Cl. 6.
Victor X-Ray Corp., Chicago, Ill., to General Electric Co., New York, N.Y. 224,235, ren. 4-11-67. Cl. 21.
Victor X-Ray Corp., Chicago, Ill., to General Electric Co., New York, N.Y. 225,343, ren. 4-11-67. Cl. 21.
Vitamin Products Co., d.b.a. Therapeutic Foods Co., Milwaukee, Wis. 827,402. Cl. 46.
Vitranide Co.: See—
Ericson, John A.
Vulcanized Rubber and Plastics Co., Inc., Morrisville, Pa. 827,217, pub. 1-24-67. Cl. 40.
WOPAC Corp., Haddonfield, N.J. 827,328, pub. 1-24-67. Cl. 100.
Walzwerk Neviges Gesellschaft mit beschränkter Haftung: See—
Schleker, Willy H., K.G.
Wang Yick Fireworks Co.: See—
Hung, Tank K.
Ward, H. H. & Co., Inc., New York, N.Y. 711,441, can. Cl. 18.
Warner Brothers Co., The, Bridgeport, Conn. 711,565, can. Cl. 39.
Warner-Lambert Pharmaceutical Co.: See—
Maltine Co., The.
Weather Trends, Inc., New York, N.Y. 827,393. Cl. 38.
Wedgeworth, Charles A., Pampa, Tex., to Brewer & Johnson, Booker, Tex. 428,128, ren. 4-11-67. Cl. 14.
Wellworth Pickle Co., Paterson, N.J. 827,268, pub. 1-24-67. Cl. 46.
West Chemical Products, Inc., Long Island City, N.Y. 827,313, pub. 1-24-67. Cl. 52.
Western Import Inc., Portland, Oreg. 827,139, pub. 1-24-67. Cl. 22.
Westervelt-Renhouse, Inc., East Rutherford, N.J. 827,188, pub. 1-24-67. Cl. 38.
Wheeling Corrugating Co., to Wheeling Steel Corp., Wheeling, W. Va. 223,892, ren. 4-11-67. Cl. 34.
Wheeling Steel Corp.: See—
Wheeling Corrugating Co.
White, H. N., Co., Inc.: See—
Seeburg Corp., The.
White Laboratories Inc., Kenilworth, N.J. 711,444, can. Cl. 18.
Whitehouse Products, Inc., Brooklyn, N.Y. 827,052, pub. 1-24-67. Cl. 2.
Whiting, E. B. and A. C., Co.: See—
Pro-Phy-Lac-Tic Brush Co.
Wilco Hosiery Mills, Inc., Helen, Ga. 711,549, can. Cl. 39.
Wilco Laboratories, Inc., Chicago, Ill. 711,442, can. Cl. 18.
Williams Gold Refining Co., Inc., Buffalo, N.Y. 827,232, pub. 1-24-67. Cl. 44.
Wilson & Co., Inc.: See—
Mutual Rendering Co., Inc.
Windsor Plastics, Inc., Evansville, Ind. 827,360, pub. 1-24-67. Cl. 106.
Winfield Brooks Co., Inc., Woburn, Mass. 827,317, pub. 1-24-67. Cl. 52.
Wisconsin Foods, Inc., Sturgeon Bay, Wis. 827,243, pub. 1-24-67. Cl. 48.
Woolworth, F. W., Co., New York, N.Y. 827,334, pub. 1-24-67. Cl. 101.
Wooster, Philip A., d.b.a. Acorn Paper Co., San Francisco, Calif. 711,524, can. Cl. 37.
Xerox Corp., Rochester, N.Y. 827,150, pub. 1-24-67. Cl. 26.
Young, Albert B., d.b.a. Barnes Co., to Cling-Surface Co., Buffalo, N.Y. 225,416, ren. 4-11-67. Cl. 18.
Zendman, I., Inc., New York, N.Y. 711,592, can. Cl. 42.

U.S. DEPARTMENT OF COMMERCE OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

April 18, 1967

Volume 837

Number 3

PATENTS NOTICES

Board of Appeals Decisions Rendered in the Month of March 1967

Examiner affirmed	269
Examiner affirmed in part	35
Examiner reversed	71
Total	375

Divisional applications directed to the non-elected inventions will not automatically be given special status based on papers filed with the petition in the parent case. Each such application must meet on its own all requirements for the new special status.

RICHARD A. WAHL,
Assistant Commissioner.

Mar. 21, 1967.

Adjudicated Patents

(D.C. Wis.) Kesling Patent No. 2,467,432 (32-14), for METHOD OF MAKING ORTHODONTIC APPLIANCES AND OF POSITIONING TEETH, Held invalid. T. P. Laboratories, Inc. v. Hugel, 261 F. Supp. 349; 151 USPQ 605.

(D.C. Wis.) Kesling Patent No. 2,531,222 (32-14), for TOOTH POSITIONING APPLIANCE, Held invalid. Id.

(D.C. Ohio) Wayman Patent No. 2,836,437 (285-158), for ECCENTRIC COUPLER FOR ATTACHING SERVICE ENTRANCE MASTS FOR METERS, Claims 3 and 4 Held valid and infringed. M. and W. Electric Mfg. Co. v. Gatto Electric Supply Co., 260 F. Supp. 891; 151 USPQ 40.

(D.C. Ariz.) Redmond Patent No. 2,895,821 (75-75), for PROCESS FOR REFINING BLISTER COPPER, Held valid and not infringed. Brian Jackson Associates, Inc. v. Kennecott Copper Corp., 220 F. Supp. 679; — USPQ —.

Special Examining Procedure for Certain New Applications

The practice of granting special status to certain new applications as set forth in the Notice of December 14, 1965, 822 O.G. 2, is modified to the extent indicated below in the case where the Office determines that all of the claims presented are not obviously directed to a single invention.

Where the claims in a case are directed to more than one invention, an election without traverse will be a prerequisite to the grant of special status.

The election may be made by applicant at the time of filing the petition for special status. Should applicant fail to include an election with the original papers or petition and the Office determines that a requirement should be made, the established telephone restriction practice will be followed.

If otherwise proper, examination on the merits will proceed on claims drawn to the elected invention.

If applicant refuses to make an election without traverse, the application will not be further examined at that time. The petition will be denied on the ground that the claims are not directed to a single invention, and the application will await action in its regular turn.

New Application Received During February 1967

Patents	6366
Designs	359
Plant Patents	12
Reissues	21
Total	6758

Issue—April 18, 1967

Patents	1195—No. 3,314,077 to No. 3,315,271, incl.
Designs	35—No. 207,442 to No. 207,476, incl.
Reissues	7—No. 26,189 to No. 26,195, incl.
Total	1237

Restriction and Election Practice

Effective April 1, the practice and procedure in cases involving a requirement for restriction or election is changed as indicated below.

Under the new practice, whenever a written or telephoned requirement is made in a case which includes claims considered by the Examiner to be generic or linking, it will not include any rejection of these claims. The Examiner should specify which claims are considered to be generic or linking.

Although no art will be cited where linking claims are present, a search should be made and art cited where generic claims are involved. In the latter situation the generic claims will not be rejected but merely indicated as not allowable in view of the cited art (Rule 146).

A 30-day shortened statutory period will be set for response to a written requirement. Such action will not be an "action on the merits" for the purpose of the second action final program. In either situation, with linking or generic claims, a response, to be complete, need only include a proper election.

The only exception to the above practice will be in the case where the Examiner gives a complete action on the merits of all the claims in addition to the requirement for restriction.

The use of the telephone to make an initial requirement will be continued and is encouraged.

RICHARD A. WAHL,
Assistant Commissioner.

Feb. 28, 1967.

Patents Available for Licensing or Sale

D. 203,125. WEED CUTTER. Louis Gouveia, Rte. 1, Box 582, Grass Valley, Calif., 95945.

2,831,316. ASSEMBLY APPARATUS WITH ALL LINK PART FEEDER STATIONS FEEDING SAID PARTS PERPENDICULAR TO THE ASSEMBLY SURFACE. Emil Linde, Jr., Wuppertal, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,196,518. LATHE CUTTER BITS. Alvin Williams, 223 W. 135th St., New York, N.Y., 10030.

3,286,236. HYDRO-AIR CUSHION VESSELS. G. Solomon Padial, Apartado 13068, Madrid, Spain.

3,295,504. SUPPORT FOR STEAM BOILERS HAVING AN UPRIGHT WALL FORMED BY HELICALLY ARRANGED TUBES. Vereinigte Kesselwerke A.G., Düsseldorf, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,295,853. MULTIPURPOSE TAPE RECORDER AND PLAYBACK SYSTEM. Teh Yuan Cheng. Correspondence to: Nathan M. Briskin, 501 5th Ave., New York, N.Y., 10017.

3,296,902. MACHINE TOOL. Th. Kieserling & Albrecht, 565 Solingen, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,300,168. VISOR CLIP. Orlando A. Gaudino, 315 Center Ave., Butler, Pa., 16002.

3,305,984. ICE ANCHOR. Michael W. Boruck, 19 Detroit Ave., Providence, R.I. Correspondence to: Barlow & Barlow, 2005 Industrial Bank Bldg., Providence, R.I., 02903.

3,306,405. TRAVELLING CASE. Robert Rosenblum, 365 West End Ave., New York, N.Y., 10024.

General Electric Company is prepared to grant non-exclusive licensing under the following 31 patents upon reasonable terms to domestic manufacturers.

Applications for licensing under the following patent may be addressed to: General Electric Company, Patent Counsel, Insulating Materials Department, Bldg. 33, Room 209, 1 River Road, Schenectady, N.Y., 12305.

3,228,901. COMPOSITIONS COMPRISING AN EPOXY RESIN, SHELLAC, POLYBUTADIENE AND A PEROXIDE CURING AGENT.

Applications for license under the following 2 patents may be addressed to: Division Patent Counsel, Missile and Space Division, General Electric Company, Valley Forge Space Technology Center, P.O. Box 8535, Philadelphia, Pa., 19101.

3,030,652. METHODS AND APPARATUS FOR DEVELOPING FORCES WITH ION BEAMS.

2,900,500. ELECTRONIC COUNTER AND SHIFT REGISTER.

Applications for license under the following 4 patents may be addressed to: General Electric Company, Industrial Drives Systems Division, 3001 E. Lake Road, Erie, Pa., 16501, attention: Patent Counsel.

3,198,975. EDDY CURRENT COUPLING.

3,249,778. EDDY CURRENT COUPLING.

3,274,412. COMPOUND DIRECT CURRENT MOTORS.

3,296,472. SERIES DIRECT CURRENT MOTOR FIELD POLES.

Applications for license under the following 12 patents may be addressed to: General Electric Company, Housewares Division, 1285 Boston Ave., Bridgeport, Conn., 06602.

2,976,388. THERMOSTAT CONTROL.

3,002,302. LIQUID SPRAY STEAM IRON.

3,032,861. METHOD OF MANUFACTURING A FLAT-IRON.

3,041,758. STEAM AND LIQUID SPRAY IRON.

3,041,757. STEAM AND LIQUID SPRAY IRON.

3,156,054. FLOODED BOILER STEAM OR SPRAY IRON.

3,161,971. STEAM IRON WITH SELF-CLEANING VALVE ASSEMBLY.

3,175,316. STEAM IRON.

3,183,610. STEAM AND LIQUID SPRAY IRON.

3,188,758. LIQUID SPRAY IRON.

3,201,880. AUTOMATIC SPRAY, STEAM AND DRY IRON.

3,238,649. STEAM IRON BOILER CLEANING.

Applications for license under the following 12 patents may be addressed to: Patent Counsel, Lamp Division, General Electric Company, Nela Park, Cleveland, Ohio, 44112.

2,862,335. APPARATUS FOR RESHAPING CYLINDRICAL GLASS TUBES.

2,862,337. METHOD OF RESHAPING CYLINDRICAL GLASS TUBES.

3,066,507. APPARATUS FOR RESHAPING CYLINDRICAL GLASS TUBES.

3,131,920. SECTIONALIZED CRUCIBLE.

3,155,534. METHOD OF MAKING MAGNESIA-ALUMINA SPINEL BODIES.

3,160,339. APPARATUS FOR SCORING AND BREAKING LENGTHS FROM AN ELONGATED VITREOUS BODY.

3,172,589. GLASS TUBE SEVERING APPARATUS.

3,212,401. INHOMOGENEOUS MAGNESIA-ALUMINA OPTICAL LENS.

3,239,323. METHOD FOR SEALING CERAMICS.

3,246,520. IMMERSIBLE THERMOCOUPLE ASSEMBLY.

3,269,817. MANUFACTURE OF HELIUM SEPARATION APPARATUS.

3,281,309. CERAMIC BONDING.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF MARCH 13, 1967

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager..... Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	9-16-63	1-17-62
GENERAL ORGANIC CHEMISTRY, GROUP 120—G. D. MITCHELL, Manager..... Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	7-25-63	9-12-61
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING, GROUP 140—M. STERMAN, Manager..... Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	11-18-63	1-16-62
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager..... Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	12- 2-63	3-27-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager..... Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	9- 4-63	10-23-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—M. L. LEVY, Manager..... Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	8- 9-63	8-30-62
SECURITY, GROUP 220—S. BOYD, Manager..... Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	3-17-65	6-17-63
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—E. J. SAX, Manager..... Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	8-22-63	7- 3-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—F. M. STRADER, Manager..... Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	8-14-63	11- 3-61
PHYSICS, GROUP 280—R. L. EVANS, Manager..... Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	1-13-64	6-24-63
DESIGNS, GROUP 290—S. BOYD, Manager..... Industrial Arts; Household, Personal and Fine Arts.	10-22-65	6-10-65
Total number of pending applications (excluding Designs).....		190,219
Total number of Design applications pending.....		4,116
Total number of applications awaiting action (excluding Designs).....		139,389
Total number of Design applications awaiting action.....		2,464
Date of oldest new application awaiting action.....		July 25, 1963
Date of oldest amended application awaiting action.....		July 3, 1961

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during April 1967, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 660. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1965*.
Patents..... Numbers 2,502,406 to 2,505,747, inclusive
Plant Patents..... Numbers 930 to 937, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)

	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid, Flexible and Special Receptacles and Packages.	4-19-65	9-26-63
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BEROER, Manager. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	1- 4-65	10-25-62
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, Etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletary; Printing; Typewriters; Stationery; Information Dissemination.	8-17-64	7-17-62
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	7-16-65	2-28-64
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	4- 5-65	4-26-63
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager. Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	2-16-65	7-25-62

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DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE FRANCIS J. HONN AND WILLARD M. SIMS

No. 7593. Decided August 4, 1966

[53 CCPA —; 364 F.2d 454; 150 USPQ 652]

1. APPLICATION—SUFFICIENCY OF DISCLOSURE—COMPOUNDS—SPECIFIC EMBODIMENT—35 U.S.C. 112 AND RULE 71(b) CONSTRUED.

"What is referred to by section 112 as 'the invention' is determined by appellants' claims read in light of the specification. * * * Here the invention is certain compositions of matter, obtained by reacting certain fluorohalogenated propylenes with certain fluorinated ethylenes. Appellants have set forth, indeed effectively named, three specific copolymers * * * which fall within the scope of those composition of matter claims. From the other description in the specification, we are informed that at least 10 percent of the carbon atoms in the linear chain of those copolymers must be —CH₂— groups, thus effectively establishing, for example, that the copolymer of vinylidene fluoride and 2-chloroperfluoropropylene is composed of at least one molecule of vinylidene fluoride (CH₂=CF₂) for each four molecules of 2-chloroperfluoropropylene (CF₂—CCl=CF₂). When so constituted, those copolymers are said to be elastomeric (rubbery), chemically inert and electrically insulating. We think those copolymers, when considered with the remainder of the specification, are *specific embodiments* of the invention within any reasonable requirement of Rule 71(b), as well as within the language of section 112 requiring 'a description of the invention.' A specific embodiment of the invention may be found in the disclosure considered as a whole, and need not of necessity be restricted to a paragraph labelled 'example.'"

2. SAME—SAME—SAME—SAME—PROCESS OF MAKING—35 U.S.C. 112.

"Appellants, however, must also disclose how to make and use that invention. 35 U.S.C. 112. * * * While appellants have not set forth a full, detailed working example of the manner of making their copolymers, we are satisfied that sufficient working procedure has been set forth so that one skilled in the art may prepare the claimed copolymers without undue experimentation. * * * It is well settled that an applicant need not expressly set forth in his specification that which would be understood by persons skilled in the art. * * * While addition to the disclosure of a more detailed specific embodiment of the *process* of preparing the copolymers (which is not the claimed invention here) might have been helpful, the information that is in the disclosure, considered as a whole, would clearly teach those skilled in the art what the invention is and how to practice it."

3. SAME—SAME—SAME—SAME—SPECIFIC EMBODIMENT—RULE 71(b).

"It is apparent that the statutory provisions and the expression 'specific embodiment' in Rule 71(b) are subject to some interpretation. Application of those principles must necessarily depend on the facts of each case. The presence or absence of a working example is but one factor to be considered in determining whether the specification *as a whole* is sufficient under the statute and rules. Attendant relevant circumstances, such as the nature of the invention, the state of the prior art and relative skill of those in that art, should be given full consideration. The circumstances here would seem to indicate that the presence of a specific working example, denominated as such, is unnecessary."

4. SAME—SAME—SAME—SAME—SPECIFIC WORKING EXAMPLE—35 U.S.C. 112.

"In enacting section 112 as part of the 1952 Patent Act, Congress retained the phraseology of R.S. 4888 with minor deletions in wording, and added the clause at the end of the first paragraph which gives rise to the controversy here. In our view, there is nothing in that clause, either explicitly or implicitly, which necessarily requires a specific working example, labeled as such, to be set forth as the contemplated 'best mode.' Moreover, we have nothing in the record before us to suggest that appellants have not in fact disclosed the best mode contemplated by them of carrying out their invention."

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* * * Certainly the absence of a specific working example is not necessarily evidence that the best mode has not been disclosed, nor is the presence of one evidence that it has. It seems to us that an inventor may represent his contemplated best mode just as well by a preferred range of conditions or group of reactants as by a working example which employs unitary values of each variable involved."

5. SAME—SAME—SAME—SAME—SELECTION OF COPOLYMER FROM LIST OF MONOMER REACTANTS.

"While it might be possible to produce the specific copolymer of hexafluoropropene and vinylidene fluoride here in issue by a fortuitous selection of that particular pair of monomers from the list of 30 or so other monomers in a manner of selection generally suggested by appellants in their specification hereinbefore quoted, we are not convinced that appellants' specification, considered as a whole, necessarily discloses that copolymer in a manner entitling them to claim it."

6. SAME—SAME—SAME—SAME—SAME.

"We find the directions or criteria set forth in appellants' specification insufficient to necessarily lead one of ordinary skill in the art to the copolymers of hexafluoropropylene and vinylidene fluoride, the precise aspect of the invention here claimed. * * * As the Board observed, the simple listing of possible monomer reactants is not ipso facto a basis for claims to any specific copolymer obtained from those reactants which may fall within the scope of the disclosure."

7. SAME—BENEFIT OF FILING DATE OF EARLIER APPLICATION—35 U.S.C. 112 AND 120.

"The Board refused to give the present application the benefit of the 1953 filing date of appellants' parent application under the provisions of 35 U.S.C. 120. The parent and present applications each contain the disclosure reproduced earlier in this opinion from which appellants urge that the invention claimed in the appealed claims antedates the Rexford patent as a reference. That position is valid only if appellants' parent application complies with section 120, which requires that the earlier application disclose the invention in the manner provided by the first paragraph of section 112."

8. PATENTABILITY—PARTICULAR SUBJECT MATTER—"FLUORINATED ELASTOMERS AND METHOD FOR CROSSLINKING SAME."

The refusal of certain claims in an application entitled "Fluorinated Elastomers and Method for Crosslinking Same," as unpatentable because of insufficient disclosure and in view of the prior art is reversed as to certain claims and affirmed as to the others.

APPEAL from the Patent Office. Serial No. 6,879.

MODIFIED.

James A. Smith (Cruzan Alexander of counsel) for appellants.

Clarence W. Moore (Jack E. Armore of counsel) for the Commissioner of Patents.

Before RICH, Acting Chief Judge, and MARTIN, SMITH, and ALMOND, Jr., Associate Judges, and Judge WILLIAM H. KIRKPATRICK, United States Senior District Judge for the Eastern District of Pennsylvania

KIRKPATRICK, J., delivered the opinion of the court.

This is an appeal from the decision of the Board of Appeals which affirmed the Examiner's rejection of claims 1-12 and 14-22 in appellants' application¹ entitled "Fluorinated Elastomers and Method for Crosslinking Same."

A short chronology of the proceedings leading to this appeal will be helpful in understanding the issues involved. Appellants' 1953 parent application, like the present application, describes certain linear, elastomeric, fluorinated copolymers and methods for vulcanizing

¹ Serial No. 6,879, filed February 5, 1960, as a division of application Serial No. 346,800, filed April 3, 1953.

or cross-linking those polymers to produce products of increased toughness and heat resistance, and lessened plasticity and solubility. According to appellants, the parent application has issued as U.S. Patent No. 2,965,619 with claims drawn to *vulcanized* elastomers and processes of preparing them from the linear, fluorinated copolymers.

The present application was originally filed with 13 claims drawn to certain of the *vulcanizable* elastomeric fluorinated copolymers disclosed therein. The Examiner finally rejected all claims (now present claims 1-12 and 14-16) as based on an insufficient disclosure and as unpatentable over two prior art patents² to Dittman. Appellants appealed to the Board; before its decision, the Examiner reopened prosecution, citing a third patent to Rexford³ against the claims. Appellants responded to that rejection by copying claims 1, 2 and 6-9 of Rexford into their application as present claims 17-22 and requested an interference be declared with Rexford. The Examiner refused to institute interference proceedings, and entered a second final rejection of all claims, including claims 17-22, "as based on an insufficient disclosure," "as being substantially met by Rexford" and "as unpatentable over either of the Dittman * * * patents." A second appeal to the Board ensued. In his answer, the Examiner modified his position to the extent that, in addition to the insufficient disclosure rejection of all claims, claims 1-3, 5, 6, 8, 12, 14 and 17-22 were rejected as "fully met" by Rexford and claims 1-3, 5-9, 12, 14 and 17-22⁴ were rejected "as unpatentable over" the Dittman patents. The Board affirmed on all grounds. We shall consider each issue separately.

The "Insufficient Disclosure" Rejection

The appropriate starting point for disposition of the issue of sufficiency of disclosure is appellants' specification. The portions which are relevant to the claimed subject matter are set out below:

These and other objects are accomplished by the following invention. Linear elastomers comprising disordered, saturated, fluorinated carbon chains, and including a substantial number of carbon atoms which are linked only to hydrogen and to other carbon atoms, are reacted with a crosslinking agent at elevated temperatures to produce a vulcanized elastomer. Ordinarily, the linear elastomer is at least 10 percent comprised of —CH₂— groups.

Disorder in the linear, saturated, fluorinated carbon chains is ordinarily achieved by the copolymerization of at least two mono-olefinic compounds. In order to obtain chemical stability in the elastomer, at least one of the mono-olefinic compounds must be fluorinated. In order that the copolymer be elastomeric in nature, at least one of the mono-olefinic compounds must contain at least one carbon atom linked only to hydrogen and carbon atoms. At least 10 percent of the carbon atoms in the chain must be of this type in order to obtain an elastomeric product. Ordinarily, a mono-olefinic compound containing a CH₂= group is used and this results in the linear chains containing —CH₂— groups. When the mono-olefinic compound contains an unsaturated chain of three or more carbon atoms, methyl groups may be present and these remain as side groups on the linear chain.

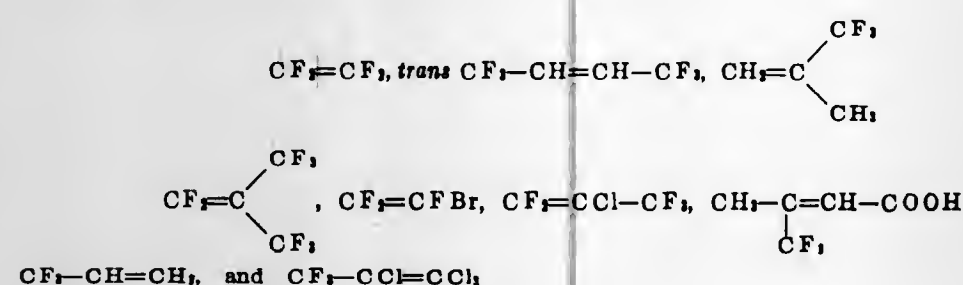
Among the fluorinated mono-olefinic compounds which may be used as comonomers to produce fluorine-containing elastomers are: CF₂=CFCl, CF₂=CH₂,

² Dittman, 2,689,241, September 14, 1954; 2,705,706, April 5, 1955.

³ Rexford, 3,051,677, August 28, 1962 (filed April 29, 1957).

⁴ The Examiner also rejected claim 16 on Dittman. As the Solicitor points out, it appears claim 16 was inadvertently included in that rejection since claims 10 and 16 are essentially duplicates and claim 10 was not rejected on Dittman. Since we find the subject matter of claim 16 new and nonobvious in view of Dittman, the rejection of that claim is reversed without need of further discussion.

$\text{CF}_2=\text{CCl}_2$, $\text{CF}_2=\text{CF}=\text{CF}_2$, $\text{CF}_2=\text{CF}=\text{CN}$, $\text{CF}_2=\text{CHCl}$, $\text{CF}_2=\text{CCl}=\text{CCl}-\text{CF}_2$,
 $\text{CF}_2=\text{CHF}$, $\text{CH}_2=\text{CFCl}$, *cis* $\text{CF}_2-\text{CH}=\text{CH}-\text{CF}_2$,



These fluorinated mono-olefinic compounds may be copolymerized with each other, provided at least one of the comonomers contains at least one carbon atom bonded only to hydrogen and carbon atoms. Fluorinated olefinic compounds, such as those listed above, may also be copolymerized with other mono-olefinic compounds supplying the carbon atoms which are linked only to hydrogen and carbon atoms. Among the mono-olefinic compounds which may be used for this purpose are vinyl chloride, propylene, styrene, vinylidene chloride, acrylonitrile, (n) butyl acrylate, divinyl benzene, ethylene, acrylamide and vinyl bromide.

Among the copolymer systems which are particularly advantageous are the following:

vinylidene fluoride	-1,1-chlorofluoroethylene
vinylidene fluoride	-tetrafluoroethylene
vinylidene fluoride	-bromotrifluoroethylene
*vinylidene fluoride	-2-chloroperfluoropropylene
vinylidene fluoride	-acrylamide
vinylidene fluoride	-chlorotrifluoroethylene
vinylidene fluoride	-vinylidene chloride
difluorodichloroethylene (asym.)	-(n) butyl acrylate
dichlorodifluoroethylene (asym.)	-1,1-fluorochloroethylene
*perfluoropropylene	-1,1-difluoro-2-chloroethylene
(n) butyl acrylate	-tetrafluoroethylene
(n) butyl acrylate	-1,1-fluorochloroethylene
trifluoroethylene	-2-chloroperfluoropropylene
*1,1-fluorochloroethylene	-ethylene
tetrafluoroethylene	-1,1-fluorochloroethylene
tetrafluoroethylene	

The copolymerization reaction may be carried out in either a water suspension type system or in a mass polymerization system. In the former system the reaction is preferably carried out at a temperature between about 0° C. and about 35° C. In a mass polymerization system the reaction is preferably carried out at a temperature between about -20° C. and about 0° C. With the water suspension type system a redox catalyst system is preferred. It has and contains an oxidant, a reductant and a variable valence metal salt. The oxidant in the water suspension type recipe is preferably an inorganic persulfate, such as potassium persulfate, sodium persulfate or ammonium persulfate, the latter being most desirable. The reductant is preferably a bisulfite, such as sodium bisulfite or potassium bisulfite, and preferably the former. The variable valence metal salt which is employed for the purpose of regenerating the oxidant is preferably in the form of an iron salt, such as ferrous sulfate or ferrous nitrate with ferrous sulfate being the most desirable variable valence metal salt.

In the mass polymerization system, organic peroxide promoters, and particularly halogen-substituted acyl peroxide, are used. Trichloroacetyl peroxide is a preferred promoter of this type. Other halogen-substituted organic peroxides suitable for carrying out the polymerization are trifluoroacetyl peroxide, difluoroacetyl peroxide, 2,4-dichlorobenzoyl peroxide, chloroacetyl peroxide, trifluorodichloropropionyl peroxide, and dichlorofluoroacetyl peroxide.

The appealed claims are all directed to certain copolymers derived from a fluorohalogenated propylene and a fluorinated ethylene. Appellants and the Patent Office agree that only the compounds marked by an asterisk (*) in the above list of proposed "copolymer systems"

fall within the scope of the appealed claims, of which claims 1, 8, 10, 15 and 17 are representative:

1. An elastomeric copolymer consisting essentially of a fluorohalogenated propene in which the halogen substituents are normally gaseous halogens, not more than one of which is chlorine, and a fluorinated ethylene in which the substituents are selected from the group consisting of fluorine and hydrogen, said compounds having at most two hydrogen atoms per molecule, which hydrogen atoms are in the form of $\text{CH}_2=$ groups, and only one of said compounds having a $\text{CH}_2=$ group, said copolymer having a linear carbon chain comprised of at least 10 percent $-\text{CH}_2-$ groups.

8. An elastomeric copolymer consisting essentially of hexafluoropropene and vinylidene fluoride having a carbon chain in which at least 10 percent of the carbon atoms are $-\text{CH}_2-$.

10. An elastomeric copolymer consisting essentially of hexafluoropropene and 1,1-fluorochloroethylene having a carbon chain in which at least 10 percent of the carbon chains $-\text{CH}_2-$. [sic]

15. An elastomeric copolymer consisting essentially of vinylidene fluoride and 2-chloroperfluoropropylene having a carbon chain in which at least 10 percent of the carbon atoms are $-\text{CH}_2-$.

17. An elastic copolymer of about 70% to 30% by weight of vinylidene fluoride and from about 30% to 70% by weight of hexafluoropropene.

The position of the Examiner and the Board with respect to the sufficiency of disclosure issue is exemplified by the following excerpt from the Board's opinion:

Claims 1 through 12 and 14 through 22 * * * stand rejected as based upon an insufficient disclosure. The Examiner points out that not a single example is disclosed for preparing a fluorohalogenated or perfluoropropene copolymer and only three of the suggested pairings of monomers * * * would fall within the terms of the broad claims; further that nothing is taught concerning the properties or preparation of these copolymers or even any assertion that they are new. The specific copolymer of hexafluoropropene-vinylidene fluoride now claimed is nowhere specifically suggested * * * [in] the specification. The Examiner saw no valid basis for appellants claiming as new products "materials never described, never prepared and never stated to be new." * * * He specifically held that the disclosure failed to comply with Rule 71(b) lacking a complete description of a specific embodiment of the presently claimed invention.

Our conclusion on the preceding rejection is that it is proper and should be sustained. Appellants have argued that the disclosure is sufficient to teach any person skilled in the art how to prepare the claimed copolymers. However, the method is not in issue but rather the copolymers themselves, which would vary in characteristics depending upon the particular selection of monomers and the conditions of polymerization. * * * sweeping disclosures of the instant type do not teach specific inventive compositions broadly embraced thereby * * *.

The question of sufficiency of disclosure is one that must be determined on the basis of each state of facts and the decisions relied upon by appellants are not seen controlling in the instant case where the results of minor variations are relatively unpredictable and catalytic phenomena are involved. * * * The tenor of the entire disclosure is that the invention is directed to the crosslinking of certain of these polymers and both of the examples are to a process of producing such crosslinked polymers. If in the broad and speculative disclosure of possible polymers herein there is a second and distinct invention, such portion must by itself comply with Rule 71(b) and include a complete description of a specific embodiment of that distinct invention. *Ex parte Knowles et al.*, * * * 122 USPQ 151. Disclosure of the best mode is mandatory. *Faulstich v. Ladd*, 138 USPQ 287. The listing of possible monomer reactants is not necessarily a basis for claims to any specific combination which may fall within the scope of the disclosure. *Pruett v. Fuller and Johnson*, 43 CCPA 831; * * * 109 USPQ 59. The situation is similar to that in *In re Fried*, 50 CCPA 954; * * *

* As will become apparent later in this opinion, we think appellants have described their copolymers and methods of preparing them. With regard to the Examiner's observation that appellants' claimed copolymers were "never stated to be new," it would seem reasonable to infer from the mere filing of the present application that appellants considered the copolymers to be new. In any event, appellants' application oath states that they believe they "are the original, first and sole inventors of the invention or discovery" in the present application entitled "Fluorinated Elastomers and Method for Crosslinking Same." [Emphasis supplied.]

312 F.2d 930; 136 USPQ 429 wherein a disclosure permitting choices between several variables with no working example and failure to name or identify the final compounds by formula was held insufficient under 35 U.S.C. 112 to support claims to a specific steroid. The rejection for insufficiency of disclosure is sustained.

For purposes of our discussion, the claims may conveniently be placed into two groups: (I) Those claims (1-7, 10, 11 and 14-16) which are generic to or directed to species other than the copolymer of hexafluoropropylene and vinylidene fluoride, and (II) those claims (8, 9, 12 and 17-22) directed to copolymers of hexafluoropropylene and vinylidene fluoride.

I. While the exact nature of the Patent Office position regarding claims 1-7, 10, 11 and 14-16 is not entirely clear from the record, it would appear that one of its chief concerns is the asserted failure of the specification to comply with Patent Office Rule 71(b), which requires that the specification "must describe completely a *specific embodiment* of the process, machine, manufacture, *composition of matter* or improvement invented * * *." (Emphasis supplied.) As we noted in *In re Gay*, 50 CCPA 725, 309 F.2d 769, 135 USPQ 811, that language of Rule 71(b) has no statutory antecedent basis except insofar as it implements the following requirements of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same * * *.

Under what circumstances, if any, the present language of Rule 71(b) is bereft of antecedent statutory authority on the ground that it requires more disclosure in a specification than Congress has established is necessary in section 112 we need not here decide, for we are satisfied under the present circumstances that appellants' specification does "describe completely a specific embodiment of the * * * composition of matter * * * invented," and does contain "a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains * * * to make and use the same."

[1] What is referred to by section 112 as "the invention" is determined by appellants' claims read in light of the specification. *In re Chilowsky*, 50 CCPA 806, 306 F.2d 908, 134 USPQ 515. Here the invention is certain compositions of matter, obtained by reacting certain fluorohalogenated propylenes with certain fluorinated ethylenes. Appellants have set forth, indeed effectively named, three specific copolymers (denoted by asterisks in the quotation from appellants' specification) which fall within the scope of those composition of matter claims. From the other description in the specification, we are informed that at least 10 percent of the carbon atoms in the linear chain of those copolymers must be $-\text{CH}_2-$ groups, thus effectively establishing, for example, that the copolymer of vinylidene fluoride and 2-chloroperfluoropropylene is composed of at least one molecule of vinylidene fluoride ($\text{CH}_2=\text{CF}_2$) for each four molecules of 2-chloroperfluoropropylene ($\text{CF}_3-\text{CCl}=\text{CF}_2$). When so constituted, those copolymers are said to be elastomeric (rubbery), chemically inert and electrically insulating. We think those copolymers, when considered with the remainder of the specification, are *specific embodiments* of the invention within any reasonable requirement of Rule 71(b), as

well as within the language of section 112 requiring "a description of the invention." A specific embodiment of the invention may be found in the disclosure considered as a whole, and need not of necessity be restricted to a paragraph labelled "example."

[2] Appellants, however, must also disclose how to make and use that invention. 35 U.S.C. 112. No question has been raised as to the sufficiency of disclosure of the manner of using the vulcanizable, elastomeric copolymers. The position of the Patent Office with regard to the "process of making" the invention is not entirely clear. On the one hand, the Board states that "The method is not in issue," and on the other that "catalytic phenomena are involved" and that the copolymers "would vary in characteristics depending on the particular selection of monomers and the conditions of polymerization." While appellants have not set forth a full, detailed working example of the manner of making their copolymers, we are satisfied that sufficient working procedure has been set forth so that one skilled in the art may prepare the claimed copolymers without undue experimentation. We are supported in our conclusion by reference to the two Dittman patents in the record, which describe in detail the "water suspension" and "mass" polymerization *processes* contemplated by appellants and indicate the general applicability of those processes to catalytic polymerization of a wide variety of fluorinated olefin monomer species, including many of the fluorinated propylenes and ethylenes recited by appellants here. It is well settled that an applicant need not expressly set forth in his specification that which would be understood by persons skilled in the art. See *In re Bosy*, 53 CCPA —, — F.2d —, 149 USPQ 789; *In re Chilowsky*, 43 CCPA 775, 229 F.2d 457, 108 USPQ 321, and cases cited therein. While addition to the disclosure of a more detailed specific embodiment of the *process* of preparing the copolymers (which is not the claimed invention here) might have been helpful, the information that is in the disclosure, considered as a whole, would clearly teach those skilled in the art what the invention is and how to practice it.

[3] It is apparent that the statutory provisions and the expression "specific embodiment" in Rule 71(b) are subject to some interpretation. Application of those principles must necessarily depend on the facts of each case. The presence or absence of a working example is but one factor to be considered in determining whether the specification *as a whole* is sufficient under the statute and rules. Attendant relevant circumstances, such as the nature of the invention, the state of the prior art and relative skill of those in that art, should be given full consideration. The circumstances here would seem to indicate that the presence of a specific working example, denominated as such, is unnecessary.

The Board also observed that "Disclosure of the best mode is mandatory," with apparent reference to the last clause of the first paragraph of 35 U.S.C. 112 and the last sentence of Rule 71(b).⁶ It is the Solicitor's position that the "best mode" requirement of the above statute and rule "does require actual working examples" and that appellants' specification, containing no "working example" of the preparation of the claimed copolymers, necessarily fails to fulfill that requirement.

⁶ In the interest of accuracy, we observe that both section 112 and Rule 71(b) require that the specification set forth "the best mode contemplated by the inventor of carrying out his invention." (Emphasis supplied.)

[4] In enacting section 112 as part of the 1952 Patent Act, Congress retained the phraseology of R.S. 4888⁷ with minor deletions in wording, and added the clause at the end of the first paragraph which gives rise to the controversy here. In our view, there is nothing in that clause, either explicitly or implicitly, which necessarily requires a specific working example, labeled as such, to be set forth as the contemplated "best mode." Moreover, we have nothing in the record before us to suggest that appellants have not in fact disclosed the best mode contemplated by them of carrying out their invention. Quite the contrary, as is evident from their specification quoted above, appellants have disclosed a number of elastomeric fluorinated copolymers as "particularly advantageous," temperature ranges in which the copolymerization reaction "is preferably carried out," and "preferred" or "most desirable" components of catalyst systems to be utilized. Certainly the absence of a specific working example is not necessarily evidence that the best mode has not been disclosed, nor is the presence of one evidence that it has. It seems to us that an inventor may represent his contemplated best mode just as well by a preferred range of conditions or group of reactants as by a working example which employs unitary values of each variable involved.

In conclusion, we hold:

(1) That appellants' disclosure, considered as a whole, does completely disclose a specific embodiment of the inventions claimed in claims 1-7, 10, 11 and 14-16.

(2) That appellants' disclosure does contain a written description of the invention in such manner as will enable one skilled in the art to make and use those inventions without undue experimentation.

(3) That no reason exists to cause us to believe appellants have not set forth the best mode contemplated by them of carrying out the invention.

⁷ R.S. 4888, as amended (38 Stat. 958, 46 Stat. 376) read in pertinent part:

Before any inventor or discoverer shall receive a patent for his invention or discovery, he shall make application therefor in writing, to the Commissioner of Patents, and shall file in the Patent Office a written description of the same, and of the manner and process of making, constructing, compounding, and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which it appertains or with which it is most nearly connected, to make, construct, compound, and use the same; and in case of a machine, he shall explain the principle thereof, and the best mode in which he has contemplated applying that principle, so as to distinguish it from other inventions . . .

The revision note to section 112 states:

The clause [in R.S. 4888] relating to machines is omitted as unnecessary and the requirement for disclosing the best mode of carrying out the invention is stated as generally applicable to all types of invention (derived from Title 35, U.S.C., 1946 ed., § 69, first defense).

We also note the remarks of P. J. Federico in his "Commentary on the New Patent Act," 35 USCA §§ 1-110 at page 25:

. . . The clause in the old statute [R.S. 4888] relating to machine patents and requiring the best mode in such cases has been omitted as unnecessary and a clause has been added requiring that the specification "shall set forth the best mode contemplated by the inventor of carrying out his invention." Although not the same, this requirement is partly derived from and replaces the first defense specified in old R.S. 4920 (see under section 282) as well as being a revision and extension of the old clause which related only to machine. This requirement, it should be noted, is not absolute, since it only requires disclosure of the best mode contemplated by the inventor, presumably at the time of filing the application. (Emphasis supplied.)

R.S. 4920 (35 U.S.C. 69, 1946 ed.), first defense, to which both the revision note to section 112 and Mr. Federico refer, read:

In any action for infringement the defendant . . . may prove on trial any one or more of the following special matters:

First. That for the purpose of deceiving the public the description and specification filed by the patentee in the Patent Office was made to contain less than the whole truth relative to his invention or discovery, or more than is necessary to produce the desired effect . . .

It is in the above context that this court stated in *In re Gay*:

. . . the essence [of the last clause of the first paragraph of section 112] . . . requires an inventor to disclose the best mode contemplated by him, as of the time he executes the application, of carrying out his invention. Manifestly the sole purpose of this latter requirement is to restrain inventors from applying for patents while at the same time concealing from the public preferred embodiments of their inventions which they have in fact conceived.

. . . we think that an inventor is in compliance therewith if he does not conceal what he feels is a preferred embodiment of his invention. . . .
See also "Robinson on Patents," sec. 485 (1890).

II. A somewhat different question is presented by claims 8, 9, 12 and 17-22 which are directed in varying degrees of detail only to copolymers of hexafluoropropene ($\text{CF}_3-\text{CF}=\text{CF}_2$) and vinylidene fluoride ($\text{CF}_2=\text{CH}_2$). Those particular copolymers are nowhere specifically named in the specification. Appellants, however, urge that the copolymers of those claims "would be the natural and expected result achieved by one skilled in the art following the procedures outlined in the application."

[5] While it might be possible to produce the specific copolymer of hexafluoropropene and vinylidene fluoride here in issue by a fortuitous selection of that particular pair of monomers from the list of 30 or so other monomers in a manner of selection generally suggested by appellants in their specification hereinbefore quoted, we are not convinced that appellants' specification, considered as a whole, necessarily discloses that copolymer in a manner entitled them to claim it. As we stated in *Pruett v. Fuller*, 43 CCPA 831, 230 F.2d 459, 109 USPQ 59:

The question as to whether an application forms a proper support for a claim to a composition which is not specifically disclosed, but which falls among compositions suggested by general language in the application is one which must be determined largely by the particular circumstances of each case. The determining factor is whether the application would fairly suggest to the skilled worker in the art the particular composition claimed, or whether the desirability of that composition could be ascertained only by extensive experimentation. As was noted in *In re Prutton*, supra [40 CCPA 724, 200 F.2d 706, 96 USPQ 147], the indication or lack of indication of a preference for the composition, in the application disclosure, is an important factor to be considered in making the determination, since anyone attempting to carry out the disclosure of an application would logically begin with the preferred examples given.

[6] We find the directions or criteria set forth in appellants' specification insufficient to necessarily lead one of ordinary skill in the art to the copolymers of hexafluoropropylene and vinylidene fluoride, the precise aspect of the invention here claimed. See *In re Rainer*, 52 CCPA 1593, 347 F.2d 574, 146 USPQ 218; *Biel v. Chessin*, 52 CCPA 1607, 347 F.2d 898, 146 USPQ 293. As the Board observed, the simple listing of possible monomer reactants is not ipso facto a basis for claims to any specific copolymer obtained from those reactants which may fall within the scope of the disclosure. See also *In re Prutton*, 40 CCPA 724, 200 F.2d 706, 96 USPQ 147; *Engelbrecht v. Rogers*, 32 CCPA 861, 148 F.2d 102, 64 USPQ 582; *In re Collins*, 22 CCPA 1053, 75 F.2d 1000, 25 USPQ 38, and cases cited therein.

We conclude that appellants' specification does not support claims 8, 9, and 12 drawn to the copolymers of hexafluoropropylene and vinylidene fluoride. Moreover, as for claims 17-22 which were copied from Rexford for purposes of interference, we do not find in the specification a disclosure of the particular ranges of weight or mol percentages of monomer constituents set forth in those claims, exemplified by claim 17. The rejection of claims 8, 9, 12 and 17-22 is affirmed.

The Rejection on Rexford

The issue here arises from the rejection of claims 1-3, 5, 6, 8, 12, 14 and 17-22 as "fully met" by the Rexford patent, which has a filing date in 1957. Rexford discloses and claims certain copolymers of hexafluoropropylene and vinylidene fluoride. [7] The Board refused to give the present application the benefit of the 1953 filing date of appellants' parent application under the provisions of 35 U.S.C. 120.

The parent and present applications each contain the disclosure reproduced earlier in this opinion from which appellants urge that the invention claimed in the appealed claims antedates the Rexford patent as a reference. That position is valid only if appellants' parent application complies with section 120, which requires that the earlier application disclose the invention in the manner provided by the first paragraph of section 112. It follows from the discussion of the section 112 issue earlier in this opinion that claims 1-3, 5, 6, and 14 are not properly rejected on Rexford, whereas claims 8, 12 and 17-22, not supported by either the parent or present disclosure, are properly rejected on that patent.

The Rejection on Dittman

As noted earlier, the Dittman patents are directed to *processes* for the polymerization of halogenated olefin monomers. Both patents contain similar disclosures of suitable halogenated olefins that may be utilized in those processes. It seems apparent from a consideration of both Dittman patents that the patentee was not particularly concerned with the nature of the final polymer products obtained, noting only that the processes could be used to obtain a variety of "plastics, oils, greases and waxes."

In sustaining the Examiner's rejection in the present case, the Board stated:

*** [The Dittman] references have a broad disclosure of copolymerizing monomers selected from a listing similar to that contained in the instant application. In our opinion this disclosure, while possibly on no better footing than appellants' own disclosure, provides sufficient basis for sustaining the rejection. *** One need only make the selection that appellants find can so readily be made in their own case. For example, Dittman et al., 2,705,708, name several perhalo-olefins which may be homopolymerized or copolymerized. One of these is trifluorochloroethylene; another is perfluoropropene. These may be copolymerized with other monomers such as vinylidene fluoride. The pairing of trifluorochloroethylene and vinylidene fluoride is found ***. Since trifluorochloroethylene is in the same class as perfluoropropene according to *** [the patent], presumably perfluoropropene could be substituted for the trifluorochloroethylene for copolymerization with vinylidene fluoride and this would result in polymers meeting the requirements of appellants' claims. ***

Appellants' complaint that Dittman et al.'s teachings are insufficient for selecting the appropriate monomer combinations is, in our opinion, equally applicable to appellants' own disclosure. It does not seem logical that an applicant should be entitled to insist that a reference have a disclosure better than his own before it can be applied to his claims. ***

It is evident from the Board's opinion and the Solicitor's brief that the only copolymer which the Patent Office thinks may be synthesized from the Dittman disclosure to meet the requirements of the instant generic and specific claims is the copolymer of hexafluoropropylene (perfluoropropene) and vinylidene fluoride.⁸

Appellants urge that the Board failed to appreciate that the Dittman patents make no mention of elastomeric copolymers, much less the criteria necessary for selecting the requisite monomers from the extensive list of polymerizable materials therein in order to prepare elastomeric products; and that the Board erred in equating appellants' disclosure with that of Dittman.

⁸ We observe that present claims 17-22, appearing as claims 1, 2 and 6-9 in the Rexford patent and drawn to specific copolymers of hexafluoropropylene and vinylidene fluoride, were allowed to Rexford over both Dittman patents. No adequate reason has been offered by the Patent Office why the subject matter of those claims is now properly rejected on Dittman (see 35 U.S.C. 282), and we find none.

We agree with appellants. A disclosure such as in the Dittman patents, while providing ample detail as to polymerization processes, would seem of little value in solving the particular problem which appellants faced, that of providing *elastomeric* fluorinated polymers. Certainly nothing in either Dittman reference suggests that preparation of rubbery polymers is possible or desirable. We find no clear suggestion in the Dittman patents of the concept of copolymerizing vinylidene fluoride and hexafluoropropylene or of the product obtained thereby.

The rejection of claims 1-3, 5-9, 12, 14 and 16-22 as unpatentable over the Dittman references is reversed.

[8] In summary, the decision of the Board is affirmed as to claims 8, 9, 12 and 17-22 and reversed as to claims 1-7, 10, 11 and 14-16. **MODIFIED.**

MARTIN, J., concurs in the result.

SMITH, J., concurring, with whom RICH, J., joins.

As the majority opinion notes, Rule 71(b) has no statutory antecedent basis except insofar as it implements certain provisions of 35 U.S.C. 112, set forth in the majority opinion. The provisions there quoted are similar in all material respects to the language employed by Congress in R.S. 4888, the progenitor of section 112. In *Lawson v. Bruce*, 42 CCPA 893, 222 F.2d 273, 105 USPQ 440, we observed that there was no requirement in R.S. 4888 or in the Rules of Practice then in effect that a party relying on a constructive reduction to practice must show a specific embodiment or working example to support claimed compounds. As is evident from the excerpt from the decision of the Board of Patent Interferences which is quoted in *Lawson v. Bruce*, the Patent Office tribunals were then in agreement with that position, stating:

The Office rulings above discussed definitely establish that a sufficient disclosure need not of necessity contain a specific working example for a particular compound being claimed.⁹ A teaching in the specification as a whole for preparing the compound may suffice. As for identifying properties the decisions establish no uniform practice. We find nothing in R.S. 4888 [the statute then applicable] or the Rules of Practice which demands such properties in a disclosure. ***

It is not believed necessary that the *** application indicate that the compound was ever made. *** the statutes do not require that a patentee actually reduce the invention to practice. The filing of a complete and allowable application is conclusive evidence that the invention was reduced to practice as early as that date.

*** It appears *** that although no specific working example is given *** [for the compound in issue] there is set forth substantial working procedure. ***

we are satisfied that a person skilled in the art, following the general and specific teachings therein, would encounter no difficulty in producing [the] compound ***. We appreciate that it may involve some judgment on the part of the skilled worker. This, however, is true even in cases where examples are given since obviously every detail of the necessary procedure cannot be given in a patent specification and many details must be left to the skill of the chemist. ***

⁹ The Board was referring to the decisions in *Ex parte Hagelston*, 88 USPQ 561, and *Ex parte Von Zueren*, 86 USPQ 489. For a later Board decision to the same effect, subsequent to enactment of section 112 and promulgation of Rule 71(b) in substantially its present form, see *Ex parte Stoccombe*, 130 USPQ 38.

At the present time, section 112, like its predecessor, makes no explicit requirement that a specific embodiment or working example is necessary to support claims to a composition of matter. Assuming the expressions "specific embodiment" and "working example" may be equated, as the Patent Office has evidently done here, present Rule 71(b) does make such a requirement, the language pertinent thereto making its first appearance in the Rules of Practice effective March 1, 1949. The Rules of Practice, when not inconsistent with the statutes from which they are derived, have the force of law. 35 U.S.C. 6. To be consistent with section 112, the language in Rule 71(b) relating to a description of a "specific embodiment" should not be construed as requiring more description of the invention than is otherwise required by section 112. It is not within the province of the Patent Office or this court, in interpreting section 112 by rule or decision, to require more or accept less in the way of disclosure of an invention than Congress intended a specification shall contain.

As to the first question decided in the majority opinion, concerning claims 1-7, 10, 11 and 14-16, I agree with the reasoning and conclusions set forth in the majority opinion that the terms of section 112 are satisfied. As Rule 71(b) cannot in my view require more in the way of a disclosure, the inquiry is at an end and the Board's decision as to those claims cannot be sustained.

For the above reasons, I concur in the reversal of the Board's decision as to claims 1-7, 10, 11 and 14-16. I agree with the reasoning and conclusion of the majority as to claims 8, 9, 12 and 17-22.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

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2,713,690, C. Schneider, BED OR DIVAN SPRING ARRANGEMENT, filed Jan. 11, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67-48-FW, Charles Schneider and Signal Mfg. Co. v. The Seng Co. and Kroeler Mfg. Co.

2,754,240, W. B. Kinney, CASEIN ADHESIVE COMPOSITION AND LAMINATED STRUCTURE UTILIZING THE SAME, filed Dec. 8, 1966, D.C. Minn. (St. Paul), Doc. 3-66-360, The Borden Co. v. H. B. Fuller Co.

2,766,510, J. D. Helbel, METHOD AND APPARATUS FOR MAKING CONDENSERS, filed Feb. 3, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c186, Erie Technological Products, Inc. v. Die Craft Metal Products, Inc.

2,777,657, L. J. Zent, TRACTOR MOUNTED SUPPORT FOR UMBRELLAS, filed Jan. 23, 1967, D.C., S.D. Ill. (Rock Island), Doc. RI-180, Snow Corp. v. Viola Sales & Engineering Inc.

2,782,251, Ebel and D'Ascoli, CABLES FOR HIGH FREQUENCY USE, filed Dec. 15, 1966, D.C., S.D.N.Y., Doc. 66-C-4324, Belden Mfg. Co. v. Saxton Products, Inc.

2,785,259, J. E. Haydon, SWITCH CASING, filed Dec. 2, 1966, D.C. Conn. (New Haven), Doc. 11,719, Tri-Tech, Inc. v. Masson Electronics Corp.

2,799,858, Bacon and Kent, NAIL-DRIVING MACHINE, filed Jan. 9, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67-35-R, GBC Designs v. Robert Salmon.

2,804,838, H. W. Moser, TROLLING OUTBOARD MOTOR CONTROL, filed Jan. 12, 1967, D.C., W.D. TENN. (Memphis), Doc. C-67-11, Harold W. Moser v. Byrd Industries, Inc., St. Louis Diecasting Corp., and Tennessee Diecasting Corporation.

2,828,194, Hopkins and Easley, ETCHING, filed Jan. 17, 1967, D.C.N.J. (Newark), Doc. 58-67, The Dow Chemical Co. v. Angelo C. Cioppa and Joseph Brenner.

2,853,791, W. J. Wood, UNIFORM INSIGNIA GAUGE, filed Dec. 5, 1966, D.C., S.D.N.Y., Doc. 66-C-4159, Walter J. Wood v. Ira Green, Inc.

2,896,874, K. Nurmse, DRIVING MEANS FOR FISHING REELS, filed Jan. 19, 1967, D.C., S.D.N.Y., Doc. 67-C-255, The Garcia Corp. v. Harman's Sport Goods, Inc.

2,935,602, R. S. Fremont, LIGHTING FIXTURES FOR RECESSED CEILING MOUNTING, filed Feb. 1, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67-152-IH, Halo Lighting, Inc. v. Wilco Lighting Corporation.

3,089,935, Rentshler, Langlois, Larson, Alverson, and Liggett, PRODUCTION OF CRYSTALLINE GLUCOSE, filed Jan. 30, 1967, D.C., S.D. Iowa (Davenport), Doc. 3-730-D, A. E. Staley Manufacturing Co. v. Standard Brands, Inc.

REISSUES

APRIL 18, 1967

Matter enclosed in heavy brackets [] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

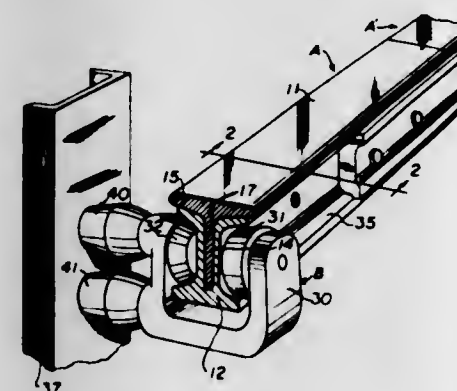
26,189

TROLLEY CONDUCTOR

Roy F. Dehn, Wickliffe, Ohio, assignor to The Cleveland Crane & Engineering Company, Wickliffe, Ohio, a corporation of Ohio

Original No. 3,222,464, dated Dec. 7, 1965, Ser. No. 313,959, Oct. 4, 1963. Application for reissue Mar. 14, 1966, Ser. No. 541,054

3 Claims. (Cl. 191-22)



1. [A] An electric trolley conductor bar comprising an elongated non-ferrous metal member of high electrical conductivity having a central web and flanges along the opposite elongated edges thereof having flange portions which extend laterally from opposite sides of said web and form outwardly facing channels open along opposite sides of said member for receiving support members therein to engage the side walls of said channels to support said elongated member, one elongated edge of said web having an aperture therein coextensive with the length thereof and of a depth such that it terminates at approximately the junction of the plane of the adjacent laterally extending flange portions extending from the other elongated edge of said web, an elongated T-shaped ferrous metal member having a web closely received in said aperture and a transversely extending flange along one elongated edge thereof overlying and closely engaging the nonferrous flange portions extending from opposite sides of the opening to said aperture and forming a collector shoe slide surface.

26,190

SWIVEL BRACKET

Thomas M. McDonnell, 2918 Madison, Bellwood, Ill. 60104

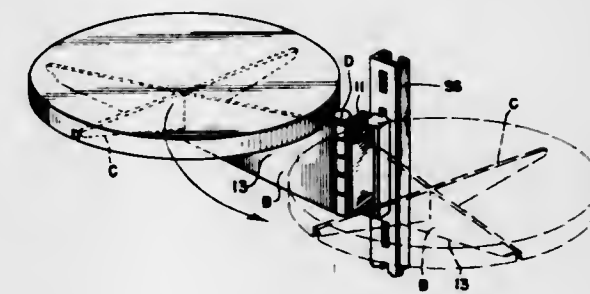
Original No. 3,184,200, dated May 18, 1965, Ser. No. 316,701, Oct. 16, 1963. Application for reissue Sept. 6, 1966, Ser. No. 582,193

1 Claim. (Cl. 248-240)

A swivel bracket and standard arrangement for supporting a shelf, comprising:

- a vertically disposed standard having a flat wall presenting a plurality of transversely aligned, vertically spaced slots;
- a shelf supporting bracket including a pair of interconnected [vertical plates] arms disposed at [right] angles to each other; and
- a mounting member pivotally connected to an end of one of said [plates] arms on a vertical axis and rigidly and removably connected to said standard;
- said member presenting on one side thereof a flat,

vertical surface seated against an outer surface of the flat wall of said standard and having projecting from said flat surface a plurality of transversely aligned locking lugs spaced vertically from each other a distance equal to the distance between the slots of said standard and having on the lower ex-



terminities thereof downwardly extending projections spaced from said flat surface a distance substantially equal to the thickness of said flat wall to provide a rigid, removable, interlocking connection between the member and standard when the lugs of the former are positioned within the slots of the latter.

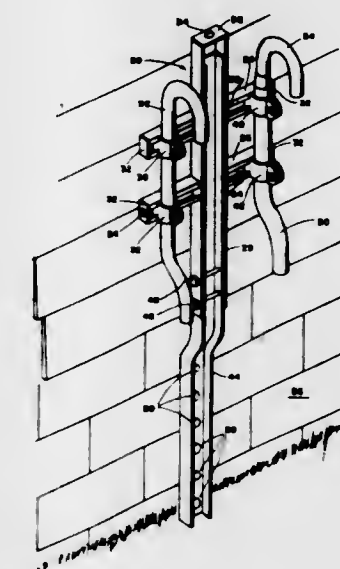
26,191

GAS METER MOUNTING BRACKET

William B. McDowell, Fenton, Mich., assignor to Michigan Tube Benders, Inc., Ann Arbor, Mich., a corporation of Michigan

Original No. 3,208,704, dated Sept. 28, 1965, Ser. No. 321,780, Nov. 6, 1963. Application for reissue Sept. 13, 1966, Ser. No. 586,909

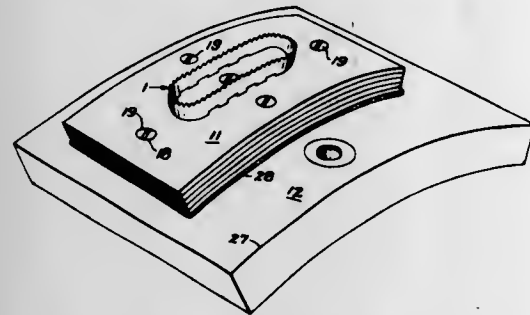
8 Claims. (Cl. 248-68)



3. Gas meter mounting means comprising a bracket having an elongated, recessed central portion defined by lateral portions, extension portions extending from said lateral portions in opposite directions from each other and away from said central portion, and pipe clamp receiving means defined in each of said extension portions spaced from said central portion.

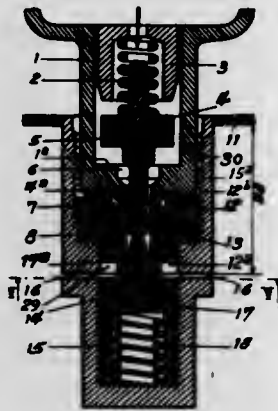
26,192
DIE RULE AND METHOD OF FORMING AND MOUNTING THE SAME
 Merrill D. Martin, 2 Mall Court, Oakland, Calif. 94611

Original No. 3,170,358, dated Feb. 23, 1965, Ser. No. 182,732, Mar. 27, 1962. Application for reissue Jan. 26, 1966, Ser. No. 526,954
 18 Claims. (Cl. 83—665)



1. In a method of forming a die rule and die rule mounting for a rotating die cutter element the steps of providing a primary base conforming to the peripheral curvature of rotation of said element, forming slits through said primary base conforming to the contour of the die rule, pressing the die rule into the slits so that the cutting edges of the die rule protrude from the convex face of said primary base, and mounting said primary base on a curved second base adapted to be secured to said rotating element.

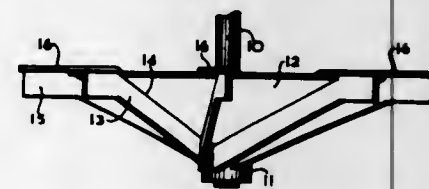
26,193
FILLING ARRANGEMENT FOR A LIQUEFIED GAS LIGHTER
 Antoine Labat, Paris, France, assignor to Societe Franco-Hispano-Americaine Francispam, Paris, France, a corporation of France
 Original No. 3,115,907, dated Dec. 31, 1963, Ser. No. 98,561, Mar. 28, 1961. Application for reissue Dec. 27, 1965, Ser. No. 559,008
 13 Claims. (Cl. 141—295)



1. An arrangement for filling with liquefied gas contained in a gas supply cylinder a lighter tank having a top wall, lateral walls and a bottom wall, comprising in combination,
 (a) a cylindrical supply valve casing in said gas supply cylinder,
 (b) a supply valve seat in said supply valve casing,
 (c) a supply valve head movable towards and away from said supply valve seat in said supply valve casing,
 (d) a supply valve stem connected to said supply valve head,
 (e) a cylindrical lighter valve casing in the top wall of the tank,
 (f) a lighter sealing and valve-seating assembly having two parallel annular end faces one of which is adjacent to said supply valve casing and the other

is directed towards the interior of the tank and forms a lighter valve seat in said lighter valve casing,
 (g) a lighter valve head movable towards and away from said lighter valve seat in said lighter valve casing,
 (h) a lighter valve stem connected to said lighter valve head,
 (j) said stems coming into contact with each other to effect opening of said valve heads,
 (k) a biasing spring for each of said valve heads,
 (l) the biasing spring for the supply valve head being more powerful than the biasing spring for the lighter valve head,
 (m) a spring abutment in each of said valve casings and on each of said valve stems,
 (n) a cylindrical nozzle terminating said supply valve casing towards the exterior of said gas supply cylinder,
 (o) a notch at the outer edge of said nozzle,
 (p) a slot closable by said lighter valve head, formed of two diametrically opposed sectors each extending over a little less than 180°, provided in the cylindrical wall of said lighter valve casing, and located in a plane perpendicular to the axis of said lighter valve casing at a distance from the top wall of the tank determining the height of a desirable safety zone in which there must be a gaseous mixture when the tank is full,
 (q) an escape duct having a wall which is partially formed in said lighter sealing and valve-seating assembly in communication with said slot and leading to the atmosphere,
 (r) said notch in said nozzle being in communication with said slot when said supply cylinder is seated over said lighter tank for filling said tank, and
 (s) the effective area of said escape duct being substantially less than that of said notch in said nozzle.

26,194
APPARATUS FOR THE AERATION OF LIQUIDS
 Charles Righton Alsop, Heald Green, Cheshire, and Robert Morrison Semple, Cheshire Hulme, England, assignors to Simon-Carves Limited, Stockport, England, a British company
 Original No. 3,182,972, dated May 11, 1965, Ser. No. 158,672, Dec. 12, 1961. Application for reissue Feb. 10, 1966, Ser. No. 532,510
 9 Claims. (Cl. 259—107)



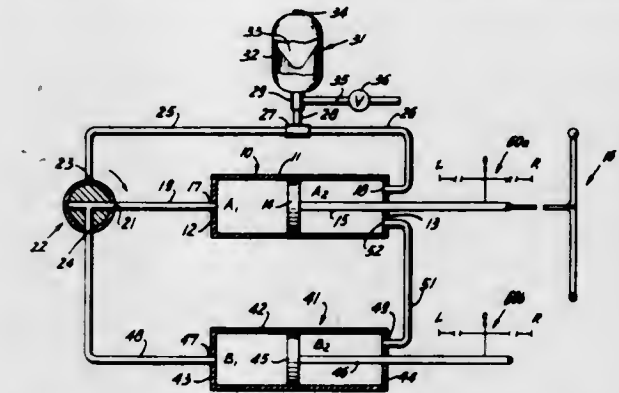
8. Apparatus for the aeration of liquids which comprises surface means defining a spaced adapted to receive a body of liquid therein having a level, an agitator located in said space for the aeration of said liquid, said agitator comprising a shell defining a central circular locality and having a shell wall covering downwardly to said locality, arms having flat faces lying in planes which planes extend tangentially in circumferential succession to said locality and said arms extending along said shell to the liquid level at an angle to the horizontal in circumferentially spaced positions about said shell with their upper edges secured to the under surface of said shell and at a slight angle to a radius extending from the axis of said shell to the arm, each said arm having an arm extending from its upper end horizontally outwardly from said shell with a horizontal upper edge at approximately said liquid level and with a lower edge extending horizontally below said

liquid level, each horizontally extending arm having a deflector extending from its upper edge substantially horizontally in the direction of rotation of said shell, each deflector being horizontally spaced from the next deflector.

26,195
HYDRAULIC SERVO-SYSTEM
 Jean Mercier, 501 Bloomfield Ave., Caldwell, N.J. 07006
 Original No. 3,152,448, dated Oct. 13, 1964, Ser. No. 120,081, June 27, 1961. Application for reissue Oct. 5, 1966, Ser. No. 589,172
 4 Claims. (Cl. 60—54.5)

1. A hydraulic servo-system comprising a pressure transmitter comprising a casing having a piston slidably mounted therein, a hydraulic unit comprising a casing also having a piston slidably mounted therein, said pistons defining a chamber on each side thereof in the respective casings, means connecting the chambers on the respective sides of said pistons, the volume of the chambers defined on each side of the piston of the pressure transmitter when said pistons are in central position being at least equal to the volume of the corresponding chambers defined on each side of the piston of the hydraulic unit, whereby movement of the piston of the pressure transmitter will provide a movement of the piston of the hydraulic unit an amount proportional to such first movement, means providing a source of fluid under

pressure greater than atmospheric, the means connecting the chambers on the respective sides of the pistons comprising a permanent connection between corresponding chambers on one side of the pistons of said pressure transmitter and said hydraulic unit with said source of fluid under pressure, and valve means interposed between said source of fluid under pressure and the chambers of



said transmitter and said hydraulic unit on the other side of the pistons thereof, said valve means providing communication alternately between said last two chambers and between one of said last two chambers and the source of fluid for recharging of said transmitter and said hydraulic unit upon reduction in the volume of the fluid therein.

PATENTS GRANTED APRIL 18, 1967

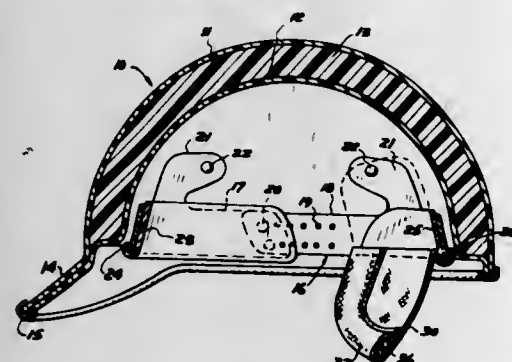
GENERAL AND MECHANICAL

3,314,077

SAFETY HELMET RETAINER

John L. Marchello, Ann Arbor, Mich., assignor, by mesne assignments, to American Safety Equipment Corporation of Michigan, New York, N.Y., a corporation of Delaware

Filed Apr. 9, 1965, Ser. No. 446,829
3 Claims. (Cl. 2-3)



2. A retainer flap in combination with a protective safety helmet shaped to fit over and to be worn upon a human head and having a forward end portion and a rear end portion, comprising:

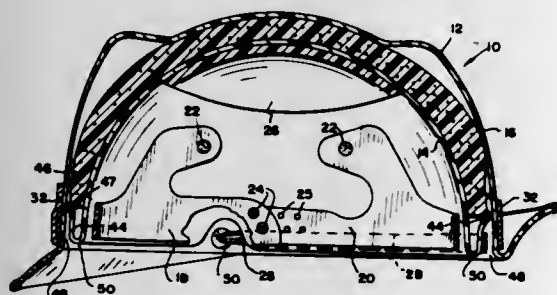
a scoop-shaped sheet of stiffened, fabric-like material, having an upper edge, means securing said upper edge to the rear end portion of the helmet, with the flap normally extending downwardly and forwardly at an incline relative to the helmet; the flap being of a relatively narrow width and of sufficient height to cover and snugly engage only the base of the skull at the rear portion of the head, from a point rearwardly of each of the wearer's ears and downwardly to the upper part of the neck, thereby leaving exposed, the wearer's ears and neck and frictionally locking the helmet upon the head by grasping the curved, rearward lower portion of the skull.

3,314,078

SAFETY HELMET CHIN STRAP

John L. Marchello, Ann Arbor, Mich., assignor to American Safety Equipment Corporation of Michigan, New York, N.Y., a corporation of Delaware

Filed Oct. 12, 1965, Ser. No. 495,177
4 Claims. (Cl. 2-3)



3. A safety helmet comprising:

a thin-walled generally dome-shaped outer shell; a thin-walled generally dome-shaped inner shell disposed within said outer shell and spaced therefrom; said inner and outer shells each being formed of a stiff semi-flexible material, characterized by being bendable under substantial pressure but normally recovering its shape upon release of such pressure;

686

a resilient shock absorbing liner substantially filling the space between the inner and outer shells; and the lower edge of said inner shell being bent outwardly and upwardly to form a continuous outer flange, and said flange being double bent, between its upper and lower edges to form a central, outwardly and upwardly inclined shoulder portion, with the flange portion above the shoulder portion forming a continuous rim, means securing said continuous rim in abutting face to face contact with the interior of the outer shell;

and an annular groove formed between the lower edge portion of said flange, beneath said shoulder portion; and the lower edge portion of said liner being snugly inserted and retained between the flange rim and the portion of said inner shell arranged opposite to said flange rim, and rested upon said shoulder portion.

3,314,079

HEAD PROTECTING HOOD

Hazel E. Stout, P.O. Box 276, Lancaster, Tex. 75146, and Billy W. Leaser, 534 Shadyway Drive, Dallas, Tex. 75232

Filed Mar. 18, 1965, Ser. No. 444,910
2 Claims. (Cl. 2-173)



1. A head protecting hood of the type described, comprising a substantially cross-shaped blank formed integrally from a single piece of moisture absorbent tissue paper, said blank having a crown portion with a front edge, a pair of side portions extending laterally downwardly from opposite sides of said crown portion, said side portions having parallel front edges in transverse alignment and relatively divergent rear edges, a back portion extending downwardly from the back of the crown portion and having a pair of parallel side edges, and a face flap connected to the front edge of the crown portion, said flap normally underlying the crown portion and having a pair of side edges, the front edge of the crown portion being gathered, removable fasteners securing the front edges of said side portions to the ends of the gathered front edge of the crown portion, the divergent rear edges of the side portions and the parallel side edges of the back portion being brought together in overlapping relation, removable fasteners securing said rear edges of the side portions to said side edges of the back portion, said flap being selectively movable to a face covering position wherein the side edges of the flap are contiguous with the parallel front edges of said side portions, and removable fasteners securing said side edges of the flap to said front edges of the side portions.

APRIL 18, 1967

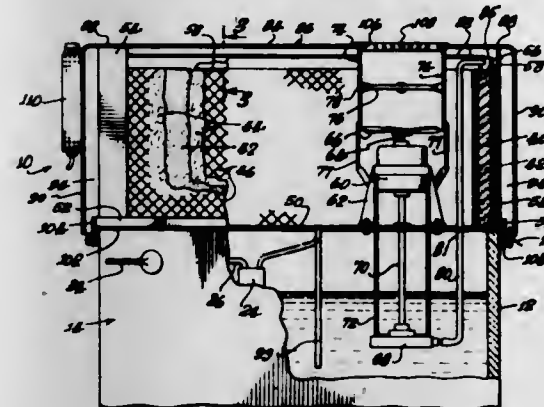
GENERAL AND MECHANICAL

687

3,314,080

HUMIDIFYING SYSTEM

John Shilling, Jr., 16126 Spinning Ave., Gardena, Calif. 90247
Filed Aug. 18, 1964, Ser. No. 390,325
15 Claims. (Cl. 4-68)



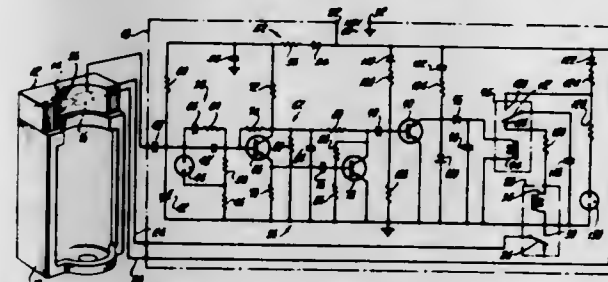
1. In a humidifier for use in a dwelling, the combination comprising:
a water closet having a tank and means permitting periodic emptying of the tank;
an enclosure having an air-permeable porous mat for at least a part of its walls;
means for supplying water from the tank to the mat to wet said mat;
means for drawing air through the water-wetted mat; and
means for discharging water draining from the mat into the water of the tank of the water closet.

3,314,081

CAPACITY OPERATED AUTOMATIC FLUSHING SYSTEM

Carl E. Atkins, Montclair, and Robert L. Ziolkowski, Plainfield, N.J., assignors to Tung-Sol Electric Inc., a corporation of Delaware

Filed May 22, 1964, Ser. No. 369,543
3 Claims. (Cl. 4-100)



1. An automatic flusher for a toilet comprising:

(a) capacity sensitive means for detecting body capacity in the area of use of the toilet;
(b) actuating means for flushing the toilet;
(c) means responsive to said body capacity for operating the actuating means for flushing the toilet after the capacity sensitive means detects a minimum level of body capacity for at least a predetermined length of time and thereafter detects an absence of such a level of body capacity; and
(d) means for delaying the flushing of the toilet for a period after said capacity sensitive means detects said absence of body capacity.

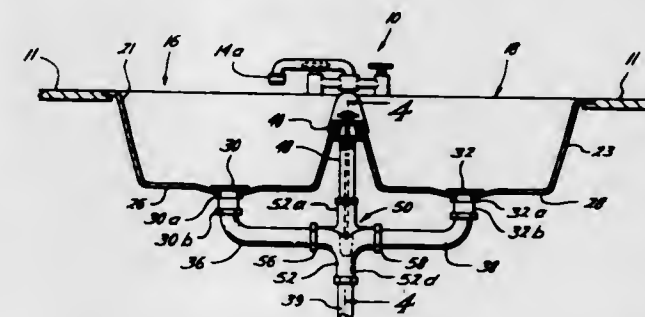
3,314,082

COMPARTMENTED SINK AND ASSOCIATED LIQUID FLOW MEANS

Angelo Minella, Houston, Tex., assignor to A. Minella Plumbing Supplies, Inc., a corporation of Texas
Filed Oct. 28, 1964, Ser. No. 407,060
1 Claim. (Cl. 4-194)

A compartmented sink and associated liquid control means therefor comprising:

(a) a sink having two compartments separated by an upright partition;
(b) overflow means for communicating with each of said compartments arranged on the upright partition;
(c) unrestricted conduit means connected with said overflow means and extending between said partition means for discharging overflow from either of said compartments;
(d) each of said compartments having a waste opening therein;
(e) conduit drain means connecting each of said waste openings with said unrestricted conduit means;
(f) a sleeve valve positioned at the juncture of said unrestricted conduit means and said conduit drain means;
(g) said sleeve valve fitting snugly throughout its longitudinal extent within the juncture formed by said conduit drain means and unrestricted conduit means to form a seal at said juncture;



(h) said conduit means forming a pair of ports at the juncture of said conduit drain means and said unrestricted conduit means;
(i) said sleeve valve having a port therein;
(j) a rod connected to the upper end of said sleeve valve and extending upwardly through said unrestricted conduit means and said overflow means whereby said sleeve valve may be moved;
(k) means mounted on the upper end of said rod and resting on said overflow means;
(l) said overflow means having groove means therein spaced circumferentially about said rod; and
(m) said means mounted on the upper end of said rod having spaced ears thereon so that when said means is manually grasped and rotated said sleeve valve is lifted and rotated to align the port therein selectively as desired to open and close said conduit means of said compartments independently of each other.

3,314,083

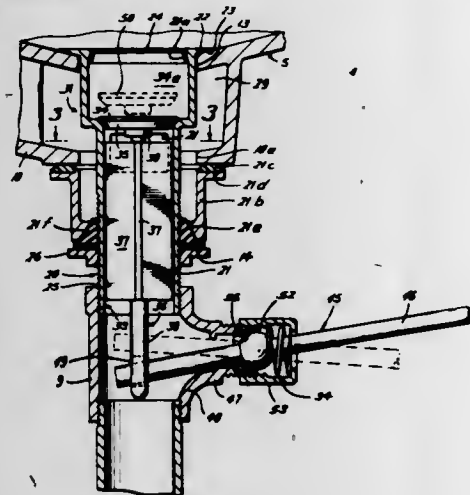
CONCEALED POP-UP WASTE VALVE

Angelo Minella, Houston, Tex., assignor to A. Minella Plumbing Supplies, Inc., a corporation of Texas
Filed May 25, 1964, Ser. No. 369,974
3 Claims. (Cl. 4-203)

1. A concealed pop-up waste valve for receptacles comprising:

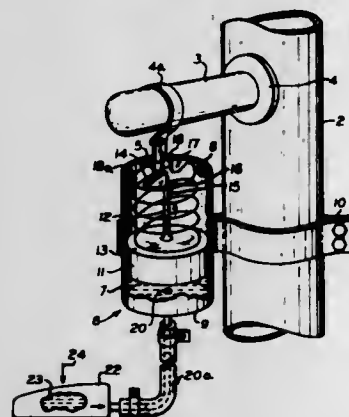
(a) a hollow cylindrical body;
(b) an annular flange adjacent one end of said body for seating said cylindrical body in a receptacle waste opening;
(c) a foraminated cover extending across one end of said cylindrical body;
(d) said cylindrical body including two cylindrical portions;
(e) the first of said cylindrical portions being disposed adjacent and extending downwardly from the opening in the waste receptacle and being cylindrical substantially throughout its extent;
(f) the second of said cylindrical portions extending downwardly from the first and being smaller in diameter than said first portion;

- (g) the juncture of said first and second portions defining an annular radially inwardly extending shoulder in said cylindrical body;
- (h) an annular upwardly facing valve seat formed on the upper edge of said radially inwardly extending annular shoulder;
- (i) said first cylindrical portion providing an unobstructed valve chamber from the foraminated cover to said valve seat;
- (j) a valve member having a solid upper surface and an annular edge for seating on said annular valve seat;
- (k) a valve rod depending from said valve member and extending into said second portion of said cylindrical body;



- (l) said valve rod having integrally formed thereon guides for contacting said second portion of said cylindrical body at circumferentially spaced points thereon to center said valve member during opening and closing thereof;
- (m) means abutting said valve rod at substantially the center of said cylindrical body and projecting laterally relative to said body whereby said rod may be moved longitudinally relative to said body to raise said valve member into said unobstructed valve chamber and open the receptacle to drainage and;
- (n) said cylindrical body having openings therein beneath said valve seat for communicating the overflow drain of said receptacle with said second portion of said cylindrical body.

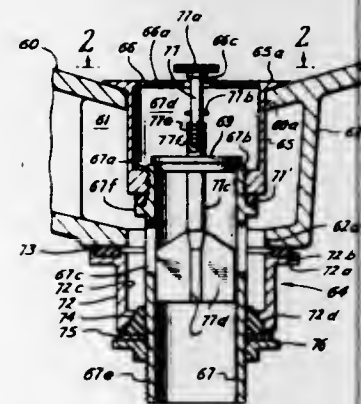
3,314,084
AUTOMATIC FLUSHING SYSTEM
 Nishan Balikjian, 5800 Arlington Ave.,
 New York, N.Y. 10471
 Filed Sept. 23, 1964, Ser. No. 398,512
 5 Claims. (Cl. 4-249)



- 1. A valve actuating mechanism comprising:
 (a) a lever actuating valve having clamping means with a latch means, and attached to said lever,

- (b) cylindrical enclosure having terminal closure covers at both extremities,
- (c) piston means internal said enclosure having an elongated piston rod connected thereto at one extremity and extending towards one of said closure covers,
- (d) latching means carried by the piston rod at the other extremity, and coacting with the latching means on the clamping means
- (e) compressive means internal said enclosure between the said closure and piston, and
- (f) fluid distensible means including a reservoir of fluid connected to enclosure, the said fluid flowing from said reservoir in response to compressive action upon the distensible means to urge the movement of the piston in a direction to cause the latching means to engage the said clamping means and thereby permit the compressive spring, upon release of the pressure from the distensible means, to actuate the valve.

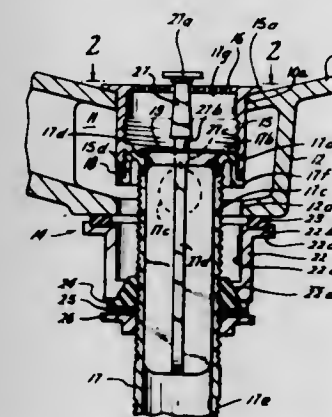
3,314,085
CONCEALED POP-UP VALVE FOR WASTE DRAINS
 Angelo Minella, Houston, Tex., assignor to A. Minella Plumbing Supplies, Inc., a corporation of Texas
 Filed Oct. 5, 1964, Ser. No. 441,518
 3 Claims. (Cl. 4-287)



- 1. A concealed pop-up waste valve for receptacles having an overflow drain comprising:
 (a) a hollow cylindrical member;
 (b) an annular flange adjacent one end of said member for seating said cylindrical member in a receptacle waste opening;
 (c) a foraminated cover extending across one end of said member adjacent said flange;
 (d) a tubular member of smaller diameter than said cylindrical member;
 (e) each of said members having thread means whereby said smaller diameter member may be threadedly engaged with the lower end of said larger diameter threaded member to facilitate positioning of said cylindrical member within the receptacle waste opening to inhibit distortion and misalignment thereof;
 (f) said larger diameter member having a radial shoulder extending about the upper end of said smaller diameter member;
 (g) an upwardly facing valve seat formed on said tubular member within said hollow cylindrical member;
 (h) a valve within said hollow cylindrical member for seating on said upwardly facing valve seat to close off flow from the receptacle waste opening;
 (i) means for lifting said valve off said seat to open the receptacle waste opening;
 (j) a valve rod depending from said valve;

- (k) said valve rod having integrally formed thereon guides for contacting said tubular member at circumferentially spaced points to center said valve during opening and closing thereof; and
- (l) said tubular member having at least one opening therein below said valve seat for communicating with the overflow drain of the receptacle.

3,314,086
CONCEALED POP-UP VALVE FOR WASTE DRAINS
 Angelo Minella, Houston, Tex., assignor to A. Minella Plumbing Supplies, Inc., a corporation of Texas
 Filed Sept. 30, 1965, Ser. No. 491,770
 3 Claims. (Cl. 4-287)

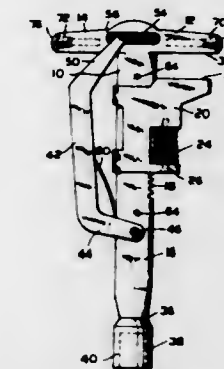


- 1. A concealed pop-up waste valve for receptacles having an overflow drain comprising:
 (a) a hollow cylindrical body;
 (b) an annular flange adjacent one end of said body for seating said cylindrical body in a receptacle waste opening;
 (c) a foraminated cover extending across one end of said cylindrical body;
 (d) a tubular member of smaller diameter substantially throughout its longitudinal extent than said cylindrical member;
 (e) said tubular member having its upper end outwardly rolled to form a peripheral lip extending annularly of said tubular member to form a valve seat;
 (f) threaded means on the outer periphery of said rolled end of said tubular member and on said cylindrical member whereby said cylindrical member and tubular member may be connected together;
 (g) a valve within said hollow cylindrical member for seating on said valve seat;
 (h) means for lifting said valve off said seat to open the receptacle waste opening;
 (i) valve aligning means depending from said valve and contacting said tubular member at circumferentially spaced points to guide said valve; and
 (j) said tubular member having at least one opening therein below said seat for communicating with the overflow drain of the receptacle.

3,314,087
WRENCH-TYPE COMBINATION TOOL
 Edward Clifford Green, 159 Highway 36,
 Belford, N.J. 07718
 Filed Oct. 29, 1964, Ser. No. 407,406
 1 Claim. (Cl. 7-7)

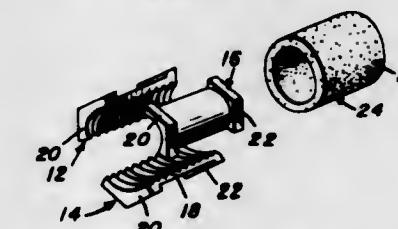
A combination tool comprising a T shaped frame having a vertical member and two horizontal members integral therewith and extending therefrom; said vertical member having slidably positioned thereon a jaw member which with one of said horizontal members forms the jaws of an adjustable wrench, a striker plate affixed to said horizontal members; said vertical member having pivotably mounted thereon an elongated striker lever with a

flint affixed thereto, said flint being in abutting contact with said striker plate and providing sparks when moved across said striker plate, said slidable jaw being positioned



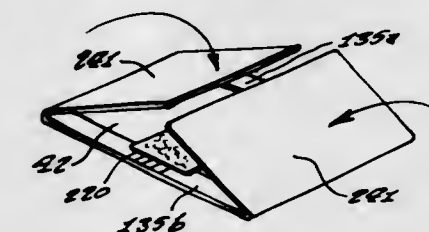
between said striker plate and said striker lever pivot, and said vertical member having a socket positioned on the terminal end thereof.

3,314,088
WATER RESPONSIVE RELEASE MECHANISM
 Robert J. Nordhaus, 6900 Rio Grande Blvd. NW. 87107;
 Harold W. Groves, 1821 General Somervell St. NE. 87112; and Robert E. Marsh, 1105 Childers NE. 87112, all of Albuquerque, N. Mex.
 Filed Dec. 21, 1965, Ser. No. 515,427
 5 Claims. (Cl. 9-9)



- 1. A water responsive coupling device for releasably coupling first and second mechanisms comprising, at least two split collar members, said split collar members each being internally threaded and when joined providing a unitary internally threaded collar for receiving and connecting externally threaded ends on first and second mechanisms, and means for releasably joining said split collar members whereby said first and second mechanisms will be connected thereby when threaded therein, said releasable joining means being fluid soluble at a predetermined rate whereby immersion of said coupling device in fluid will cause said releasable joining means to dissolve and release said split collar members.

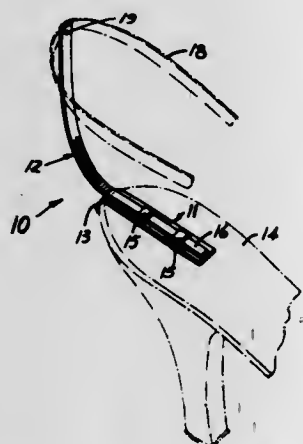
3,314,089
MACHINE FOR PRODUCING IMITATED NORMAL HARD BOOK COVERS AND METHOD THEREFOR
 Fay Margolis and Frieda Margolis, both of New York, N.Y.; said Fay Margolis assignor to New York Business Development Corporation, Albany, N.Y., a corporation of New York
 Filed Oct. 14, 1965, Ser. No. 496,074
 20 Claims. (Cl. 11-2)



- 1. In a machine for producing imitated normal hard book covers, the combination of a mainframe, said mainframe supporting a plurality of unit assemblies each of which sequentially perform an operation on an article

to produce said imitated normal hard book cover, said unit assemblies comprising a stock feed unit for feeding a rectangular stock case blank of relatively thin cardboard material that will ultimately become said imitated normal hard book cover, a grinding unit for grinding down in thickness one side of said case blank in the vicinity that will form a backing portion, said side becoming ultimately an inner side of said cover, a die cutting unit for cutting off the corners of said case blank to form central flaps along the opposite side edges and upper and lower edges of said case blank, a first scoring unit for subsequently bending inwardly approximately 45° the flaps along the said upper and lower edges, a first adhesive application unit for subsequently applying adhesive along the inner side of said upper and lower edges of said case blank, back and forward flap folder units for subsequently bending fully inward said upper and lower flaps and sealed against said adhesive, a second scoring unit for subsequently impressing score lines on said inner side along said backing portion, a second adhesive application unit for subsequently applying adhesive to said inner side adjacent said backing portion and adjacent the said side edges of said case blank, a crash unit for subsequently applying a crash over said backing portion and adhering said crash to said adhesive adjacent said backing portion, a folding horn for subsequently folding over inwardly the panels formed at the sides of said case blank and adhering said case blank side panels against said upper and lower flaps and side portions of said crash to form front and rear cover panels, a score breaking unit for subsequently breaking said score lines on said backing portion for enfolding a book body and allowing hinged movement of said front and rear cover panels, a third adhesive application unit for subsequently applying adhesive to the inner sides of said front and rear cover panels, a casing in adhesive pot unit for subsequently applying adhesive to the exposed central portion of said crash, a casing in section for subsequently placing an edge of said book body against said crash, closing said front and rear cover panels against the sides of said book body and creasing the same together, thus completing the production of a book having said imitated normal hard book cover, and a delivery unit for carrying said book out of the machine.

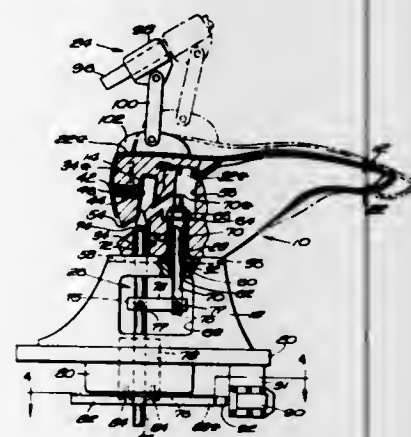
3,314,090
SHOE SLING
Rocco Azzarito, 6419 Chaffee St.,
Tujunga, Calif. 91042
Filed Oct. 20, 1965, Ser. No. 498,737
5 Claims. (Cl. 12-1)



1. An accessory for supporting a shoe sling while the shoe is not being worn or is on display, said accessory comprising a thin base member adapted to be supported

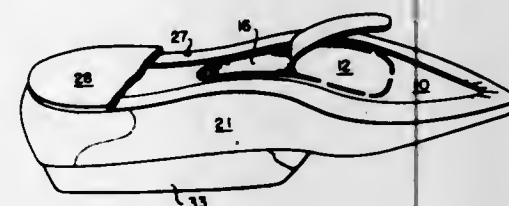
longitudinally on the center portion of a ladies' shoe, a thin resilient strip having the lower end thereof adjacent to and adjustably assembled on said base member with its upper end projecting upwardly from said base member for supporting engagement with the rearmost portion of the shoe sling and for resiliently supporting the same in the normal wearing position thereof, and means on said base member adapted to engage the heel area of the shoe and to hold said accessory releasably assembled to the shoe.

3,314,091
SHOE LAST CONSTRUCTION
Victor J. Levaggi, 151 Dodge St.,
Beverly, Mass. 01915
Filed Jan. 5, 1965, Ser. No. 423,493
15 Claims. (Cl. 12-135)



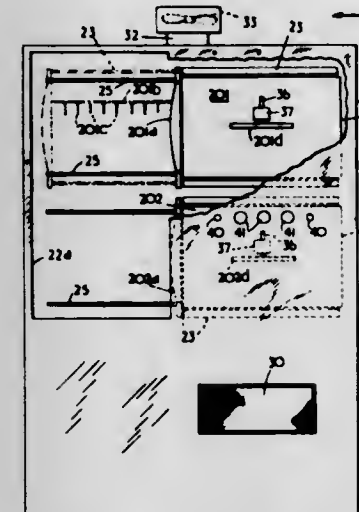
1. A shoe last comprising a main forepart and a separable counter section, said forepart and counter section being adapted to mate slidably along a surface extending upwardly, forwardly from the rear of the last through the arch area and through the bottom of the last; a base; means for rigidly maintaining said forepart on said base; at least one thimble hole extending through said forepart and into said counter section and a reciprocative post which is slidable into said thimble hole when said counter section and said forepart are in said mating engagement.

3,314,092
SHOEMAKING PROCESS
Jaime Pujol, 2-B Grove Road,
Kingston, Jamaica
Filed July 3, 1963, Ser. No. 292,648
5 Claims. (Cl. 12-142)



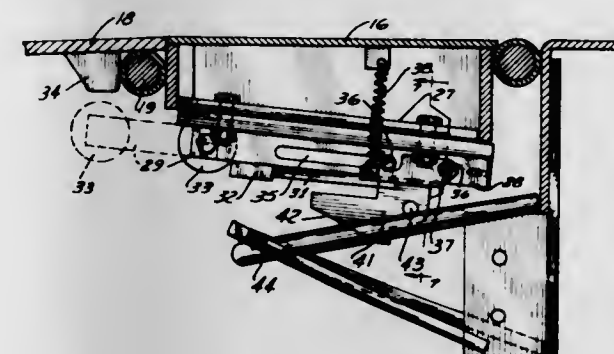
1. The shoemaking process comprising the steps of making a line of spaced slits in an insole blank to define a removable area, in the central portion thereof laminating the slitted blank with a sock lining having a cushion ply and thus enclosing the cushion ply, lasting an upper to the margin of the insole blank, and after the lasting step removing the defined area from the insole to expose the enclosed cushion ply.

3,314,093
MULLING OF SHOE UPPERS
John James Justice, Baswick, England, assignor to Lotus Limited, Stafford, England, a corporation of Great Britain and Northern Ireland
Filed Nov. 24, 1964, Ser. No. 413,595
24 Claims. (Cl. 12-142)



1. A method of mulling shoe uppers which resides in the steps of first introducing the shoe uppers to be mulled into an hermetically sealable chamber and then hermetically sealing the said chamber subsequently evacuating the atmosphere from the said sealed chamber and then introducing a humidifying atmosphere into the evacuated chamber for a predetermined time and finally removing the mulled shoe uppers at the expiry of such time, the processes of sealing, evacuating and humidifying being effected automatically according to a predetermined timed cycle.

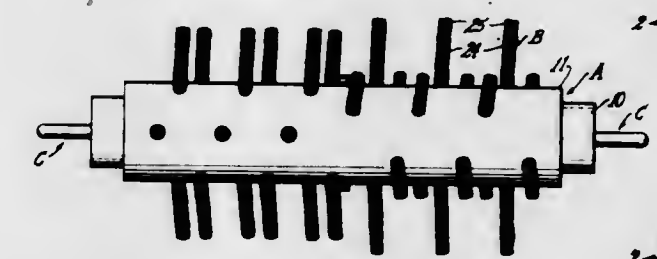
3,314,094
DOCKBOARD
Harris P. Moyer, Deerfield, and William T. Bardouski, Sterling, Ill., assignors to Unarco Industries, Inc., Chicago, Ill., a corporation of Illinois
Filed Sept. 21, 1964, Ser. No. 397,901
8 Claims. (Cl. 14-71)



1. A dockboard for use with a dock having a flat upper surface and a vertical front wall comprising a mounting plate having a horizontal flange portion to rest on the flat upper surface of a dock and a vertical portion to overlie the front wall of a dock, a board hinged to the mounting plate to swing from a raised position angling upwardly to a lowered position angling downwardly, a lip hinged to the free edge of the board to swing from a depending position to an extended position in which it forms an extension of the board, an extensible and contractable motor having one part connected to the vertical portion

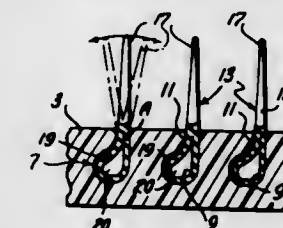
of the mounting plate and another part arranged to provide a component of force for swinging the board between said lowered and raised positions, and means operatively associated with the board and connected to the other motor part and being movable relative to the board to both raise the board when the motor is extended and then to move relative to the board to swing the lip at least partially toward its extended position.

3,314,095
SEWER CLEANING BRUSH AND METHOD OF FABRICATING THE SAME
Charles J. Prange, Lima, Ohio, assignor to Flexible Sewer-tool Corporation, Lima, Ohio, a corporation of Ohio
Filed Sept. 24, 1965, Ser. No. 459,843
5 Claims. (Cl. 15-104.2)



1. A brush for cleaning sewer conduits, comprising, in combination: a tubular core having therein a plurality of pairs of transversely-opposed bores; a sleeve surrounding said core and separated therefrom radially by an annular gap, said sleeve having a plurality of pairs of apertures in positions matching those of said bores and approximately radially opposed thereto but displaced axially therefrom; a plurality of stiff, flexible scouring stems each extending through an opposed pair of said bores, having axially offset portions traversing said gap at opposite sides of the brush and having free end portions projecting generally radially outwardly from said sleeve to constitute scouring fingers; and fastener means securing said sleeve to said core in axially-displaced relation thereto such as to clamp said stems between said sleeve and core and to lock said axially offset portions of the stems into said gap, thereby securely anchoring said stems against radial displacement in said core and sleeve, said core and sleeve having respective fastener holes in alignment on a common diametral axis when said bores and apertures are relatively displaced axially as aforesaid, and said fastener means comprising a pin extending diametrically through said holes and means securing it against displacement from said holes.

3,314,096
BRUSH CONSTRUCTION
Henry A. Berliner, 2841 Tilden St. NW.,
Washington, D.C. 20008
Filed June 28, 1965, Ser. No. 467,285
7 Claims. (Cl. 15-159)



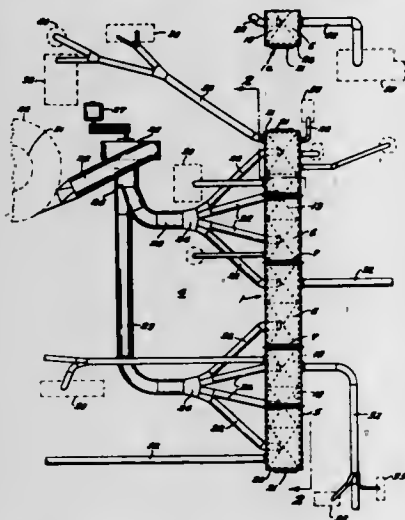
1. A brush construction, comprising: a brush head having groove means formed in the undersurface thereof; a continuous tape having its inner edge portion received in said groove and having a plurality of brushing elements provided on its outer edge portion, and inflatable tubular means positioned in said groove means and holding said tape means in position when inflated.

3,314,097
BRISTLE STRIP AND BRUSH COMPRISING SUCH A BRISTLE STRIP
 Charles T-M Månberg, Huskvarna, Sweden, assignor to Aktiebolaget Huskvarna Borstfabrik, Huskvarna, Sweden, a Swedish joint-stock company
 Filed Feb. 7, 1966, Ser. No. 525,449
 Claims priority, application Sweden, Feb. 19, 1965, 2,143/65
 6 Claims. (Cl. 15-182)



1. A bristle strip comprising: a substantially channel-shaped longitudinal rail; U-shaped bristles seated transversely of the rail and extending longitudinally of the rail so that the bristles are substantially aligned to receive an anchoring wire; an anchoring wire received within the troughs of the U-shaped bristles and extending longitudinally of the rail, the channel-shaped longitudinal rail enclosing the anchoring wire and that portion of the bristles located nearest to the wire; and the channel-shaped rail having projecting flaps spaced at intervals along its longitudinal edges, each flap being positioned opposite an interspace between two adjacent flaps of the other opposing longitudinal edge of the rail and having a width in the longitudinal direction of the bristle strip less than the width in the same direction of the opposite interspace, each flap being bent towards the central longitudinal plane of the bristle strip so as to deflect the bristles located opposite the flap transversely of and away from the central longitudinal plane of the bristle strip whereby bristles located longitudinally between adjacent oppositely disposed flaps remain deflected.

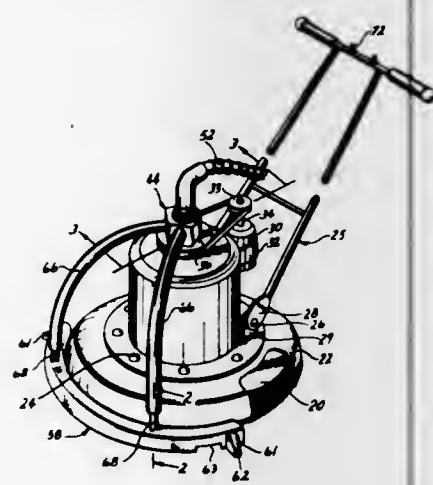
3,314,098
DUST COLLECTING PLENUM INSTALLATION
 Eugene A. Carsey, Cincinnati, Ohio, assignor to The Kirk & Blum Manufacturing Co., Cincinnati, Ohio, a corporation of Ohio
 Filed Sept. 14, 1964, Ser. No. 396,131
 5 Claims. (Cl. 15-301)



1. In a dust collecting system of the class described the combination of an elongated manifold permanently installed in a manufacturing area, and comprising a bottom having a longitudinal series of downwardly convergent dust entraining and transferring hopper groups therein, a top wall for the manifold spaced above the bottom and forming with the bottom a continuous, closed and unrestricted passageway coextensive with the manifold, said top wall being adapted for connection with dust feeder

pipes throughout its length, a plurality of feeder pipes connected to said top wall, said feeder pipes having their remote inlet ends connected to dust creating machinery in the manufacturing area, an independent suction and dust conveying branch pipe connected to the restricted bottom of each of the hoppers, a common suction source for the system, main pipes feeding into the common suction source, a fitting positioned on the end of each main pipe, and the branch pipes serving each group of hoppers feeding into a common fitting.

3,314,099
FLOOR CLEANING APPARATUS
 Ed A. Otto, 5701 W. Earl Drive, Phoenix, Ariz. 85031
 Filed June 7, 1965, Ser. No. 441,701
 12 Claims. (Cl. 15-385)

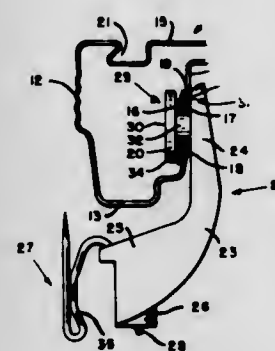


1. Floor cleaning apparatus comprising: (a) a rotary brush for sweeping a floor, (b) said brush rotatable about a substantially vertical axis, (c) a motor for rotating said brush, (d) means for supporting said brush and said motor in assembly, (e) a suction head positioned near the periphery of said brush and adapted to contact said floor, (f) said suction head adapted to communicate with a suction chamber, (g) a reversible motor mounted on said brush and motor assembly, means connecting said reversible motor to said suction head and adapted to rotate said suction head substantially about the periphery of said rotary brush, (h) switch means for actuating said reversible motor, and (i) handle means secured to said brush and motor assembly.

3,314,100
TRAVERSE ROD
 Henry Znamirski, Ellicott City, Md., assignor to Eastern Products Corporation, Baltimore, Md., a corporation of Maryland
 Filed Apr. 16, 1965, Ser. No. 448,680
 1 Claim. (Cl. 16-87.4)

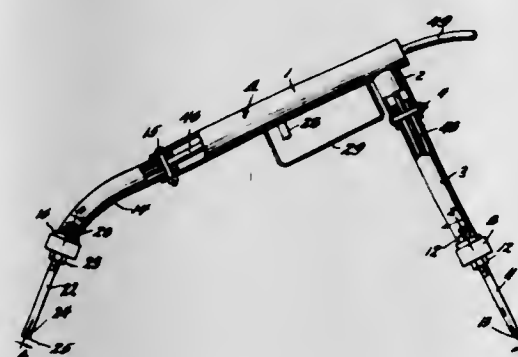
In combination, a carrier for supporting draperies and the like and adapted to be moved along a track in the wall of a traverse rod comprising a supporting arm adapted to hold a drapery hook at its lower end and a track engaging member attached to the supporting arm at the upper end thereof, said track engaging member having two flanges and a track rail riding portion connecting said two flanges and establishing a predetermined distance between said flanges longer than the width of the track rail upon which the riding portion is adapted to ride, the horizontal axis of said riding portion being substantially perpendicular to the vertical axis of the drapery hook;

and a traverse rod for supporting said carrier having a back wall with a slot therein extending substantially the length of said rod to form a track for the track riding portion of said carrier, the lower supporting rail of said track formed by the lower edge of said back wall being substantially the same thickness as the upper guiding rail of said track formed by the upper portion of said back



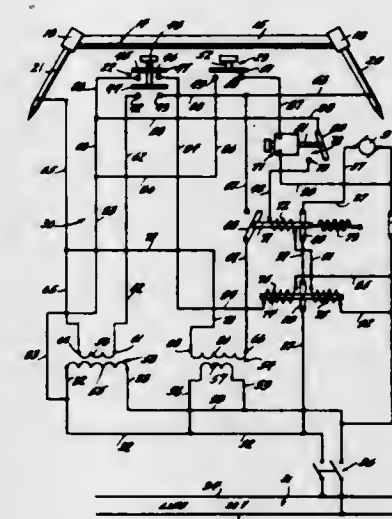
wall, said supporting rail being offset toward the front of the rod from said guiding rail by an amount such that the distance between the rear surface of said guiding rail and the front surface of said supporting rail is substantially equal to said predetermined distance between said flanges of said track riding portion of said carrier to maintain the axis of said track riding portion substantially horizontal.

3,314,101
APPLICATOR FOR USE IN ELECTRICALLY STUNNING ANIMALS
 Richard W. Rains, Timonium, Md., assignor to Schludenberg-Kurdle Co., Inc., Baltimore, Md., a corporation of Maryland
 Filed July 1, 1965, Ser. No. 468,694
 4 Claims. (Cl. 17-1)



1. An applicator for applying a stunning voltage to an animal, prior to slaughtering, said applicator comprising: an elongated body section, a pair of longitudinally spaced arms which are secured to said body section and extend downwardly therefrom, a first electrode means secured to the lower end of one of said arms, and a second electrode means secured to the lower end of the other of said arms; said first electrode means comprising a block of insulating material which is secured to the lower end of one of said arms, a pair of spaced metal rods which are secured to and extend downwardly from said block, and a helically coiled spring wire secured to and between the lower ends of said rods; conductor means by which one side of an electrical source is adapted to be connected to said first electrode means and the other side of said electrical source is adapted to be connected to said second electrode means, and a switch which is interposed in said conductor means; said first electrode means and said second electrode means being adapted to be applied to selected spaced apart sections of an animal's body.

3,314,102
APPARATUS FOR ELECTRICALLY STUNNING ANIMALS
 Richard W. Rains, Timonium, Md., assignor to Schludenberg-Kurdle Co., Inc., Baltimore, Md., a corporation of Maryland
 Filed July 1, 1965, Ser. No. 468,695
 3 Claims. (Cl. 17-1)

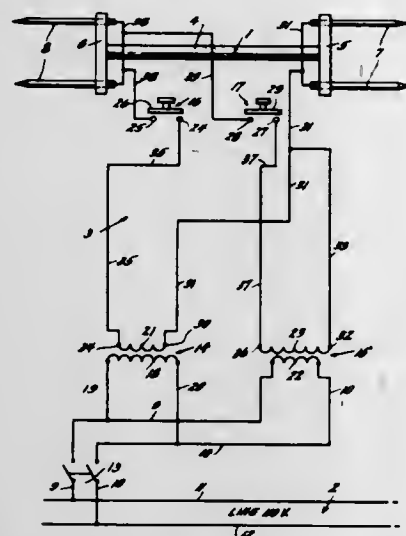


1. A slaughtering apparatus of the character described comprising: a conveyor by which animals are successively delivered to a slaughtering station; an electric motor by which said conveyor is driven; a first electrode which is adapted to be placed in electrical contact with the head of an animal and a second electrode which is adapted to be placed in electrical contact with the back of an animal in spaced relation to said first electrode; a low voltage source, and a high voltage source; a motor circuit by which said motor is connected between the opposite sides of a power line, switching means interposed in said motor circuit; a low voltage circuit by which said first and second electrodes are connected between the terminals of said low voltage source, a high voltage circuit by which said first and second electrodes are connected between the terminals of said high voltage source, and a switch interposed in said high voltage circuit; a normally open manually actuated switching mechanism which is operative when closed to close said low voltage circuit and to effect the actuation of said switching means to open the said motor circuit and thereby de-energize said motor; power means which is operative when energized to actuate said switch to close the said high voltage circuit between said high voltage source and said electrodes and when subsequently de-energized to actuate said switch to open said high voltage circuit and simultaneously actuate said switching means to close said motor circuit and thereby energize said motor; control means which is operative when momentarily energized to effect the energization and the subsequent de-energization of said power means; and a manually actuated switch which is operative when closed to effect the energization of control means.

3,314,103
METHOD OF ELECTRICALLY STUNNING ANIMALS
 Richard W. Rains, Timonium, Md., assignor to Schludenberg-Kurdle Co., Inc., Baltimore, Md., a corporation of Maryland
 Filed July 1, 1965, Ser. No. 468,696
 2 Claims. (Cl. 17-45)

1. The method of stunning an animal prior to slaughtering comprising, applying a pair of spaced electrodes to the head and back of an animal, passing a relatively low tranquilizing voltage between said electrodes through the brain and back of the animal for an indeterminate length

of time, gradually increasing the said relatively low tranquilizing voltage to a relatively high stunning voltage, maintaining said relatively high stunning voltage by said conveyor means and for causing said fabric to cool until made self-sustaining while said forming bodies are maintained at said final interval.



for a predetermined length of time, gradually reducing said relatively high stunning voltage, and then terminating the application of voltage to said animal.

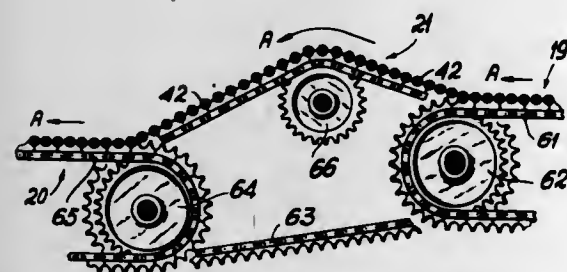
3,314,104 METHOD AND APPARATUS FOR PRODUCING SELF-SUSTAINING MULTI-CELL TEXTILE FABRIC SHEATH MATERIAL

Lino Alessandro Borlolo, 10 Via Monterosa,
Cusano Milanino, Italy

Filed Sept. 18, 1963, Ser. No. 309,747

Claims priority, application Italy, Sept. 21, 1962,
18,758/62

9 Claims. (Cl. 18—1)



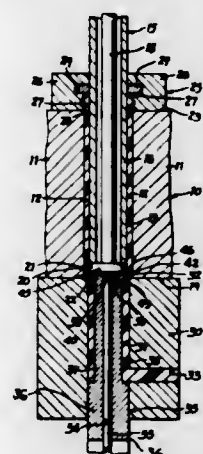
1. An apparatus for processing a heat-shrinkable fabric in elongated piece form and having a plurality of parallel evenly spaced pockets adjacent to each other and located transversely of said piece, for heat-shrinking said fabric about individual forming bodies individually located within each pocket to form a multi-tubular self-sustaining textile material adapted for cutting storage battery plate sheaths therefrom, comprising, in combination, an elongated frame structure having an inlet part and an outlet part at its remotest ends, means for continuously supplying un-processed fabric having individual forming bodies located in said pockets thereof at said inlet part, conveyor means arranged lengthwise of said frame structure and constructed to successively and releasably engage said individual forming bodies to impart to and maintain adjacent forming bodies at a first given inter-axial interval greater than the inter-axial spacing of the cells of the plate sheaths to be produced and then at a final given interval equal to said spacing, while progressing said bodies and the fabric arranged thereabout along said apparatus from said inlet to said outlet part, along portions of said apparatus adjacent to said inlet and respectively to said outlet part, drive means to drive said conveyor means, and means for applying heat to said fabric as progressed along said portions for causing heat-shrinkage thereof while said first interval is controllably reduced

3,314,105 APPARATUS FOR INJECTION MOLDING A BLOWABLE PARISON

Donald L. Amsden, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed June 17, 1963, Ser. No. 288,201

6 Claims. (Cl. 18—9)



1. In an apparatus for making an-inflatable parison of plasticized material and including a parison mold having a mold space with an open end communicating with a source of plasticized material under pressure and a parison pin projecting axially into the mold space to terminate short of the open end thereof, the improvements of a valve passage interposed between the mold space and said source, a valve body having one end projecting from said valve passage into the mold space for contacting the parison pin and a pressure land thereon exposed to material in said mold space, means biasing said valve body into contact with the parison pin to centralize said pin in said mold space until such time as the pressure in said mold space acting on said valve body land overcomes the force of said biasing means and shifts said valve body to a position wherein said valve body blocks said valve passage thus interrupting the flow of material from said source to said mold space, said valve body having a central bore and a radial passage opening into said central bore for continuing the flow of plasticized material to said mold space during shifting of the valve body, thereby forming a closed end on said parison, and means for closing said radial passage when said valve body is in said flow interrupting position thereof.

3,314,106 NECK FORMING DEVICE FOR BLOW MOLDING MACHINE

Maurice Latrelle, 6855 Place du Roi, Charlesbourg,
Quebec, Canada, and Marcel Poirier, 139 Des Peupliers
St. E., Quebec, Quebec, Canada

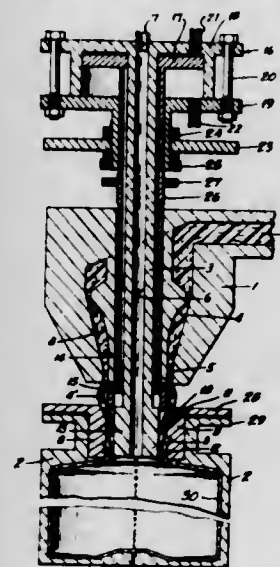
Filed May 18, 1964, Ser. No. 368,209

4 Claims. (Cl. 18—9)

1. In a container blowing machine, a blow mold including two complementary mold halves which, when in closed position, define a cavity having the shape of the container to be molded and including an inlet passage formed in said complementary halves and extending to one end wall of said mold, said inlet passage forming an outer neckmolding surface, said blow mold adapted to receive a tubular parison having a closed end in said mold and extending through said inlet passage beyond the same, a blowing nozzle inserted into said tubular body, said blowing nozzle having an inner neck molding surface disposed in said inlet passage opposite said outer neck molding surface and spaced radially inwardly therefrom, said

inlet passage having a radially inwardly protruding annular boss disposed at the end of said neck forming surface adjacent said mold cavity said boss extending in the molding space between said inner and outer molding surfaces, but terminating short of said inner molding surface, so as to leave an annular passage between said boss and said blowing nozzle, a sleeve-like plunger axially movable along said blowing nozzle and surrounding the same and having an outer end portion having a sliding fit with both said inner and outer molding surfaces, and power means to move said sleeve-like plunger between a retracted position outwardly of said inlet passage and clear-

a discharge port, a valve member movable toward and from said port, an actuating shaft therefor extending from the valve housing, valve operating means operatively connected to the actuating shaft, pressure responsive means responsive to the pressure of the material at the discharge end of the extruder, means actuated by the pressure responsive means for controlling the valve operating means, and connecting mechanism between the actuating shaft and the valve member arranged to produce a much smaller movement of the valve for a given incremental movement of the actuating shaft, corresponding to a given incremental change in pressure, when the valve member is close to the valve port than when the valve member is at a distance from said port.



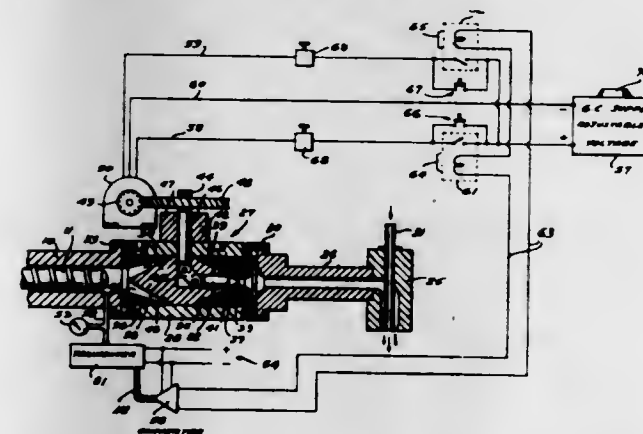
ing said tubular parison and an active position within said molding space but terminating short of said annular boss, said plunger during its active stroke from said retracted position to said active position cutting the tubular parison, engaging the portion of said parison in said molding space and ramming and upsetting the same between said inner and outer molding surfaces and against said annular boss, to thereby form a container neck by compression molding, said annular boss preventing the flow of said parison into said mold cavity during said active stroke of said plunger, while allowing said neck to remain connected to the remaining portion of the tubular parison in said mold cavity.

3,314,107 EXTRUDER SYSTEM

Richard A. Honstrater, Linden, N.J., assignor to Sterling Extruder Corporation, Linden, N.J., a corporation of New Jersey

Filed Aug. 24, 1965, Ser. No. 482,052

1 Claim. (Cl. 18—12)



In an extruder system for organic plastic material including a screw type extruder, a die head, a conduit interconnecting the discharge end of the extruder and the die head, a valve in the conduit for controlling the pressure of the material supplied to the die head, the valve having

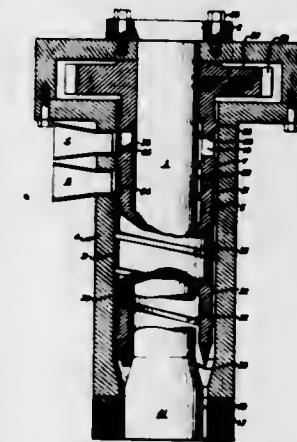
3,314,108 EXTRUDER

Michael Wienand, Siegburg, and Adolf Ristau, Troisdorf,
Germany, assignors to Dynamit Nobel Aktiengesellschaft, Cologne, Germany

Continuation of application Ser. No. 314,560, Oct. 7, 1963. This application Sept. 15, 1966, Ser. No. 579,784

Claims priority, application Germany, Oct. 11, 1962,
D 40,033

5 Claims. (Cl. 18—12)



1. An extruder comprising:
 - (a) a centrally disposed mandrel member;
 - (b) a divider member disposed radially outwardly of and spaced from the mandrel in opposed relation with respect thereto providing a first annular space, said first annular space being between the mandrel and divider;
 - (c) a casing member disposed radially outwardly of and spaced from the divider in opposed relation with respect thereto providing a second annular space, said second annular space being between the divider and the casing;
 - (d) means defining an extruder discharge nozzle having a discharge opening for issuance of extruded material;
 - (e) the divider terminating short of the discharge nozzle opening, said first and second annular spaces communicating with each other at the locus of divider termination;
 - (f) the nozzle including means defining a passage-way from the locus of divider termination to the nozzle discharge opening;
 - (g) a first worm element in said first annular space and fixedly secured to the divider, said first worm element serving to mount the mandrel in the divider;
 - (h) a second worm element in said second annular space and fixedly secured to the divider, said second worm element serving to mount the divider in the casing member;
 - (i) and including first and second inlet means for, respectively, said first and second annular spaces for introducing material, respectively, thereinto, said

first and second inlet means being disposed along the corresponding worm elements remote from the discharge nozzle means;

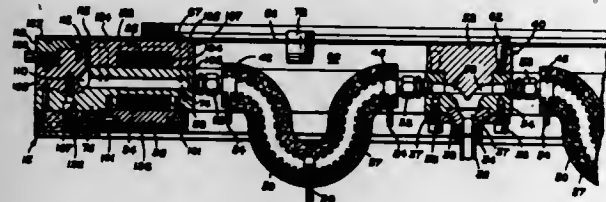
- (j) means sealing said first and second annular spaces from each other for preventing combining of material from the first and second inlet means prior to introduction of the material into the first and second annular passageways;
- (k) means for rotating the divider to thereby rotate the first worm element and the second worm element for transportation of material through the first and second annular spaces toward said extruder discharge nozzle, said rotating means being disposed at the end portion of the divider remote from said discharge nozzle;
- (l) said casing having an extension enclosing said means for rotating the divider;
- (m) said mandrel being fixedly secured to said casing extension at the end thereof remote from said discharge nozzle.

3,314,109

EXTRUSION DIE AND FEED APPARATUS

James V. Barton, John J. Borzick, Harvey H. Gove, and Robert E. Hoffman, Hamilton, Ohio, assignors to The Black-Clawson Company, Hamilton, Ohio, a corporation of Ohio

Filed July 26, 1965, Ser. No. 474,616
9 Claims. (Cl. 18—14)



4. An improved die and feed apparatus for extruding tubular film from thermoplastic material and especially adapted to maintain the material at a uniform temperature while feeding a die of large size to provide a smooth and consistent flow of material from said die and to prevent cracking of the die due to differential thermal expansion and contraction, said apparatus comprising an annular die having means defining an annular cavity and an extrusion orifice, means defining a plurality of inlet passageways spaced apart around said die for directing material uniformly into said cavity, means for heating said die adjacent said cavity and said inlet passageways, means including a corresponding plurality of discrete tubular conduit members connecting said inlet passageways within said die to a source of plastic material and adapted to provide for thermal expansion and contraction of said die, and means for separately heating each said conduit member so that plastic material is supplied to said annular cavity at a uniform temperature.

3,314,110

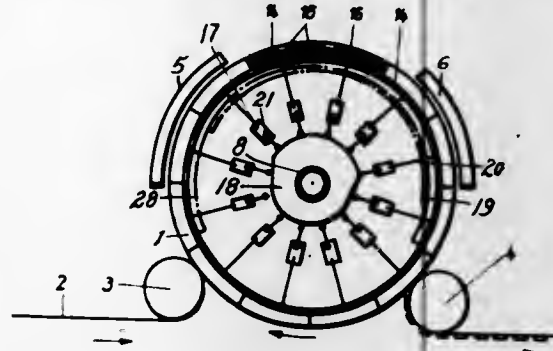
APPARATUS FOR CONTINUOUSLY SHAPING PLASTIC MATERIALS

Günther Missbach, Heckstrasse 101,
Essen-Werden, Germany

Filed May 31, 1963, Ser. No. 284,486
5 Claims. (Cl. 18—21)

1. Apparatus for continuously shaping plastics materials comprising in combination a revoluble drum, vacuum apparatus connected to the drum for placing the interior thereof under vacuum, a plurality of mould segments mounted on the periphery of the drum, said drum being formed with a plurality of groups of suction orifices around its periphery, each said mould segment being associated with at least one group of suction orifices, for each group of suction orifices, a changeover valve for

connecting the orifices of the group of the interior of the drum and to atmosphere as desired, a stationary control disc in the drum for operating the changeover valves, a



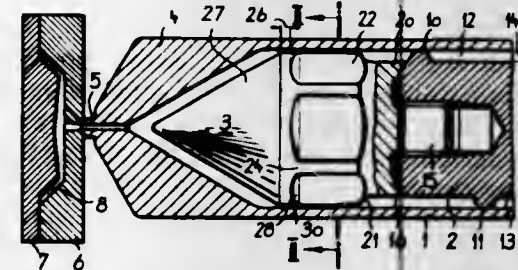
shaft on which the drum is mounted, and means mounted on each side of the disc to adjust the position of the latter on the shaft.

3,314,111

SCREW DIE CASTING MACHINES

Walter Tanner, Rubigen, and Viktor Zühner, Saint Gall, Switzerland, assignors to Gebrüder Buhler, Oberuzwil, Switzerland, a company of Switzerland

Filed Feb. 12, 1964, Ser. No. 344,354
Claims priority, application Switzerland, Feb. 15, 1963,
1,943/63
14 Claims. (Cl. 18—30)



1. A screw die casting machine which includes a rotatable and axially displaceable screw arranged in a cylinder which is adapted to be fed with granular and similar materials to be cast, comprising a screw having threads thereon, and an end piece connected to said screw, said end piece having a polygonal zone area defined around its periphery by a plurality of arcuate portions of substantially the same diameter as the interior of the associated cylinder and recessed polygonal portions connecting the arcuate portions, said screw further having a throttling area defined around its periphery of a diameter slightly smaller than the diameter of the interior of the cylinder with which it is to be associated connected to the polygonal area on the side opposite from the connection to said screw, and a streamlined tip area connected to the throttling area on the side opposite from the connection to said polygonal area.

3,314,112

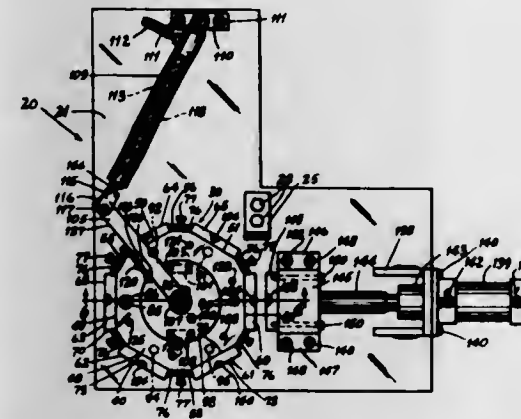
MULTI-PLATE MOLDING MACHINE AND INDEXING MECHANISM THEREFOR

Samuel L. Hardcastle, 9380 Golden Gate,
St. Louis, Mo. 63144

Filed Mar. 27, 1964, Ser. No. 355,267
6 Claims. (Cl. 18—30)

1. A molding machine comprising a base, a molding head, means mounting the molding head for vertical reciprocation between lower and upper positions, an injection nozzle supported on the lower side of the mold head, a disk rotatably supported by the base on a vertical axis of rotation, a plurality of mold plates mounted on the sides of the disk, a separately mounted mold plate slidable on the base, means to slide the separately mounted

mold plate into and out of contact with successive ones of the plurality of mold plates depending upon their rotational position, a mold cavity being defined when the separately mounted mold plate contacts one of the plurality of mold plates with a sprue opening communicating with the cavity, means to rotate the disk through incremental arcs to move the plurality of mold plates succes-



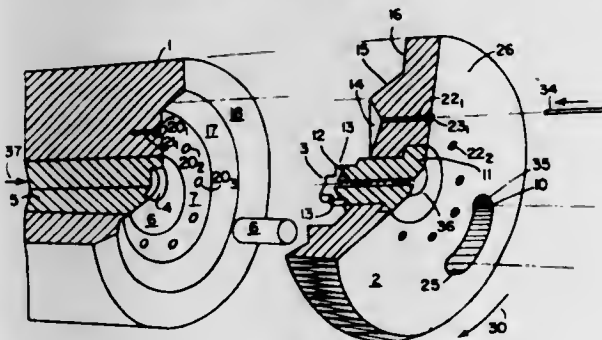
sively into positions opposite the separately mounted mold plate, and means to reciprocate the molding head to its lower positions in which the injection nozzle introduces moldable material through the sprue opening to the mold cavity and to thereafter reciprocate the molding head to its upper position to permit free rotation of the disk.

3,314,113

MOULDING METHOD AND APPARATUS

Allan C. Goodman, Ottawa, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada

Filed Apr. 15, 1964, Ser. No. 359,989
7 Claims. (Cl. 18—36)



1. Apparatus for moulding a straight elongated body having a surface to which solidified moulding material will not adhere adequately and for rendering the body fast within such moulding material which comprises:

a mould comprising a block portion and a cap portion relatively assemblable to define a mould cavity and including an inlet channel for the introduction of liquid moulding material into the cavity, said cap portion being relatively rotatable on said block portion,

means for accommodating said straight elongated body within the mould and including a tunnel defined in one of the portions, and a socket defined in the other portion alignable with the tunnel,

means permitting relative rotation between said block portion and said cap portion while said elongated body is positioned in said tunnel and said socket for kinking said elongated body,

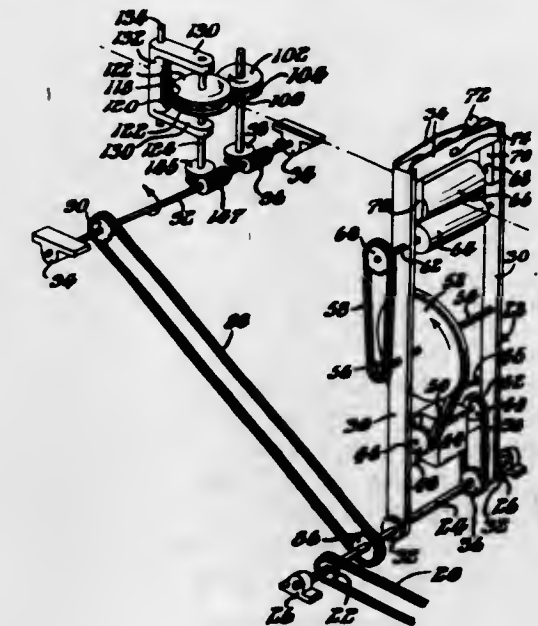
and stop means on one of said portions engaging the other portion upon chosen relative rotation of said block and cap, said body being kinkable by relative rotation of said block and cap and thereby being fast within said moulding material after solidification.

3,314,114

APPARATUS FOR PROCESSING TEXTILES

William Kirk Wyatt, Lansdale, Pa., assignor to Turbo Machine Company, Lansdale, Pa., a corporation of Pennsylvania

Filed Feb. 19, 1964, Ser. No. 346,045
1 Claim. (Cl. 19—240)



In apparatus for the continuous processing of sliver, the combination comprising a pair of nip rolls at the upstream end and a pair of measuring rolls at the downstream end of a drafting zone, a rigid frame mounting said nip rolls and mounted for pivotal movement for positioning said nip rolls a selected distance from said measuring rolls, means releasably securing said frame with said nip rolls in the selected position thereof, means stationarily mounting one of said measuring rolls, means rockably mounting the other of said measuring rolls, means yieldably biasing the same toward the stationary measuring roll, and means for actuating said nip rolls and measuring rolls in predetermined timed relation to each other for positively advancing said sliver and drafting the same to level the weight thereof per unit of length including a main drive shaft, said rigid frame being pivoted on said main drive shaft, an auxiliary drive shaft driven by said main drive shaft, means gearing said auxiliary drive shaft to said measuring rolls whereby to drive the same in opposite directions, means interposed between said main drive shaft and nip rolls whereby to drive the same in opposite directions including a variable speed unit mounted upon said rigid frame, and means responsive to the movement of said rockable means for varying the speed of operation of said measuring rolls after a predetermined time delay as required to correct for any long term variations in the weight of the sliver.

3,314,115

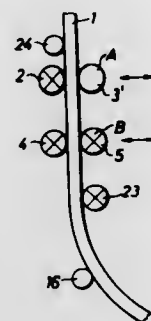
CONTINUOUS CASTING MACHINE

Charles Wilfrid Saunders, Aspatia, Cumberland, England, and Armin Thalman, Zurich, Switzerland, assignors to Concast AG, Zurich, Switzerland

Filed Jan. 17, 1964, Ser. No. 338,464
7 Claims. (Cl. 22—57.2)

1. A continuous casting machine for casting a continuous initially substantially vertical strand comprising at least one pair of rotatably driven withdrawal rollers, a strand bending roller, a counteracting roller, said strand bending roller and said counteracting roller being positioned at spaced apart locations along said strand, said strand bending roller being movable to exert a bending moment by cooperation between said strand bending roller and said counteracting roller to bend said cast

strand, the axial displacement between said strand bending roller and said counteracting roller being short, and support roller means positioned above said withdrawal rollers and on the same side of said strand as said bending roller and displaced from said bending roller and said counteracting roller by a distance which is long as



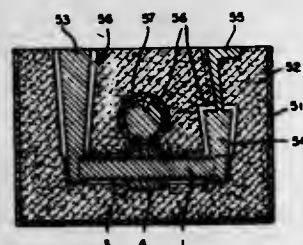
compared with the axial displacement between said strand bending roller and said counteracting roller, said pair of withdrawal rollers being movably mounted for movement transversely of the axis of said strand and the axis of said roller so that the reaction forces of said bending are imposed upon said supporting roller means and are not imposed upon said withdrawal rollers.

3,314,116

GASIFIABLE CASTING PATTERN

Adalbert Wittmoser, Lampertheim, Germany, Johannes Schade, Petit-Lancy-Geneve, Switzerland, and Erich Krzyzanowski, Ludwigshafen (Rhine), Germany, assignors, by mesne assignments, to Full Mold Process, Inc., Lathrup Village, Mich., a corporation of Delaware

Filed July 30, 1963, Ser. No. 298,676
Claims priority, application Great Britain, Apr. 2, 1962, 12,542/62
8 Claims. (Cl. 22-129)



5. For use in a casting arrangement, a casting pattern comprising, in combination,
a member gasifiable substantially without residue on subjection to a molten casting charge and having substantially the configuration of an article to be cast, and
a material distributed throughout said gasifiable body in significant amounts up to 500% by weight of the pattern to produce a predetermined characteristic in the casting.

3,314,117

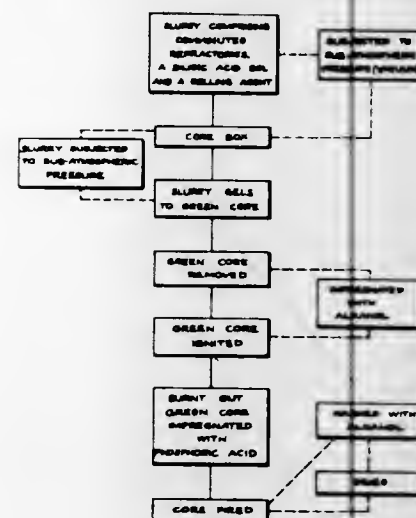
METHOD OF MANUFACTURING A FOUNDRY CORE

Jerome L. Fischman, Flushing, and Kenneth H. Brinsmead, Northport, N.Y., assignors to British Industries Corporation, Plainview, N.Y., a corporation of New York

Filed May 10, 1965, Ser. No. 454,715
6 Claims. (Cl. 22-194)

1. Method of manufacturing a foundry core which comprises:
(1) forming a slurry comprising comminuted refractories, a silicic acid sol and a gelling agent;
(2) pouring the slurry into a core box; and allowing it to gel;

- (3) removing the green core from the core box;
(4) igniting the green core and allowing it to burn out;

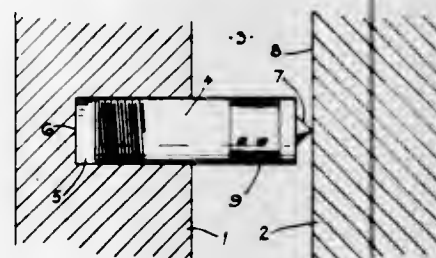


- (5) impregnating the burned core with phosphoric acid; and
(6) firing the core.

3,314,118

MOULDING TECHNIQUES

George Stanworth, 147 Wheatley Lane Road, Barrowford, Nelson, England
Filed Nov. 10, 1964, Ser. No. 410,152
1 Claim. (Cl. 22-203)



A method of locating an insert in a moulded article comprising preparing a mould with a first internal wall and a location for said insert in another internal wall, said location including an end location face for a first face of said insert, forming said insert with a protuberance on a second face oppositely directed to said first face, said second face facing said first internal wall of said mould when said insert is in said location, whereby said protuberance prevents said insert resting with its second face in such a position abutting said first internal wall which would prevent the flow of molten material between said insert and said first internal wall, and forcing molten material under pressure-diecasting pressure into said mould, so that said molten material pressing on said second face of said insert forces said insert into its location to engage said first face of said insert with said end location face.

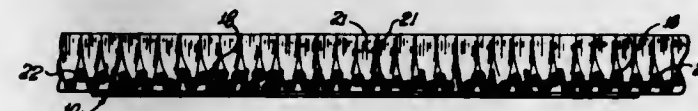
3,314,119

SEAMING STRIP

Harvey J. Hill, Monterey Park, Calif., assignor to Roberts Consolidated Industries, Inc., City of Industry, Calif., a corporation of California
Filed Feb. 15, 1965, Ser. No. 432,701
7 Claims. (Cl. 24-87)

1. A seaming device comprising:
a thin strip of metal formed into a plurality of parallel sections joined together by flexible, connecting straps located adjacent opposite longitudinal margins

of said metal strip with the respective sections being provided with a plurality of prongs, said flexible connecting straps having a first position holding ad-

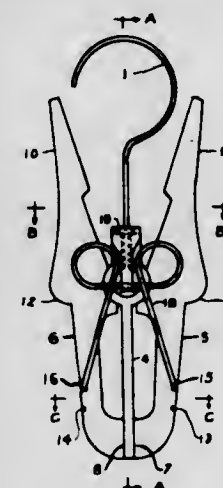


joining sections closely spaced and an extended, second position holding said sections away from each other and in spaced apart, parallel orientation.

3,314,120

CLIPS WITH DUAL CLAMPING DEVICES

Roland E. Minogue, 515 S. M St., Lake Worth, Fla. 33460
Filed July 6, 1965, Ser. No. 469,731
13 Claims. (Cl. 24-137)



1. A clip with dual clamping devices, with three integral parts, a central and two outer parts, having two identical springs, and interlocked with a supporting hook so that the pressure of the clamping devices increases with the weight of the articles being supported, has means for lifting the clip and the articles being supported without the use of the supporting hook and has means providing support for a sling in conjunction with the clip when it is desired.

3,314,121

STIRRUP BUCKLE

Earl L. Blevins and Joan V. Blevins, both of Bosler Route, Wheatland, Wyo. 82201
Filed Nov. 24, 1964, Ser. No. 413,540
2 Claims. (Cl. 24-181)

1. A stirrup buckle for detachably connecting a stirrup strap with a saddle strap, said buckle comprising, in combination, an elongated substantially rectangular plate and a cooperating hollow elongated substantially rectangular sleeve, said plate including an elongated substantially rectangular tongue offset and projecting laterally from a longitudinally extending edge thereof intermediate a pair of its opposed ends, said plate having means thereon engageable with means on one end of said stirrup strap fixedly connecting said stirrup strap on said plate, said tongue having a plurality of studs projecting laterally away therefrom in a direction away from said plate, said saddle strap having openings formed in a portion thereof to releasably receive and connect said studs therein with the free ends of said studs extending therebeyond, and said sleeve comprising an elongated substantially hollow rectangular member having a continuous side wall provided with an inwardly opening transversely extending channel intermediate the ends thereof, said

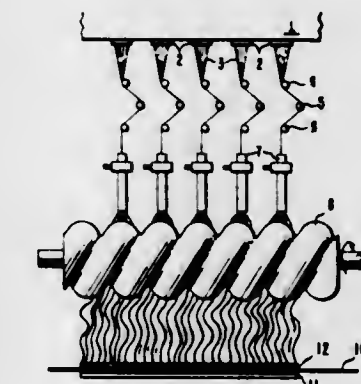


said channel and with said free ends of said studs frictionally engaging confronting portions of the inner side of said side wall.

3,314,122

APPARATUS FOR FORMING NON-WOVEN WEB STRUCTURES

Robert Wendel Bundy, Nashville, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 1, 1963, Ser. No. 291,944
3 Claims. (Cl. 28-1)



3. In an apparatus for combining a plurality of laterally spaced and aligned parallel moving streams of an elastic fluid having a plurality of electrostatically charged fibrous elements dispersed therein and collecting the fibrous elements from the combined streams in the form of a unitary coherent non-woven web structure having uniform thickness, density, and directional properties, the improvement comprising a stream combining and controlling mechanism, said mechanism comprising a member having a smoothly curved peripheral surface located in a position extending transversely to and generally tangent to each of said streams, said member aerodynamically diverting each stream in a given direction transverse to the path of stream movement and means cooperating with said smoothly curved peripheral surface and concurrently operated therewith for additionally diverting each stream in an oscillating manner along a general lateral line of direction transverse to the path of stream movement and substantially perpendicular to said given direction to form a single combined evenly-blended continuous laterally extending moving stream of fluid and fibrous elements.

3,314,123

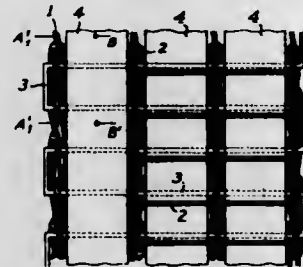
METHOD OF KNITTING FABRICS WITHOUT PERMANENT DEFORMATION

Gustave Groebli, Saint-Quentin, France, assignor to Societe Anonyme le Textile Delcer, Saint-Quentin, France, a French society

Filed Dec. 9, 1963, Ser. No. 329,939

Claims priority, application France, Dec. 8, 1962, 918,016; Nov. 29, 1963, 955,437

2 Claims. (Cl. 28-72)



1. A method of producing knitted fabrics having a repetitive pattern and having the appearance and properties of woven fabrics, comprising feeding a first yarn which can be shrunk and which can be set after being shrunk and forming rows of stitches therefrom, assembling said rows of stitches by means of two yarns which act as weft yarns and join at least two rows of stitches, feeding straight yarn, which shrinks less than the first yarn and inserting such straight yarn in unknitted condition between the rows of stitches, controlling the rate of feeding of the first yarn relative to the rate of feeding of the straight yarn so that the first yarn has a length which markedly exceeds the length of the straight yarn and which is substantially equal to the theoretical length of the first yarn which is required to obtain an inextensible row of stitches after the shrinkage treatment, subjecting said fabric to a shrinkage treatment, and during the shrinkage treatment maintaining the length of the fabric substantially equal to the length of the straight filling yarn after allowing for any shrinkage of the filling yarn.

3,314,124

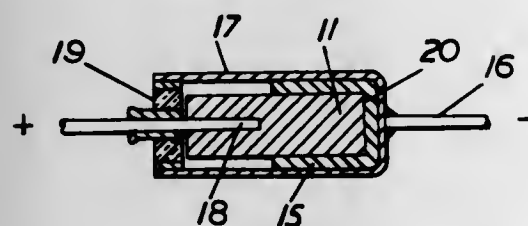
METHOD OF MANUFACTURING SOLID ELECTROLYTIC CAPACITOR

Eiichi Okamoto and Masasi Koike, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan

Filed Mar. 10, 1964, Ser. No. 350,804

Claims priority, application Japan, Mar. 22, 1963, 38/15,045

6 Claims. (Cl. 29-25.31)



1. In an improved method for manufacturing a solid electrolytic capacitor having a metal body anode, an oxide film of said metal covering said body, a manganese dioxide layer overlaying said oxide film, a conductive cathode layer overlaying said manganese dioxide layer and leads connected to said anode and cathode, the steps comprising:

- selecting said metal body from the group consisting of: aluminum, tantalum, niobium, zirconium and titanium
- forming said oxide layer on said selected metal body

- immersing said metal body with said oxide film deposited thereon, in a liquid mixture of an aqueous solution of manganous nitrate and an organic reducing agent selected from the group consisting of formamide, formic acid, glycolic acid, formaldehyde, and acetaldehyde, the amount of said inorganic reducing agent being in the range of about 10% to 20% by volume;
- heating said mixture, including the immersed body at a temperature below 300° C. until a layer of manganese dioxide of desired thickness is deposited over said oxide layer; and
- thereafter overlaying said manganese dioxide layer with a layer of a conductive material.

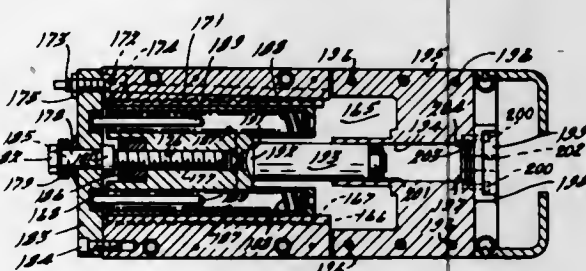
3,314,125

MULTIPLE MACHINING DEVICE

William D. Walters, Ridgewood, N.J., assignor to Standard Tool & Manufacturing Company

Filed Oct. 21, 1964, Ser. No. 405,451

17 Claims. (Cl. 29-38)



1. In a machine tool, a base having a cylinder, a piston in said cylinder, a slide on said base advanced by said piston, spring means in said slide for returning said slide and piston as the pressure in the cylinder is reduced, a tool-supporting member removably secured to said slide, and means for driving said tool-supporting member in rotation.

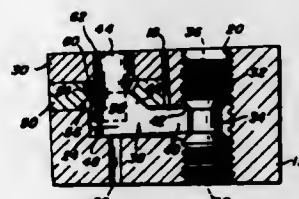
3,314,126

TOOLS

Henry W. Stier, Dearborn Heights, Mich., assignor to Carmet Company, Pittsburgh, Pa., a corporation of New Jersey

Filed Apr. 7, 1966, Ser. No. 540,972

12 Claims. (Cl. 29-96)



1. A tool holder comprising
- a shank,
 - a head having a bore therethrough, said head having a recess formed of
 - a base surface,
 - a wall intersecting the base surface, and
 - a passageway disposed beneath the base surface and communicating with the bore of the head,
 - a support disposed in seating engagement on the base surface of the head and having a centrally disposed opening therein,
 - a cutting insert having a central opening therein and disposed in an aligned relationship with the opening of the support,
 - locking mechanism disposed to secure the cutting insert into clamping engagement with the wall intersecting the base surface, said locking mechanism including

- a generally L-shaped locking member having a vertically extending leg disposed within the aligned opening of the support and the cutting insert,
- a horizontally extending leg disposed within the passageway in communication with the bore, and
- actuating means disposed within the bore to pivot the locking member to thereby secure the cutting insert into locking engagement with the wall of the recess.

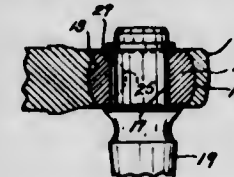
3,314,127

METHOD OF MAKING UNIVERSAL BEARINGS

Donald Robert Acuff, Cleveland Heights, and Albert Charles Hunter, Mentor, Ohio, assignors to Towmotor Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Sept. 6, 1963, Ser. No. 307,071

2 Claims. (Cl. 29-149.5)



1. A method of manufacturing a self-aligning bearing comprising forming a bearing element from a solid material having a predetermined melting temperature, forming a cavity in a casting mold having a configuration of a socket member for encompassing said element, coating said bearing element with a colloidal solution of powdered graphite and a liquid vehicle, disposing the coated element in said cavity, pouring a material which has a lower melting temperature than the bearing element and graphite into said cavity in a liquid state so as to encompass said bearing element whereby the liquid vehicle in said solution boils off leaving the powdered graphite coating on said element, and enabling said liquid material to solidify to form a one-piece socket member in said mold whereby said bearing element is encaptured therein so as to have relative universal movement with respect to said socket member.

3,314,128

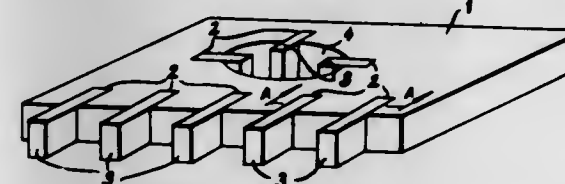
METHOD OF MAKING A CIRCUIT ELEMENT

Hans Jürgen Schütze and Heinz Wilhelm Ehlbeck, Ulm (Danube), and Manfred Dressler, Neu-Ulm (Danube), Germany, assignors to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany

Filed Sept. 21, 1962, Ser. No. 225,203

Claims priority, application Germany, Sept. 21, 1961, T 20,804

3 Claims. (Cl. 29-155.5)



1. A method of making a circuit element comprising the steps of:
- providing an insulating plate having two opposed surfaces, at least one of which is planar, and at least one outer edge defining the lateral extent of said surfaces;
 - forming an opening through said plate to define an inner edge;
 - forming slots in said inner edge and said outer edge of said plate, with said slots extending to said surfaces;
 - metallizing the slots of the plate;

- inserting a respective complementarily shaped metal pin of about the same thickness as the plate into each slot, each said pin being of a length to project laterally beyond its associated plate edge;
- securing each such metal pin in its respective metallized slot;
- abrading and then polishing each such metal pin and said planar plate surface to provide a continuous planar surface defined by one surface of each said pin and said planar plate surface;
- providing a circuit element having leads in said opening and electrically connecting the leads thereof with the pins projecting into the opening;
- depositing passive conductive elements upon the abraded and polished surfaces to electrically connect at least certain of the pins.

3,314,129

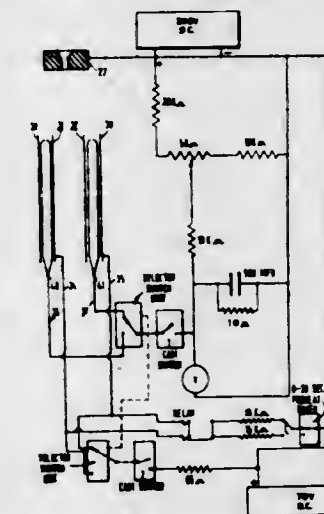
THERMOCOUPLES

Harold Pugh, Thelwall, Warrington, and George Gauterin, Saughall, Chester, England, assignors to United Kingdom Atomic Energy Authority, London, England

Filed Aug. 8, 1963, Ser. No. 300,774

Claims priority, application Great Britain, Aug. 14, 1962, 31,224/62

3 Claims. (Cl. 29-155.5)



1. A method of manufacturing a thermocouple from a thermocouple cable having conductors surrounded by refractory insulating material in a tubular metal casing, comprising heating a shaped end of the cable in a rarefied atmosphere by way of a gas plasma derived from a plasma generator by first connecting the conductors electrically as an anode with respect to the generator and bombarding the conductor ends with plasma electrons, whereby adjacent ends of the conductors are fused together to form a thermocouple junction, and then connecting the casing electrically as an anode and bombarding it with plasma electrons, whereby the end of the casing is fused to form a sealed end closure insulated from the thermocouple junction by the insulating material.

3,314,130

METHOD OF MAKING HOLLOW ELECTRONIC COMPONENTS

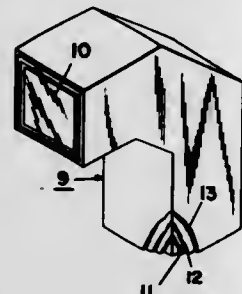
William R. Sheridan, Buffalo, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Mar. 23, 1964, Ser. No. 354,186

2 Claims. (Cl. 29-155.5)

1. The method of making a hollow electronic wave guide which comprises:
- selecting an alloy consisting of approximately 55.5 percent bismuth and 44.5 percent lead,
 - shaping the alloy to provide a mandrel having outer surfaces between its ends which determine the internal configuration of the wave guide,

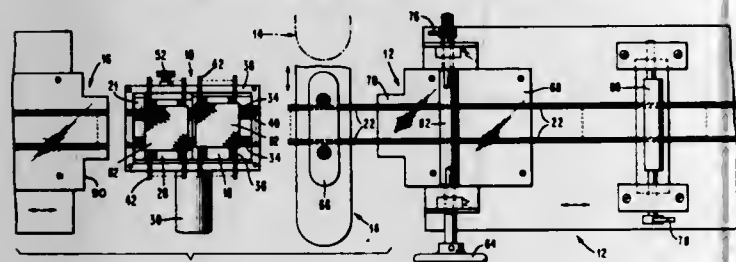
- (c) applying a thin inner layer of lead to cover said outer surfaces of the mandrel,
 (d) applying a layer of conductor material selected from the group comprising silver and copper to cover the inner layer of lead,
 (e) applying a thin outer layer of lead to cover the conductor material,
 (f) subjecting the mandrel and applied layers assembly to a hot oil bath maintained at a temperature of ap-



- proximately 255° F. to melt the alloy forming the mandrel,
 (g) subjecting the inner layer of lead to a solution of ferric chloride to completely remove any alloy therefrom and
 (h) removing the inner and outer layers of lead by a solvent solution selected from the group comprising acetic acid and hydrogen peroxide.

3,314,131 WIRE THREADING METHOD AND APPARATUS

Robert L. Judge, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
 Filed Apr. 29, 1964, Ser. No. 363,481
 30 Claims. (Cl. 29-155.5)



1. A method of threading a row of aligned apertured articles with a wire made of material that normally is flexible but which is capable of being hardened by the application thereto of tensile stress in excess of its elastic limit, said method comprising the steps of
 subjecting a leading portion of the wire to tension which causes the material in said portion of the wire to be stressed in excess of its elastic limit, thereby hardening the stressed material in a substantial length of the wire extending from the leading end thereof, and feeding the wire through the aligned apertures in said row of apertured articles in such manner that the hardened leading portion of the wire maintains the wire in the desired direction as it moves through said row of articles.

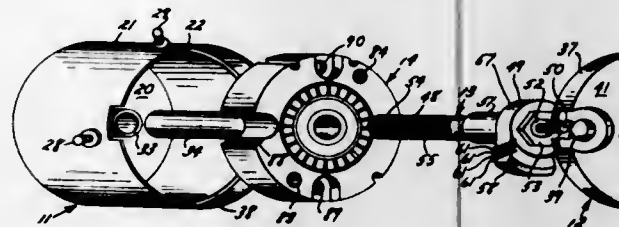
3,314,132 METHOD OF MAKING A ROTARY SWITCH

David J. Van Dorn, Pompton Plains, N.J., assignor to Collectron Corporation, New York, N.Y., a corporation of New York
 Filed Oct. 12, 1962, Ser. No. 230,087
 1 Claim. (Cl. 29-155.54)

The method of manufacturing a rotary switch including a commutator body having a continuous conductive ring and a segmented conductor ring disposed in coaxial

radially-spaced relation thereto, which includes the steps of:

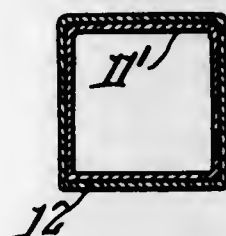
- (a) providing a commutator body having an annular groove therein;
 (b) forming said continuous and segmented rings as portions of an integral body having a pair of coaxially positioned laterally-extending flanges interconnected by a web of material;



- (c) wiring said continuous and segmented rings;
 (d) positioning said integral body within said groove;
 (e) injecting a quantity of moldable synthetic resin into the interstices between said integral body and said groove, and curing said resin to mount said integral body within said commutator body; and
 (f) cutting away said web to expose parallel surfaces of said continuous and segmented rings.

3,314,133 COIL FORM AND METHOD

William F. Stahl, 423 Abbottsford Road, Kenilworth, Ill. 60043
 Filed Oct. 30, 1963, Ser. No. 320,145
 1 Claim. (Cl. 29-155.57)



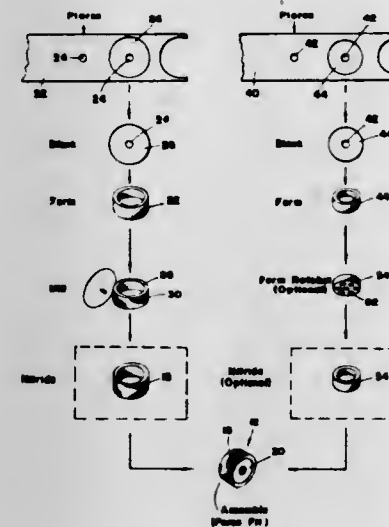
In a method of making a coil, the steps of spirally winding and adhesively uniting in the overlapped portions thereof at least two ribbons of paper in overlapping fashion to develop a laminar tube, one of said ribbons being impregnated with a partially cured phenolic resin, a ribbon adjacent said one ribbon being unimpregnated kraft paper, subjecting said tube to heat to complete the cure of said tube, and winding a wire conductor about said tube to provide an inductance.

3,314,134 IGNITION SPARK WHEELS

Ginn Blesenbach, 120 Madison Ave., Reading, Pa. 19607
 Original application Oct. 28, 1964, Ser. No. 407,035, now Patent No. 3,262,289, dated July 26, 1966. Divided and this application Apr. 1, 1966, Ser. No. 539,503
 6 Claims. (Cl. 29-159)

1. A method of making spark wheels for ignition devices which comprises punching a circular blank from a strip of steel, pressing said blank into a hollow, cup-shaped body having a radial wall bounded by a peripheral wall, and then forming an abrasive surface on said peripheral wall, said blank being punched from a strip of a nitriding steel alloy and said body being nitrided to form an outer section, then forming a second circular blank to

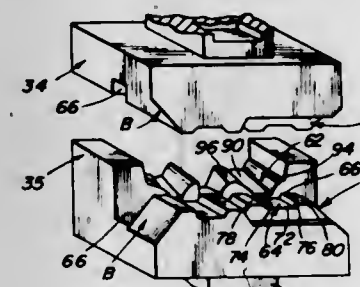
constitute an inner section, and thereafter inserting said inner section within the hollow of said outer section in



such a manner that the peripheral wall of the outer section encompasses the periphery of the inner section.

3,314,135 CRIMPING TOOLS AND DIES

Karl E. Smith, Twelve Mile, Ind., assignor to Vaco Products Company, Chicago, Ill.
 Filed July 30, 1964, Ser. No. 386,364
 14 Claims. (Cl. 29-203)



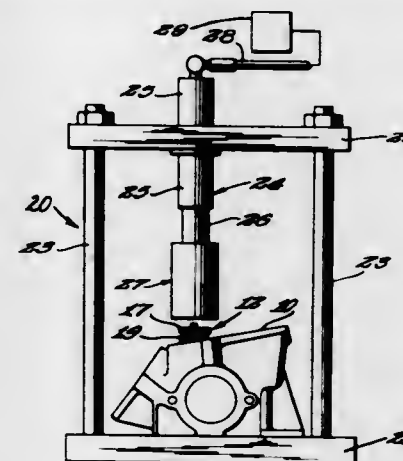
1. In a tool for crimping a ferrule of an electrical connector onto an insulated conductor having a bared conductor portion, a set of ferrule crimping dies, each said dies comprising a first section constituting a bared conductor crimping section and a second section constituting an insulated conductor crimping section,
 each said bared conductor crimping section defining an open ended relatively shallow trough-shaped nest having a substantially planar base and a pair of symmetrically disposed side walls integral with said base and diverging outwardly from longitudinal lateral edges thereof,
 each said insulated conductor crimping section defining an open ended ferrule receiving nest having a base and a pair of symmetrically disposed side walls flared rearwardly and outwardly toward said bared conductor crimping section, said flared side walls defining inwardly directed convex surfaces.

3,314,136 COLLET LOCK REMOVAL TOOLS

William S. Giles, Highland Heights, Ohio, assignor to TRW Inc., a corporation of Ohio
 Filed Aug. 5, 1964, Ser. No. 387,591
 11 Claims. (Cl. 29-249)

1. A power operated retainer assembly removal tool comprising:
 a pilot sleeve having an open end and a closed end, a plug having a lower collet engaging portion,

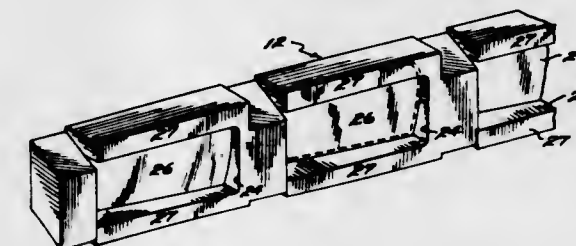
said plug being axially slidably mounted within said pilot sleeve with said lower portion facing the sleeve open end,
 said plug tubular lower portion having means to removably engage a retainer collet,
 a spring means in said pilot sleeve in contact with the plug to urge the plug lower portion towards the pilot sleeve open end with a predetermined force,



an ejector axially slidably mounted in the pilot sleeve, means within the pilot sleeve to limit the axial movement of the ejector,
 said ejector being adapted to abut a valve spring retainer,
 an ejector spring means mounted in the pilot sleeve in contact with the ejector to urge the ejector toward the pilot sleeve open end.

3,314,137 MAKING PRODUCT ARTICLES BY COMBINED CAVITATION AND MACHINING OF BAR STOCK

Eugene Peter Schellens, Essex, Conn., assignor to Schellens True Corporation, subsidiary of Perfect Circle Corporation, Essex, Conn., a corporation of Indiana
 Filed Feb. 6, 1964, Ser. No. 342,996
 11 Claims. (Cl. 29-413)



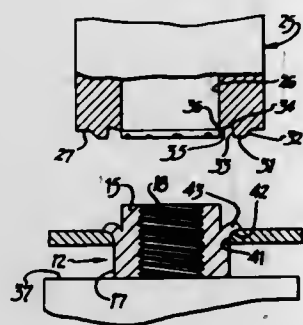
1. The method of making product articles by combined cavitation and machining of bar stock which includes the steps of, sinking a first pair of mating cavities in an elongate bar of source material respectively from opposite lateral faces of said bar sufficiently deep to leave between said cavities a relatively thin residual web of said material integral with bordering portions of the bar, sinking an additional pair of mating cavities respectively from said opposite faces of said bar in a location displaced along the bar from said first pair of cavities, grooving said bar crosswise thereof between said pairs of mating cavities in a manner to produce from said adjoining portions of the bar a desired profile shape of the product article while the same remains integral with said relatively thin residual web, severing the bar crosswise between said pairs of cavities in a manner to divide the bar into separate work blanks each comprising one of said residual webs bordered and reinforced by adjoining portions of the bar, and detaching said webs from said work blanks to liberate therefrom the complete product article.

3,314,138 METHOD OF ASSEMBLING A PIERCE NUT IN A PANEL

Plummer E. Double, deceased, late of Detroit, Mich., by Donald L. Double, administrator, Detroit, Mich., assignor to Multifastener Corporation, a corporation of Michigan

Original application Oct. 10, 1961, Ser. No. 144,132. Divided and this application Apr. 10, 1964, Ser. No. 358,963

2 Claims. (Cl. 29—432.2)

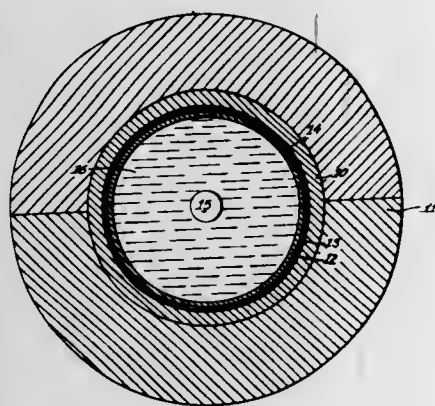


1. A method of assembling a rectangular nut having a central rectangular pilot portion and outer flanges to an essentially planar panel, the nut having undercut recesses on two sides only of the pilot portion, by relatively moving the nut and the panel in a single uninterrupted motion sequentially: (1) piercing the panel with the nut pilot portion, (2) bottoming the panel outwardly of the recesses on the nut flanges, (3) swaging the panel portions on said two sides of the pilot portion into said recesses and (4) staking outwardly the remaining two sides of the nut pilot portion to overlies the remaining panel portions.

3,314,139 METHOD OF BONDING OBJECTS OF DIS- SIMILAR METALLIC COMPOSITION

Stanley J. Whittaker and Avrum W. L. Segel, Deep River, Ontario, Canada, assignors to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada, a corporation of Canada

Filed Sept. 11, 1964, Ser. No. 395,716
5 Claims. (Cl. 29—470.1)

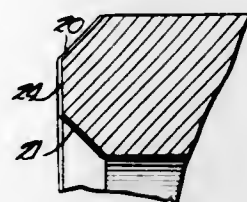


1. A method of bonding two objects of dissimilar metallic composition and strength which comprises providing an oxide coating on a surface to be bonded of a first one of said objects, arranging said objects in juxtaposition to each other with a surface to be bonded of the second one of said objects in spaced confronting relation with respect to said surface of said first one of said objects, placing an explosive adjacent the one of said objects of lower strength, evacuating the space between said surfaces, and detonating said explosive to release energy to cause impingement of the metal of one of said surfaces against the metal of the other of said surfaces and thereby bond said surfaces together.

3,314,140 METHOD OF MAKING A SURFACE JOINT

Merritt W. Albright, 23 Eisenhower Road, Peabody, Mass. 01960

Filed May 14, 1964, Ser. No. 367,537
8 Claims. (Cl. 29—473.1)



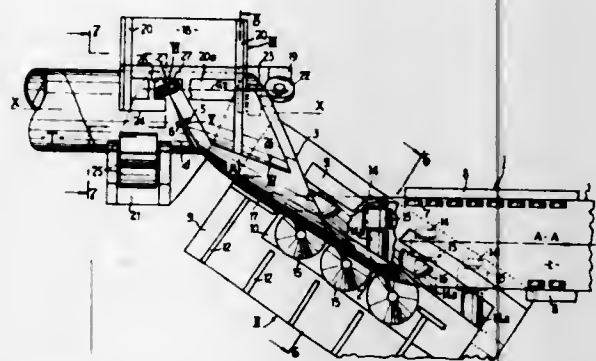
1. A method for the preparation of a glass member for soldering comprising the steps of, beveling the edge of the glass object at a 45° angle, polishing the beveled edge, cleaning the beveled edge in hot chromic acid, rinsing the beveled edge in hot water, rinsing the edge in distilled water, applying a thin layer of platinum paste which has been thoroughly mixed to the beveled edge of the glass object, prebaking the glass object for approximately 30 minutes at a temperature of 400–500° F. to drive off the volatiles in the platinum paste, firing the glass object at a temperature of approximately 1000° F., applying a liquid, non-acid flux to the surface of the platinum layer, and tinning the platinum layer with a low temperature solder.

3,314,141 METHOD AND DEVICE FOR MANUFACTURING METAL TUBES BY HELICALLY COILING A SHEET METAL STRIP

Marcel André Bacrot, Pont-a-Mousson, France, assignor to Centre de Recherches de Pont-a-Mousson, Meurthe-et-Moselle, France, a French body corporate

Filed May 8, 1964, Ser. No. 365,947
Claims priority, application France, July 23, 1963, 942,395

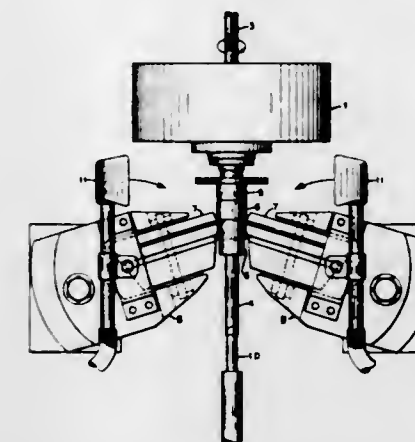
9 Claims. (Cl. 29—477.3)



1. A method of producing a tube by helically coiling a strip of sheet metal into a series of complete coils which are butt-welded together after having been suitably heated, said method comprising the steps of feeding the strip which has straight edges to a strip coiling machine in a direction parallel with the axis of the tube and subjecting in the course of formation of the tube each portion of the strip corresponding to a complete coil in the produced tube to the following successive treating stages: initially coiling said portion so as to impart thereto the shape of a cylindrical portion having the desired radius and generatrices which are oblique relative to the edges of the strip, the initial angle that the generatrices make with the parallel edges of the strip being less than the final angle that the generatrices of the tube to be obtained make with the coiling helix of the tube; progressively increasing said initial angle so as to bring it to the

value of said final angle by so coiling the strip as to form an intermediate portion having the shape of a non-cylindrical developable surface; coiling the strip a second time at said final coiling angle so as to form a second cylindrical portion at the desired radius and having generatrices parallel with the strip edges before their first coiling, continuing said coiling so as to form a complete coil of the tube; and welding the adjacent edges of the second cylindrical portion and the previously-formed complete coil of the tube.

5. A machine for producing a tube, comprising in combination a strip feeding device, a first coiling device oriented obliquely relative to the strip feeding direction, a second coiling device oriented in a direction parallel with the strip feeding direction, said second device being combined with heating means for heating the edges of the strip to be welded, and means for maintaining said edges of the strip in contact after they have been brought together, and strip guiding means located between the two coiling devices and adapted to create a progressive modification in the orientation of the strip.

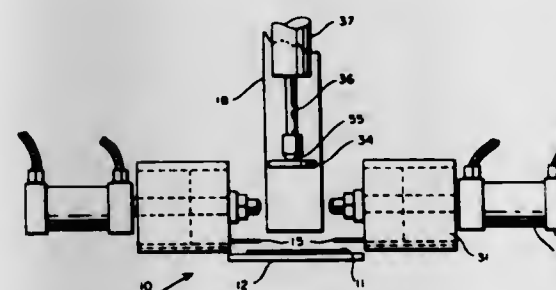


at room temperature, and thereafter drawing the resulting tube shell into metal tubing.

3,314,142 METHOD OF ENCASING BRICK

James D. Jenkins, San Jose, and Charles B. Reynolds, Saratoga, Calif., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware

Original application June 3, 1963, Ser. No. 285,093, now Patent No. 3,273,373, dated Sept. 20, 1966. Divided and this application May 25, 1964, Ser. No. 372,734
2 Claims. (Cl. 29—509)



1. In a method of encasing a preformed nonacid refractory brick, the steps of which comprise placing a channel-shaped metal casing on such brick so as to cover at least a portion of each of a plurality of adjacent side faces thereof, said brick having a preformed shallow, discontinuous depression in each of a pair of opposing side faces thereof and said metal casing at least partly overlying said depressions, conveying said brick and associated casing to a dimpling zone, and there simultaneously maintaining said brick stationary and by opposing punches applying up to a predetermined maximum local pressure without impact shock to said metal casing in registry with each said depression to a limit of travel of the punches to locally deform and depress said casing into conformity and frictional engagement with said depression.

3,314,143 METHOD FOR PRODUCING TUBE SHELLS

Robert E. McDonald and Carl F. Leitten, Jr., both of Oak Ridge, Tenn., assignors to the United States Atomic Energy Commission

Filed Nov. 3, 1964, Ser. No. 408,708
3 Claims. (Cl. 29—528)

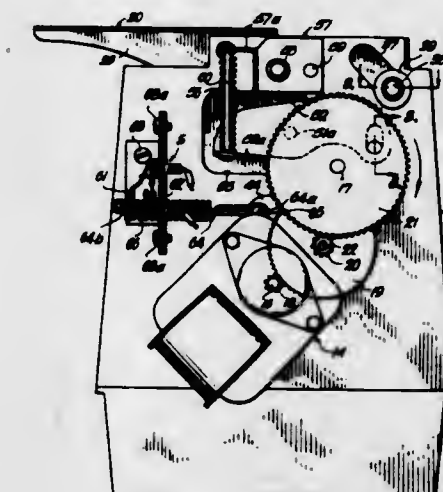
1. A method for fabricating metal tubing comprising the steps of casting said metal into a hollow billet, shrink fitting said billet onto a mandrel, deforming said billet on said mandrel to thereby displace said metal uniformly

along said mandrel in a direction opposite to the direction of applied force, said deforming step being carried out

3,314,144 POWER OPERATED CAN OPENER WITH POWER PIERCE AND AUTOMATIC SHUT-OFF

Robert E. McLean, Raytown, Mo., assignor to Rival Manufacturing Company, a corporation of Missouri

Filed Feb. 17, 1965, Ser. No. 433,274
9 Claims. (Cl. 30—4)

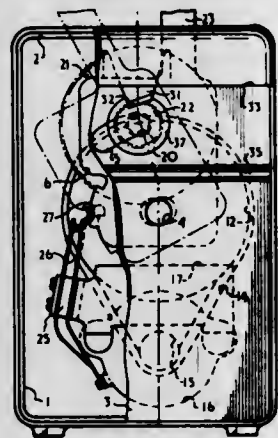


1. In an electrically powered can opener, the combination of
an upright frame having a front and a back,
a feed wheel supported in front of said frame for rotation about a substantially fixed, horizontal axis,
a cutter carrier member positioned adjacent the front of said frame,
an operating lever,
first pivot means connecting said operating lever to said frame for swinging movement of the operating lever about a substantially horizontal axis offset from said feed wheel axis, said lever having a downwardly swung limit position,
second pivot means connecting said lever with said carrier member, the axis of said second pivot means being offset both from said feed wheel axis and said first pivot axis,
a cutter element mounted on said carrier member and disposed in overlapping cutting relationship with said feed wheel when said operating lever is in said limit position, said element operable to impose a moment on said carrier member about said second axis when a can lid is being cut and hold said carrier member in one position with respect thereto,

resilient means connected with said carrier member and imposing a weaker counter moment on said carrier member, said resilient means operable to displace said carrier member from said first position to a second position upon completion of the cutting, an electric motor drivingly connected with said feed wheel, motor control means actuated by movement of said carrier member between said first and second positions therefor, said control means energizing the motor when the cutter carrier member is in said first position therefor and deenergizing it when the carrier member is in said second position therefor, and can guide means carried by said carrier member and arranged to resiliently thrust the can into feeding engagement with said feed wheel, said guide means so mounted and biased that when said lever is in said limit position the reaction forces imposed by the can on said guide means do not impart a moment on said carrier member about said second axis.

3,314,145

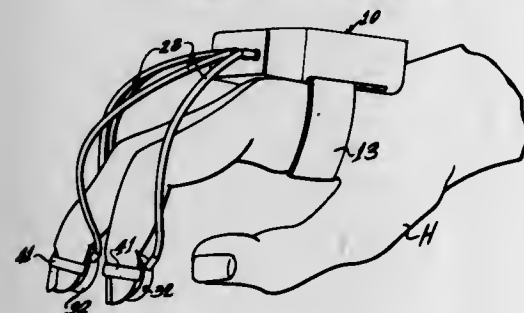
ELECTRICALLY POWERED CAN OPENER
Samuel Baylin, St. Laurent, Quebec, Canada, assignor to Aviation Products Company, Montreal, Quebec, Canada, a Canadian corporation
Filed Mar. 30, 1966, Ser. No. 538,662
8 Claims. (Cl. 30-4)



1. An electric can opener comprising a housing; an electric motor; a circuit closer therefor; a pivot in said housing; a chassis floatingly suspended on said pivot to both turn on and slide across the pivot; a fixed cutter; a can carrying traction wheel mounted on said chassis and operatively connected to said motor; and means for moving said chassis, causing it first to turn on its pivot and then to slide sideways on its pivot to engage said circuit closer.

3,314,146

MOTOR DRIVEN SHAVING MEANS INDIVIDUALLY MOUNTED ON THE USER'S FINGERS
Frank W. Cooksey, 508 Baker Drive, Birmingham, Ala. 35213
Filed Nov. 4, 1964, Ser. No. 408,961
1 Claim. (Cl. 30-43.6)



An electric shaver comprising:
(a) an electric motor and housing therefor,

- (b) means carried by the motor housing for detachably attaching said motor to a hand,
- (c) a plurality of cutter heads, each having a rotary cutter,
- (d) means carried by each cutter head for detachably attaching said cutter head to a finger,
- (e) a plurality of flexible drive shafts, each being operatively connected at one end to said motor,
- (f) a rotary drive member carried by each rotary cutter, and
- (g) other rotary drive members carried by the other ends of said flexible drive shafts and operatively connected to the first mentioned drive members carried by the rotary cutters.

3,314,147

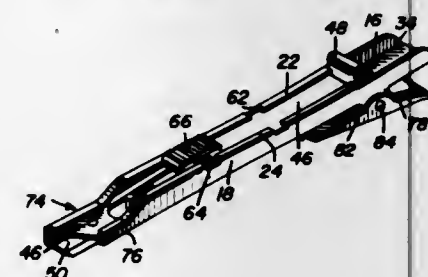
SAFETY RAZOR WITH ADJUSTABLE GUARD
Robert L. Karr, 1915 Winslow Ave., Terre Haute, Ind. 47805
Filed Sept. 29, 1965, Ser. No. 491,197
6 Claims. (Cl. 30-60.5)



1. A safety razor, comprising a handle fixedly connected to a first plate, a second plate operatively supported on said handle and movable toward and away from said first plate, guard means interposed between said plates and having guard elements movable inwardly and outwardly along a pair of opposed sides of said plates upon movement of said second plate with respect to said first plate, means for moving said second plate relative to said first plate, and means releasably retaining a blade on said first plate with its cutting edges overlying said guard means.

3,314,148

RETRACTIBLE POCKET BLADE HOLDER
Albert J. Foellmi, 5814 Pacific Ave., Stockton, Calif. 95207
Filed Feb. 17, 1966, Ser. No. 528,244
5 Claims. (Cl. 30-162)

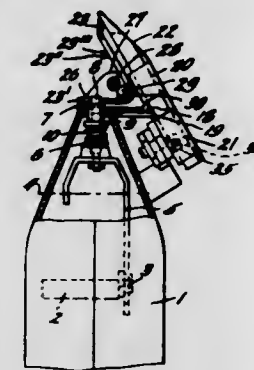


1. A blade holder of the type having a retractible blade comprising, a hollow elongate body member, said body member open at both ends and having a slot extending the full length of one wall thereof, blade holding means slidably mounted within said body member and having means substantially intermediate the ends thereof extending upwardly through said slot for sliding said blade holding means through said body member, stop means substantially adjacent one end of said blade holding means

extending upwardly through said slot, means adjacent one end of said body member cooperating with said stop means for limiting the forward sliding movement of said blade holding means in said body member, said blade holding means comprising spring plate means of substantially resiliently flexible construction, said spring plate means bent back on itself thereby forming a pair of spring arms, and a blade receiving head at the open end of said spring arms.

3,314,149

HAIR CLIPPERS HAVING A SWINGABLE, RECIPROCABLE CUTTER BLADE
Victor Kobler, Huttenstrasse 42, and Werner Kobler, Huttenstrasse 43, both of Zurich, Switzerland
Filed Dec. 30, 1963, Ser. No. 334,466
7 Claims. (Cl. 30-222)

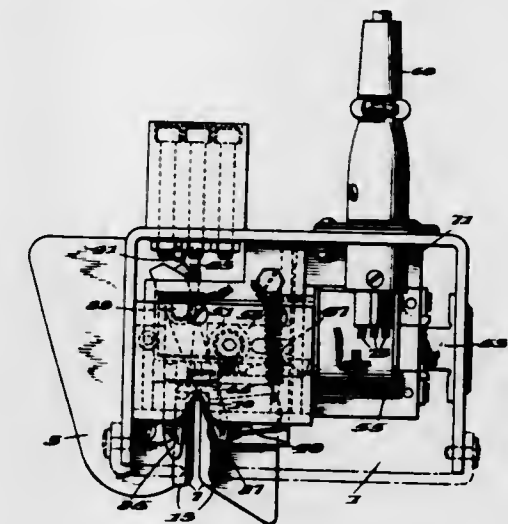


1. In hair clippers of the kind having a head adapted to be mounted on a drive motor housing which serves as a handle, said head comprising a base, a stationary blade mounted on said base and having cutting teeth on its forward edge, an axle, means on said base mounting said axle in spaced relation thereto and parallel with the cutting part of said stationary blade, a two-armed bell crank mounted on said axle with said axle substantially at the junction of said arms, and reciprocable relative to said axle and angularly movable thereabout, a movable blade adjacent and in operative engagement with said stationary blade and having cutter teeth adjacent the teeth of said stationary blade, one of the arms of said bell crank extending forwardly and being drivingly connected with said movable blade, the other arm of said bell crank extending from said axle rearwardly to adjacent said motor housing, drive means extending from said housing and operatively engaging said rear bell crank arm, and spring means pressing on said rear arm to tend to resiliently rotate said bell crank about said axle, and press said movable blade against said stationary blade.

3,314,150

YARN CUTTING APPARATUS
Eugene L. Davis, Jr., Mechanicsville, and David W. Rudd, Chesterfield County, Va., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 23, 1964, Ser. No. 406,026
3 Claims. (Cl. 30-228)

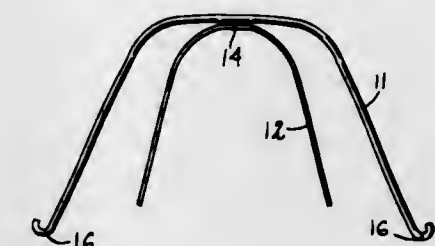
1. An improved yarn handling mechanism for maintaining a running yarn line in an operative relationship to (1) the inlet end of a portable air-aspirated yarn sucker gun device and (2) a yarn cutter device, and then actuatable for cutting the running yarn line and causing the cut end of the incoming yarn line to be inserted into the inlet end of the yarn sucker gun device for tensioning and take-up of the cut end of the incoming yarn line, said mechanism comprising a frame, a first cutter element mounted on said frame, a second cutter element pivotally connected to said first cutter element, guide means for guiding said yarn along a path between said



first and second cutter elements, a solenoid mounted on the frame for operation in response to a signal, a solenoid plunger connected to said solenoid, a roller member connected to the end of said solenoid plunger in operative relationship to said second cutter element whereby energization of said solenoid causes said roller member to move said second cutter element into scissoring relationship with said first cutter element, means to restore the second cutter element to its initial position, means to

3,314,151

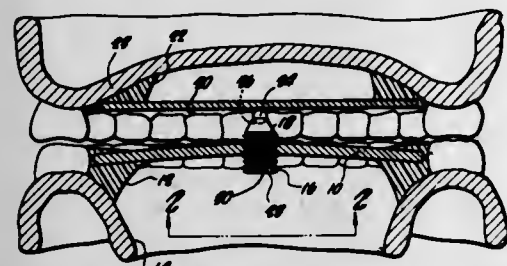
ORTHODONTIC FACE BOW AND METHOD OF MAKING SAME
James M. Rubin, 141 W. 17th St., New York, N.Y. 10011
Filed Mar. 26, 1964, Ser. No. 354,909
3 Claims. (Cl. 32-14)



1. An orthodontic face bow comprising a first solid longitudinal wire, a second solid longitudinal wire spaced from said first longitudinal wire, and a solid web whose length is substantially less than the length of said wires, said web being integrally formed with said wires, the longitudinal axes of said wires being parallel one to another at least in the area of said web, said first wire adapted to be manipulated into a general U-shaped configuration with means at the ends thereof to engage a head band means, said second wire adapted to be manipulated into a substantially U-shaped configuration opening in the same general direction as said first wire.

3,314,152 DENTAL DEVICE FOR CONTROLLING THE RELATIVE POSITION OF DENTURES IN THE MOUTH

John P. Frush, 1100 St. Albans Road,
San Marino, Calif. 91108
Filed Sept. 16, 1963, Ser. No. 309,175
1 Claim. (Cl. 32-19)

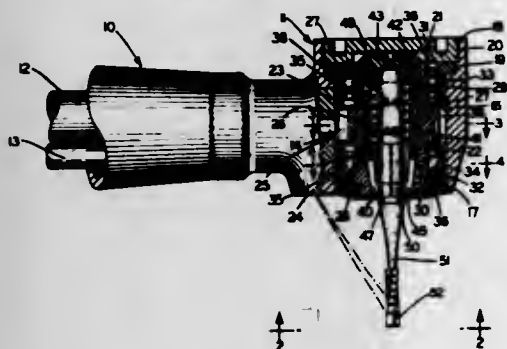


Apparatus for controlling the relative position of upper and lower dentures in a patient's mouth, the apparatus comprising upper and lower dentures, an elongated base member having end portions rigidly and removably secured to the lower denture, a contact plate having a portion rigidly and removably secured to the upper denture so as to be spaced from the base member, the base member having a threaded hole opening toward the contact plate, a threaded pin screwed into the hole and extending away from the base member toward the contact plate, calibration marks on the base member around the threaded hole, and a longitudinal groove on the pin to serve as an indicator mark which shows the amount of rotation of the pin relative to the base member, the groove extending from the end of the pin remote from the contact plate to the base member.

3,314,153 DENTAL HANDPIECE CONSTRUCTION

John A. Maurer, Canton, Ohio, assignor to The Weber Dental Manufacturing Company, Canton, Ohio, a corporation of Ohio

Filed June 7, 1963, Ser. No. 286,244
3 Claims. (Cl. 32-27)



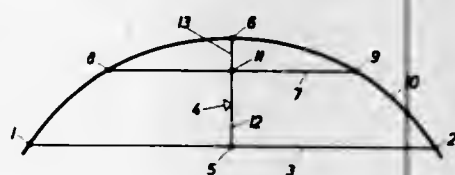
1. In a dental handpiece of the type having a handle and a head at an outer end of the handle; the head including a housing, a burr chuck, bearing means for rotatably mounting the chuck in the housing, drive means operably connected to the chuck for selectively rotating the chuck, the chuck having an axially extending opening formed therein with a rearward end and a forward end opening outwardly of an end of the housing, the chuck opening having a radially inwardly tapered wall portion tapering radially inwardly in the axial direction from the opening rearward end toward the forward end, a hollow generally cylindrical collet axially slidably received in the chuck opening and having resilient gripping fingers extending in an axial direction toward the opening forward end and received in the opening tapered wall portion and bearing resiliently against said wall portion; an end cap removably mounted on the burr chuck at the chuck opening rearward end forming a chuck rearward end surface; a compression spring within the chuck opening rearwardly engaging the chuck cap rearward end surface and

operably connected to the collet axially rearwardly of the collet gripping fingers for normally resiliently urging the collet gripping fingers axially forwardly along said opening tapered wall portion to resiliently grip a dental burr, and compressible for inward axial movement of said collet gripping fingers along said opening tapered wall portion to release said burr; and a centering recess formed in the chuck cap rearward end surface for receiving an end of the dental burr and supporting said burr between said recess and the collet gripping fingers.

3,314,154 METHOD OF CORRECTING AN ARCUATE TRACK

Franz Plasser and Josef Theurer, both of Johannesgasse 3, and Egon Schubert, Sturzgasse 17, all of Vienna, Austria

Filed Nov. 9, 1965, Ser. No. 511,282
Claims priority, application Austria, Nov. 13, 1964,
A 9,644/64
10 Claims. (Cl. 33-1)



1. A method of correcting a track having a first portion substantially conforming to a predetermined arcuate shape and a second portion deviating from said shape which comprises:

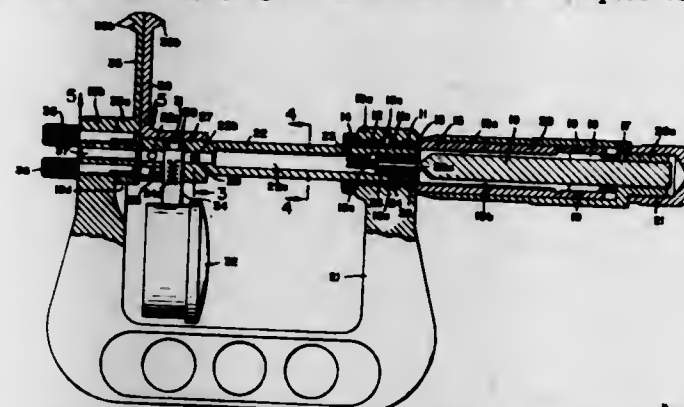
- sequentially laying respective first chords between the ends of a plurality of sections of said track, said sections overlapping each other, and the ends of each first chord being respectively located in said first and second portions;
- sequentially laying a second chord shorter than the corresponding first chord between a pair of points of each track section in a fixed geometrical relationship to said corresponding first chord, one of said points being located in said first track portion, and the other point being located in said second portion and spaced from said ends of the associated track section;
- laying a straight line in a predetermined direction from each first chord to the associated track section in said first portion of said track, each line intersecting the corresponding second chord in such a manner that the point of intersection divides the line into two parts; and
- moving said other point of each track section while maintaining said fixed geometrical relationship of said first and second chords until the relationship of the lengths of said two parts of the corresponding line and of said chords corresponds to the relationship of corresponding line parts and chords in an arc of said predetermined shape.

3,314,155 MICROMETER

Joseph G. Lavalley, 58 Steward Ave.,
San Jose, Calif. 95127
Filed Aug. 2, 1965, Ser. No. 476,259
4 Claims. (Cl. 33-147)

1. In a micrometer for measuring inside and outside diameters of threads, and other characteristics of threads, gear teeth and the like, the combination of a frame of substantially C shape having opposing arms, a segment having one end provided with work engaging surfaces, means attaching said segment to one of said arms so that said segment extends therefrom, a movable member, means supporting said movable member on the other of said

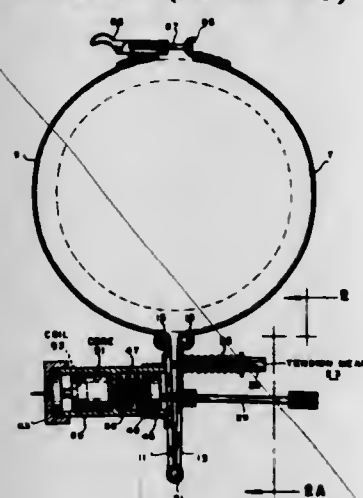
arms, means moving one end of said member toward or away from said segment, a second segment, means pivotally supporting said second segment on said one end of said member so that it extends therefrom substantially parallel to said first mentioned segment, said second segment being adapted to be moved by said moving means so that work engaging surfaces thereof are adapted to be



brought into engagement with surfaces of the work opposite to surfaces of said work engaged by said first mentioned segment, indicating means, means attaching said indicating means to said one end of said movable member, said indicating means having means engaging said second segment to indicate when said second segment is in predetermined alignment with said first mentioned segment.

3,314,156 APPARATUS FOR USE IN MAKING UP PIPE STRINGS

Glenn G. Van Burkleo, Houston, Tex., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed July 8, 1964, Ser. No. 381,043
4 Claims. (Cl. 33-179)



1. Apparatus for indicating proper make-up of a screw-threaded engaged joint, comprising:

- a bipartite band including first and second band members, for encircling one of the members of said joint;
- hinge means connected to first matching ends of said band members;
- means connecting together the other matching ends of said band members;
- means connected to said hinge means for urging together said first matching ends of said band members;
- variable reactance means connected to said hinge means;
- magnetic means connected to said hinge means and extending into said reactance means for varying the reactance of said reactance means in accordance with the distance said magnetic means extends into said reactance means;
- manually adjustable means for adjusting the initial distance said magnetic means extends into said reactance means;

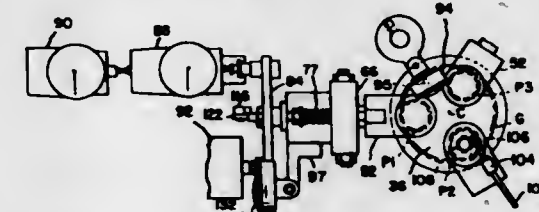
said reactance and said magnetic means being connected to said hinge means so that the distance said magnetic means extends into said reactance means varies in accordance with the distance between said first matching ends of said band members;

signal generating means connected to said reactance means for producing a signal variable in frequency in accordance with the reactance of said reactance means; and

circuit means coupled to said signal generating means for producing an output indication variable in accordance with variations in frequency of said signal generating means.

3,314,157 AUTOMATIC GEAR CHECKER FOR INTERNAL GEARS

Carl H. Motz, Harper Woods, and Russel W. Anthony, Detroit, Mich., assignors to National Broach & Machine Company, Detroit, Mich., a corporation of Michigan
Filed Jan. 24, 1966, Ser. No. 522,725
11 Claims. (Cl. 33-179.5)



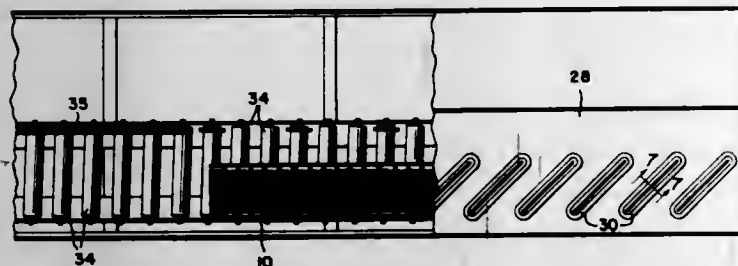
1. An internal gear checker comprising three rotary pinion supports spaced substantially equally from a common vertical centerline, said supports having pinions thereon occupying a substantially horizontal common plane with their axes substantially parallel to each other and perpendicular to said plane and adapted to enter into tight mesh simultaneously with an internal work gear having its axis substantially coincident with the vertical centerline, means mounting all of said supports for movement from an operating position radially inwardly with respect to the centerline to loading positions in which the pinions have radial clearance with respect to the internal work gear, means connected to two of said supports to shift them radially between inwardly displaced loading positions and outwardly displaced fixed operating positions, means connected to the third support to shift it inwardly to loading position and to bias it outwardly to urge the pinion thereon yieldingly into tight mesh with an internal work gear positioned in said plane surrounding said pinions, conveyor means below the plane containing said pinions including means for positioning an internal work gear with its axis vertical and substantially coincident with the said vertical centerline, work gear support means engageable with the underside of a work gear on said conveyor means to support the work gear for limited lateral displacement, means connected to said gear support means for moving it vertically from the plane of said conveyor means to the plane of said pinions, means for rotating said pinions, the work gear in mesh therewith, and said gear support, and means for measuring movement of said third support during such rotation.

3,314,158 STORAGE BATTERY

William D. Carson and Leon F. Paul, Muncie, and Richard O. Wilkins, Anderson, Ind., and Oscar H. Smith, Old Bridge, N.J., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 19, 1965, Ser. No. 508,758
14 Claims. (Cl. 34-21)

1. In a method for drying a plurality of open top battery assemblies, each consisting of a battery case having

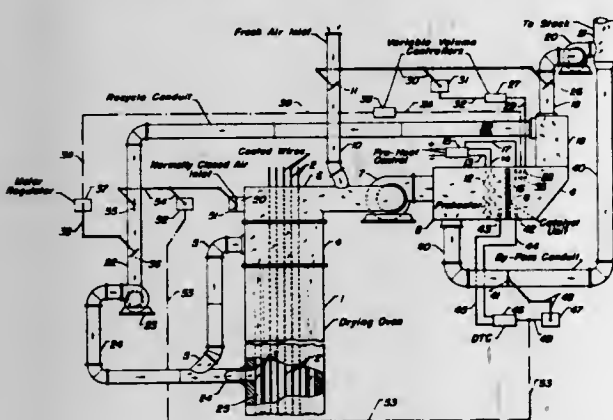
a plurality of contiguous open top compartments wherein each compartment includes a wet, fully charged battery plate assembly consisting of positive and negative battery plates spaced from one another by permeable separators and connected electrically to the battery plate assembly in the next adjacent compartment, the steps comprising; providing a plurality of open top battery assemblies along a conveyor, concurrently blowing hot, dry, non-oxidizing



gas at high velocity into said open top assemblies from a plurality of spaced nozzles set angularly to the direction of movement of said assemblies whereby the open top compartments and battery plate assemblies therein are progressively swept with said gas, continuously withdrawing cooled, less dry gas from said assemblies, and continuing the procedure until said battery plates are dried.

3,314,159 FUME TREATING SYSTEM FOR A DRYING OVEN

Erwin C. Betz, Gondsroth, Germany, assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed May 18, 1964, Ser. No. 368,049
6 Claims. (Cl. 34-72)



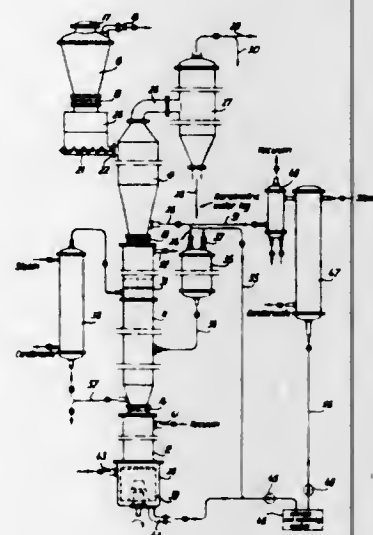
1. a fume treating system for use with a vertical drying oven which comprises in combination:

- (1) a fume collecting hood positioned above the fume outlet from said drying oven;
- (2) duct means connecting said collecting hood with a catalytic oxidizing chamber having a fume path therethrough;
- (3) catalytic fume incinerating means positioned in said oxidizing chamber in the fume path therethrough;
- (4) air inlet means connecting to said duct means ahead of said oxidizing chamber and downstream from said fume collecting hood;
- (5) conduit means connecting from said oxidizing chamber to outlet stack means;
- (6) recycle conduit means connecting between said conduit means and said fume collecting hood and having a first normally open damper means positioned therein;
- (7) bypass conduit means connecting between said duct means and said outlet stack means and having a second normally closed damper means positioned therein;

- (8) additional air inlet means connecting directly with said collecting hood and having a third normally closed damper means positioned therein; and
- (9) temperature sensitive means placed in combination with said catalytic oxidizing chamber in a position sensitive to temperature changes both upstream and downstream of said catalytic fume incinerating means in said chamber, said temperature sensitive means being operatively connected through automatic damper regulator means to said first, second and third damper means whereby, responsive to failure of said incinerating means to effect catalytic oxidation of the fumes therethrough, said first damper means is closed and said second and third damper means are opened.

3,314,160 DEHYDRATING APPARATUS

John H. Forkner, Fresno, Calif., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware
Original application Dec. 6, 1961, Ser. No. 157,478. Divided and this application June 3, 1966, Ser. No. 566,174
6 Claims. (Cl. 34-92)



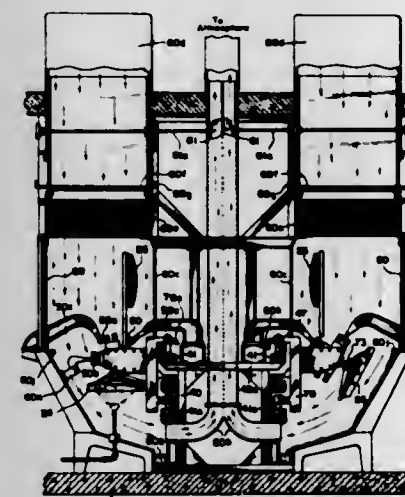
1. In dehydrating apparatus of the character described, tank means forming a first treatment chamber, means for successively introducing charges of hot oil and moist material to be dehydrated into the first chamber, means for maintaining a partial vacuum within the first chamber, means forming a second treatment chamber, valve means serving when open to establish communication between the first and second chambers and serving when closed to interrupt such communication, said valve means serving to permit the transfer of successive charges from the first chamber to the second chamber after initial evaporation in the first chamber, and means for applying a partial vacuum to the second treatment chamber.

3,314,161 AIR SYSTEM AND CART FOR SCREEN CONVEYOR

Joseph P. Fiore, Wheeling, and Thaddeus J. Hajduk and Raymond J. Pekosh, Chicago, Ill., assignors to The Rauland Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 25, 1964, Ser. No. 391,985
10 Claims. (Cl. 34-105)

1. Cathode-ray tube processing apparatus comprising: an endless conveyor for transporting a multiplicity of screening carts through a plurality of work stations; a housing having vertically extending walls in space-opposed relation on opposite sides of the path of

travel of said screening carts for enclosing at least one of said work stations;
an air conditioning system completed to said housing at a point above the work processing area of said enclosed station for delivering conditioned air vertically downwardly;
an exhaust duct in communication with said housing at a point below said work processing area of said enclosed station for establishing laminar flow of conditioned air downwardly across the one of said screening carts instantaneously in said enclosed station;

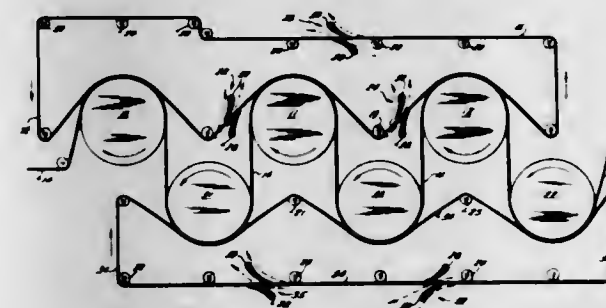


each of said screening carts comprising a workholder for supporting the screen section of a cathode-ray tube;

means for rotating said workholder about a first axis; means for selectively adjusting the angular position of said workholder about a second axis which is normal to said first axis; and means for supporting a mask for said screen section in a substantially vertical position for washing by said laminar flow of air in said enclosed station.

3,314,162 PAPERMAKING APPARATUS

Oliver G. Haywood, New Canaan, Conn., assignor to Huyck Corporation, Rensselaer, N.Y., a corporation of New York
Filed Oct. 19, 1965, Ser. No. 497,883
20 Claims. (Cl. 34-111)

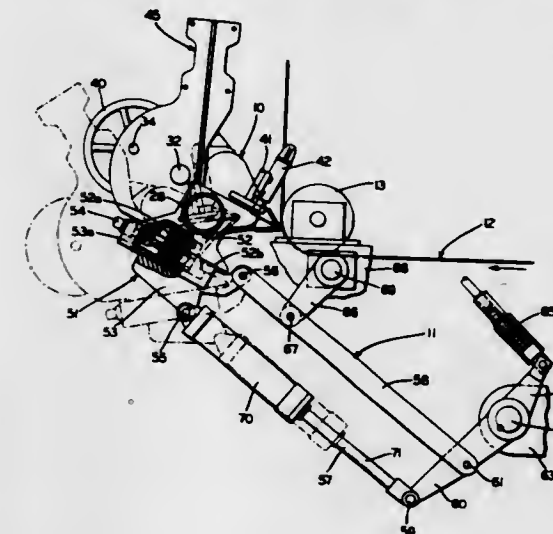


1. In an apparatus for drying a continuous sheet of material, an endless pervious belt movable in conjunction with said sheet and arranged to press said sheet against the drying means in said apparatus, and two vanes positioned in proximity to each other but on opposite sides of said belt from each other, each of said vanes having an elongated surface positioned adjacent to said belt at desired locations along the path of travel of said belt where it is not in contact with said sheet with the long dimension of each such elongated surface oriented substantially in the width direction of said belt, one of the long edges of said surface of each of said vanes residing

within the mass of gas entrained by said belt when it is in motion, the distance between the belt and each of said elongated surfaces of said vanes increasing at positions which are progressively removed from each of said edges along a line which is parallel to the path of travel of said belt.

3,314,163 NOZZLE CONSTRUCTION FOR COATING MACHINES AND THE LIKE

John B. Kohler, North Canton, Ohio, assignor to The Kohler Coating Machinery Corporation, Greentown, Ohio, a corporation of Ohio
Filed Feb. 21, 1964, Ser. No. 346,421
24 Claims. (Cl. 34-155)



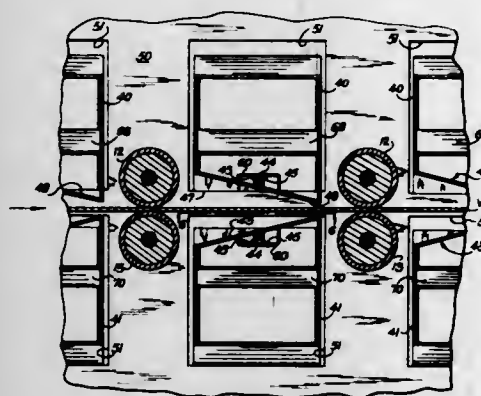
1. Fluid nozzle construction for coating machines and the like including a transversely elongated nozzle body having a transversely elongated discharge opening formed therein discharging a transversely elongated jet of fluid at a surface along a transverse line of impingement; separated transversely extending distribution chamber means parts formed in the nozzle body spaced rearwardly from the discharge opening and extending transversely a distance at least equal to the length of said discharge opening; a common plenum formed in the nozzle body between the distribution chamber means parts and discharge opening receiving fluid from each of said distribution chamber means parts and discharging fluid through said discharge opening; transversely extending partition means formed in the body for each of said distribution chamber means parts between said parts and said common plenum; restricted opening means formed in each of said partition means communicating between each of said distribution chamber means parts and said common plenum for passing fluid from said distribution chamber means parts to said common plenum; and means for supplying fluid to the distribution chamber means parts.

3,314,164 VENEER DRYER

Edward P. Morris, Painesville, Ohio, assignor to The Coe Manufacturing Company, Painesville, Ohio, a corporation of Ohio
Filed Aug. 30, 1965, Ser. No. 483,676
9 Claims. (Cl. 34-155)

1. An apparatus for drying veneer comprising an elongated enclosure, conveyor means in said enclosure for conveying veneer to be dried through said enclosure in a path of travel, conduit means extending transversely of the length of said enclosure adjacent to opposite sides of said path of travel and having guide surfaces facing the veneer conveyed by said conveying means, at least one of said guide surfaces being inclined toward said path of travel in the direction in which the veneer is conveyed and effective to return the veneer to said path of travel

when veering therefrom, said conduit means having discharge means on the sides thereof facing said path of travel arranged to discharge a drying medium onto opposite sides



of veener being moved therepast by said conveying means, means for circulating under pressure a drying medium through said conduit means and said discharge means and means for heating said drying medium.

3,314,165

EDUCATIONAL DEVICE

Peter K. Shreck, 555 Cornelia Ave., Chicago, Ill. 60657, and Thomas B. Howe, 26 Oswego Drive, Greenlawn, N.Y. 11740

Filed July 6, 1964, Ser. No. 380,255
9 Claims. (Cl. 35-8)



1. An educational device comprising a housing, means on the housing to receive a master card, means on the housing defining a plurality of spaces on the housing to receive individual character cards, an indicating device for each of the spaces normally occupying a first position but movable to a second position, a master card to be received in said first named means, a plurality of individual character cards to be received in said spaces, the master card being formed with spaced keying openings and the character cards being formed with complementary keying projections at one edge thereof normally to engage the master card and block full insertion of the character cards into the space but entering the keying openings to permit such insertion when the correct character card for a given space is inserted in that space, and a projection on each of the character cards operative when the character card is fully inserted into a space to move the indicating device for that space from its first to its second position and means on the master card to move certain of the indicating devices for which there are no corresponding character cards in the solution of a problem from their first to their second positions.

3,314,166

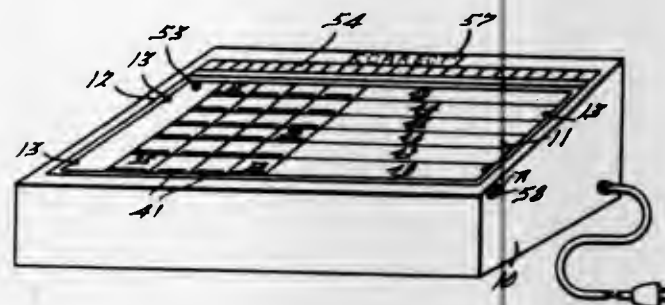
EDUCATIONAL DEVICE

Fred J. Styes, W. U.S. 2, Saint Ignace, Mich. 49781

Filed Apr. 27, 1964, Ser. No. 362,577
14 Claims. (Cl. 35-9)

2. In an educational device, a case having a top with question and answer areas to be covered by a lesson card

containing questions each of which has a correct and a plurality of wrong answers with apertures provided through the card adjacent each answer, said top having illuminating means for an answer for each question, scoring means recording each correct answer, contacts in the answer area one of a plurality of which is in a circuit which indicates a correct answer on the scoring means, a



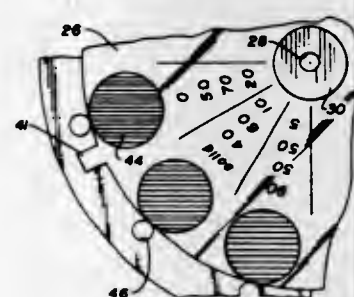
probe insertable through one of a plurality of apertures through the card for answering the question, a circuit through the probe energized upon the engagement of any contact for completing a circuit to the answer illuminating means, the circuit through probe when engaging the correct answer contact, completing a circuit to the scoring means to show that the answer is correct and the number of the correct answers.

3,314,167

COLOR ANALYZING APPARATUS

Robert F. Allgood, 490 S. Springer Road, Los Altos, Calif. 94022

Filed Aug. 3, 1964, Ser. No. 386,942
2 Claims. (Cl. 35-28.3)



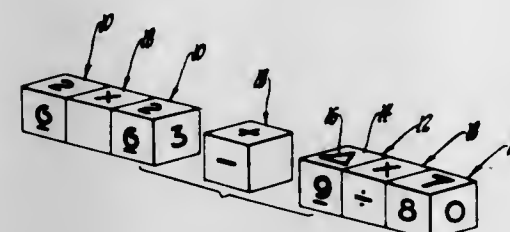
1. A color matching device comprising a base, a plurality of discs concentrically mounted on said base for rotation about their respective central axes, each said disc having thereon a plurality of color areas that are equally radially and circumferentially spaced with respect to the central axis and to one another, each said color area being formed by a plurality of uniformly spaced apart dots, said disc being transparent intermediate said dots, the proportion of each said color area that is occupied by dots being different for each area on a given disc, numerical indicia associated with each said area for indicating the percentage of said area covered by said dots, each individual said disc having color areas of a color different from the color of color areas on the other said discs, whereby rotation of said discs relative one another affords different admixtures of colors and the indicia afford an indication of the constituents of a mixed color, said base having a diameter greater than said discs so that an annular margin of said base extends beyond said discs, said margin being provided with at least one hole so radially spaced that edges of said color areas are aligned with said hole.

3,314,168

MATHEMATICAL INSTRUCTION MEANS

Martha Jane Heckman, 1985 Villa, Birmingham, Mich. 48008

Filed Apr. 24, 1964, Ser. No. 362,427
6 Claims. (Cl. 35-31)



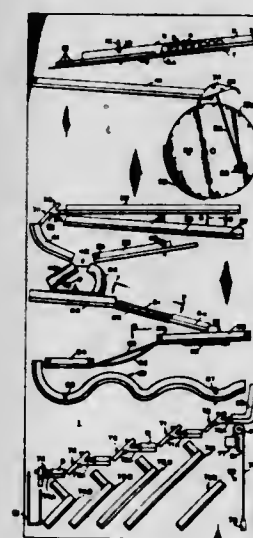
1. Mathematical instruction means comprising:
a first set of at least two identical cubes having numbers on the faces thereof, said numbers being in a first range of numbers;
a second set of at least two identical cubes having numbers on the faces thereof, said numbers being in a second range of numbers;
a third set of at least three identical cubes having arithmetical signs on the faces thereof;
and a plurality of cards, each of said cards having a number on one face thereof said cards being adapted to be placed in a stack with the numbers thereon hidden from view and from which one of said cards may be selected at random to expose a number;
at least some of said first, second, and third sets of cubes being arrangeable to show an arithmetically equivalent form of said exposed number on said one card.

3,314,169

EDUCATIONAL DEVICE

Joseph C. Wold, 560 W. 24th St., Eugene, Ore. 97405

Filed Dec. 23, 1964, Ser. No. 420,670
4 Claims. (Cl. 35-32)



1. An educational device operated by ball members for demonstrating certain physical laws and also for demonstrating the binary number system, said device comprising:
a substantially vertically disposed supporting panel divided progressively downward into a ball-storage zone, a first ball-transfer zone, a ball-distributing zone, a second ball-transfer zone, a ball separation zone, a third ball-transfer zone and a ball-sorting terminal zone,

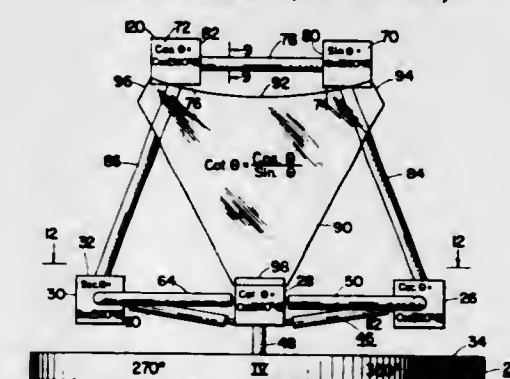
said ball storage zone including primary ball-storing track means and including flexible ball actuated means attached thereto for progressively releasing the stored ball members at intervals into said first ball-transfer zone,
said first ball-transfer zone including a wheel having circumferential pockets and escapement means controlling wheel rotation,
said ball distributing zone including diverging track sections and a ball actuated gate for alternately directing successive ball members onto one of said diverging track sections, a converging track member downwardly inclined toward one of said diverging track sections to provide a collision area, means below the collision area for guiding the gravitating ball members into a subjacent said second ball transfer zone,
said second ball-transfer zone including a segmented inclined turntable and a pair of track members, one of said track members adjacent the highest side of said turntable and the other adjacent the lower side of said turntable for directing the ball members into said ball-separation zone,
said ball-separation zone including a track member having a plurality of ways formed therein and means within one of said ways of stopping a descending ball member therein,
trigger means disposed within another of said ways for releasing the stopped ball member,
rails in communication with said ways and with ways of a lower track member superjacent a third ball-transfer zone,
said third ball-transfer zone including an undulating track member having its lower or discharge end adjacent a ball sorting terminal zone,
said ball sorting terminal zone comprising a series of gates in inclined relationship to one another wherein each of said gates comprises a guideway and an angularly disposed arm for directing the ball members received thereby in diverging directions, and means for receiving and storing the ball members.

3,314,170

GEOMETRIC STRUCTURE

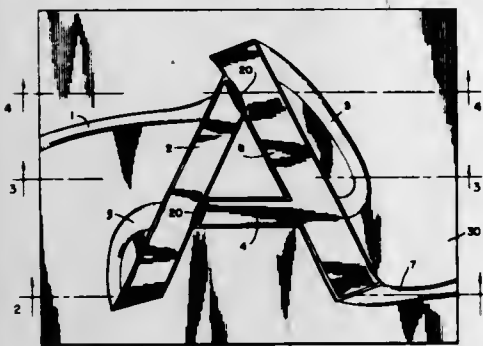
Richard L. Beam, Winchester, Va. (4129 Hoagland Ave., Fort Wayne, Ind. 46807)

Filed Dec. 9, 1964, Ser. No. 417,038
20 Claims. (Cl. 35-34)



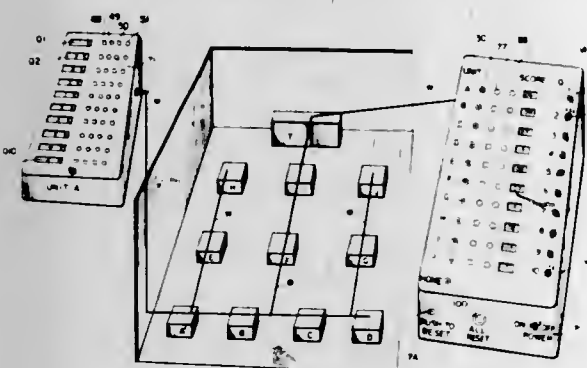
1. A device for visually displaying a plurality of interrelated mathematical functions and their interrelating equations comprising a plurality of mutually spaced-apart elements each having a respective one of said functions indicated thereon; and a plurality of members respectively connected to and extending between predetermined ones of said elements, each of said elements being connected to at least three other of said elements by said members, each of said members having a respective one of said equations indicated thereon and connecting the respective elements which have the functions included in said one equation indicated thereon.

3,314,171
TEACHING DEVICE
 Ade Bethune, 118 Washington, St.,
 Newport, R.I. 02840
 Filed Oct. 6, 1964, Ser. No. 401,858
 8 Claims. (Cl. 35—37)



1. A penmanship teaching device comprising a block having a surface containing at least one groove defining a legible symbol, and an elongated projection extending above said surface adjacent to and directed towards an end of each said groove corresponding with a motion made by a penman beyond each groove in forming said symbol.

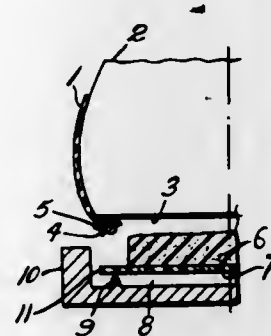
3,314,172
TESTING SYSTEMS
 Robert E. Boyett, 6130 Shenandoah St.,
 Orlando, Fla. 32807
 Filed June 15, 1965, Ser. No. 464,078
 20 Claims. (Cl. 35—48)



1. An electrical system for indicating at a central console the score attained by persons at separate response units where each person selects from multiple-choice answers his responses to plural questions, comprising:

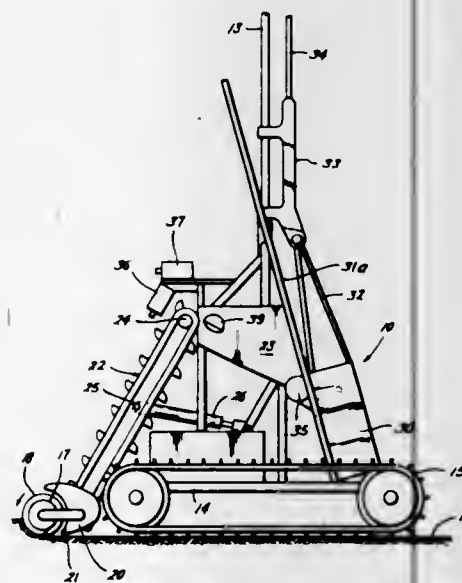
- response switches at each unit corresponding with said plural questions and each having multiple positions corresponding with the selectable answers;
- first scanning means in each unit and connected for scanning the multiple positions of the response switches;
- correct-answer switches at the console pre-settable to multiple-choice positions corresponding with the positions of the response switches;
- second scanning means at the console and connected for scanning the positions of the answer switches;
- means at the console corresponding with each unit for accumulating the number of selected response-switch positions which coincide with pre-set correct-answer positions;
- unit selector means at the console for connecting the second scanning means both to the accumulating means and to the first scanning means of a selected unit; and
- means for advancing in unison the scanning means in the console and in the selected unit to sequentially scan all of the switch positions to thereby actuate the accumulating means for that unit.

3,314,173
FOOTWEAR
 Andrew Szerenyi, Waynesville, N.C., assignor to Research, Inc., Waynesville, N.C., a corporation of North Carolina
 Filed Nov. 26, 1962, Ser. No. 239,966
 4 Claims. (Cl. 36—2.5)



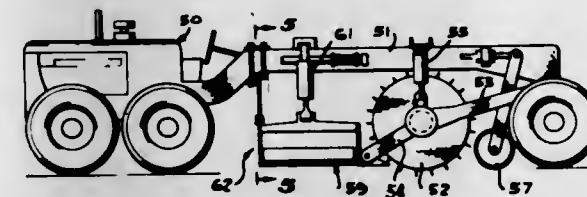
1. Footwear comprising an upper, a welt-like element stitched to said upper, a tread sole of sheet material, and a layer of elastomeric material molded and cured to said welt-like element and said tread sole, said tread sole having its margin turned inwardly into said elastomeric layer and being fully embedded therein, said welt-like element joined to said elastomeric layer only at its underside, so as to have its upper side and its side rim exposed.

3,314,174
UNDERWATER MINING APPARATUS AND METHOD
 Samuel E. Haggard, 2924 Quenby Road,
 Houston, Tex. 77005
 Filed Dec. 31, 1963, Ser. No. 334,810
 5 Claims. (Cl. 37—54)



1. Apparatus for mining the bottom of a body of water, comprising remotely controlled, self-propelled traveling means for moving along the bottom, means carried by the traveling means for digging a layer of solid material from the bottom, collecting means carried by the traveling means to pick up the material and a receptacle movable between a position to receive the material from the collecting means to a position adjacent or above the surface of the water and means for guiding said receptacle into and out of said position to receive said material from the collecting means.

3,314,175
EARTH SCRAPER
 Reed C. Petty, Van Nuys, and Curtis M. Figg, La Canada, Calif.; said Figg assignor to said Petty and Helen de Francia C. Petty, both of Van Nuys, Calif.
 Filed Aug. 15, 1966, Ser. No. 572,282
 2 Claims. (Cl. 37—108)



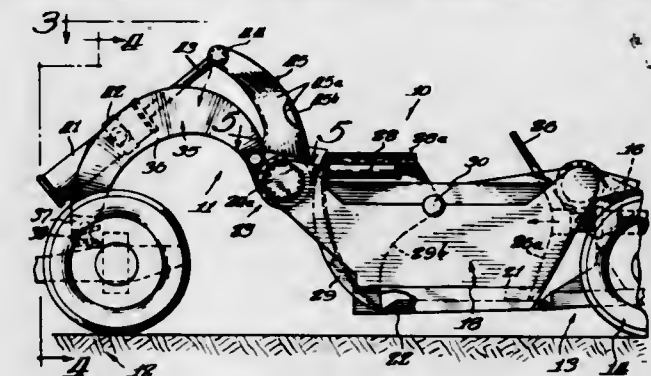
1. Apparatus for severing earth from its place and causing it to move to a remote location, comprising the combination of:

- a mobile frame;
 - a blade carriage having link means connecting said carriage to said frame for movement through an arcuate path;
 - a plurality of rigid cutting blades of broad side face carried by said blade carriage and spiralling with respect to the central axis of the blade carriage;
 - means for driving said blade carriage to drive said cutting blades broad side forward, through an annular path in a first direction to penetrate an earth formation, and to emerge from said earth formation at an angle with respect to the surface thereof;
 - a first vertically adjustable hydraulic support means holding a first end of said blade carriage, a second vertically adjustable hydraulic support means holding a second end of said blade carriage, said first and second hydraulic means holding said blades in any adjusted attitude for establishing a cutting action fixed in said arcuate path to dig into said earth formation;
 - variable speed transmission means for controlling the speed and power of said blades to produce a severing and propelling force which is related to the earth structure being moved for causing the severed material to lift free of the earth and assume a trajectory path to a target spaced from the point of emergence of said blades from said formation;
 - conveyor means located at said target for catching and removing severed earth formation material, said conveyor means extending laterally beyond said blades;
 - two spaced and vertically adjustable hydraulic hangers supporting said conveyor in any adjusted attitude, and pivoted links interconnecting said blade carriage and said conveyor whereby said conveyor is related to the tilt and elevation of the blade carriage for efficient reception of severed earth; and
 - means for transporting said blades and conveyor means along said earth formation at a speed independent of the cutting blade speed and in a direction opposed to said annular path first direction;
- whereby the severed material is placed upon said conveyor means and moved laterally out of the path of cutting.

3,314,176
EARTH WORKING SCRAPER
 Charles W. Jones, Los Angeles, Calif., assignor to Intercontinental Engineering-Manufacturing Corp., Kansas City, Mo., a corporation of Delaware
 Filed May 7, 1964, Ser. No. 365,602
 5 Claims. (Cl. 37—129)

1. An earth working scraper adapted to be connected to a power unit comprising: a wheeled support structure; a horizontally disposed bottom wall secured to said support structure and including a forward horizontal edge;

a pair of substantially spaced side walls secured to and extending vertically upwardly from said bottom wall, said spaced side walls each including an upper end portion extending forwardly of said edge and spaced a substantial vertical distance above said edge so that said bottom and side walls define a load accumulating scraper bowl having an inlet throat opening in the forward end thereof; ejecting means mounted on said support structure and located on said bottom wall and between said side walls for selective movement relative to said walls so as to define the rearward wall of said scraper bowl when said ejecting means is in a normal position; a reinforced scraper blade secured to said forward edge of said bottom wall and defining the lower limit of said inlet throat opening, a reinforced tubular member rigidly joined to and extending substantially horizontally between said upper end portions of said walls, said tubular member being spaced substantially above and forward relative to said scraper blade so as to define the upper limit of said inlet throat opening; an arcuate linking element having one end thereof connectible with a power unit and the opposite end thereof pivotally connected to said tubular member;

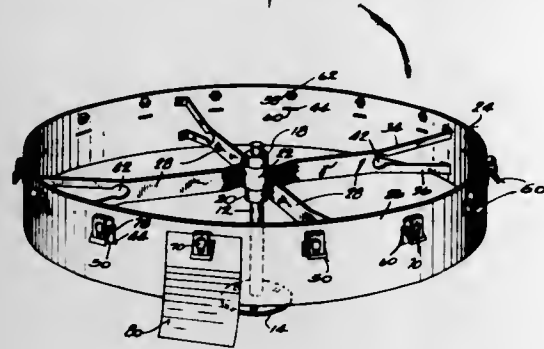


an arcuate lifting arm secured to and extending upwardly from said tubular member adjacent the location whereat said linking element is pivotally connected to said tubular member; selectively actuatable means mounted on said linking element for movement therewith and relative thereto, said actuatable means being secured to said lifting arm so that a substantial force is imparted to said lifting arm and to said tubular member in response to actuation of said means to thereby pivot said scraper bowl relative to said linking element and move said scraper blade between a ground-engaging and a ground-disengaging position; and a throat-closing apron pivotally mounted to said side walls adjacent said forward end of said scraper bowl, said apron having a lower closing edge and being movable into a closed position with said closing edge adjacent said scraper blade so as to close said inlet throat, said apron being further movable into an opened position with said closing edge positioned vertically adjacent said tubular member, whereby said scraper is provided with a large and unobstructed inlet throat opening for accommodating a substantial accumulation of material with said apron in said open position and said scraper blade in said ground engaging position.

3,314,177
ORDER CLIP AND ROTATIVE MOUNTING THEREFOR
 Carl P. Miles, Jr., Shelbyville, Ky., and Dieter F. Wegner, Sussex, Wis., assignors to Wegner and Krueger Manufacturing, Inc., Menomonee Falls, Wis., a corporation of Wisconsin
 Filed Mar. 11, 1965, Ser. No. 438,974
 10 Claims. (Cl. 40—124)

1. A support for order slips and like work, which support comprises a mounting post having a mounting flange, a wheel having a hub rotatably carried by the mounting post and including a rim, and a plurality of clips peripherally spaced upon the rim, each such clip

comprising front and rear walls, the front wall having an aperture of downwardly tapering width, and a detent ball confined between said walls and extending into the



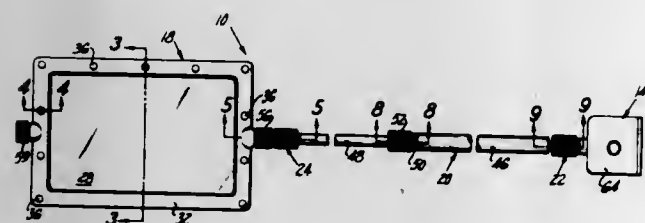
aperture, the space between said walls being open downwardly whereby to receive work inserted between the ball and the rear wall to be held by the ball in clamping engagement with the rear wall.

3,314,178

NAVIGATIONAL AID

Richardson W. Saylor, Canton, and Ralph E. Bailey, East Hartford, Conn., assignors to Astro Optics, Incorporated, East Hartford, Conn., a corporation of Connecticut

Continuation of application Ser. No. 291,744, July 1, 1963. This application Sept. 29, 1965, Ser. No. 495,022 1 Claim. (Cl. 40—130)



In a chart holder for aircraft, a telescoping arm swingably connected to a supporting member in said aircraft, a chart receiving generally planar frame pivotally attached to said arm, said frame being open on opposite sides for displaying charts on each side thereof, electroluminescent panel means adapted for providing lighting on the opposite sides of said frame secured centrally within said frame generally coplanar therewith, a recess located between the opposite sides of said panel means and said frame for receiving said charts, an elongated opening along one edge of said frame providing access to said recesses, and control means connecting said electroluminescent panel means to an electrical power source for selectively energizing opposite sides of said panel means and for varying the lighting intensity of the panel means.

3,314,179

DISPLAY APPARATUS

Sam L. Leach, 400 Veteran Ave., Los Angeles, Calif. 90024

Filed Apr. 5, 1965, Ser. No. 445,588 8 Claims. (Cl. 40—137)

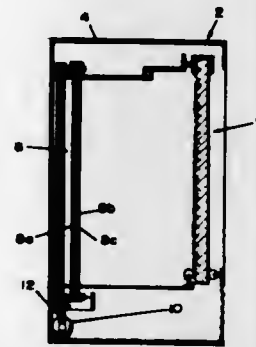
1. A display apparatus comprising:

(a) an image element having a plurality of successively adjacent elongated parallel field sections thereon; each of said field sections having a plurality of image sections therein, each image section in each field section carrying images of the same field, each field section being bordered by field sections carrying image sections of a different field therein;

(b) a lenticular screen element disposed forward of said image element and having the longitudinal axes of the lenticles thereof disposed at least substantially parallel to the longitudinal axes of said field sections;

(c) means for moving one of said elements with respect to the other to thereby change the presentation from one display to another;

(d) said means for moving including cooperating gear means for continuously moving said one element along a predetermined and periodically reversing path;



(e) said image element and said lenticular screen element being formed of materials having substantially the same coefficients of thermal expansion;

(f) first frame means engaging said image element;

(g) second frame means engaging said screen element;

(h) said cooperating gear means acting on said frame means engaging said one element to move the same relative to the other frame means and thereby move said one element with respect to the other; and,

(i) each of said frame means including means to permit expansion of the element engaged thereby while maintaining alignment between the respective elements.

3,314,180

THREE DIMENSIONAL PICTURE ASSEMBLY

Wyndham Porter, 60 W. 142nd St., New York, N.Y. 10037

Filed Feb. 24, 1965, Ser. No. 434,780 6 Claims. (Cl. 40—160)



1. A picture of a subject having high lights, color tones outline and background, said picture comprising colored material in predetermined arrays applied to a plurality of transparent sheets, the array of said material on one sheet depicting high lights appearing in one vertical plane of the subject, the array on a second sheet depicting the color tones in a second vertical plane of the subject, the array on a third sheet depicting the outline in a third plane of the subject, the array on a fourth sheet depicting the background in a fourth plane of the subject, and elastic frame-like spacers at margins of the sheets holding the same in

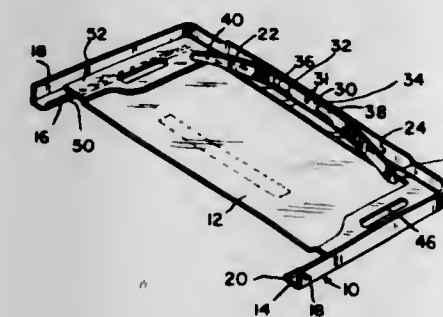
spaced positions parallel to and behind each other, a rigid frame enclosing the peripheries of the sheets and spacers and rigid means for vibrating the sheets while the spacers are alternately compressed and expanded to enhance the appearance of continuous depth.

3,314,181

LICENSE PLATE FRAME

Norman C. Bauer, Detroit, Mich., assignor to Allen Products Corporation, Detroit, Mich., a corporation of Michigan

Filed Feb. 5, 1964, Ser. No. 342,729 1 Claim. (Cl. 40—209)



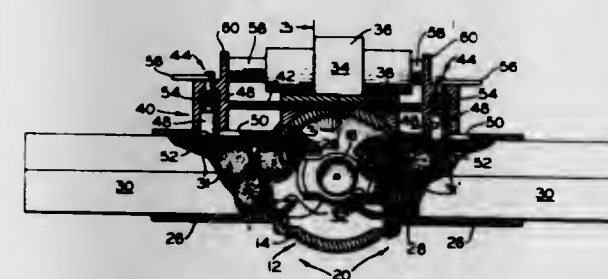
In combination a frame for a license plate comprising a substantially rectangular border portion defining a rectangular opening in the frame, said border portion having a rearwardly extending continuous perpendicular flange formed integral therewith, and a spring clip connected to the flange at each of opposite parallel portions of said flange, each clip having a base portion and oppositely extending untwisted arm portions, said base portion abutting said flange in face to face relation, the edge of said base and said arm portions adjacent said border portion being slightly spaced from said border portion, a single pin extending through each base portion and said flange to form a pivotal connection therebetween, said spacing of said clip and said border portion permitting limited pivotal movement of said clip, said arm portions receiving the ends of the license plate and being curved toward and beyond the edges of said opening, said clip being of substantially less width between said base portion and each arm portion to provide for increased resilience of said clip adjacent said base.

3,314,182

DUAL MAGAZINE SYSTEM FOR FIREARMS

Earle M. Harvey, Agawam, Mass., assignor to the United States of America as represented by the Secretary of the Army

Filed Oct. 11, 1965, Ser. No. 494,989 4 Claims. (Cl. 42—18)



1. A gun including a receiver, a barrel, a bolt disposed in said receiver for reciprocation between a battery and a recoil position, a first magazine adapted for holding a supply of cartridges of specific military characteristics and for biasing a leading one of said cartridges to a mouth of said first magazine, a second magazine separate from

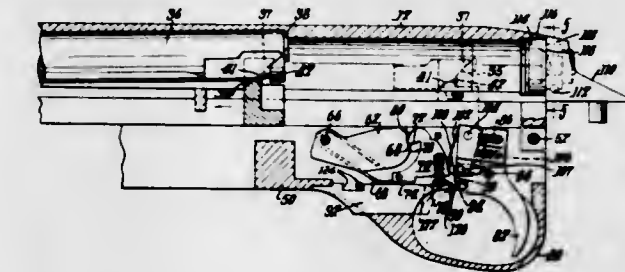
said first magazine and adapted for holding a supply of cartridges of different military characteristics and for biasing the leading one of such said cartridges therein to a mouth of said second magazine, means for mounting said first and second magazines on said receiver separately and so that each of said magazines is displaceable thereon between a feeding position wherein the leading cartridge therein is positioned for contact by said bolt during travel to the battery position and transfer thereby to said barrel and a reserve position wherein the leading cartridge is positioned away from contact by said bolt, and a switch device for displacing said first and second magazines when mounted on said receiver so that when one is displaced to its feeding position the other is simultaneously displaced to its reserve position.

3,314,183

FIREARM

Warren A. Center, Westminister, Mass., assignor to Harrington & Richardson, Inc., Worcester, Mass., a corporation of Massachusetts

Filed Dec. 2, 1964, Ser. No. 415,307 3 Claims. (Cl. 42—69)



1. A firing mechanism for a firearm including a barrel, a receiver thereon, a reciprocable bolt therein, an action bar for moving said bolt rearwardly to open the breech, a hammer, a hammer pin upon which said hammer is pivoted, a sear, a sear pin for the sear, said sear and hammer having interengaging means whereby the sear normally holds the hammer in retracted position thereof ready for firing, a spring for said hammer to move it to firing position, and means to move said sear to hammer releasing position to allow said hammer spring to spring the hammer into firing condition, the distance between the sear pin and the hammer pin being shorter than the distance between the sear-hammer interengaging means and the hammer pin, whereby pressure of said hammer upon the sear under influence of said spring causes locking pressure on said sear rather than tending to move the sear to hammer releasing position, and a spring for the sear normally tending to urge the sear towards hammer-engaging position and into the path of the hammer as it moves to cocked position, the hammer and sear having cooperating cam surfaces to allow the hammer to pass the sear so that the interengaging means can operate.

3,314,184

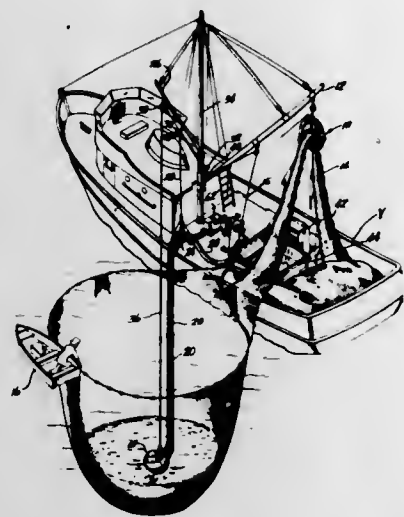
METHOD AND APPARATUS FOR TRANSFERRING FISH BY PUMPING

David W. Lerch, Iquique, Chile (% Marine Construction & Design Co., 2300 W. Commodore Way, Seattle, Wash. 98199)

Continuation of application Ser. No. 394,681, Sept. 8, 1964. This application Sept. 16, 1966, Ser. No. 580,055 10 Claims. (Cl. 43—4.5)

1. In fishing with nets and the like, the method of baiting fish concentrated by the net underwater utilizing a rotary impeller fish and water pump and a transfer conduit connected to the outlet of the pump to carry the discharge stream thereof, said method comprising positioning and operating the pump physically under water

in the net where the fish are concentrated so as to draw fish with water directly into the pump's inlet for transmission in a stream under positive pressure through the



conduit, and as the pumping progresses manipulating relatively the pump and the net so that the decreasing numbers of fish remaining in the net continue to be concentrated around the pump.

3,314,185 HOOK SETTING MEANS

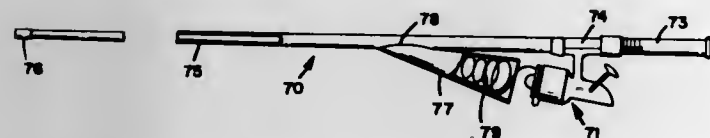
Ronald C. McCoy and Carrol Forrest, both of 1622 S. Martinson, and Douglas E. Spatz, 1626 S. Martinson, all of Wichita, Kans. 67213
Filed Oct. 26, 1964, Ser. No. 406,402
5 Claims. (Cl. 43-15)



3. A fish hook setting means comprising, an elongated barrel, line attachment means on one end of said barrel, a tension-type coil spring disposed within said barrel, means securing one end of said coil spring to said one end of said barrel, an elongated rod secured at one end to the opposite end of said coil spring, means for attaching a fish line on the opposite end of said elongated rod, a transversely extending protrusion adjacent one end of said rod, an abutment means adjacent the other end of said barrel having a radially disposed surface extended substantially a quarter of a turn relative to said barrel, said fish hook setting means loaded by extending the elongated rod thereby stretching the coil spring, and rotating the rod at least a quarter turn and placing the protrusion in engagement with said abutment means.

3,314,186 FISHLINE CASTING APPARATUS

Henry Viveiros, 1983 Camden Ave., San Jose, Calif. 95124
Filed Dec. 8, 1964, Ser. No. 416,807
2 Claims. (Cl. 43-18)

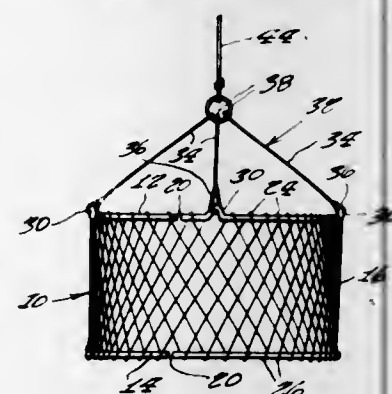


2. A fishline casting apparatus comprising a tubular rod section provided with a line guide tip at its forward end, a cone-shaped line guide at its rearward end, said cone-shaped line guide being mounted on the rearward

end of said rod in communication with the interior thereof in such a manner that the axis of said rod in relation to the axis of said cone-shaped line guide defines an acute angle, said cone-shaped line guide being substantially uniformly tapered throughout its length and to its mounting end, a handle having a forward hand grip portion and a rearward reel mount connected to said rod, and an open face spinning reel connected to said reel mount in such a manner that the reel spool axis aligns with the axis of said cone-shaped line guide, said handle having a rear grip connected to said reel mount.

3,314,187 COLLAPSIBLE COMPACT CRAB TRAP

Clem Marcinkowski, 145 Hopkins Ave., Jersey City, N.J. 07306
Filed Nov. 16, 1964, Ser. No. 411,369
1 Claim. (Cl. 43-105)



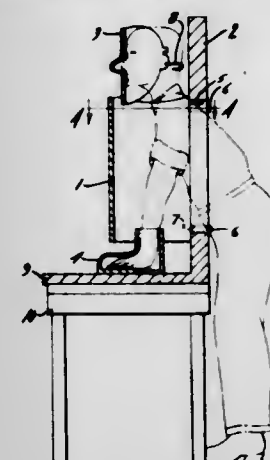
A crab trap comprising an upper split ring frame, a lower split ring frame, each split ring frame being formed of a single bar of metal stock with the lower split ring frame of a larger cross-sectional area to provide a split ring frame of greater weight, the terminal ends of the bar stock of each split ring frame being in opposed spaced apart relation to form a gap and with the opposed ends of each ring frame lying in the plane thereof, a continuous walled net of flexible collapsible material connected along the upper and lower peripheral edges thereof, respectively, to said upper and lower split ring frames, a separate bottom net connected along its peripheral edge to said lower split ring frame, a plurality of circumferentially spaced upstanding eyes on said upper split ring frame and integral therewith, a marline including a plurality of flexible strands, corresponding ends of said strands being each connected in spaced relation to an eye of said upper split ring frame, a lift ring element, the corresponding other ends of said strands being each connected to said lift ring element, and a lifting cable connected at one end to said lift ring element, both said walled net and bottom net having the peripheral edge strands thereof defining loops and the connection of said walled net and said bottom net respectively to said upper and lower split ring frames being effected by threading an end portion of a split ring frame through the loops in the peripheral edge of its associated net.

3,314,188 PUPPET AMUSEMENT DEVICE

William E. Peterson, 610 Oakland, Mukwonago, Wis. 53149
Filed Mar. 31, 1964, Ser. No. 356,136
6 Claims. (Cl. 46-13)

1. A toy puppet assembly, comprising a back-drop panel for accommodating the upper body of a child, a puppet torso section secured to the panel and extending outwardly with the diametrically laterally opposite side edges secured to the back-drop and open at the top and bottom, and

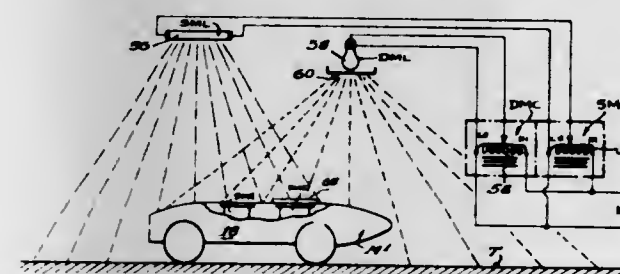
feet means for manual positioning by a child's arm which extends through the opening defined by the



lower end of the torso section and the panel and are thereby aligned with the torso section to simulate the completed body of a toy puppet.

3,314,189 REMOTE, LIGHT ACTUATED CONTROL MEANS FOR MODELS

William P. Carroll, 330 S. Wells St., Chicago, Ill. 60606
Filed Aug. 10, 1964, Ser. No. 388,463
17 Claims. (Cl. 46-244)



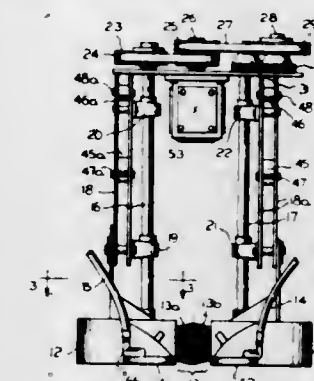
1. In remote control means for models, a support, a model for travel on said support throughout the area thereof, said model having a drive motor for propelling the same, a source of electric current for said drive motor, means for remotely controlling the flow of electric current from said source to said drive motor and thereby the speed of said drive motor comprising light sensitive means carried by said model and a variable intensity light source directed toward and spanning the area of said support to stimulate said light sensitive means at any position of said model with respect to said area, and a circuit between said source and said drive motor controlled by said light sensitive means, said circuit energizing said drive motor in response to stimulation by said variable intensity light source and in proportion to the degree of stimulation of said light sensitive means by said light source.

3,314,190 APPARATUS FOR APPLYING SYSTEMIC INSECTICIDES TO PLANTS

Richard L. Ridgway, College Station, Beverly G. Reeves, Bryan, and Lambert H. Wilkes, College Station, Tex., assignors to the United States of America as represented by the Secretary of Agriculture
Filed Mar. 22, 1966, Ser. No. 536,332
1 Claim. (Cl. 47-1.5)

An apparatus for applying uniformly a flowable material, in the form of an encircling band, to selected areas of the ground proximal, substantially erect, stalk portions of the individual plants of a row crop comprising: paired disc members incorporating radially extended peripheral

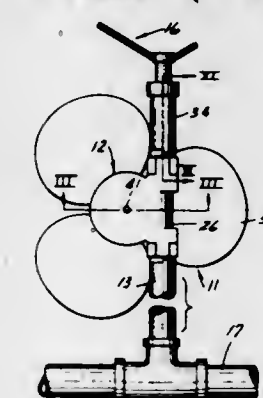
bristles, said disc members disposed horizontally in juxtaposition and with peripheral bristles tangentially meshed; means defining casings adapted to support rotatably and to shield said disc members, said means defining casings comprising separate, contoured covers enclosing each of said disc members, except for that segment of each disc member adjacent the location at which the bristles of the paired disc members are tangentially meshed; drive means adapted to supply uniform, opposed, rotary motion to the



paired disc members; duct means terminating as nozzles inside each contoured cover, said duct means and associated nozzles adapted to direct a uniform supply of a flowable material from an external reservoir to the bristle areas of the disc members; supporting and linking means to couple the apparatus to a prime mover, said supporting and said linking means adapted to permit independent, attitude controlled movement of said apparatus in a vertical plane only.

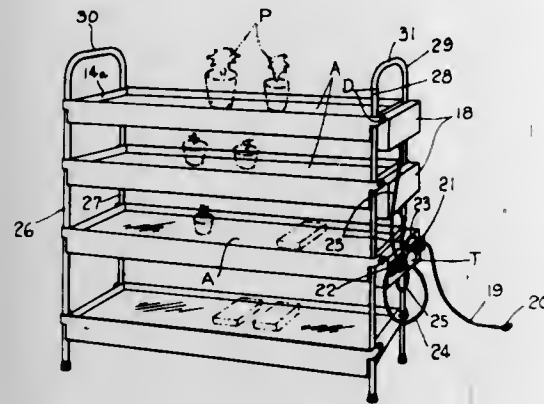
3,314,191 FROST PREVENTION DEVICE

Herman Darr, Columbia Township, Van Buren County, Mich. (Rte. 1, Box 90, Grand Junction, Mich. 49056)
Filed Dec. 27, 1965, Ser. No. 516,579
3 Claims. (Cl. 47-2)



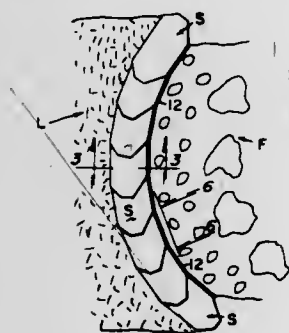
1. A frost prevention device connectible to a source of water under pressure, comprising: a hydraulic motor having inlet orifice means, outlet orifice means, shaft means and a vane-type rotor connected to said shaft means; first and second conduit means connected to said inlet and outlet orifice means, said first conduit means being connected to said source and arranged for supporting said motor in a position where said shaft rotates around a substantially horizontal axis; nozzle means connected to said second conduit means, said second conduit means communicating with said outlet orifice and the minimum size of said outlet orifice being larger than the minimum size of said inlet orifice, said nozzle means having a discharge opening not smaller than said size of said inlet orifice means; and axial flow fan means mounted upon said shaft means for rotation therewith, said fan means being near said nozzle means.

3,314,192
PLANT GROWING SHELF ARRANGEMENT
 George Barratt Park, Cokesbury Road,
 Greenwood, S.C. 29646
 Filed June 1, 1964, Ser. No. 371,284
 1 Claim. (Cl. 47-18)



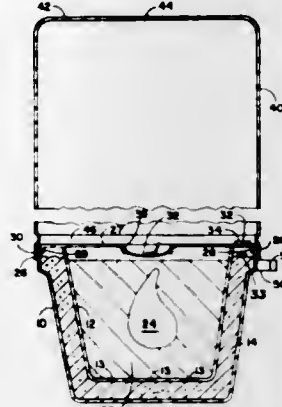
A device for growing plants such as germinating seeds, growing seedlings and the like including, a plurality of vertically spaced superposed shelves for supporting the plants, at least one of said trays having an open upper water-tight tray portion having a bottom, sides and end portions, a lower reflective element carried by said one of said shelves closely adjacent the upper tray portion, said lower reflective element being secured to said sides and end portions and having a horizontal partition with a reflective lower surface in spaced parallel relation to the bottom and a downwardly extending shield, a light source carried by the partition closely adjacent the reflective surface to provide radiant energy to plants below directed thereto by the shield and a gentle heat transfer to the plants on the tray portion above, and support means carrying said shelves.

3,314,193
LAWN EDGER
 Robert E. Chancellor, Lakewood, Colo.
 (8810 Dover Circle, Denver, Colo. 80226)
 Filed May 10, 1965, Ser. No. 454,339
 11 Claims. (Cl. 47-33)



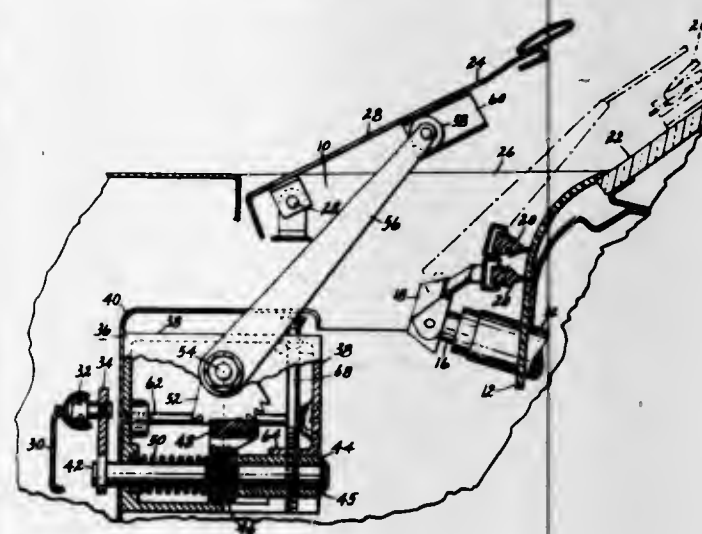
1. An edging device or the like, as for maintaining a curved boundary of a lawn, comprising:
 a vertical strip; and
 a series of adjacent, overlapping horizontally extending segments attached at the inner edges thereof to the top edge of said vertical strip, the inner edges of said segments being substantially coextensive with the vertical strip and said segments having an extension at each end which underlies or overlies the adjacent segment, said end extensions being formed to provide a greater length at a position intermediate the inner and outer edges of said segment.

3,314,194
SHIPPING AND GROWING CONTAINER FOR BULBS AND SEEDS
 Frank E. Halleck, Minnetonka, Minn., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware
 Filed Aug. 10, 1964, Ser. No. 348,418
 7 Claims. (Cl. 47-34.11)



1. A combined shipping and growing container for plants including a generally rectangular container formed from a resinous material, an inner container of the same material positioned therein and spaced therefrom, the bottom of the inner container having openings therein, a layer of a moisture absorbent material between the two containers, said layer having interconnecting cells so as to permit the diffusion of moisture downwardly to the area between the bottom walls of the containers, said moisture being adapted to travel by capillary action through said openings into said inner container after water has been added to the absorbent material and a moisture impervious cover sealed over the inner container having a removable closure member therein for permitting said plant to grow up through the cover and a transparent dome adapted to be removably secured to the top of the generally rectangular container.

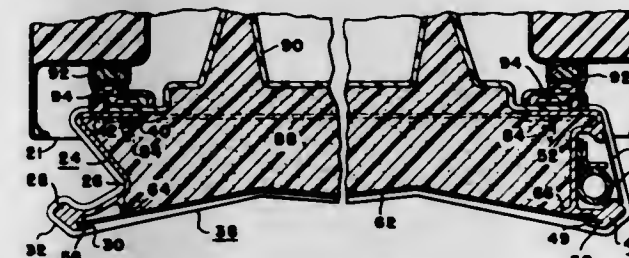
3,314,195
CONCEALED WINDSHIELD WIPER MECHANISM
 Eugene R. Ziegler, Spencerport, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
 Filed May 10, 1965, Ser. No. 454,570
 9 Claims. (Cl. 49-342)



1. In a vehicle having a windshield and a forwardly extending cowl with a transversely extending well therein having an access opening, a cover hinged to said cowl for closing said access opening, a gear box housing attached to the vehicle, a first shaft journaled in said housing, a drive arm attached to said first shaft and operatively connected to said cover for moving it between open and

closed positions in accordance with the direction of pivotal movement of said drive arm, a first helical gear attached to said first shaft, a bushing slidably supported in said housing transversely of said first shaft, a second shaft journaled in said bushing, a second helical gear attached to said second shaft and meshing with said first helical gear, an irreversible drive link connected to said second shaft for precluding manual rotation of said second shaft, spring means acting between said housing and said second helical gear for biasing said second helical gear, said second shaft and said bushing to move said cover to an open position through said first helical gear, said first shaft and said drive arm, and locking means engageable with said bushing for precluding axial movement thereof, the arrangement being such that the cover can be manually moved from the open position to the closed position so as to impart axial movement to said second helical gear, said second shaft and said bushing when the locking means are released.

3,314,196
INSULATED DOOR
 Milton G. Betz, Clayton, and El Roy G. Shank and Donald E. Snyder, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
 Filed Apr. 23, 1965, Ser. No. 450,353
 4 Claims. (Cl. 49-501)

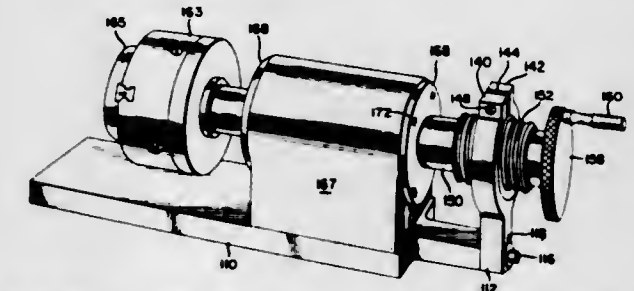


1. An insulated door including structural side members of substantially uniform irregular cross-section having opposed intumed edges extending from the top to the bottom and having outwardly facing edges, top and bottom cap members extending between the side members and having downwardly and upwardly extending flanges, respectively, extending around the edges thereof and overlapping in a close fitting arrangement the outwardly facing edges at the upper and lower ends of the side members, said cap members each having means cooperating with said flanges forming outwardly extending notches adjacent the ends thereof receiving the intumed edge of the adjacent side member, inner and outer face members held in place by the side and top and bottom members, and insulating means between said inner and outer face members.

3,314,197
THREAD GRINDER WORKHOLDER
 Edgar H. Whitney, Dunnellon, Fla., assignor to Ocala Precision Machining Corp., Dunnellon, Fla.
 Filed Aug. 12, 1964, Ser. No. 389,120
 1 Claim. (Cl. 51-232)

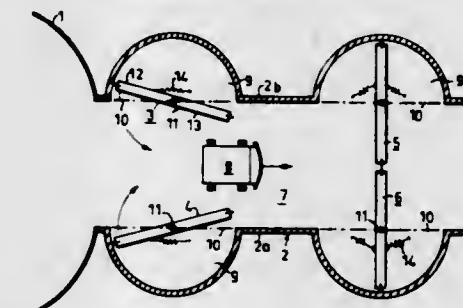
A portable work-holding fixture for mounting on the table of a grinding machine comprising,
 a flat elongated base,
 an elongated head stock yoke supported upwardly of the top surface of said base and having a split upper portion and resilient arms providing a collar retainer opening therethrough,
 an internally threaded collar in said retainer opening, locking means threaded in the split upper portion of said arms for drawing said arms into tight embracement upon said collar thereby precluding rotation of said collar within said retainer opening,

a live center member rotatably mounted in said head stock yoke,
 a lead screw on said live center member adjacent one end thereof and revolvably engageable with the thread of said collar,
 said threaded collar being releasably fixed in said retainer opening and said lead screw being releasably fixed to said live center member,
 said collar and lead screw constituting a set of the screw thread pitch desired to be ground on the work piece,
 means fixed to said live center for the rotating of same,
 gripping means at the opposite end of said live center for holding a work piece,



and aligning means for maintaining the alignment of said live center during relative movement thereof including a guiding subassembly supported upwardly of the top surface of said base and a longitudinally-extending bore through said guiding subassembly for rotatably supporting said live center and a cylindrical sleeve receivable within the bore and an anti-friction means disposed within the bore and sleeving said live center and a plurality of bearing elements carried by said anti-friction means and bearing pressure-confining engagement with said bore and said live center as said anti-friction means is supported in definite positions within said sleeve and on said live center when the latter is fully motivated in rotary and rectilinear movements.

3,314,198
AIR SLUICE CHAMBER
 Karl Per Frisk, Gamleby, Sweden, assignor to Licentia Ekman & Brundin, Stockholm, Sweden, a firm of Sweden
 Filed June 14, 1965, Ser. No. 463,624
 Claims priority, application Sweden, June 15, 1964, 7,237/64
 3 Claims. (Cl. 52-2)

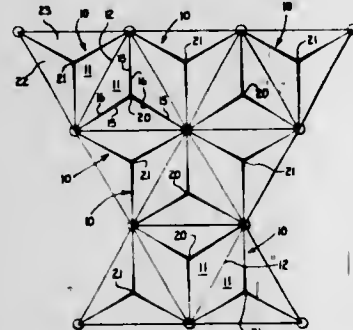


1. A sluice chamber connecting a plastic hall or tent which is held erected by an overpressure of the air enclosed by the hall, with the ambient atmosphere, a pair of opposite recesses formed in the side walls of said sluice chamber at each end thereof, a pair of doors located at each end of said chamber and being pivotally mounted for rotation about vertical axes provided approximately at the middle of the respective door to divide the same into an inner blade extending into the adjacent recess and an outer blade, said outer blades of the doors of each pair cooperating sealingly with each other and the adjacent portions of the sluice chamber

when the doors are in their closed position in a plane substantially at right angles to the longitudinal direction of the chamber and said inner blades of each pair of cooperating doors being provided to seal against the walls of the respective recess when the doors are in their closed position and spring means which serve to bias the doors to the passage blocking position when displaced.

3,314,199 PREFABRICATED SECTIONAL BUILDING CONSTRUCTION

Charles A. Wulf, Jr., 6156 Bramshaw St. 46220, and William Matthyse, 3710 Washington Blvd. 46205, both of Indianapolis, Ind.
Filed Dec. 16, 1963, Ser. No. 330,688
6 Claims. (Cl. 52-32)



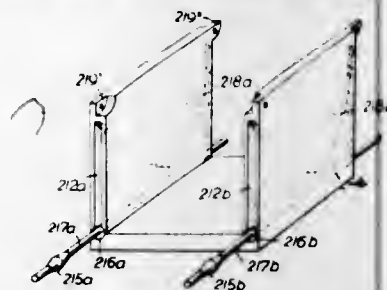
4. A building construction comprising three joined triangular shaped panel sections, each of said panel sections having a first side which is horizontal and having second and third sides, a first of said triangular sections having its second side secured to and coextensive with the third side of a second of said triangular sections and having its third side secured to and coextensive with the second side of a third of said triangular sections, the third of said three triangular sections having its third side secured to and coextensive with the second side of the second of said three joined triangular sections, three vertical posts supporting said roof construction, said three first sides defining a triangle, each of said posts being located at one of the corners of said triangle and supporting two of said panel sections, each of said panel sections having vertically projecting flanges extending completely along each of its three sides, a connecting member having oppositely opening channel portions, one of said channel portions straddling at least one of said flanges, a vertical side panel, a floor beneath said roof, said floor having a step therein, said step being located adjacent and extending parallel to a vertical plane through said connecting member, an angle having one leg fixed to said floor on said step and its other leg vertical and aligned with the other of said channel portions, said side panel having an upper end received in the other of said channel portions and a lower end resting on said step and the one leg of said angle, said side panel being fixed to and abutting the other leg of said angle but removable from said other channel portion by disconnecting said side panel and angle and movement of said lower end of said side panel over and down beside said step.

3,314,200 LOAD-BEARING STRUCTURE REVERSIBLY FLEXIBLE AND RIGID

Wilhelm Schuster, Dauphinestrasse 194, Linz, Austria
Filed May 8, 1964, Ser. No. 366,100
Claims priority, application Austria, Dec. 4, 1959, A 8,802/59
13 Claims. (Cl. 52-108)

1. A load-bearing structure comprising an elongated body subject to flexural stress in a given plane by the load, said body including a plurality of juxtaposed sections of substantially identical configuration each having

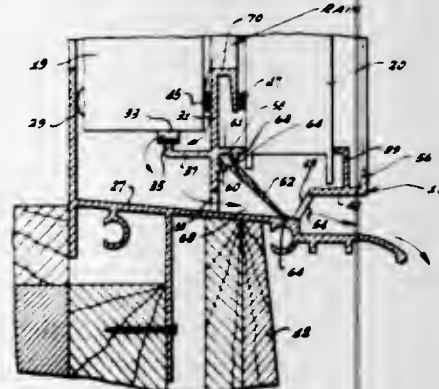
a wall surface disposed substantially parallel to said plane, said sections having aligned passages defining at least one throughgoing channel; elongated, flexible and substantially inextensible tensioning means in said channel alternately tightenable and releasable for solidifying said body by aligning said sections in pressure-transmitting relationship and slackening said body by releasing



said sections for limited relative displacement, said sections being provided with clearances enabling at least partial displacement of said tensioning means along said wall surface between a region subject to negative stresses under load and a location remote from said region; and actuating means anchored to said tensioning means for alternately tightening and relaxing same.

3,314,201 WEEP HOLE CONSTRUCTION FOR WINDOWS AND THE LIKE

Harry M. Riegelman, Rolling Hills, Calif., assignor to Ador Corporation, Fullerton, Calif., a corporation of California
Filed Nov. 23, 1964, Ser. No. 413,052
5 Claims. (Cl. 52-209)



1. In a window frame including a sill having a downwardly sloping upper surface and an upright flange disposed longitudinally upon said upper surface of said sill, a weep hole construction comprising:

at least one aperture provided in said flange, said aperture meeting with the upper surface of said sill; and a flexible flapper valve affixed along one end thereof to said flange above said aperture for covering said aperture, said flapper valve extending from said flange into contact with said upper surface of said sill and forming an angle of between 40° and 50° with said flange.

3,314,202 LOAD-BEARING PANEL WALL AND CONNECTED BEAM STRUCTURE

Carl R. Rolen, Rte. 3, Pataskala, Ohio 43062
Filed Aug. 8, 1963, Ser. No. 300,800
5 Claims. (Cl. 52-272)

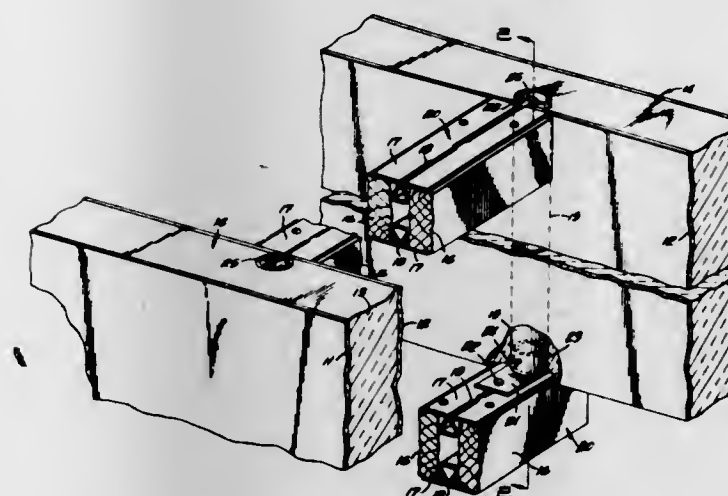
1. In a building structure, a panel comprising opposed skins disposed in spaced relationship and having insulating material therebetween, a load-bearing member disposed in said space directly adjacent one of the skins and extending therealong, said load-bearing member being in the form of a tube with an open end, a beam extending

from said panel at an angle to the skin adjacent which said tube is disposed and having an end adjacent said skin, and a connecting member secured to said beam end and having a portion extending into the open end of said tube for connecting the beam end to the panel in abutting relationship with the said adjacent skin of the panel, said connecting

and a trim strip having a central raised portion and laterally extending lips slidably positioned within said flanges of each said base strip and behind said flanges of said panel sections.

3,314,204 COMPOSITE PANEL

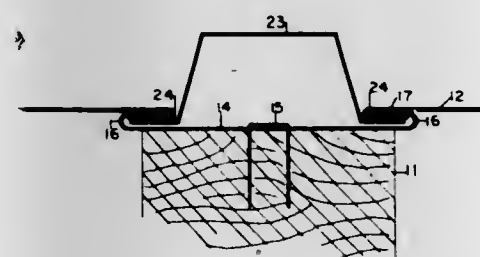
Hans Zöpnek, Hessenplatz 8, Linz, Austria
Filed Feb. 25, 1964, Ser. No. 347,185
Claims priority, application Austria, Jan. 21, 1964, A 418/64
2 Claims. (Cl. 52-308)



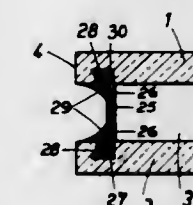
member portion being in the form of a stud having its one end rigidly connected to the end of the beam and extending therefrom at a slight angle from the vertical with its free end spaced outwardly from the beam end with the result that when the free end of the stud is inserted into the open end of the tube it will wedge tightly therein.

3,314,203 MOBILE HOME CONSTRUCTION

Delmar James Hill, Detroit, and Raymond L. Harding, Marlette, Mich., assignors to Active Mobile Homes Corporation, Marlette, Mich., a corporation of Michigan
Filed July 5, 1963, Ser. No. 293,114
8 Claims. (Cl. 52-288)



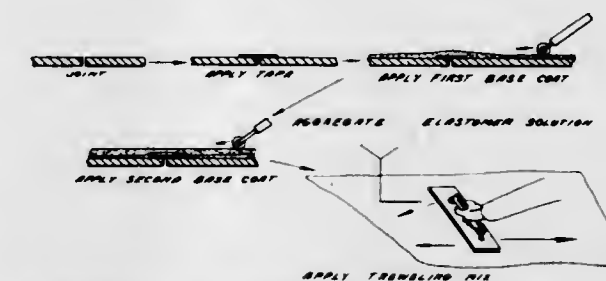
1. In a mobile home and the like, the combination comprising a frame for a vertical wall comprising a plurality of spaced vertical frame members, a plurality of vertical base strips, means for mounting each base strip on a said vertical frame member, said last-mentioned means extending through substantially the central portion of said base strip, each said base strip having an outwardly facing flange along each of the vertical longitudinal edges thereof extending inwardly of the central portion thereof, a rigid panel section between said adjacent base strips, each said panel section having an inwardly turned flange at opposed marginal vertical edges facing along the inner wall thereof adjacent said frame member and frictionally engaging behind one of said flanges on said base strips,



1. A composite panel comprising two spaced apart, parallel transparent sheets having plane surfaces facing each other, the transparent sheets being alike and each having a peripheral edge portion as well as plane surfaces facing outwardly, one pair of said plane surfaces defining an undercut groove sunk into said first-named surfaces in the peripheral edge portion, a sealing strip having an outwardly facing side face, the edge portions of the sheets and the side face of the strip defining a peripheral recess, the side face defining a pair of longitudinal shallow grooves in communication with the peripheral recess and the grooves in the facing surfaces of the sheets, the sealing strip being disposed between said sheets adjacent the peripheral edge portions thereof, and extending into and engaging said groove, and a sealing material filling the shallow grooves in the side face of the strip and extending into the peripheral recess into engagement with the facing surfaces of the sheets to hold the sealing strip therein.

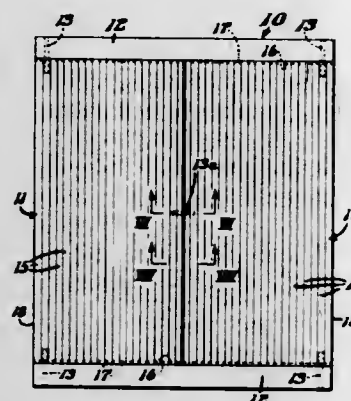
3,314,205 SYNTHETIC ELASTOMERIC COATED ROOF SURFACE AND METHODS OF APPLYING IT

Aubrey Davis, Jr., Mercer Island, Wash., assignor to Gaco Western, Inc., Seattle, Wash., a corporation of Washington
Filed May 23, 1963, Ser. No. 282,684
10 Claims. (Cl. 52-309)



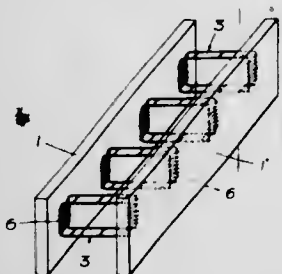
1. A method of applying a textured wear resistant surface to a roof which comprises spreading thereon a troweling mixture of (1) a thick, viscous solution of a synthetic, weather-resistant elastomer and (2) substantially dust-free nonfibrous, nonlamellated, nonfragile granules about 12 to 80 mesh and composed of the hard portions of plant seeds having a specific gravity of about 0.8 to 1.6 and having about the same specific gravity as said solution; said troweling mixture thereafter hardening by evaporation of the solvent in said solution and at least partial curing of said elastomer.

3,314,206
DIMENSIONALLY STABLE LAMINATED
WOODEN WORK SURFACE
 John J. Dau, Rosedale Drive, Pottstown, Pa. 19464
 Filed Mar. 6, 1964, Ser. No. 350,014
 3 Claims. (Cl. 52-415)



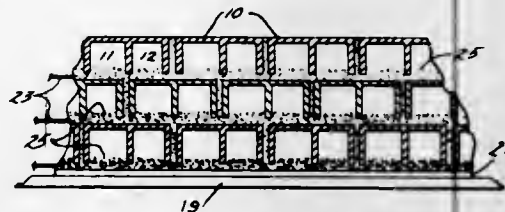
1. A compound lumber work surface comprising in combination (1) a plurality of laterally spaced body panels, each of said panels being constructed of a plurality of solid wooden sections in a laminated state, which sections form in said panels an extended planar work surface of generally rectangular shape, (2) an end bolster affixed to the exposed end grain of each of said body panels, said bolster covering the exposed end grain of each panel, (3) a creep permissive bonding agent interspersed between said end grain and said bolster whereby said body panels are held in their laterally spaced position and joined to the end bolsters by the bonding agent, and (4) pin means in each end bolster adjacent each end thereof, each of said pin means being mutually connected to the body panel contiguous therewith adjacent the perimeter of said work surface to render the perimeter of the work surface dimensionally stable.

3,314,207
TIE BETWEEN BUILDING ELEMENTS
 Friedrich W. Sigl, Salzburg, Austria, assignor to Beton-Box A.G., Saint Gall, Switzerland, a corporation of Switzerland
 Filed Sept. 20, 1963, Ser. No. 310,434
 Claims priority, application Austria, Sept. 20, 1962, A 7,463/62
 4 Claims. (Cl. 52-428)



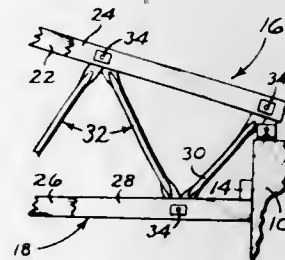
1. A construction element forming a framework to be filled with a hardenable substance, comprising a pair of generally parallel and coexistence spaced-apart plates; a plurality of mutually parallel looped tie members extending across said plates at longitudinally spaced locations, each of said tie members being constituted by a pair of coextensive metal frames interconnected by peripherally spaced crossbars welded thereto, said frames lying in planes transverse to said plates with a mutual separation less than that existing between said tie members, the latter having flat sides extending parallel to and resting against confronting surfaces of said plates; and masses of a hardened cementitious material deposited on said confronting surfaces and rigidly bonding said tie members to said plates.

3,314,208
GROUTED MASONRY WALL
 Alan L. Robertson, Newington, and Philip Paoletta, Hamden, Conn., assignors to The United Research and Development Company, Incorporated, New Britain, Conn., a corporation of Connecticut
 Continuation of application Ser. No. 470,699, Nov. 23, 1954. This application Mar. 2, 1964, Ser. No. 351,269
 2 Claims. (Cl. 52-438)



1. A masonry wall construction comprising a plurality of horizontal courses wherein each such course includes a plurality of blocks each block having an imperforate horizontal and longitudinally extending substantially rectangular top wall, a pair of side walls depending respectively from the longitudinal edges of the top wall for the full length thereof and which have bottom surfaces residing in a common horizontal plane, a pair of end walls depending transversely from said top wall with one end wall flush with one end of the top wall and the side walls at one end of the block and with the other end wall spaced inwardly from the other end of the side walls to define a vertical recess opening through the top wall at the other end of the block, both of said end walls having bottom surfaces which are spaced upwardly from said common horizontal plane, each block also including at least one additional transverse wall depending from the top wall between said end walls and having its bottom surface spaced upwardly from said common horizontal plane, the blocks in each course being set directly on a lower course and being engaged in end abutting relationship with the said one end of one block engaging the said other end of the adjacent block in the course, and each course being completed by grout poured into the vertical recesses in the several blocks in the course, to flow over the top walls of the blocks in the course below in the space between the common horizontal plane of the course being poured and the bottom surfaces of all of the transverse walls and to fill the recesses of the course being poured and thus to bind the blocks in a course to each other and to the course below.

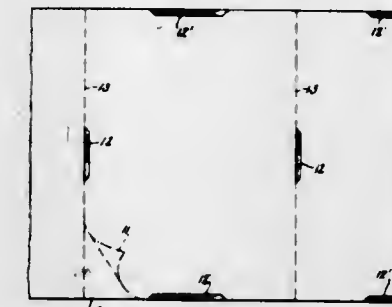
3,314,209
COMPOSITE TRUSS JOIST HAVING CHORDS AND LINKS OF ADJUSTABLE ANGLE
 Arthur L. Troutner, P.O. Box 1496, Boise, Idaho 83701
 Filed Apr. 12, 1965, Ser. No. 447,476
 5 Claims. (Cl. 52-639)



1. A composite truss joist comprising (a) upper and lower chords dimensioned to span spaced support surfaces, (b) a plurality of links arranged in zig-zag relation between the chords with the upper terminal end of each terminal link being disposed adjacent the upper chord,

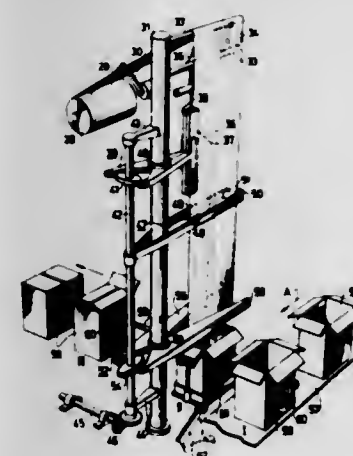
(c) first pivotal connecting means pivotally interconnecting the links and chords,
 (d) the upper terminal end of each terminal link being formed with an inwardly directed lateral extension projecting inside the plane of the lower edge surface of the upper chord,
 (e) a pair of standards adapted to be mounted one on each support surface, and
 (f) second pivotal connecting means pivotally interconnecting each terminal link extension and one of the standards on an axis parallel to and spaced from the first pivotal connecting means.

elastomeric material and having a pattern of paper regions free of release coating contiguous with the release coating pattern, and tightly wrapping the elastomeric material



with the release-coated surface in contact with the elastomeric material and with adhesive applied to regions free of the release coating to seal the package.

3,314,210
PROCESS AND A DEVICE FOR MANUFACTURING PACKAGES
 Harry Sigvard Valdemar Järund, Lund, Sweden, assignor to AB Tetra Pak, Lund, Sweden, a company of Sweden
 Filed May 18, 1964, Ser. No. 368,311
 Claims priority, application Sweden, May 20, 1963, 5,552/63
 1 Claim. (Cl. 53-27)

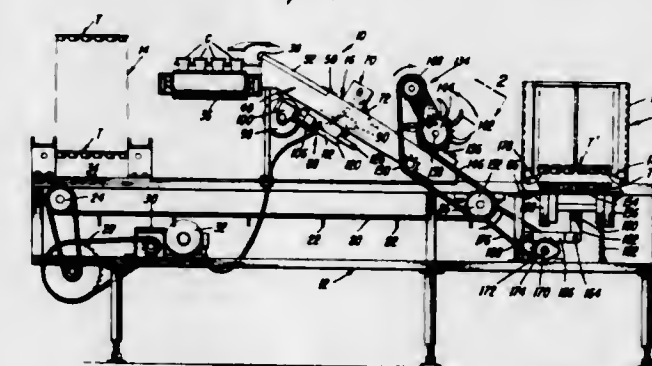


A method of producing packages of the kind comprising a closed outer carton of rigid material defining the shape of the package, said outer carton consisting of a tubular side wall and two end walls, and a sealed inner bag consisting of a thin and flexible packaging material, said inner bag containing a fluent filling material and essentially filling the interior cavity of the outer carton completely, the method comprising partially filling a tube of said flexible packaging material, which tube is closed at its lower end, with a quantity of said filling material, which quantity is smaller than the quantity in the completely filled bag, inserting the partially filled lower end of said tube into said outer carton which is open at its upper end by a relative vertical movement of said tube and said carton, completing the filling of said tube with said filling material so that the lower end of the tube will contain a quantity corresponding to a substantially completely filled bag, closing said tube in a zone above said filling material, severing the bagshaped lower end portion of the tube from the rest of the tube within said sealing zone and closing the open end of said outer carton.

3,314,211
METHOD OF PACKAGING TACKY ELASTOMERIC MATERIAL AND PACKAGING PAPER THEREFOR
 Anthony P. Wolff, Baton Rouge, La., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
 Filed Oct. 29, 1964, Ser. No. 407,421
 4 Claims. (Cl. 53-32)

1. A method of packaging tacky elastomeric materials comprising supplying packaging paper having a release coating pattern on a surface thereof for contact with the

3,314,212
TRAY LOADING MACHINE
 William S. Peppier, Chappaqua, N.Y., assignor to Diamond International Corporation, New York, N.Y., a corporation of Delaware
 Filed Feb. 17, 1965, Ser. No. 433,436
 5 Claims. (Cl. 53-55)

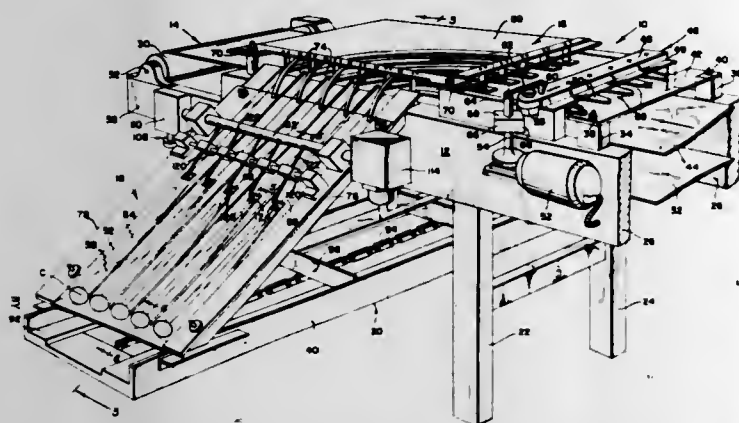


1. In a tray loading apparatus for automatically receiving, orienting and depositing articles in compartmented trays, comprising, in combination, inclined hopper means, said hopper means including a planar bottom wall having a lower, terminal, transverse edge, a cover wall parallel to and overlying said bottom wall, guide elements depending from the undersurface of said cover wall and defining parallel magazine rows between said walls for maintaining and orienting articles in a row and maintaining the articles substantially normal to the general plane of said cover and bottom walls, said cover wall including a plurality of terminal hold-down strip elements having an under-surface parallel to said bottom wall and disposed intermediately of said parallel rows and having the terminal end forwardly of said transverse edge of said bottom wall; conveyor means disposed beneath and in intersecting relation with the lower end of said hopper means for supporting oriented trays thereon, said bottom wall having an under surface rearwardly of the transverse edge thereof parallel to said conveyor means maintaining the trays in oriented relationship; and mechanically-operated abutment means mounted on said inclined hopper means and including a support shaft disposed above and rearwardly of the lower end of said hopper means, said abutment means including a plurality of pairs of abutment fingers mounted on said shaft, one of each of said pairs of abutment fingers including a terminal end portion having an orbit of rotation extending into a side portion of the respective rows and flanking opposite and rearwardly of said hold-down strip elements for engaging an article disposed in the row and displacing it out over the transverse edge of said bottom wall while still engaged by the under-surface of said hold-down strip elements.

3,314,213 TRAY LOADING MACHINE

William S. Peppler, Chappaqua, N.Y., assignor to Diamond International Corporation, a corporation of Delaware

Filed Mar. 27, 1964, Ser. No. 355,179
11 Claims. (Cl. 53—62)

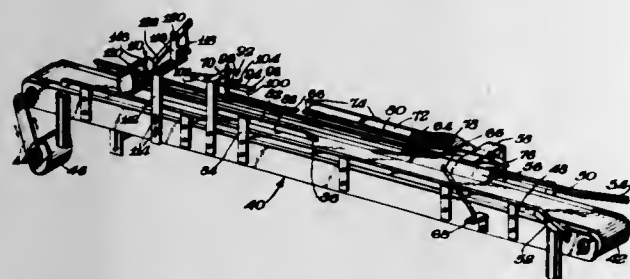


1. A tray loading machine comprising conveyor means for receiving a plurality of randomly disposed articles thereon and continuously moving the articles in a common direction, article reservoir means overlying said conveyor means including space guide portions for positioning said random articles in aligned rows, article hopper means communicating with said article reservoir means and including guide channels through which aligned rows of articles are directed, and cellular tray-conveyor assembly means disposed beneath said article hopper means in intersecting relation with said hopper means for stripping articles from said hopper means into a cellular tray carried by said tray-conveyor assembly, said first mentioned conveyor means comprising an endless conveyor, said article reservoir means including a guide plate above said endless conveyor for maintaining articles in a relatively fixed horizontal plane, said guide plate including a plurality of rows of depending guide elements for receiving and aligning articles therebetween.

3,314,214 CARTON CLOSING MACHINE

Donald E. Burt, Boston, Mass., assignor to Keyes Fibre Company, Waterville, Maine, a corporation of Maine

Filed May 26, 1964, Ser. No. 370,231
10 Claims. (Cl. 53—131)



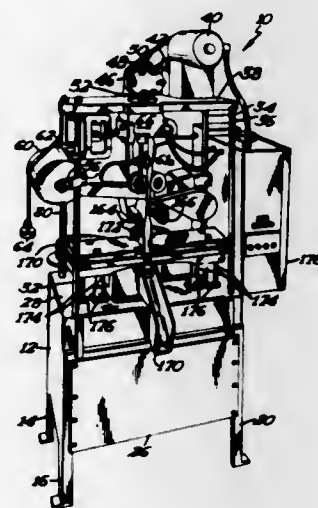
1. An apparatus for closing cartons of the type having a bottom, a rear hinge on one side of the bottom and a front hinge on the other side of the bottom; a cover having front and rear depending side walls, the lower margin of the rear wall being connected with the bottom by the rear hinge and the lower margin of the front wall having an outwardly flanged strengthening lip, a locking flap connected with the bottom by the front hinge, the locking flap being adapted to lie against the inside of the front wall of the cover when the carton is in the closed condition, and cooperating latching means on the locking flap and the front wall to secure the carton in the closed condition, the apparatus comprising conveyor means connected to engage carton bottoms for moving cartons along a longitudinal path past spaced closing means, the closing means

including means adjacent the longitudinal path engageable with the bottoms of the cartons during a first portion of carton travel to position the locking flaps inwardly of the position they assume in the closed carton condition and means connected to position the cover front walls essentially in the position they assume in the closed carton condition during the first portion of carton travel, means adjacent the longitudinal path to engage the lower portion of the depending front walls of the covers above the flanged strengthening lip during a subsequent portion of carton travel to shift the front walls inwardly toward the locking flaps, and means connected to impart a final increment of cover closing motion with the cover front walls shifted inwardly to effect cooperation of the latching means whereby the cartons are secured in the closed condition.

3,314,215 METHOD AND APPARATUS FOR VARYING PACKAGE VOLUME DURING FABRICATION

Stuart B. Alfred, Hopkins, Minn., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware

Filed Jan. 18, 1965, Ser. No. 426,298
9 Claims. (Cl. 53—182)



1. A package forming machine for producing a package from a flexible sheet material comprising a means for continuously forming the sheet material into a tube, having adjacent edges, a draw means for engaging the tube to draw the tube past the said forming means, a spreading element operatively associated with the tube forming means, a means for changing the radial size of the spreading element so as to change the diameter of the tube and a sealing means for securing together the adjacent edges of the tube.

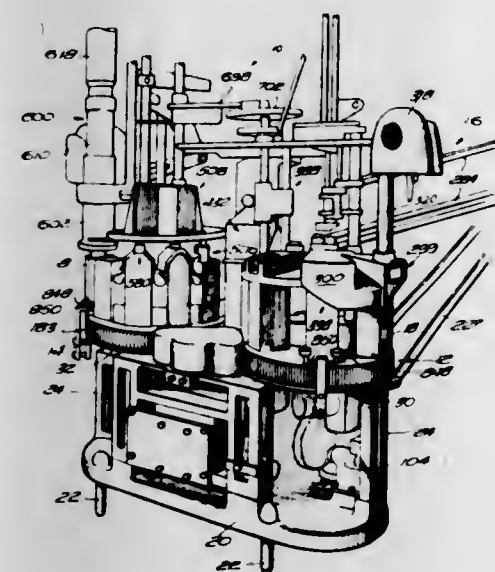
3,314,216 APPARATUS FOR FORMING AND FILLING CARTONS

John H. Fitzwater, Pawtucket, R.I., assignor, by mesne assignments, to American Can Company, New York, N.Y., a corporation of New Jersey

Filed Feb. 17, 1964, Ser. No. 345,239
99 Claims. (Cl. 53—186)

1. An apparatus for automatically processing a plurality of containers from flat folded tube form to an erected form, wherein the containers are filled with a liquid and sealed, the combination comprising a first circular table mounted for rotation, a second circular rotatably mounted table operatively interconnected to said first table and driven thereby, means for intermittently rotating said first table, said second table being indexed at intervals in accordance with the movement of said first table, means for successively erecting said containers from their flat folded to open-ended form and for successively feeding the erected containers to an unloading station on said first

table in bottom side up position, a plurality of work stations located in spaced relation at said first table, means located at said work stations and responsive to the means for rotating said first table for successively folding, heating and sealing the bottom sides of said containers, means for transferring the bottom sealed containers to a load

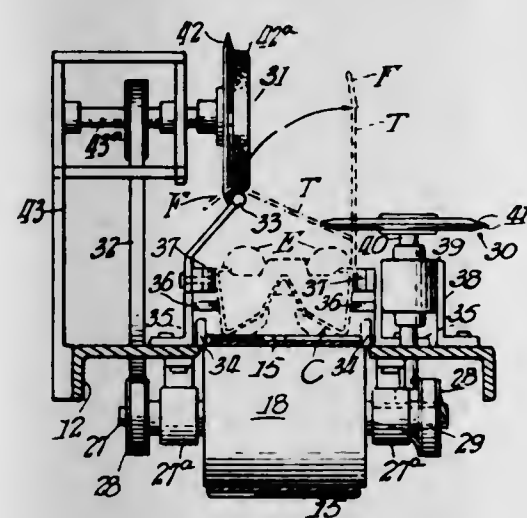


station at said second table in top side up position, a plurality of work stations located in spaced relation at said second table, means for successively pre-folding the tops of said containers, filling said containers with a liquid, heating the container tops and sealing the tops of the filled containers and means for unloading the filled and sealed containers from said second table.

3,314,217 EGG CARTON CLOSING MACHINE

Soenke Soennichsen, Chicago, Ill., assignor to Premier Tool Works, Inc., Chicago, Ill., a corporation of Illinois

Filed Jan. 30, 1964, Ser. No. 341,387
7 Claims. (Cl. 53—376)



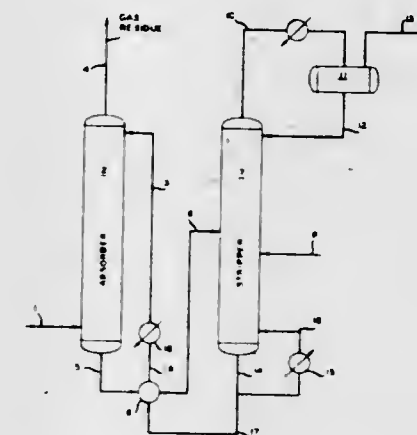
1. Apparatus for closing egg cartons equipped with pivoted lock flap tops, comprising a frame providing a generally horizontal, elongated platform, means on said frame for advancing a carton across said platform along a generally linear path from one end thereof to the opposite end thereof, wheel means mounted for rotation in a generally horizontal plane on said platform adjacent one side of said path for initially folding the carton top from a generally vertical orientation toward a horizontal orientation, first rail means on said platform adjacent the other

side of said path limiting the folding of the carton top under the urging of said wheel means by bearing upwardly against said top, second wheel means on said frame spaced forwardly of said first wheel means in the direction of carton travel and mounted for rotation in a generally vertical plane for developing a flap edge portion in said top by folding a portion of said top over said first rail means, second rail means on said frame spaced forwardly in the direction of carton travel from said first rail means for further developing said flap edge portion and positioning the same for locking insertion into said carton, and third wheel means spaced forwardly of said second wheel means for urging said flap edge portion into locking relation with said carton.

3,314,218 RECOVERY AND PURIFICATION OF ALKYLACETYLENES

Fred M. Warzel, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Sept. 14, 1964, Ser. No. 396,189
9 Claims. (Cl. 55—53)



5. A method for the recovery of an alkylacetylene from the group consisting of methylacetylene, ethylacetylene and mixtures thereof from a gas containing the same which comprises the steps of: absorbing said alkylacetylene into a solvent, stripping said alkylacetylene from said solvent, addition of sufficient olefin from the group consisting of propylene, butylene, pentene and mixtures thereof to the stripping step to produce a product wherein the concentration of alkylacetylene is less than the amount required to support explosive decomposition under the conditions of said stripping, the conditions of said stripping being maintained at a temperature and pressure to produce a gaseous product of alkylacetylene and olefin, said olefin being introduced into said stripping step at a point wherein it contacts said solvent enriched with alkylacetylene and recovering a mixture of said alkylacetylene and said olefin wherein the concentration of said alkylacetylene is less than the amount required to support explosive decomposition of the mixture in the absence of oxygen.

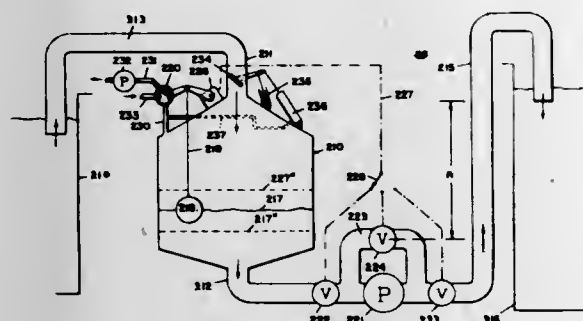
3,314,219 DRILLING MUD DEGASSERS FOR OIL WELLS

Phil H. Griffin III, Fort Worth, Tex., and John W. Melton, Jr., Lafayette, La., assignors to Bass Brothers Enterprises, Inc., Fort Worth, Tex.

Filed Mar. 10, 1965, Ser. No. 438,644
20 Claims. (Cl. 55—167)

1. In a mud degasser apparatus, the combination of a mud degasser vacuum tank having a mud inlet and a mud outlet, means for maintaining sub-atmospheric pressure within said tank, means for controlling the flow of mud into the degasser tank and for controlling the degree of vacuum within the tank in accordance with the mud level

within the tank, mechanical pump means connected to said mud outlet for effecting flow of mud through the tank, and means responsive to lowering of mud level



in the tank for controlling the mud output of said pump means to maintain the mud level in the tank substantially constant.

3,314,220

MULTIANNULAR CENTRIFUGAL SEPARATOR
Paul Goldstein, Creskill, N.J., assignor to Foster Wheeler Corporation, New York, N.Y., a corporation of New York

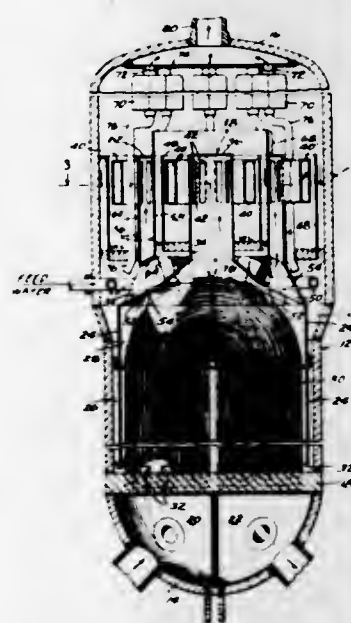
Filed Mar. 22, 1965, Ser. No. 441,810
6 Claims. (Cl. 55-343)

1. A liquid-vapor separator comprising:
 - a vessel having cylindrical vessel walls defining a separator interior region and having a closed upper vessel end defining a vapor discharge port;
 - an upright central cylindrical riser disposed concentrically within the separator interior region, said riser closed at its upper end, said riser formed with a series of evenly-spaced ports about the periphery of the riser adjacent its upper end;
 - a plurality of radially disposed horizontal central nozzles, each radially disposed horizontal central nozzle communicating with one of said ports and having an arcuate end defining a central nozzle discharge opening, the central nozzle discharge openings of said radially disposed horizontal central nozzles forming a concentric circle about said central riser;
 - an upright annular riser disposed concentrically about said central riser in spaced relationship about said central nozzles, the annular riser including a cylindrical innermost wall adjacent said central nozzles defining with the central riser an open-ended innermost annular separating channel within the separator interior region, the annular riser also including a cylindrical outermost wall spaced concentrically about the innermost wall, said annular riser further including an annular cover disposed at the upper end of the annular riser closing the annular riser between the innermost and outermost walls, said outermost wall formed with a series of evenly-spaced outer ports about the periphery of the outermost wall adjacent the upper end of the annular riser;
 - a plurality of radially disposed horizontal outer nozzles, each radially disposed outer nozzle communicating with one of said outer ports and having an arcuate end defining an outer nozzle discharge opening, the outer nozzle discharge openings of said radially disposed outer nozzles forming a concentric circle about said annular riser, the outer nozzle discharge openings in spaced relationship from the vessel walls, the outermost wall in spaced relationship from the vessel wall and defining therewith and therebetween an open-ended outermost annular separating channel within the separator interior region;
 - a central open-ended cylindrical baffle concentrically located in the innermost annular separating channel about and in spaced relationship from the central nozzles and within and in relatively closely spaced

relationship from the innermost wall of the annular riser, said central baffle having a central baffle upper edge, said innermost wall having an innermost wall upper edge, said innermost wall upper edge vertically higher than the central baffle upper edge, said central baffle upper edge and said central riser upwardly extending to approximately the same vertical height;

an outer open-end cylindrical baffle concentrically located in the outermost annular separating channel about and in spaced relationship from the outer nozzles and within and in relatively closely spaced relationship from the vessel wall, said annular riser and outer baffle extending upwardly to approximately the same vertical height;

said baffles extending in the downward direction to below the adjacent nozzles;



inlet means for passing a liquid-vapor mixture into the central and annular risers below the ports;

said risers disposed in the separator interior region in spaced vertical relationship from the vapor discharge port, said separator interior region immediately above the upper ends of the baffles being a substantially open-spaced vapor region, said open-spaced vapor region in communication with the open-ended innermost annular separating channel and the open-ended outermost annular separating channel at the open-ended upper ends of said channels;

said separator interior region including a liquid region adjacent the lower ends of said risers, said liquid region in communication with the open-ended innermost annular separating channel and the open-ended outermost annular separating channel at the open-ended lower ends of said channels.

3,314,221

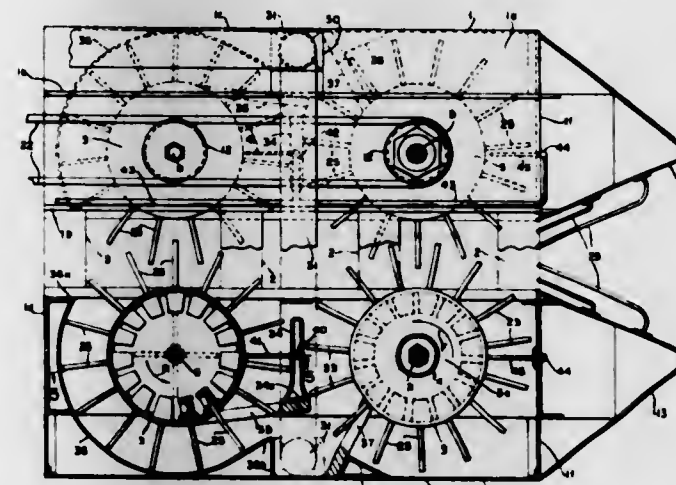
COTTONPICKER

John W. Forbes, Cleveland, Miss., assignor of one-half to Wm. B. Alexander, Preston Riley, and J. E. Wolfe, all of Cleveland, Miss.

Filed Aug. 3, 1964, Ser. No. 386,872

1. In combination with a tractor having a power take-off shaft and a power lift-arm; a cottonpicker unit mounted on the tractor adapted to straddle a row of cotton plants and comprising a pair of spaced rectangular casings open at their opposed inner faces and closed on all other faces; vertically disposed rotatable front and rear drums journaled in each casing; vertical shafts in each casing journaled concentrically with their related drums; vertical series of spaced disks on said shafts within said

drums; means operated by the power take-off shaft for rotating said drums and shafts of the unit; vertical series of horizontal rows of radially disposed picking fingers rotatably mounted in each drum, said fingers overlapping in staggered relation within the space between the casings of the unit; rollers on the inner ends of the respective fingers within the drums engaging their related disks for rotating the fingers; a vertical suction duct in each casing disposed at the outer wall thereof intermediate the front and rear drums, said suction duct having an open bottom end disposed above the bottom of the casing; a cotton receiving receptacle on the tractor; other ducts connecting the vertical ducts respectively with said receptacle; suc-



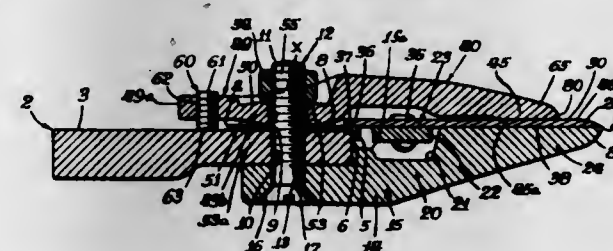
tion means in said other ducts; a separator in each casing disposed between and spaced from the fingers of the related front and rear drums and spaced laterally from the related vertical suction ducts; an arcuate rear wall in each casing spaced from the fingers of the rear drum and extending from the open face of the casing around to a point adjacent the vertical suction duct; rear doffers mounted on the separator adapted to remove the cotton from the fingers of the rear drum and to deposit same at the lower end of the vertical duct; and front doffers disposed adjacent the vertical duct and adapted to remove cotton from the fingers of the front drum and to deposit same at the lower end of the vertical duct.

3,314,222

ADJUSTABLE MOWER SICKLE GUIDING AND CLAMPING DEVICE

Thomas J. Scarnato, Park Ridge, Paul C. Gordon, Hinsdale, and Robert H. Bruner, Oaklawn, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed Sept. 3, 1965, Ser. No. 484,929
2 Claims. (Cl. 56-305)



1. In a mower, a support bar having an upper surface, mower guards mounted on the bar in laterally spaced relation along the length thereof and projecting forwardly therefrom, means providing laterally spaced cutting edges on the guards and an intervening upwardly facing guide surface, a sickle having a plurality of substantially triangular knife sections arranged in side by side relationship and having lateral cutting edges disposed in shearing relation with the cutting edges on respective guards, and

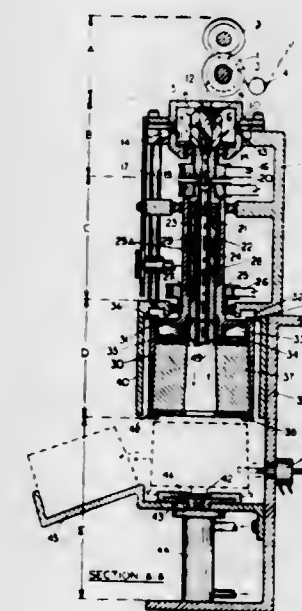
clamping means opposing said guards and therewith receiving said sickle therebetween and having a forward portion with knife-guide means overlying the sections, and a rear portion including means serving as a fulcrum seated upon said upper surface, a bolt and nut assembly securing said clamping means through said rear portion against said surface to prevent free canting movements of the clamping means toward and away with respect to said sickle, and means for forcibly canting said clamping means in a direction advancing said forward portion toward said sickle with said guide means in close guiding relation to said sections while said bolt and nut assembly is tightly securing the clamping means to the support bar, and said upper surface being substantially flat and said fulcrum means comprising upper and lower convex surfaces on said rear portion and the lower surface tangentially engaging said upper surface on a line extending longitudinally of the mower and said bolt and nut assembly having a head element and a nut element one of which comprises a generally flat surface in tangential engagement with said upper convex surface.

3,314,223

APPARATUS FOR YARN PRODUCTION
Emilian Bobkovicz, 1155 Dorchester Blvd. W., Suite 905, Montreal, Quebec, Canada

Filed Jan. 20, 1964, Ser. No. 338,684
Claims priority, application Canada, Mar. 5, 1963, 870,156

21 Claims. (Cl. 57-34)

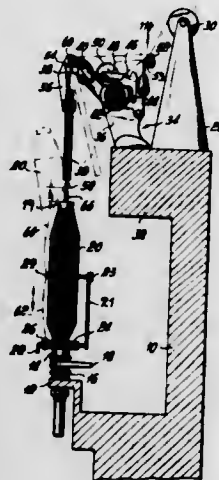


1. Apparatus for automatically transforming elongated material into a yarn package comprising in combination:
 - (a) a twist imparting device;
 - (b) means for delivering the elongated material to said twist imparting device;
 - (c) means for applying compressed air at high velocity into the twist imparting device to aid twisting of the elongated material and forwarding of the obtained yarn;
 - (d) a rotatable yarn collecting device positioned below said twist imparting device and comprising a yarn collecting inverted pot adapted to receive the forwarded yarn and means for imparting reciprocating movement to the yarn entering said inverted pot while said collecting device is rotated, so as to form a yarn package in the said pot; and
 - (e) automatic, pneumatically operating package doffing means adapted to doff the formed package from the pot.

3,314,224

BOBBIN-BUILDING MECHANISM
Aloys Grelve, Munster, Germany, assignor to Hamel G.m.b.H., Munster, Germany, a corporation of Germany

Filed Feb. 4, 1964, Ser. No. 342,362
Claims priority, application Germany, Feb. 6, 1963, H 48,166; Jan. 15, 1964, H 51,390
13 Claims. (Cl. 57-75)

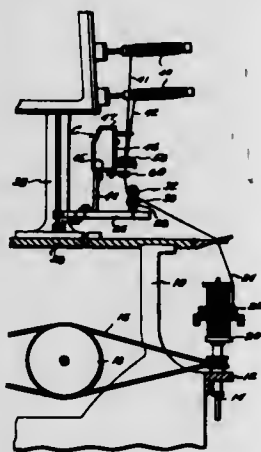


13. In a bobbin-building mechanism, in combination, a rotatable vertical spindle, a vertically reciprocable traveler ring coaxial with said spindle, supply means above said spindle for delivering a thread to said ring preparatorily to winding said thread on a core carried by said spindle, thread-guiding means between said ring and said supply means comprising an elongated vertical tube disposed in axial alignment with said spindle above the region of reciprocation of said ring, and support means for said tube pivotable about a horizontal axis directly above said tube for enabling same to be swung out of alignment with said spindle, said thread-guiding means further including a deflecting element above said tube in line with said horizontal axis and with the axis of said spindle.

3,314,225

CUT-OFF STOP MOTION FOR CONTROLLING BROKEN THREADS OR STRANDS IN TEXTILE MACHINERY

Thomas E. Batey, 40 Silver Hill, Weston, Mass. 02193
Filed Nov. 6, 1964, Ser. No. 409,375
4 Claims. (Cl. 57-81)



1. In a textile machine of the twister frame type in which a plurality of strands are drawn from delivery bobbins by means of feed rolls and twisted and wound around receiving bobbins located below the feed rolls,

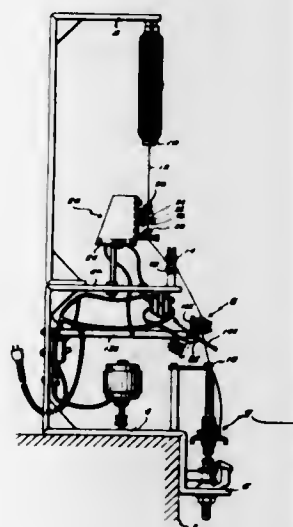
a cut-off stop motion comprising an enclosure body presenting a strand guide supporting panel at one side thereof, a plurality of individual strand guides mounted at the upper end of the panel in horizontally spaced apart relation, a pair of composite strand guides located in vertically spaced apart relation below the individual guides, a strand shearing and holding mechanism received in the enclosure body and having cutter elements thereof projecting outwardly from the supporting panel at a point between the upper and lower composite strand guides, electromechanical means in the enclosure body for actuating said strand shearing mechanism, a plurality of tension sensing elements rotatably received in the panel and extending outwardly into the path of travel of said plurality of strands in positions to be supported by said strands as long as they are in tension, holding frame members supported immediately below the individual strand guides and presenting apertures through which the sensing guide means may project and said frame member cooperating with the sensing elements to contain strands under tension at two opposite sides thereof.

3,314,226

CUT-OFF STOP MOTION APPARATUS FOR SPINNING FRAME

Thomas E. Batey, 40 Silver Hill, Weston, Mass. 02193

Filed Dec. 18, 1964, Ser. No. 419,370
5 Claims. (Cl. 57-81)



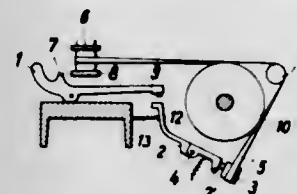
4. In a textile machine of the spinning frame type in which a strand of roving is drawn from a delivery bobbin by means of drafting rolls and spun into a thread of smaller diameter than the diameter of the roving and thereafter wound around a spindle located below the drafting rolls, a cut-off stop motion comprising a strand shearing and holding mechanism, electromechanical means for actuating said strand shearing and holding mechanism, and a tension sensing device mounted for engagement with said strand and operative to energize the electromechanical means when a change in tension occurs in the said strand, said electromechanical means including a control rod and latch apparatus, electrical means including a thread gate switch for disengaging the latch apparatus for moving the rod in one direction, a pivoted linkage responsive to movement of the control rod and connected to the shear mechanism for closing same when the rod is moved, said thread gate switch being located between the drafting rolls and the spindle and being adjustable about a horizontal axis to position the thread gate in desired positions of angularity corresponding to the path of travel of a spun thread extending angularly downward from the drafting rolls to the spindles.

3,314,227

SPINDLE DRIVES FOR SPINNING, TWISTING MACHINES AND THE LIKE

Josef Pfenningsberg, Prinzenstr. 25, Monchen-Gladbach, Germany.

Filed May 6, 1964, Ser. No. 365,407
Claims priority, application Germany, May 9, 1963, P 31,767
7 Claims. (Cl. 57-88)



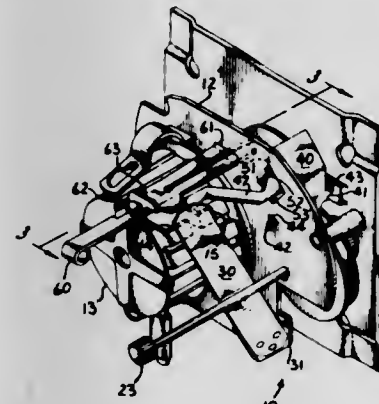
1. In a spindle drive, the combination comprising a rotatably mounted spindle, a rotatably and displaceably mounted tension pulley, belt-type drive means operatively interconnected between said spindle and said tension pulley, a brake movable into braking position with respect to said spindle for stopping the rotation of the latter, a lever link system operatively connected to said tension pulley for displacing the latter and being operatively engaged with said brake when the latter is in said braking position, resilient means operatively connected to said lever link system for displaceably urging said tension pulley into a belt-tensioned position, and means operatively interconnected between said brake and said lever link system for relieving the tension on said belt-type drive means by countering the urging by said resilient means on said tension pulley when said brake is moved into braking position with respect to said spindle.

3,314,228

ALARM MOVEMENT

Lee C. Bowden, Athens, Ga., assignor to General Time Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 23, 1965, Ser. No. 503,451
5 Claims. (Cl. 58-38)



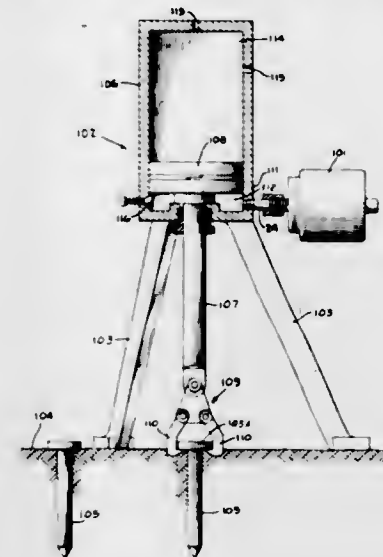
1. In an electric alarm clock the combination comprising a frame, a timing train including a synchronous motor and hour wheel, a settable index wheel adjacent the hour wheel, means including a drop-off cam interposed between the wheels to produce relative axial movement upon drop-off at a pre-set time, a buzzer blade on the motor, an alarm lever having aligned pivots permitting axial as well as rotational movement, the alarm lever having a first arm coupled to the axially moving one of the wheels for axial movement of the lever in response to drop-off, cooperating cam surfaces on the alarm lever and frame respectively, said cam surfaces being so oriented that upon axial movement of the alarm lever such lever is rotated about its axis, and a second arm on the alarm lever for movement in and out of silencing engagement with the buzzer blade in response to rotation of the alarm lever.

3,314,229

STAKE EXTRACTING APPARATUS

William R. Peterson, Bucks County, Pa., assignor to the United States of America as represented by the Secretary of the Army

Filed July 14, 1966, Ser. No. 565,327
10 Claims. (Cl. 60-26.11)

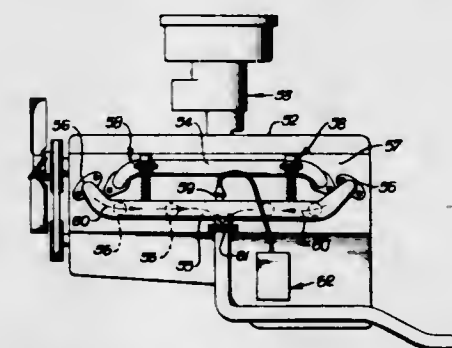


1. In a stake removal apparatus having means for clamping an embedded stake, a cylinder having an apertured lower wall portion, a piston vertically slidable in said cylinder and actuated by varying selective amounts of developed pressure gas, a rod extending through said apertured wall portion and interconnecting said piston with said clamping means, at least one of said piston and wall portion having a boss to normally place said piston in a lowest position defining with said wall portion a pressure accumulation chamber, exhaust port means in side wall portions of said cylinder for limiting the maximum stroke of said piston and for permitting the return of said piston to its normal lower position, a multiple firing initiator communicatively connected with said pressure chamber and having a plurality of gas generating caseless cartridges, and means for successively igniting selected ones of said cartridges.

3,314,230

EXHAUST MANIFOLD AFTERBURNER
Albert G. H. Vanderpoel, 14509 Van Ness Ave., Gardena, Calif. 90249

Filed Mar. 24, 1965, Ser. No. 442,258
2 Claims. (Cl. 60-30)



1. In sub-combination, an air injector body containing an air passage and having an air discharge terminal adapted for connection to an internal combustion engine exhaust manifold and an air inlet spaced from said terminal, a valve seat projecting relatively downstream within said body to pass air therethrough, and a reed valve

carried at the downstream side of said seat in such overlying relation thereto as to flex away from and toward the seat to control air flow therethrough in response to exhaust pressure fluctuations communicated to said valve, a portion of said passage extending at the outer side of said seat to receive air flowing laterally between said reed valve and seat when the reed valve is flexed away from the seat, the body formed to loosely support opposite end portions of the reed valve transversely outwardly of the seat, the valve being free to rotate about an axis defined by said passage during said valve flexing.

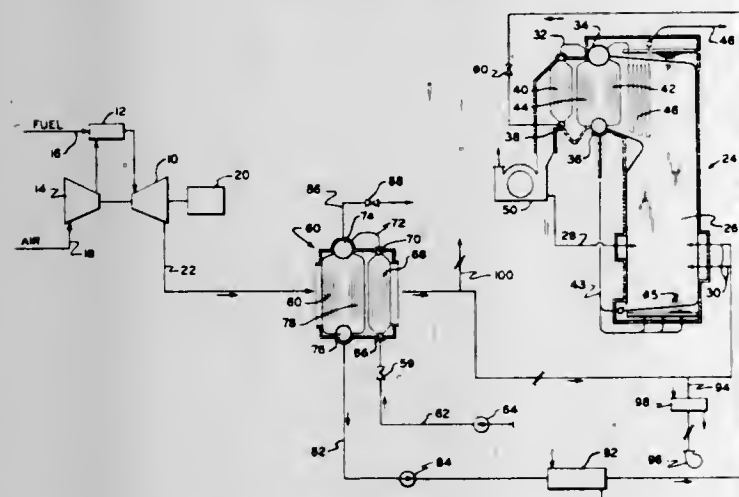
3,314,231

STEAMING FEEDWATER SYSTEM UTILIZING GAS TURBINE EXHAUST

Frank W. Hochmuth, West Simsbury, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed Dec. 29, 1965, Ser. No. 517,210

3 Claims. (Cl. 60—39.18)



1. A power plant comprising a first steam generator, a furnace associated with said first steam generator in which fuel is burned, said first steam generator including an economizer section, and a steam generating section, a gas turbine having a fuel and air inlet, and an exhaust gas outlet, a first duct extending from said gas turbine outlet to a region of combustion within the furnace, whereby the oxygen contained in the gas turbine exhaust gases supports combustion of the fuel within the furnace, a second steam generator, located within the first duct, said second steam generator including an upper drum, a lower drum, riser and downcomer tubes extending between said upper and lower drums, an inlet line for supplying liquid to the second steam generator, a first valved outlet line connecting the lower drum to the economizer of the first steam generator, a pump contained in the first valved outlet line for increasing the pressure in the first outlet line to a point where liquid will flow to the economizer of the first steam generator, a second valved outlet line leading from the upper portion of the upper drum, through which relatively low pressure steam generated in the second steam generator can be discharged.

3,314,232

GAS TURBINE ENGINE WITH AERODYNAMIC TORQUE CONVERTER DRIVE

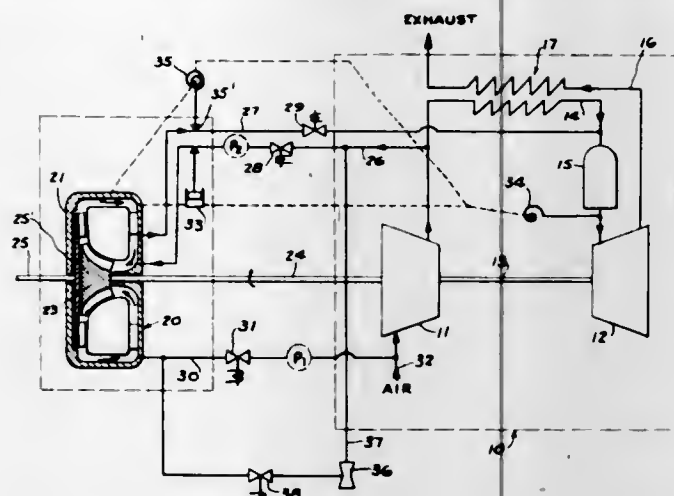
Charles C. Hill, Ann Arbor, Mich.
(1490 Coolidge Road, Troy, Mich. 48084)

Filed June 23, 1965, Ser. No. 466,343

17 Claims. (Cl. 60—39.24)

1. The combination comprising a compressor, a gas turbine having a combustor, a rotor and a stator, and a torque converter,

said torque converter having a casing filled with a compressible fluid, a stator, an input rotor, and an output rotor which is driven by fluid action upon rotation of said input rotor, said input rotor of said torque converter being connected to and driven by said rotor of said turbine,



a first fluid line between the outlet of said compressor and the interior of said casing of said torque converter, a second fluid line between the inlet to said gas turbine and said casing.

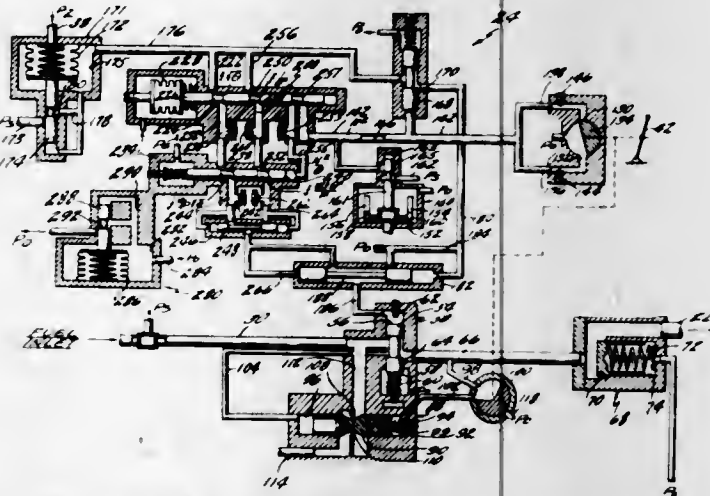
3,314,233

FUEL CONTROL

Louis A. Urban, Granby, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Jan. 15, 1964, Ser. No. 337,906

8 Claims. (Cl. 60—39.28)



1. The method of controlling a turbine type of power plant of the type having a burner and a compressor driven by a turbine comprising the steps of pressurizing fuel, metering the pressurized fuel to the burner as a single line function of

$$\frac{W_f \theta}{P}$$

relative to

$$\frac{N}{\sqrt{\theta}}$$

so as to limit turbine temperature in a predetermined manner where

W_f =weight of fuel flow per unit of time

P =pressure at the inlet of the compressor

θ =compressor inlet temperature

X =a thermodynamic value of the power plant working medium

N =rotational speed of the compressor.

3,314,234

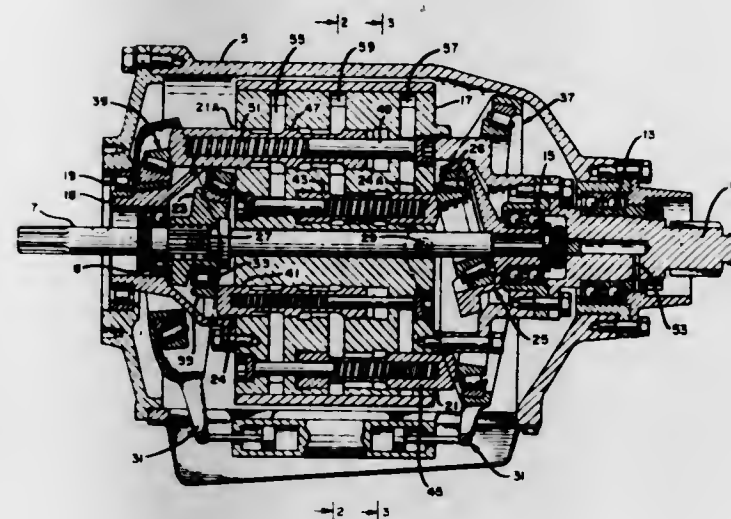
HYDROMECHANICAL TRANSMISSION

Elias Orshansky, Jr., 1811 Trousdale Drive,

Burlingame, Calif. 94010

Filed Oct. 7, 1965, Ser. No. 493,665

3 Claims. (Cl. 60—53)



1. A hydromechanical transmission comprising in combination:

- a fixed housing;
- an input shaft mounted in one end of said housing for rotation relative to said housing;
- an output shaft mounted in said housing for rotation relative to the housing and to the input shaft;
- a rotatable cylinder block mounted on the output shaft;
- four tiers of cylinders in said cylinder block, namely, first, second, third and fourth tiers counting outwardly from the input shaft;
- first and second fixed wobble plates mounted on said input shaft, one of said wobble plates having a cam surface lying adjacent the first tier of cylinders and the other of said wobble plates having a cam surface lying adjacent said second tier of cylinders;
- third and fourth variable wobble plates affixed to said housing and having cam surfaces adjacent the third and fourth tier of cylinders respectively;
- pump pistons in said first and second tier of cylinders;
- power pistons in said third and fourth tier of cylinders;
- means for varying the angle of said third and fourth wobble plates; and
- valving means whereby said pump pistons supply oil to said power pistons.

3,314,235

BRAKE PRESSURE CONTROL VALVE

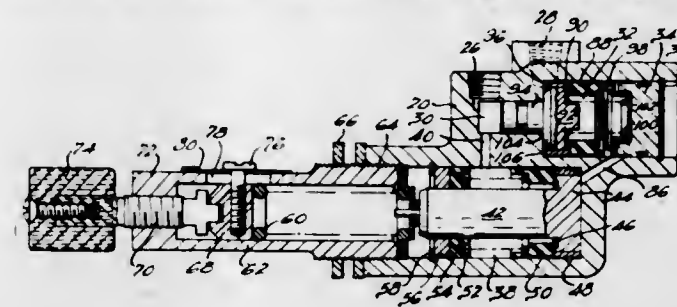
William Stelzer, Bloomfield Hills, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware

Filed July 26, 1965, Ser. No. 474,729

7 Claims. (Cl. 60—54.5)

1. In a vehicular hydraulic brake system having a master cylinder and a plurality of brake cylinders adapted to be pressurized by said master cylinder, that improvement which comprises a first pressure proportioning valve interposed between said master cylinder and at least one of said brake cylinders, said first valve being operable to reduce the pressure of fluid discharged therefrom with respect to master cylinder pressure after a predetermined initial brake application, means for varying the degree of said initial brake application, a second fluid pressure proportioning valve arranged between said first valve

and said at least one brake cylinder and a piston for operating said second valve, said piston being operable to compare the pressure of fluid discharged from said first



valve to master cylinder pressure and to actuate said second valve after the pressure of fluid discharged from said first valve is reduced with respect to master cylinder pressure.

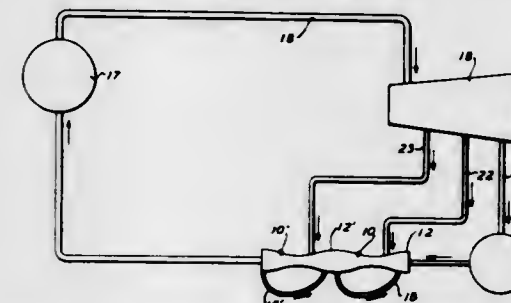
3,314,236

PUMP

Paul J. Zanoni, Montclair, N.J.
(664 Corona St., Denver, Colo. 80218)

Filed Sept. 4, 1964, Ser. No. 394,439

8 Claims. (Cl. 60—67)



1. A pump for delivering preheated feedliquid to a boiler comprising a conduit providing for the flow of a main stream of liquid at a relatively low velocity, a restriction in said conduit through which said main stream flows to effect acceleration, and reduction in pressure, of said stream, providing a liquid jet, a nozzle through which a vapor issues and expands beyond the jet, a mixing chamber where further expansion and acceleration takes place, an expanding diffuser portion of said conduit, through which said stream flows after condensing the vapor directed thereto, thereby effecting an increase in stream pressure, a by-pass conduit at the end of said diffuser portion, through which a portion of said stream flows back to form means recirculating a portion of said liquid to mix with said liquid jet before the vapor engages said stream, and means conveying the remainder of said stream of liquid toward said boiler.

3,314,237

STARTUP SYSTEM FOR A ONCE-THROUGH STEAM GENERATOR

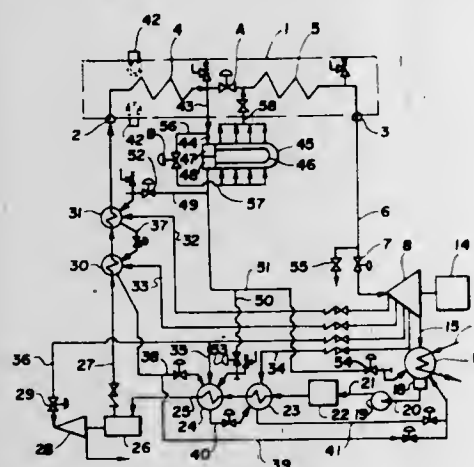
Charles Strohmeier, Jr., Wyomissing, Pa., assignor to Electrodyne Research Corporation, Reading, Pa.

Filed May 25, 1966, Ser. No. 552,896

4 Claims. (Cl. 60—105)

1. A high pressure steam-electric generating plant having a steam generator comprising a feedwater inlet and superheater steam outlet and heat absorption circuits connected by first fluid conduit means there between, a startup bypass fluid conduit connected to said first conduit means between portions of said heat absorption circuits adapted to convey fluid away from said first conduit means, flow control means for isolating and throttling fluid between a first portion of said heat absorption circuits which are directly connected to said feedwater inlet including said bypass conduit and a remaining portion of said heat absorption circuits which are directly connected to said superheater steam outlet, a heat exchanger having a first

fluid circuit connected serially in said startup by-pass conduit, a second fluid circuit in said heat exchanger, said flow control means including means for throttling and conducting coolant fluid from said first portion of said heat absorption circuits to said second fluid circuit and from thence to said remaining portion of said heat absorption circuits, said heat exchanger being of the closed circuit multiple tube and shell type, said multiple tubes being connected to inlet and outlet supply and collection manifolds and comprising said heat exchanger first fluid circuit,



said tube encased in said shell, space between said tubes and shell comprising said second circuit, said heat exchanger having means to transfer heat in the fluid in said heat exchanger first fluid circuit to the fluid in said second fluid circuit at least at times when fluid flowing in said bypass conduit is at pressure in excess of 1800 pounds per square inch and its enthalpy is in excess of 700 British thermal units per pound of flow and the fluid flowing through said second fluid circuit is throttled to a pressure lower than the fluid pressure which exists in said multiple tube portion of said bypass conduit.

3,314,238

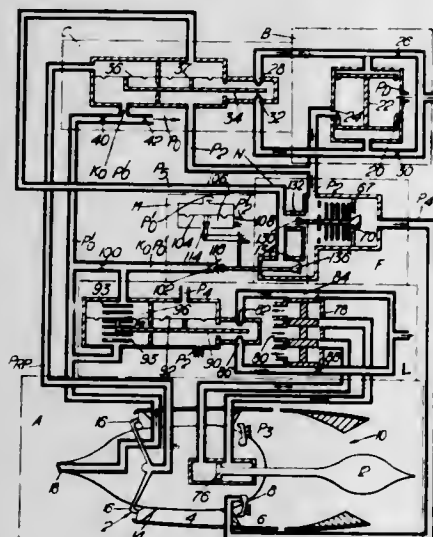
JET ENGINE SHOCK WAVE CONTROL INCLUDING FUEL SUPPLY AND EXHAUST NOZZLE REGULATION

Ronald Rimmer, Churchdown, Gloucester, and Nigel Millgrove Miller, Bath, Somerset, England, assignors to Bristol Siddeley Engines Limited, Bristol, England, a British company

Filed May 26, 1965, Ser. No. 459,052

Claims priority, application Great Britain, May 28, 1964, 22,194/64, 22,195/64

7 Claims. (Cl. 60—235)



1. An aircraft power plant including: a fluid-fuelled air-breathing jet engine suitable for operation with supersonic airflow speeds at intake; a main valve arranged to

control fuel flow to the engine; means arranged to regulate the exhaust nozzle area of the engine; a reversed Pitot tube arranged for sensing displacement of a normal shock wave in the air intake of the engine; and a control system including means which interconnects the main valve and the Pitot tube so that they are in a closed servo loop which regulates fuel flow in a manner tending to maintain intake operation of the engine at critical pressure recovery; the control system also including means, associated with the servo loop, by which the fuel system gain is compensated for variations in engine gain.

3,314,239

METHOD AND APPARATUS FOR FORMING UNDERWATER STRUCTURES

Guy A. Baron, Colombes, Jean Berne, Vernouillet, Seine-et-Oise, and André Y. Giraud, Paris, France, assignors to Institut Français du Pétrole, des Carburants & Lubrifiants, Neuilly-Malmaison, Seine-et-Oise, France

Filed Feb. 17, 1964, Ser. No. 345,422

Claims priority, application France, Feb. 21, 1963, 925,629, Patent 1,417,990; Sept. 27, 1963, 948,994, Patent 86,308

7 Claims. (Cl. 61—46)



5. A method for constructing structures of predetermined shape on the bottom of a body of water from an installation positioned at the surface thereof, comprising the steps of lowering to the bottom from said surface installation a container comprising a substantially rigid form, a container bottom secured to said rigid form, a movable cover provided with a safety valve and slidably mounted in said rigid form and displaceable therein from a collapsed position to an expanded position corresponding to the predetermined shape of the structure, said container being connected to said surface installation through flexible pipe means and an opening through said cover to fill progressively said container from said surface installation through said flexible pipe means with a mixture of liquid and solids capable of solidifying, thereby causing expansion of said movable cover, allowing said mixture to solidify, and then detaching the pipe means from said container.

3,314,240

METHOD AND APPARATUS FOR USE IN FORMING FOUNDATIONS

John J. Bardgett, New Orleans, La., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware

Filed Dec. 21, 1964, Ser. No. 420,070

5 Claims. (Cl. 61—53.5)

5. Apparatus for use in driving piles comprising: a driving head having a chamber and fluid inlets to said chamber;

a tubular member secured to said driving head and adapted to extend from the lower end of said chamber, through a section of piling to be driven and into a section of driven piling; an inflatable packer element arranged on said tubular member and adapted to be positioned in said driven section of piling;



a conduit extending from said driving head through said tubular member to said inflatable element adapted to carry packer inflate fluid from an external supply source to the interior of said inflatable element; and means on said tubular member and means on said driven pile section cooperating to connect said tubular member to said driven pile section to hold said tubular member in position.

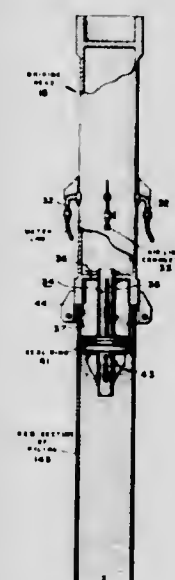
3,314,241

METHOD AND APPARATUS FOR USE IN DRIVING PILES

George E. Mayhall, New Orleans, La., assignor, by mesne assignments, to Esso Production and Research Company, Houston, Tex., a corporation of Delaware

Filed Dec. 21, 1964, Ser. No. 420,071

10 Claims. (Cl. 61—53.5)



1. A method for driving tubular, hollow piles comprising the steps of: connecting a pile driving head to the top of a new section of tubular, hollow piling to be driven;

welding the lower end of said new section of piling to the top of a driven section of tubular, hollow piling; said pile driving head containing a chamber and having connected to its lower end a conduit extending into said new section of piling and on which is arranged sealing means adapted to seal off the annulus between said conduit and the interior wall of said new pile section upon application of fluid pressure to the underside of said sealing means; supplying fluid to the underside of said sealing means through said chamber and said conduit to cause said sealing means to expand and seal off the annulus between said conduit and the interior wall of said new pile section and thereby form a closed, hydrostatic system; and then driving said piling into said formation with said driving head while supplying fluid to the interior of said piling through said chamber and said conduit.

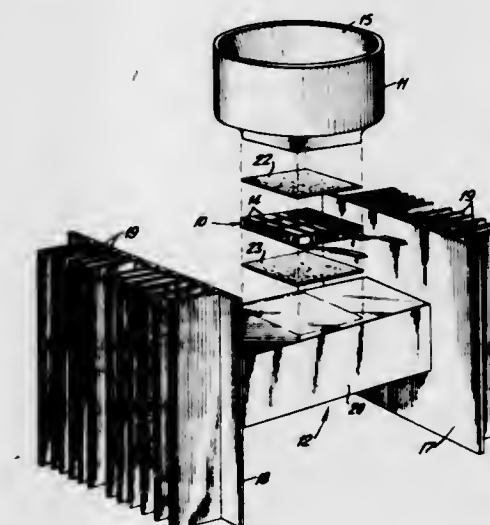
3,314,242

PORTABLE THERMOELECTRIC COOLING DEVICE AND METHOD OF MAKING THE SAME

Peter Lefferts, Hopewell, N.J., assignor to TIA Electric Company, Princeton, N.J.

Filed Aug. 30, 1965, Ser. No. 483,595

8 Claims. (Cl. 62—3)



1. A method of assembling a thermoelectric device including a thermoelectric module disposed between a heat sink and a cold sink, comprising the steps of disposing the thermoelectric module between said sinks; placing thin sheets of porous material between said thermoelectric module and each of said sinks and impregnating said sheets with an adhesive; urging said sinks toward one another and maintaining the same under pressure while said adhesive sets to thereby minimize separation between the thermoelectric module and the respective sinks.

ERRATUM

For Class 62—45 sec:
Patent No. 3,314,773

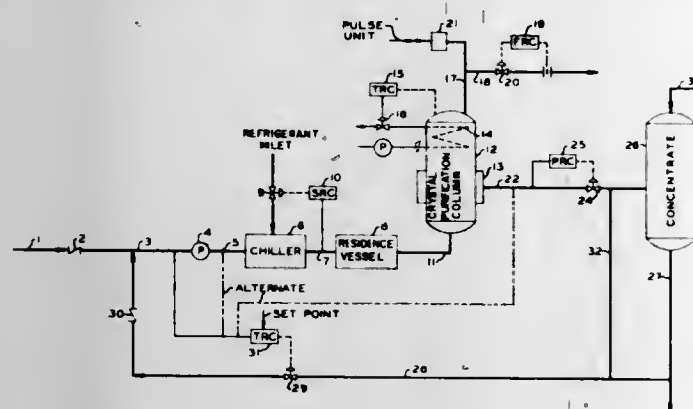
3,314,243

FRACTIONAL CRYSTALLIZATION WITH MOTHER LIQUOR RECYCLE
Dwight L. McKay, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 31, 1964, Ser. No. 422,855

12 Claims. (Cl. 62—58)

1. A process of freeze fractional crystallization for the separation of a component from a multi-component stream comprising continuously crystallizing a portion of said

component to form crystals and a mother liquor measuring a temperature of representative of the temperature

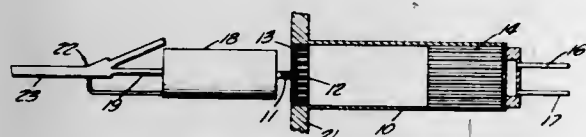


of said crystallization, and recycling a portion of said mother liquor in response to said temperature measurement, whereby a constant feed composition is obtained.

3,314,244 PULSE TUBE REFRIGERATION WITH A FLUID SWITCHING MEANS

Frederick H. Green, Palos Verdes Estates, Calif., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California

Filed Apr. 26, 1966, Ser. No. 545,444
11 Claims. (Cl. 62-88)



1. In combination, a pulse tube refrigerator comprising:
 - a tubular enclosure disposed to receive gas under pressure at one end thereof,
 - a flow smoothing heat exchanger disposed at said one end of said enclosure for smoothing the flow of gas entering said enclosure,
 - means for removing heat at the other end of said enclosure, and
 - means for cyclically increasing and decreasing the pressure of the gas within said enclosure;
 - said means for cyclically increasing and decreasing the pressure of the gas including
 - conduit means for supplying gas under pressure;
 - a fluid switching means having an inlet connected to said conduit means, and two outlets communicating with said inlet, and one of said outlets communicating with said one end of said enclosure; and
 - fluid control means disposed on said fluid switching means for controlling the exit of the gas from the switching means into one or the other outlet.

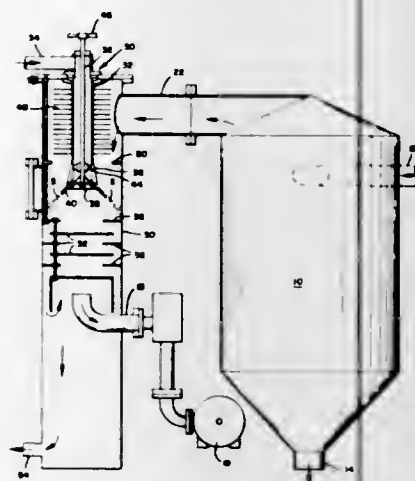
3,314,245 HEAT EXCHANGER

Kenneth J. Brady, 82 Windsor St., Milpitas, Calif. 95035; Frank J. Dors, 20450 Montalvo Lane, Saratoga, Calif. 95070; and Anthony S. Palermo, 14866 Reynaud Drive, San Jose, Calif. 95127
Continuation of abandoned application Ser. No. 434,549, Feb. 23, 1965. This application Apr. 13, 1966, Ser. No. 542,423

15 Claims. (Cl. 62-100)

12. The process of preparing a salad dressing which comprises cooling the dressing at an elevated temperature,

subjecting the dressing while at the elevated temperature to a vacuum, separating the salad dressing and the vapors removed therefrom by the vacuum,

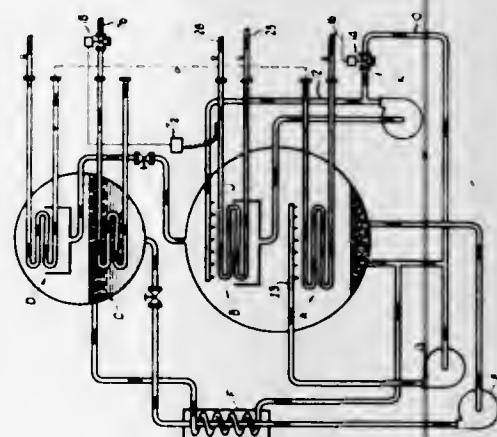


conveying the vapors through an elongated path, and subjecting the separated vapors to the cooling and condensing action of a coolant along a substantial portion of said path.

3,314,246 CAPACITY CONTROL FOR REFRIGERATION SYSTEMS

Neil E. Hopkins and Robert F. Muhleman, York, Pa., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed Oct. 22, 1965, Ser. No. 500,797
4 Claims. (Cl. 62-101)

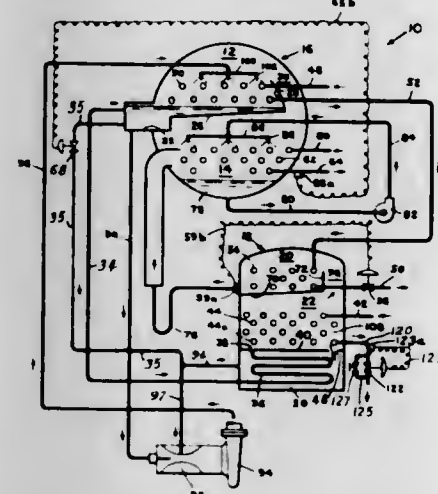


1. In a method for operating an absorption refrigeration machine, said machine comprising an evaporator, an absorber, a generator, and a condenser connected to provide a closed circuit refrigeration system, means for supplying a heating medium to said generator, a solution circuit including spray means in said absorber and means for circulating absorbent solution to said spray means, and a refrigerant circuit including means for circulating refrigerant to and from said evaporator, the steps including: maintaining a supply of heating medium to said generator and a supply of absorbent solution to said absorber during normal operation throughout the entire capacity range of said system; continuously monitoring the operation of said machine to determine the presence of an abnormal condition which is indicative of imminent solution crystallization or evaporator freeze-up; withdrawing refrigerant from said refrigerant circuit and supplying it to said solution circuit directly upstream from the absorber spray means such that the refrigerant mixes with the absorbent solution just prior to being directed into said spray means.

3,314,247 INTEGRAL PREHEATER AND SUB-COOLING FOR GENERATOR OF ABSORPTION REFRIGERATION SYSTEMS OR EQUIVALENT COMPONENT OF ANOTHER SYSTEM

David Aronson, Upper Montclair, N.J., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware

Filed May 31, 1966, Ser. No. 560,038
12 Claims. (Cl. 62-101)



3. A method of condensing and sub-cooling a vaporous heating fluid used to heat a process liquid in a container comprising the steps of:

passing the vaporous heating fluid through a plurality of tubes in indirect heat exchange relation with the process liquid to heat the process liquid and condense the heating fluid;

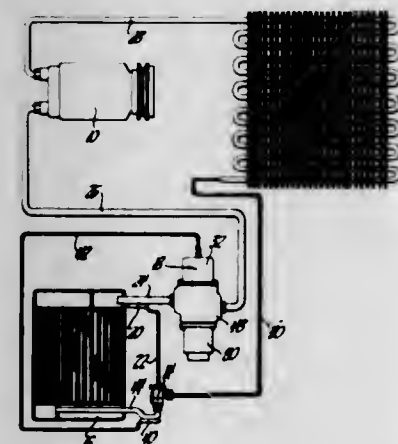
sub-cooling the condensate of the heating fluid by passing the condensate through a second set of tubes in indirect heat exchange relation with the process liquid; and

controlling the flow of condensate in response to condensate discharge temperature so as to maintain the interface formed between the vapor and the condensate upstream of the outlet of the second set of tubes at all times.

3,314,248 AIR CONDITIONING EVAPORATOR CONTROL FOR AUTOMOBILES

Marshall W. Baker, Lockport, and Paul K. Beatenbough, Medina, N.Y., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 13, 1965, Ser. No. 479,408
6 Claims. (Cl. 62-217)



1. In an automobile air conditioning system having a compressor, condenser, expansion valve, evaporator and suction control valve connected to form a closed refrigerant circuit, means for controlling said expansion valve

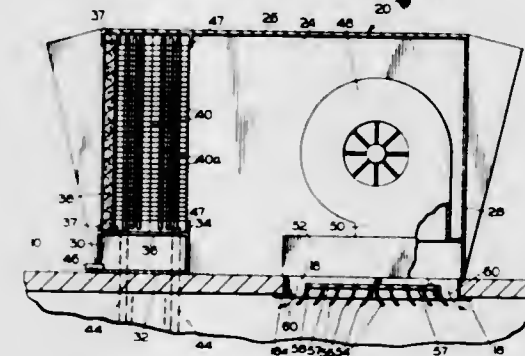
in accordance with the temperature of refrigerant discharged from the evaporator, and means for controlling the said suction control valve in accordance with the temperature of refrigerant at the inlet to the said evaporator.

3,314,249 AIR CONDITIONING METHOD AND APPARATUS FOR TRAILERS

Wallace N. Lundbom, Portland, Oreg., assignor to Ramco, Inc., Portland, Oreg., a corporation of Oregon

Filed May 10, 1965, Ser. No. 454,452

2 Claims. (Cl. 62-244)



1. In combination, a house trailer having a floor, a roof, and defining end and side walls forming with said floor and roof the living space of the trailer, said roof having an opening intermediate the ends of the trailer, air conditioning apparatus for said trailer including an air handling unit mounted on said roof exteriorly of the trailer, said air handling unit having an air inlet end communicating with the atmosphere only and an air outlet end in registry with said opening in the roof, a blower in said air handling unit for forcefully moving atmospheric air inwardly through said inlet end and outwardly through said air outlet end, whereby the air admitted forcefully to said trailer by the said apparatus comprises totally fresh air, cooling coils in said air handling unit in the path of movement of said air, and baffle means mounted in said opening, said baffle means being arranged to direct air substantially horizontally in adjacent relation to the under surface of said roof and in opposite directions toward the far ends of said trailer whereby to cool said trailer by moving air as well as to form an insulating layer of cool air adjacent the under surface of said roof to minimize radiation of heat through the latter.

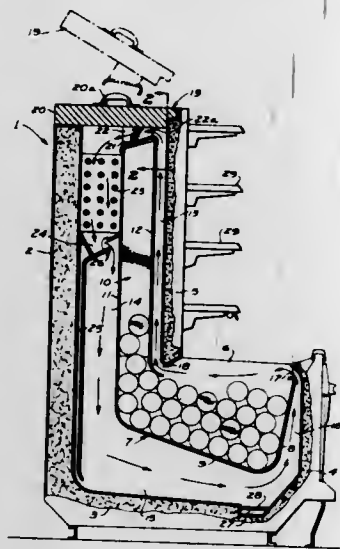
3,314,250 GRAVITY FLOW REFRIGERATED STORAGE AND DISPLAY CASE

Karl A. Weber, Los Angeles, Calif., assignor to Walter Kidde & Company, Inc., Belleville, N.J., a corporation of New York

Filed Sept. 1, 1965, Ser. No. 484,204
6 Claims. (Cl. 62-256)

1. A gravity flow refrigerated storage and display case, comprising:
 - (a) walls defining a container substantially L-shaped in side aspect and including an upwardly open display compartment, and an upwardly extending storage compartment communicating at its lower end with the rear side of said display compartment;
 - (b) walls confronting said container walls to form an air circulating passage surrounding said container except the open upper side of said display compartment, said flow passage having an outlet slot at the forward upper margin of the open upper side of the display compartment and an inlet slot at the juncture of said storage and display compartments substantially in horizontal alignment with said outlet slot to direct the flow of air across the open upper side of display compartment;

(c) a refrigerating unit located in said passage at the rear side of said storage compartment adjacent the

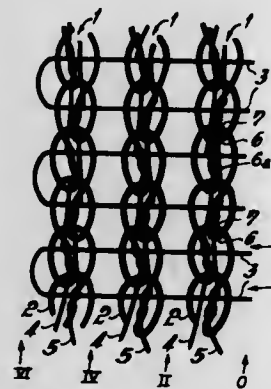


upper end thereof for chilling air and causing gravity flow of air through said passage and across the open upper side of said display compartment.

3,314,251

ELASTIC FABRIC

August Bünger, Hasslingshausen Erlenrode, Germany
Filed Dec. 4, 1964, Ser. No. 415,891
Claims priority, application Germany, Dec. 9, 1963,
B 74,596
10 Claims. (Cl. 66—193)



1. A fabric comprising a thread forming a wale of successive interconnected stitches; and two elastic threads extend through and within said interconnected stitches symmetrically to a central plane passing through the axis of said wale, said elastic threads being connected to at least some of said stitches and exerting due to their symmetrical arrangement on said wale forces counterbalancing each other so that the fabric is flat.

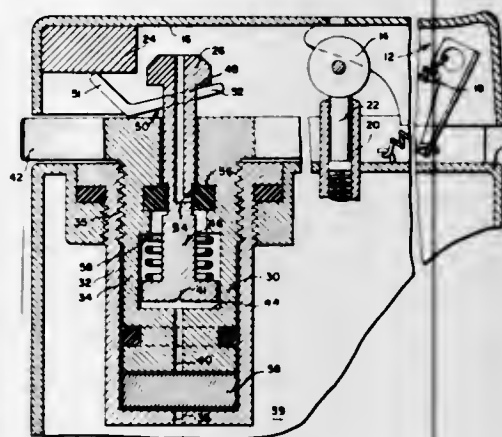
3,314,252

CIGARETTE LIGHTER

Yoshio Kanamaru, 5 Sanbancho, Chiyoda-ku,
Tokyo, Japan
Filed June 7, 1966, Ser. No. 555,803
3 Claims. (Cl. 67—7.1)

1. A gas fueled lighter, comprising:
 - (A) a casing having a reservoir constructed to hold fuel under pressure;
 - (B) a burner valve assembly attached to said casing, said assembly being in communication with said reservoir;
 - (C) a fingerpiece, snuffer cap and spark producing mechanism mounted on said casing, said cap including a block portion;

(D) an off-on valve mechanism located within said burner valve assembly, said mechanism including a reciprocating valve stem containing a passageway terminating at the top thereof in a first port and at one side thereof in a second port, resilient sealing means mounted within said valve assembly in covering relationship with respect to said second side port when said off-on valve mechanism is in upper closed position and in downwardly twisted uncovering relationship with respect to said second side port when said off-on valve mechanism is in lower open position;

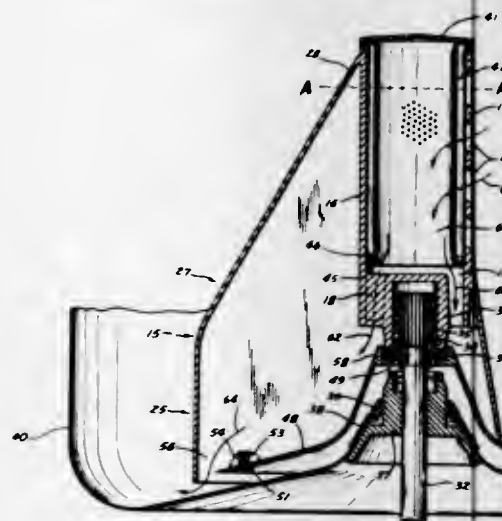


- (E) an actuating assembly for moving said off-on valve mechanism to outer closed position, said actuating assembly including an angular element having a first end normally engaged and pushed downwardly by said block portion of said snuffer cap when said fingerpiece is in raised idle position and a second end engaging said valve stem of said off-on valve such that when said first end is pushed downwardly said second end and engaged valve stem of said off-on valve mechanism are moved upwardly to closed position; and
- (F) means for biasing said off-on valve mechanism in lower open position when said first end of said element is not engaged by said block portion of said snuffer cap.

3,314,253

AGITATOR FOR WASHING MACHINE

Thomas R. Smith, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware
Filed July 19, 1965, Ser. No. 472,860
7 Claims. (Cl. 68—18)



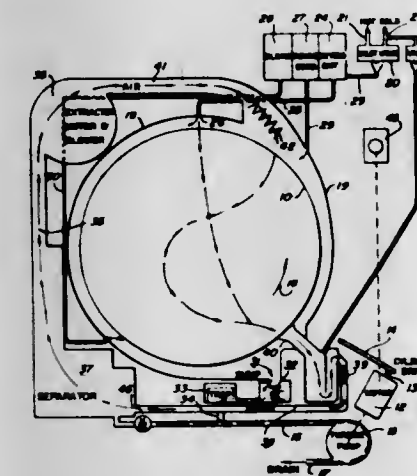
2. An agitator assembly adapted to be submerged in a body of washing fluid and oscillatable therein to effect a cleansing of fabrics within said fluid, the combination

comprising: a base member having flared portions disposed about a central axis; hollow agitating vanes extending upwardly from said base member between said flared portions; a centrally located hollow centerpost interposed between said hollow vanes, said hollow vanes including an upper portion tapering toward said centerpost; a plurality of fluid intake openings in said centerpost providing a means for fluid flow into said centerpost from said body of fluid; a hub portion positioned within said centerpost; a plurality of webs interconnecting said centerpost and said hub portion and defining a series of internal apertures between said centerpost and said hub portion; a shroud member connected to the underside of said base member and extending inwardly to said hub portion, said shroud member including first portions mating with the underside of said flared portions for preventing fluid flow therebetween and further including second portions cooperable with said hollow vanes for defining a plurality of conduits through said hollow vanes communicating with said internal apertures and terminating in radially outward disposed egress openings to said body of fluid; and fluid treatment means positioned within said hollow centerpost in the path of fluid flow through said agitator, said hub portion being adapted to receive an agitator shaft for oscillating said agitator and thereby effecting a unidirectional fluid flow through said agitator to effect a treatment of the fluid passing therethrough.

3,314,254

COMBINATION WASHER-DRYER WITH A SUDS TRAP

Vincent C. Mandarino, Jr., St. Joseph, and John A. Lauck, Jr., Stevensville, Mich., assignors to Whirlpool Corporation, a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 501,055
8 Claims. (Cl. 68—20)

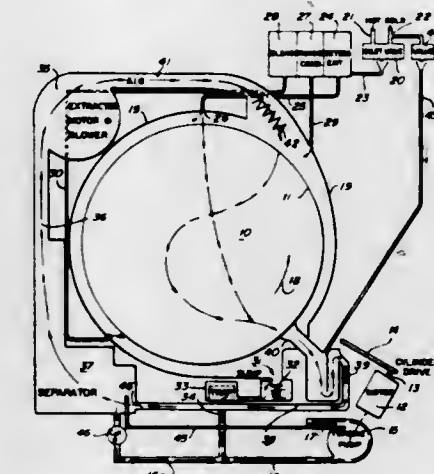


7. Laundry apparatus, comprising: a container for contacting fabric with a washing solution capable of forming suds during a washing portion of a laundry cycle and for contacting wet fabric with heated air during a moisture extracting portion of said cycle; a suction conduit for conveying fluids from said container; selectively operable suction means for drawing moisture laden air through said suction conduit from said container during said moisture extracting portion of said cycle; trap means in said suction conduit for retaining sufficient water to block said suction conduit; and selectively operable means for supplying water to said trap means at the beginning of said washing portion for blocking flow of suds through said trap means during said washing portion of said laundry cycle, and for supplying water to said trap means during said moisture extracting portion of said cycle whereby moisture is condensed from air flowing in said conduit.

3,314,255

WASHER-DRYER HAVING A DRAIN PUMP WITH VENT MEANS

Gerhard W. Neumann and Vincent C. Mandarino, Jr., both of St. Joseph, Mich., assignors to Whirlpool Corporation, a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 501,714
4 Claims. (Cl. 68—20)

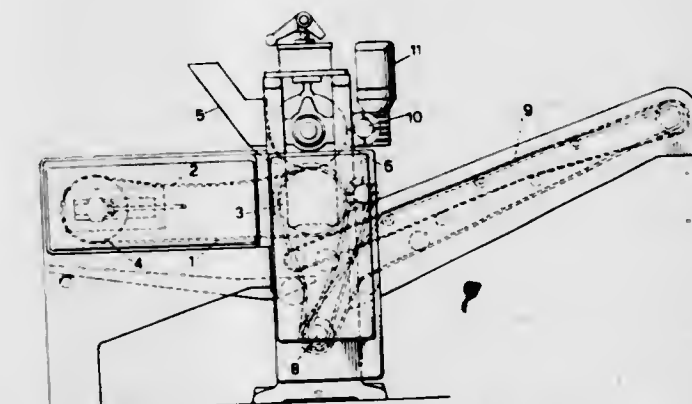


1. In a washer-dryer: a rotatable container for receiving wet fabrics; suction conduit means communicating with the interior of said container; fluid separator means connected to said suction conduit means for separating liquid from air passing through said suction conduit means; suction means in said suction conduit means for causing air and liquid to flow through said separator means from fabrics within said container; pump means including an outlet for discharging liquid from said fluid separator means; and vent means interconnecting the interior of said pump means and said fluid separator means for venting fluid from said pump interior to said fluid separator to preclude air locking of said pump means.

3,314,256

DYEING AND SIMILAR LIQUID TREATMENT OF TEXTILE MATERIALS

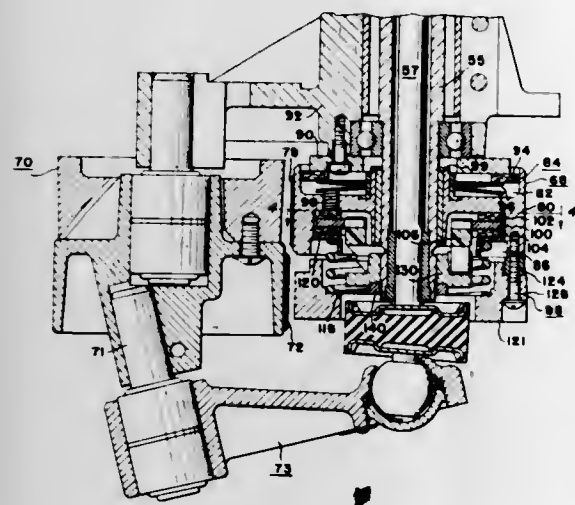
John Walsh, Rochdale, England, and William M. A. Smith, Peterhead, Scotland, assignors to F. Smith & Co. (Whitworth) Limited, Rochdale, England
Filed June 29, 1964, Ser. No. 378,547
Claims priority, application Great Britain, July 1, 1963,
26,011/63
13 Claims. (Cl. 68—22)



1. A padding machine comprising, two padding rollers arranged in parallel adjacent disposition and defining a roller nip therebetween, an endless belt passing through said nip, deflector means arranged to cause said belt to assume an upwards concave form over a part of its length thereat to hold a pool of treatment liquor, material feed means adapted to feed material to be processed to the belt at a position between the concavity and the said nip, and liquor feed means adapted to apply a treatment liquor to the material in advance of the roller nip.

3,314,257 CLOTHES WASHING MACHINE WITH A SLIPPING CLUTCH

John R. Fosler and Verlos G. Sharpe, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 4, 1965, Ser. No. 430,264
13 Claims. (Cl. 68-23)



5. In combination, a washing machine having a rotatable tub, means for rotating said tub, said means comprising a support means, motor means, spin shaft means carried by said support means, a spin drum supported on said spin shaft means, drive means drivably interconnecting said motor means and said spin drum, and slip clutch means for said spin drum between said drive means and said spin shaft means, said slip clutch means including means slippingly responsive to a torque below the maximum torque of said motor means for slipping to prevent out of balance loads in said rotatable tub from being rotated to spin speeds above the critical speed, said support means including yieldable means having a sufficiently soft spring rate in cooperation with the slip in said slip clutch means to reduce the frequency of response thereof and thereby effect a critical speed of rotation for said rotatable tub when rotating with an unbalanced load which will be below that speed at which said washing machine will be moved in response to the rotation of said unbalanced load.

3,314,258
WIPE AND STRETCH FORMING MACHINE WITH
RISE AND FALL OF STRETCH HEAD CONTROLLED BY RISE AND FALL OF WIPE SHOE
Stanley M. Loney, Parma, Ohio, assignor to The Cyril Bath Company, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 7, 1964, Ser. No. 416,306
5 Claims. (Cl. 72-21)



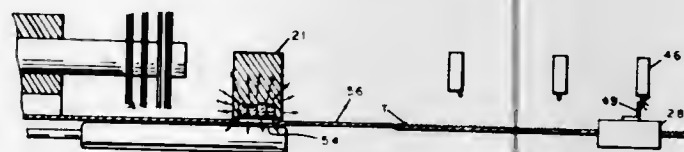
1. In a metal stretch and wipe forming machine, a table adapted to support a side face die, a power operated stretch head operable to grip one end of a length of stock and apply tension thereto, means supporting the head and table for rotation relative to each other about a predetermined upright axis, for movement relatively toward and away from each

other in planes normal to said axis, and for movement toward and away from the plane of the table, for wrapping the stock about the die face, power means for moving the stretch head toward and away from the plane of the table, a power operated wipe shoe operable to press the metal yieldably against the side face of the die while the metal is being wrapped on the side face, means supporting the shoe and table for rotation relative to each other about said axis, for movement relatively toward and away from each other in said planes, and for movement toward and away from the plane of the table, means for effecting the relative rotation of the head and table relative to the rotation of the shoe and table, control means for said power means and responsive to movements of the wipe shoe toward and away from the plane of the table for controlling the operation of said power means so as to cause movements of the head toward and away from the plane of the table in a predetermined relation to movements of the wipe shoe toward and away from the plane of the table, respectively.

3,314,259
METAL FORMING
Kenneth W. Knapp, Pennington, N.J., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed July 31, 1964, Ser. No. 386,736
10 Claims. (Cl. 72-46)

1. Method of cold forming a steel workpiece, comprising providing on said workpiece a coating of barium ferrate measuring 0.01 gram to 10 grams per square foot, and cold forming said workpiece carrying said barium ferrate coating.

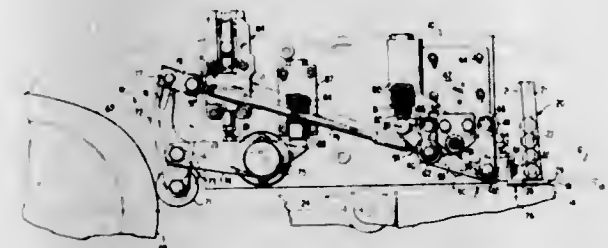
3,314,260
METHOD AND APPARATUS FOR PRODUCING
FINNED METAL TUBING
Edward P. Habdas, Dearborn Heights, and John W. Carter, Grosse Ile, Mich., assignors to Calumet & Hecla, Inc., Allen Park, Mich., a corporation of Michigan
Filed July 1, 1964, Ser. No. 379,642
20 Claims. (Cl. 72-56)



17. The method of initiating a finning operation on thin-walled metal tubing without producing split fins from work hardening which comprises positioning a length of tubing over a mandrel with substantial clearance therebetween, applying a pulse of electromagnetic constrictive force to a short section of tubing overlying said mandrel to reduce the inside diameter of said short section and move it into engagement with said mandrel without undesirable work hardening of the metal, thereafter supporting the reduced section of the tubing on said mandrel and radially advancing a plurality of inclined finning rolls into relatively light engagement with the outer surface of the tubing at the reduced section, driving the rolls and tubing in rotation and advancing the tubing longitudinally of the mandrel to form fins on an unreduced portion of the tubing adjacent the reduced section thereof.

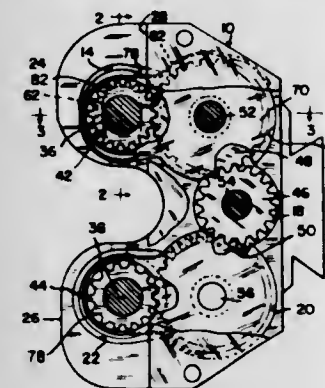
3,314,261 STARTER MECHANISM FOR THREAD ROLLING MACHINE

Edward G. Groboski, Litchfield, and Robert D. Morton, West Hartford, Conn., assignors to Hartford Special Machinery Company, Simsbury, Conn., a corporation of Connecticut
Filed Nov. 18, 1964, Ser. No. 412,022
8 Claims. (Cl. 72-90)



1. A starter mechanism for a thread rolling machine of the reciprocating type including, a first fixedly mounted thread rolling die, a second thread rolling die movably mounted and reciprocatingly driven parallel to the first die, means for feeding work blanks to a position adjacent a starting end of the first die, and a starter mechanism for gating the work feeding means and wedging a work blank between the starting ends of the first and second dies, the starter mechanism comprising: a starter blade, a swinging linkage including at least two pivotable links supporting the starter blade for substantially straight line movement, and means for driving the linkage.

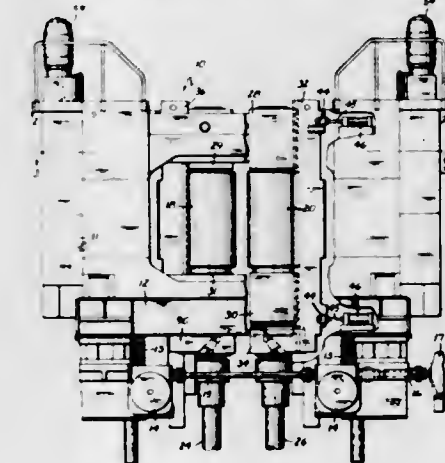
3,314,262
THREAD ROLL FIXTURE
Bruce D. Bedker, Mount Clemens, Mich., assignor to Leo W. Bedker, East Detroit, Mich.
Filed Feb. 3, 1964, Ser. No. 342,144
7 Claims. (Cl. 72-104)



1. Thread rolling apparatus comprising a body having two arms, an assembly carried by each of said arms comprising a shaft, a thread roll and a gear coupled to said roll, the shafts on said arms being substantially parallel, means for insuring timed rotation of said rolls comprising at least one intermediate gear in mesh with one of said roll-coupled gears, a first pocket in said body open at one end and receiving the shaft and gear of one of said assemblies, said pocket being laterally enlarged to provide for movement of the roll-coupled gear therein toward and away from said other assembly, a second open-ended pocket in said frame laterally intersecting said first pocket, means in said second pocket mounting the intermediate gear in mesh with the roll-coupled gear in said first pocket for rotation about a fixed axis, said one assembly having a cylindrical surface located substantially at the open end thereof, a movably mounted chip guard comprising a flat plate overlying the gear in said second pocket and having a lateral extension toward said first pocket provided with an opening interfitted with said cylindrical surface and movable therewith upon movement of the said assembly

in said first pocket and forming a closure therewith preventing entry of chips into contact with the roll-coupled gear in said first pocket, said guard having a flange extending to the bottom of said first pocket and extending around said first pocket between the lateral intersection between said first and second pockets at the side of said gear remote from said second pocket and extending into said second pocket.

3,314,263
THIRD CHOCK CLAMP
William J. Hill, Holden, Mass., assignor to Morgan Construction Company, Worcester, Mass., a corporation of Massachusetts
Filed Apr. 3, 1964, Ser. No. 357,140
11 Claims. (Cl. 72-237)

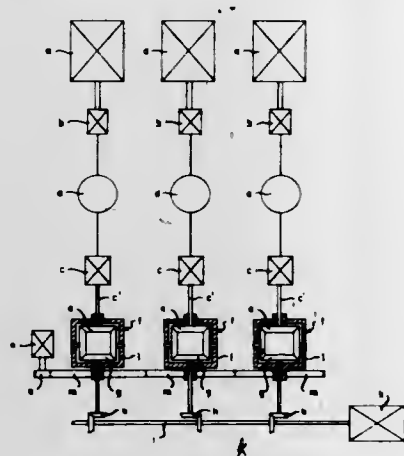


1. In a roll stand for a rolling mill having rolls journaled for rotation between bearing chocks, said rolls connected to drive spindles by universal spindle couplings rotatably mounted within independent third chocks, means for maintaining constant axial alignment between said bearing chocks and said third chocks comprising the combination of: opposed elongated guide rails extending through said roll stand to terminate at one end in fixed stop means, said rails further provided with inwardly disposed rail flanges; said third chocks being separable from said guide rails and slidably mounted thereon to positions abutting said fixed stop means; said bearing chocks being slidably mounted on said guide rails and held in mutual axial alignment against said rail flanges by roll separation adjustment means; and third chock securing means associated with said fixed stop means for positively locking said third chocks against said rail flanges in axial alignment with said bearing chocks.

3,314,264
APPARATUS FOR CONTROLLING THE SPEED OF
THE DRIVE MOTORS FOR DRIVING THE ROLL
STANDS OF A MULTIPLE-STAND ROLLING
MILL
Max Vater, Berlin-Wannsee, and Artur Hinkel, Osterath-Bovert, Germany, assignors to Kommanditgesellschaft Friedrich Kocks, Dusseldorf, Germany, a corporation of Germany
Filed Mar. 23, 1964, Ser. No. 353,866
6 Claims. (Cl. 72-249)

1. Apparatus for controlling the speed of drive motors for driving the roll stands of a multiple-stand rolling mill comprising a drive motor for each stand, a primary signal feeder coupled to each drive motor deriving its input signal therefrom, such input signal being proportional to the speed of the drive motor, a secondary drive element for each stand, a secondary signal feeder coupled to each secondary drive element deriving its input signal therefrom, such input signal being proportional to the speed of the secondary drive element, a difference trans-

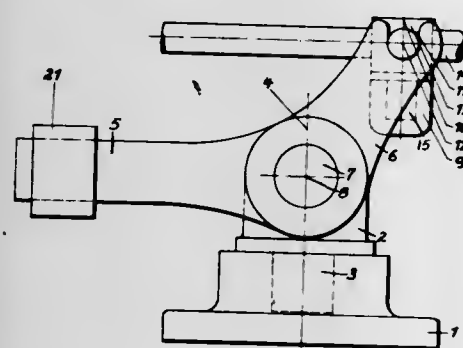
mitter for each stand to which the input signals from the primary and secondary signal feeders for that stand are fed in such manner that the speed of the drive motor for that stand is affected by the input signal of the secondary signal feeder when the primary signal is different from the input signal of the primary signal feeder, common means



for driving all of the secondary drive elements, a power transmission for each secondary drive element driven by the common driving means, each power transmission having a control element whose speed affects the speed of the corresponding secondary drive element, and means whose speed is independently adjustable at will driving all of the control elements.

3,314,265 SPINDLE-SUPPORTING MEANS FOR ROLLING MILLS

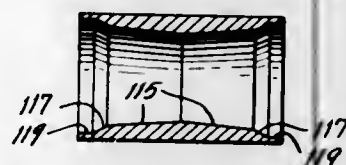
Ulf Geier, Osterath-Bovert, Germany, assignor to Schloemann Aktiengesellschaft, Dusseldorf, Germany
Filed Dec. 16, 1964, Ser. No. 418,609
Claims priority, application Germany, Dec. 27, 1963, Sch 34,388
3 Claims. (Cl. 72-249)



1. Spindle-supporting means for rolling mills in which the rolls are not located vertically one above the other, comprising: a base, a rocker block so mounted upon the base as to be turnable about a vertical axis, a rocker so mounted upon the rocker block as to be turnable about a horizontal axis, the rocker having cantilever arms extending on opposite sides of the axis about which it turns, a counterpoise on the rocker on one side of its axis, a bearing body so mounted upon the rocker, on the other side of its axis, as to be turnable, relatively to the rocker, about a horizontal axis, and a journal-bearing casing so mounted in the bearing body that it can turn, relatively to the bearing body, about a vertical axis, the spindle to be supported being axially slidable through the journal-bearing casing, which supports it.

3,314,266 METHOD OF MAKING PIPE COUPLING BLANKS

Odin Werther, East Cleveland and Charles P. McCabe, Rocky River, Ohio, assignors to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey
Filed May 7, 1962, Ser. No. 192,902
5 Claims. (Cl. 72-255)

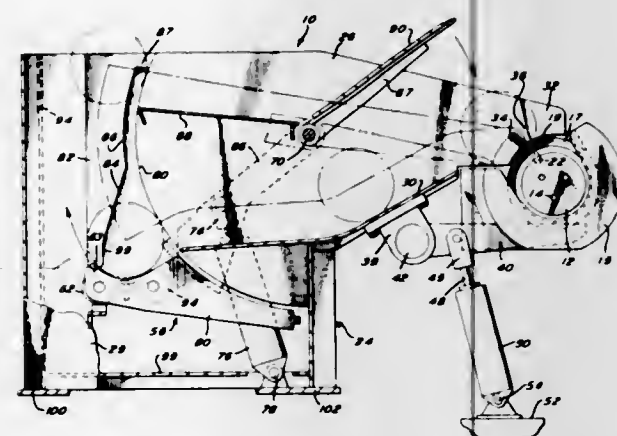


1. Method of preparing a pipe coupling blank or the like for threading with an internal thread, said coupling blank being formed with an annular generally cylindrical wall, which comprises disposing said blank at one side of an annular circular extruding orifice so that said annular wall extends about and is generally coaxial with the axis of said orifice, moving said blank parallel to said axis concomitantly with forcing said wall thereof through said annular circular orifice to true the inner surface of said blank about said axis of said orifice to circular section concentric with said axis of said orifice, and then upsetting said trued blank to shape said inner surface of said wall of trued circular section to a contour along the axis of said annular wall to conform to the shape required by the internal threads to be formed in said coupling wall.

3,314,267 DIE CHANGER

Francis J. Kent and Bernard J. Klavertkamp, Wallingford, Pa., assignors, by mesne assignments, to Baldwin-Lima-Hamilton Corp., Philadelphia, Pa., a corporation of Delaware

Filed Apr. 28, 1964, Ser. No. 363,133
9 Claims. (Cl. 72-263)



1. Apparatus comprising a support means for receiving a die, a die, said die having orientation means thereon, a bolster coupled with said support means for maintaining said die in an upright position, said bolster including guide means for engagement with said orientation means so that said die is rotated to a predetermined rotative position with respect to said support means.

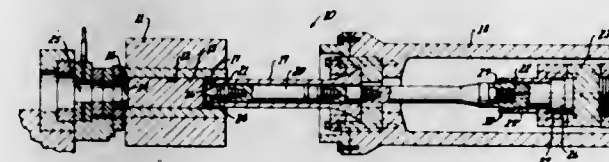
3,314,268 PIERCING AND EXTRUDING MANDREL LOCKING MEANS AND PARTS THEREFOR OR THE LIKE

Allen D. Gettig, Phoenix, Ariz., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Jan. 2, 1964, Ser. No. 335,097
8 Claims. (Cl. 72-265)

1. A piercing and extruding mandrel locking means comprising an axially movable housing having an inter-

locking cavity interrupting one end thereof with said cavity having an enlarged part inboard thereof, a mandrel having an enlarged end interlockingly disposed in said enlarged part of said cavity of said housing and being rotatable relative thereto in any direction without effecting

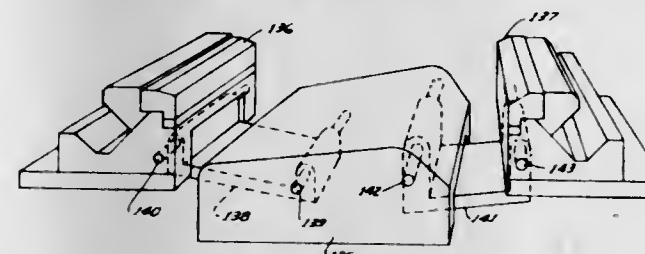


said interlocking relation therebetween so that said housing and said mandrel will axially move in unison, and a sleeve interconnected to said housing outboard of said enlarged part of said cavity and to said mandrel to prevent rotation of said mandrel relative to said housing.

3,314,269 PRESTRETCH FIXTURE AND COMBINATION THEREOF WITH DRAWING DIE PRESS

Robert A. Mackenzie, Chagrin Falls, Ohio, assignor to The Cyril Bath Company, Cleveland, Ohio, a corporation of Ohio

Filed Aug. 12, 1966, Ser. No. 575,487
20 Claims. (Cl. 72-296)



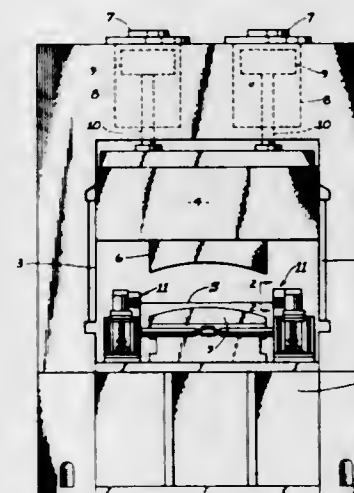
1. A die and stretch head combination comprising: a die having a forward forming face which is convex forwardly and is unsymmetrical in section in a first plane extending in the direction of one of the dimensions of the face and intersecting the face; stretch heads located adjacent those limits of the forming face which are opposite from each other in said direction and adapted to grip two opposite margins, respectively, of a sheet of metal stock; first and second pivot means having axes, respectively, which extend transversely of said dimension, are in fixed position relative to the die face, and are arranged unsymmetrically relative to, and at opposite sides of, a reference plane which is at a right angle to the first reference plane and which includes that median line of said face which extends transversely of said dimension; first and second link means, each of fixed length, supported by the first and second pivot means, respectively, each for swinging about the axis of its associated pivot means; means connecting the stretch heads to the link means, respectively, each head for swinging with its associated link means toward and away from the die, and constraining the heads each to a fixed distance from the axis of the pivot means of its associated link means during swinging of its associated link means.

3,314,270 GRIPPING JAWS FOR GRIPPING SHEET METAL

Stanley M. Dolney, Parma, Ohio, assignor to The Cyril Bath Company, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 2, 1964, Ser. No. 400,997
14 Claims. (Cl. 72-305)

1. In a stretch forming machine, gripping means for gripping one margin of a length of stock, a power driven

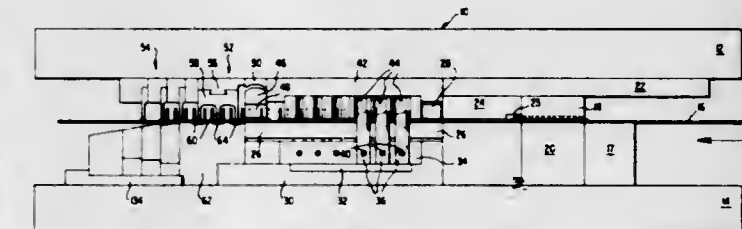
stretch head for gripping the opposite margin, said head being movable relatively toward and away from said means for stretching the sheet along the dimension from said one gripped margin to the opposite gripped margin, whereby the margin of the stock gripped by the faces will be urged to slip in a forward direction relative to the head, a pair of clamping jaws mounted in the head, means on the head connecting the jaws thereto for movement to clamping and releasing positions, respectively, and for holding the jaws in fixed position relative to the associated head when the jaws are in clamping position, power



means for moving the jaws into clamping position, said jaws having gripping faces, respectively, which are aligned in face to face spaced relation to each other when the jaws are in clamping position and which are elongated transversely of said forward direction, elongated gripping ridges on the gripping face of said upper jaw, said ridges being spaced from each other transversely of their length endwise of the face, at least those of the ridges adjacent the ends of the face being oblique to said forward direction, those ridges at one end of the face diverging in a direction from front to rear of the head relative to those at the other end of the face.

3,314,271 PUNCH PRESS

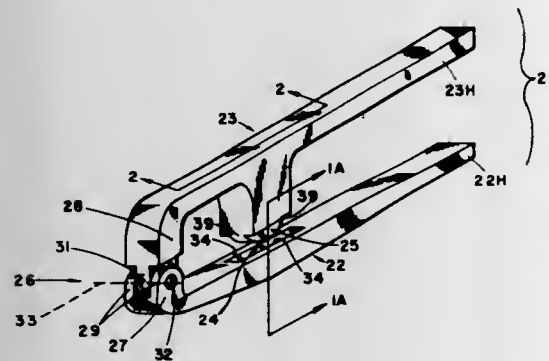
Fred Otis, Miami, Fla., assignor to Automated Building Components, Inc., Miami, Fla., a corporation of Florida
Filed Apr. 3, 1964, Ser. No. 357,154
17 Claims. (Cl. 72-325)



1. A punch press comprising upper and lower relatively movable die shoes, a punch and die set secured to said shoes for operating on stock material passing through said press between said shoes, a straightener block having a plurality of shallow cavities secured to one of said die shoes, a vertically movable straightener secured to the other shoe and having a plurality of straightening fingers in vertical alignment with said cavities, and wedge means

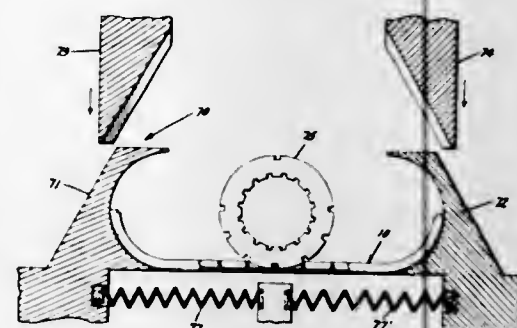
for vertically adjusting the position of said straightener with respect to said other die shoe.

3,314,272
FORMING TOOL FOR FORMING A SUPPORTING MEANS IN A THIN-SHEET TOP PANEL PORTION OF A CONTAINER CLOSURE COVER
Frank L. Dahl, 5248 W. 119th Place, Inglewood, Calif. 90304
Filed July 6, 1964, Ser. No. 380,345
8 Claims. (Cl. 72-325)



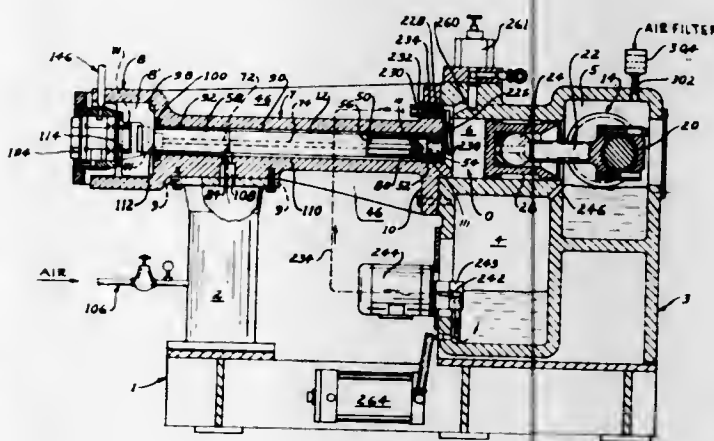
1. A non-progressive, single-step, stretch-forming tool for stretch-forming an upwardly projecting supporting loop means in a thin-sheet top panel portion of a container closure cover, comprising: a die-carrying member provided with a cavity-defining die; a punch-carrying member provided with a projection-defining punch; and movable mounting means movably mounting said die-carrying and punch-carrying members for relative movement of said die and punch toward and away from each other for support-forming engagement thereof with respect to a thin-sheet top panel portion of a container closure cover and for disengagement therefrom for removal of said container closure cover after said support-forming operation; said punch comprising and defining a projecting intermediate portion having laterally spaced shearing side portions; said punch having opposite end portions positioned substantially behind the position of maximum projection of said projecting intermediate portion thereof; said die comprising, defining, and having therein a receiving recess substantially in the form of a rectangular parallelepiped and having shearing side portions laterally separated by a width substantially identical to but slightly larger than the width separating the shearing side portions of said punch and together therewith defining shearing means for shearing side edges of a loop member comprising said normally upwardly projecting supporting loop means when stretch-formed in a non-progressive, single-step operation by the forcible engagement of said punch within said die with a thin-sheet top panel portion of a container closure cover therebetween, said die having opposite end wall portions non-shearingly cooperable with said opposite end portions of the loop member stretch-formed of the thin-sheet top panel portion of the container closure cover and integrally connected therewith; said movable mounting means comprising pivotal connection means positioned adjacent to forward ends of said punch-carrying member and said die-carrying member; said punch-carrying member and said die-carrying member having longitudinally rearwardly extended, spaced-apart handle portions positioned with respect to said pivotal connection means rearwardly and forwardly, respectively, of said corresponding projection-defining punch and cavity-defining die in a manner such that the non-progressive, single-step, stretch-forming engagement of said punch and die occurs between the rear position of said handle portions when manually squeezed together and said forwardly positioned pivotal connection means.

3,314,273
PROCESS FOR MAKING SPLIT RIMMED RINGS
Raymond J. Sollohub, Linton, Ind., assignor to General Electric Company, a corporation of New York
Filed Mar. 12, 1964, Ser. No. 351,404
6 Claims. (Cl. 72-335)



1. A process for making a split rimmed ring having a predetermined radius and circumferential length and carrying a resilient annulus, said process comprising the steps of: cutting an elongated flat piece from metallic strip material, said elongated flat piece having a length essentially equal to the predetermined circumferential length of the ring, forming said flat metallic piece into a channel-shaped piece, punching a plurality of spaced apart tabs along at least a portion of said channel-shaped piece, forming an essentially 90 degree bend at each end of said channel-shaped piece to provide an angulated piece, said 90 degree bends having a radius essentially equal to the predetermined radius of the ring, supporting the resilient annulus adjacent the channel-shaped piece intermediate the ends thereof, the resilient annulus having at least as many tab-receiving notches spaced about a portion of the periphery thereof as the number of tabs in said channel-shaped piece, and forming two additional 90 degree bends to shape said angulated piece into a split rimmed ring of said predetermined radius about said resilient annulus, with the tabs of said split rimmed ring being located in respective notches in said resilient annulus.

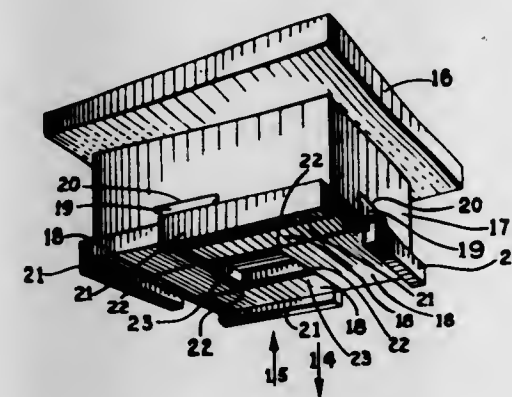
3,314,274
APPARATUS FOR FORMING CUP-SHAPED MEMBERS
Cornelis Langewis, Walnut Creek, Calif., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed Jan. 23, 1964, Ser. No. 339,814
16 Claims. (Cl. 72-349)



1. An apparatus for forming seamless can bodies and the like from shallow cup-shaped workpieces, comprising the combination of stationary die means and a punch for

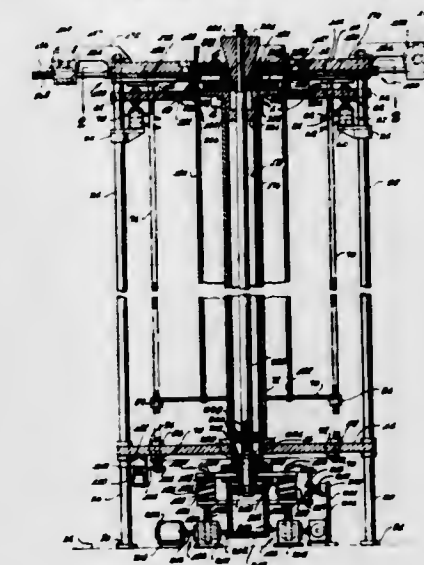
drawing a workpiece through said die means; said die means including a stationary reverse redraw die aligned with and disposed adjacent the entry end of said die means for initially receiving and centering said workpiece with respect both to said punch and die means prior to the entrance of said punch and said workpiece into said forming die means; means for actuating said punch in such a fashion as to minimize off-centering said punch with respect to said die means; said actuating means comprising a piston rod means, the punch being disposed at one extremity of said piston rod means and a working piston disposed on said piston rod means at a point remote from said punch; an actuating piston and a fluid coupling means connecting said actuating piston with said working piston; means for advancing said actuating piston in one direction so as to move said working piston, said piston rod and said punch from preselected starting positions and for effecting passage of said punch along with a workpiece in a single uninterrupted stroke of said punch through said die means; and yieldable means acting upon said working piston for returning the working piston, said piston rod, said punch and said actuating piston to their respective preselected starting positions.

3,314,275
TOOLING FOR SHEET MATERIAL FORMING
Thomas W. Mullen, Evansville, Ind., Mary E. Mullen, 2013 W. Iowa St., P.O. Box 6001, Sta. B, Evansville, Ind. 47712, executrix of said Thomas W. Mullen, deceased
Filed Dec. 17, 1963, Ser. No. 331,289
11 Claims. (Cl. 72-350)



1. Tooling for forming sheet material into a shell comprising:
(a) a form post;
(b) a centrally apertured die ring;
(c) a centrally apertured pressure ring;
(d) said rings having opposed faces to engage the opposite surfaces of and clamp therebetween a sheet of such material;
(e) means mounting said rings in axial alignment for relative axial movement to clamp such a sheet;
(f) means mounting said rings and said post in axial alignment and for relative axial movement between said post and said rings to cause said post to pass through the central apertures of said rings;
(g) at least one of said rings comprising a base member and a plurality of segments mounted for movement on said base member in paths about said post and in nonintersecting relation to the axis of said one ring, said segments having surfaces which in the aggregate define the entire one of said opposed faces of said one ring; and
(h) means for imparting movement to said segments along said paths concomitant with movement of said post relative to said rings.

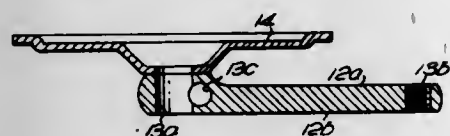
3,314,276
BELLOWS FORMING MACHINE
John F. Peyton, Long Beach, and Paul Wassner, Anaheim, Calif., assignors to Federal-Mogul-Bower Bearings, Inc., Detroit, Mich., a corporation of Michigan
Filed Apr. 7, 1964, Ser. No. 358,042
14 Claims. (Cl. 72-370)



1. In a machine for forming bellows from tubular stock, apparatus comprising:
supporting and positioning means for such tubular stock;
a first die means positioned for restraining encirclement of a first circumferential portion of the external surface of such tubular stock;
a second die means positioned for restraining encirclement of a second circumferential portion of the external surfaces of such tubular stock, said first die means and second die means being spaced-apart relative to one another axially of such tubular stock;
means mounting said first and second die means for limited movement relative to one another, axially of such tubular stock;
a third die means having a rigid, external, peripheral portion positioned for encirclement thereof by such tubular stock at a location axially intermediate said first and second die means;
means for moving said peripheral portion of said third die means generally radially outwardly into forceful engagement with the internal encircling surface of such tubular stock, to form an outward circumferential bulge in such tubular stock extending between said first and second die means;
and means for simultaneously continuing such movement of said peripheral portion of said third die means generally radially outwardly, and such movement of said first and second die means relatively toward one another axially of such tubular stock, until completion thereby of an outwardly projecting, circumferentially extending convolution in the wall of said tubular stock intermediate said first, second and third die means.

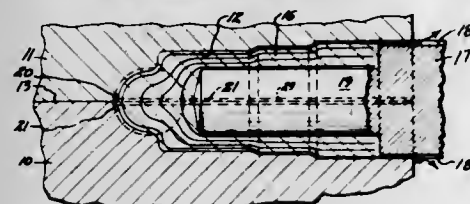
3,314,277
COLD FORMING OF ASYMMETRIC ARTICLES
John Edward Hopkins, Coggeshall, Essex, and Dennis Richard Wilson, Wollaton, Nottingham, England, assignors to Raleigh Industries Limited, a company of the Queen of Great Britain, Northern Ireland and The Isle of Man
Filed Feb. 4, 1963, Ser. No. 255,877
Claims priority, application Great Britain, Feb. 3, 1962, 4,249/62
1 Claim. (Cl. 72-375)
The method of forming a bicycle crank comprising, utilizing a section of a cylindrical bar of less diameter

than the largest diameter of the finished crank, cold forging the bar to provide a large diameter part on one end of it, swaging the bar to form a head on its opposite end, pressing the crank-shaped bar between open dies to provide a desired profile on each of its opposite faces while permitting opposite sides of the bar to unrestrainedly



spread out between the open dies to thereby assume an unrestricted formation, thereby reducing the thickness of the bar in one direction while increasing its thickness in a direction at right angles, and utilizing the dies to produce depressions in the enlarged parts of the bar at its opposite ends for the production of axle and pedal shaft holes.

3,314,278
FORGING PROCESS AND PRODUCT THEREFROM
Daniel T. Bergman, 64 Deer Park Ave.,
San Rafael, Calif. 94901
Filed Mar. 3, 1964, Ser. No. 348,967
1 Claim. (Cl. 72-377)



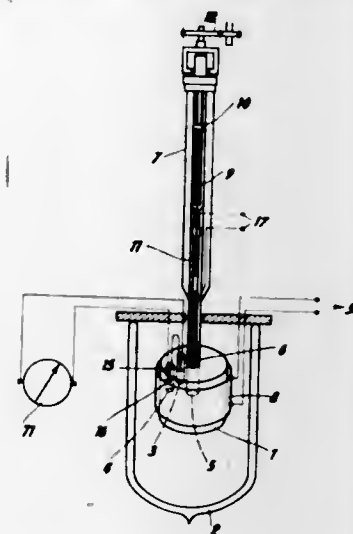
A method of forging with mating dies which form an elongated cavity of desired shape comprising the steps of forming the dies along their meeting portions with mating surfaces which define a shallow groove opening into the cavity, positioning a slug of material in the cavity, exerting pressure on the slug to cause the material to flow longitudinally of the cavity and along the groove to thereby form an object with a bead, and then removing the bead.

3,314,279
APPARATUS FOR RECORDING AND REGULATING TEMPERATURE DURING DIFFERENTIAL THERMAL ANALYSIS
Charles Paquot, Paris, Roger Perron, Chateauf-Malabry, and André Mathieu, Bagneux, France, assignors to Etablissement Public: Centre National de la Recherche Scientifique, Paris, France, a corporation of France
Filed July 8, 1964, Ser. No. 381,044
Claims priority, application France, July 10, 1963, 941,022

13 Claims. (Cl. 73-15)

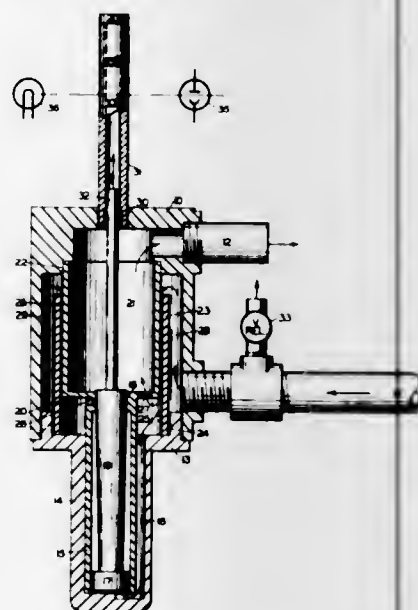
1. An apparatus to record and regulate temperatures during differential thermal analysis comprising, a metallic block with at least three holes therein, the first of said holes for receiving a sample to be examined, the second of said holes for receiving a reference sample; at least one source of power; a differential thermocouple connected in an electrical circuit, said circuit including means for recording electro-motive force, said differential thermocouple having its first junction in said first hole and its second junction in said second hole; an elongated liquid thermometer having a contact wire, one end of said thermometer acting as a reservoir for liquid and positioned in the third of said holes, said wire being joined to a mechanical means for movement of said wire along the longitudinal axis of said thermometer; a first electromechanical means connected with said mechanical means to carry out a predetermined displacement of said wire, said first electromechanical means being actuated

by contact between said wire and said thermometer liquid, the displacement of said wire between two successive positions being fixed and predetermined, said first electromechanical means being in operating connection with said recording means during contact between said wire and



said thermometer liquid; means for heating said metallic block; a second electromechanical means to actuate said heating means, said second electromechanical means being in operating connection with said first electromechanical means; and movable means for switching in said circuit.

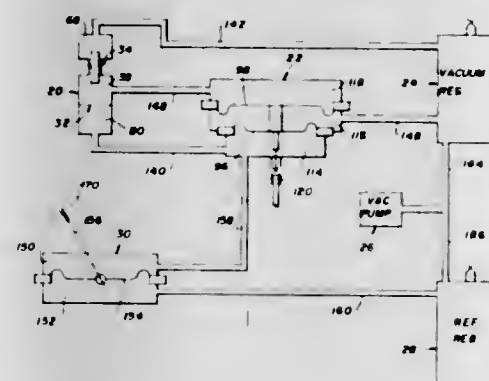
3,314,280
METHOD AND MEANS FOR INDICATING THE CONCENTRATION OF A GAS IN A MIXTURE OF GASES
Henry L. Burns, Beaverton, Oreg., and Dan R. Reece, 10111 SW. 57th Ave., Portland, Oreg. 97219; said Burns assignor to said Reece
Filed Aug. 26, 1963, Ser. No. 304,513
5 Claims. (Cl. 73-23)



1. In a device for testing carbon dioxide concentration in air in which a sample of the air to be tested is delivered into the device in a flow of predetermined rate at a constant predetermined pressure, an air-receiving chamber, a second air distribution chamber in the device, a flow-restricting passageway connecting said second chamber with said first mentioned chamber so arranged as to cause laminar flow of the air from said first chamber to said second chamber, said second chamber having an open fixed discharging orifice connecting said second chamber with an outlet from said device and providing turbulent flow by-pass from said second chamber, said

second chamber having a second turbulent orifice connected with said outlet from said device by a variable passageway, means responsive to the air pressure within said second chamber controlling the opening through said last mentioned variable passageway, and indicating means operated by said pressure responsive means.

3,314,281
GAS ANALYZING METHOD AND APPARATUS
Dan R. Reece, 10111 SW. 57th Ave., Portland, Oreg. 97219, and Henry L. Burns, Beaverton, Oreg.; said Burns assignor to said Reece
Filed June 1, 1965, Ser. No. 460,410
10 Claims. (Cl. 73-23)

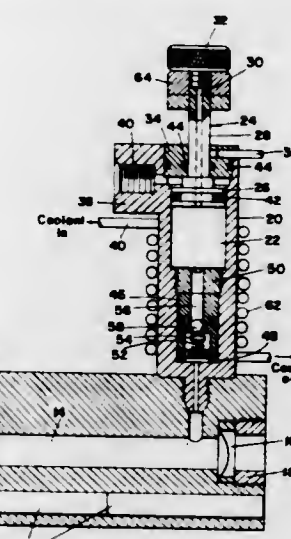


1. Apparatus for determining the concentration of one gas in a mixture of gases comprising:
means defining a path of flow for a sample of said gases, turbulent flow orifice means in said path of flow, laminar flow orifice means in said path of flow, flow regulating means for varying the rate of gas flow through said flow path,
means for sensing the pressure drop across said laminar flow orifice means,
means for sensing the pressure drop across said turbulent flow orifice means,
means responsive to said sensing means and connected to said flow regulating means operative to effect adjustment of the latter means to maintain the flow rate through said flow path such that the pressure drops across said orifice means remain in predetermined ratio to one another,
sensing means responsive to changes in the flow rate of said gases through said path of flow,
and readout means responsive to said last mentioned means for providing a signal proportional to the flow rate of said gases in said path.

3,314,282
THERMAL STABILITY TEST APPARATUS FOR COMBUSTIBLE FLUIDS
Ludwig Stiefel, Philadelphia, Pa., assignor to the United States of America as represented by the Secretary of the Army
Filed Feb. 3, 1965, Ser. No. 430,224
10 Claims. (Cl. 73-35)

3. An apparatus for testing the thermal stability of a combustible fluid including
a body defining a test chamber, said test chamber communicating with the outside of said body via at least one passageway;
means in said passageway for closing same, said means being adapted to open when a predetermined pressure is reached within said test chamber;
a cylinder in open communication at one end with said test chamber, said cylinder defining a fluid reservoir;
means in said cylinder for filling said reservoir with a fluid;
a piston in said cylinder;
means for urging said piston toward the end of said cylinder which communicates with said test chamber

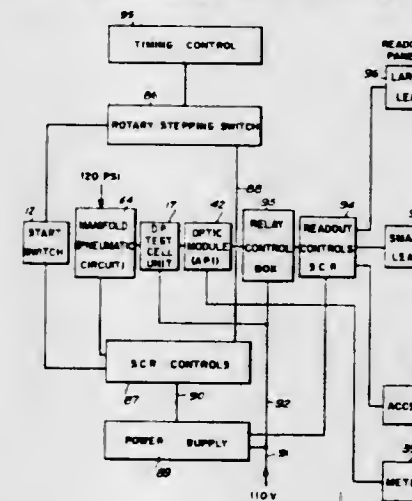
whereby fluid in said cylinder may be displaced into said test chamber;
adjustable means on said piston for metering the volume of fluid displaced into said test chamber;



means within said cylinder for restricting fluid flow into said test chamber;
means for heating said test chamber body; and
cooling means arranged around said cylinder for maintaining fluid therein at a relatively lower temperature than that of said test chamber body.

3,314,283
LEAK TESTING METHOD AND APPARATUS
Richard Thomas Fitzpatrick and Ray Moore, Jr., Livonia, Mich., assignors to Ajem Laboratories, Inc., Livonia, Mich.

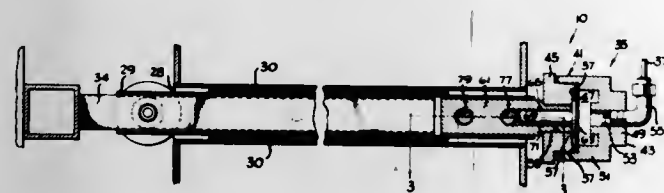
Filed June 16, 1964, Ser. No. 375,515
20 Claims. (Cl. 73-40)



1. A method of testing parts for leaks which comprises the steps of subjecting the opposite sides of a wall of a part to be tested to a difference in pressure, forming a closed chamber on at least one side of said wall, connecting said chamber to a standard chamber, segregating the two chambers after the pressure therein is equalized, measuring any difference in pressure in the two chambers during a predetermined period of time, producing a voltage directly proportional to any measured difference in pressure, utilizing any voltage so produced to actuate a responsive device to indicate the occurrence of a leak, subsequently performing the steps of forming the closed chamber, segregating the two chambers and measuring any difference in pressure by successive RC networks each having a predetermined time period, and energizing the successive networks by operation of the preceding network whereby to automatically perform a testing operation by forces produced by each successive step.

3,314,284 FORCE GAUGING SYSTEM

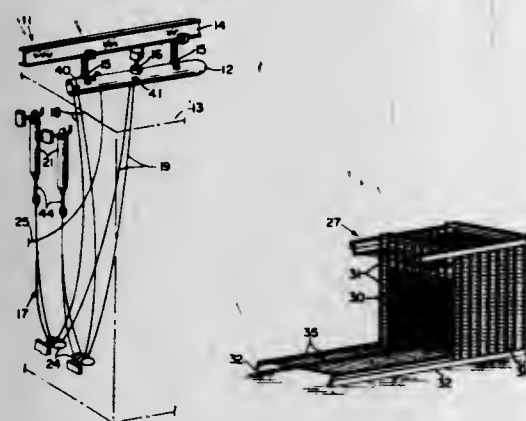
Henry Wilmot McDonough, Dundee, Ill., assignor to Elgin Elmac Enterprises, Inc., a corporation of Illinois
Filed Feb. 14, 1964, Ser. No. 345,051
7 Claims. (Cl. 73-141)



1. A force measuring system comprising a support, a member mounted on said support for movement in each of opposite but parallel directions relative to said support, a hollow transducer cell mounted on the movably mounted member for shifting movement relative thereto in each of said opposite directions, an elongated element projecting from the interior of the cell and movable relative thereto in each of said opposite directions, a medium within the cell intermediate a surface of said element and a wall of said cell engageable by the movable element so as to be placed under pressure incident to the application of opposing forces to said cell and said element in parallel relation to the directions of movement of said movably mounted member, means limiting movement of said support relative to said cell in one of said opposite directions, means effecting engagement between said element and said movably mounted member incident to a force applied to said movably mounted member in said one of said opposite directions, thereby placing said medium under pressure when movement of said cell in said one direction relative to said support is prevented, means limiting relative movement between said support and said element in the other of said opposite directions, means effecting engagement of said movably mounted member with said cell incident to a force applied to said movably mounted member in said other of said opposite directions so as to place said medium under pressure when movement of said element in said opposite direction is prevented, and means communicating with said medium adapted to indicate the force creating the pressure under which said medium is placed.

3,314,285

DEVICE FOR ARRESTING MOVING VEHICLES
Eugene A. Brigner, Camarillo, Phillip C. Wondra, Oxnard, and Thomas W. Middleton, Camarillo, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Oct. 30, 1964, Ser. No. 407,932
10 Claims. (Cl. 73-167)

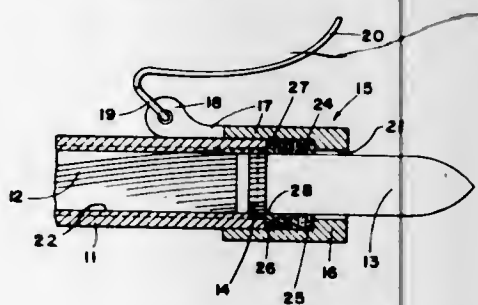


1. A device for providing free flight test and recovery of a missile or other body launched at a high acceleration rate comprising:
a structure for releasably supporting said missile;

flexible restraining means connected at one end to selected points on said missile and at their other ends to said structure for limiting movement of said missile to a selected distance from said structure; means for imparting acceleration to said missile; means for actuating said acceleration imparting means; arresting means interposed in the path of said missile at a position substantially at said selected distance from said structure for reducing the momentum of said missile and restricting movement thereof about at least one axis of motion; said restraining means including a least a pair of cables connecting the after portion of said missile to said structure and an additional pair of cables connecting the mid-portion of said missile to said structure; whereby both pairs of cables act to stop said missile within said selected distance of said structure and inhibit roll of said missile, and the pair of cables connected to the mid-portion of said missile acting to inhibit yaw of said missile.

3,314,286

PROJECTILE RECOVERY APPARATUS
Frederick R. Hickerson, Newton, Andrew J. Marhefka, Port Morris, and Carl P. Iosso, Dover, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed July 8, 1965, Ser. No. 470,638
2 Claims. (Cl. 73-167)



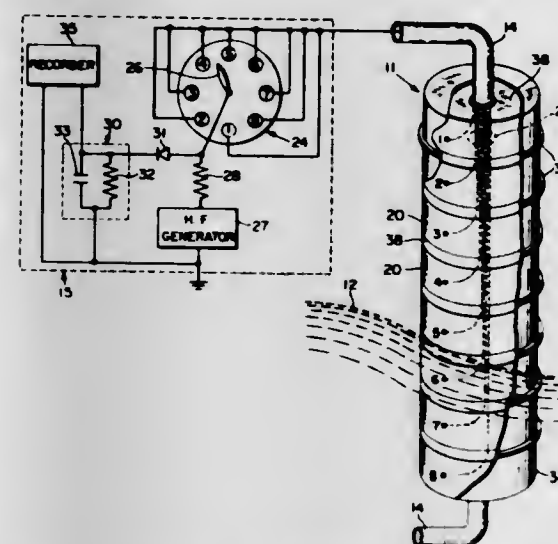
2. The combination with a gun tube having an open forward end for release of a fired projectile, of a cable ring assembly secured to said tube forward end, said assembly including a forward ring and a rearward projection having a swivel connection securing thereto a balloon and a cable therefor to retard the flight velocity of said projectile, said ring having an aperture substantially coaxial with the hollow interior of said tube forward end and defined by an inwardly directed flange, and an annulus of shock absorbing material interposed between said tube forward end and said ring flange, said material having a portion extending inwardly of the internal surface of said tube forward end for engagement by outwardly directed flange means on a rear portion of said projectile.

3,314,287

STEP CAPACITANCE WAVE PROFILE RECORDER
Zeger H. Blankers, Ventura, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed July 29, 1964, Ser. No. 386,097
10 Claims. (Cl. 73-170)

1. A device for determining ocean wave profiles comprising:
a wave staff arranged to be vertically disposed at the ocean's surface;
a plurality of conductive sensing bands spaced at equal intervals longitudinally along the outer surface of said wave staff;

a commutator having a rotary arm and at least as many terminals as there are sensing bands;
a plurality of conductive connectors disposed within said electrical insulation material;
each of said connectors connecting one of said bands to a respective one of said terminals;
a high frequency generator having its output terminal connected to the rotary arm of said commutator through a resistor in series therewith;
a detector connected between said resistor and said rotary arm;
a recorder connected to the output terminal of said detector; and



said sensing bands being separated from contact with the water by covering means which forms a capacitive coupling between each band and the water; whereby when said staff is partially submerged in the ocean the capacitance of each sensing band to the sea water will vary in relation to whether the band is above or below the surface of the water, and by recording information representative of the high voltage of non-submerged bands and of the low voltage of submerged bands, successive samplings of the bands will provide wave profile information.

3,314,288

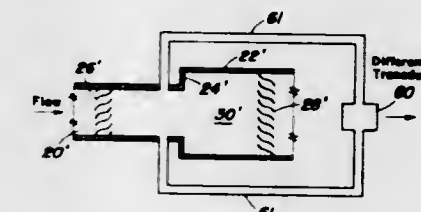
DIFFERENTIAL CALORIMETER
Kenneth Arthur Sherwin, Ipswich, Suffolk, England, assignor to Fisons Fertilizers Limited
Filed Oct. 29, 1964, Ser. No. 407,495
Claims priority, application Great Britain, Nov. 2, 1963, 43,334/63
11 Claims. (Cl. 73-190)



1. A differential calorimeter comprising two cylindrical cells in apposition made of a heat conducting metal A

3,314,289

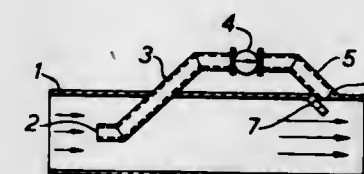
SWIRL FLOW METER TRANSDUCER SYSTEM
Alan E. Rodely, Scotch Plains, N.J., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed May 11, 1964, Ser. No. 366,496
15 Claims. (Cl. 73-194)



1. Fluid flow measuring apparatus comprising, in combination, fluid conductor means; swirl means operatively associated with said fluid conductor means and effective to urge fluid flowing through the latter to assume a swirl condition; the cross-sectional area of said fluid conductor means being effective to cause the swirling fluid to precess at a rate proportional to the fluid flow rate; sensing means operatively associated with said fluid conductor means and providing an electrical output responsive to pulses in said fluid conductor means; and electrical measuring circuits connected to the output of said sensing means, said circuits being connected to substantially nullify electrical outputs due to pulses resulting from extraneous pulsations; whereby said electrical measuring circuit is responsive only to pulses resulting from the such precession of the swirling fluid.

3,314,290

SHUNT FLOW METER
Anthony Peranio, Haifa, Israel, assignor to The Technion Research & Development Foundation, Ltd., a corporation of Israel
Continuation of abandoned application Ser. No. 209,137, July 11, 1962. This application July 26, 1965, Ser. No. 474,864
8 Claims. (Cl. 73-202)



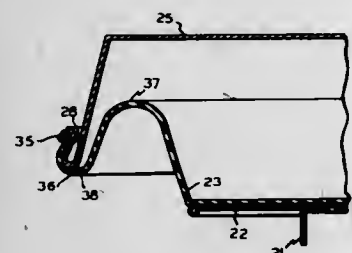
1. An impact-restriction shunt flow meter for measuring the flow of a flowing fluid in a relatively large main conduit comprised of a smaller conduit for producing an impact head within said main conduit containing therein a mechanical flow meter capable of measuring the flow of fluid, said meter being outside of the flow in said main conduit, said smaller conduit passing out of and back into said main conduit at a sufficiently abrupt angle to cause a change in velocity of flow in said smaller conduit and having an impact head opening facing directly

upstream within said main conduit whereby part of the fluid flowing in said main conduit is by-passed through said smaller conduit at a higher pressure than the flow in said main conduit, said smaller conduit being of substantially uniform cross section in its intake section from its impact head to the flow meter, and being of the same cross section on the discharge side of said flow meter and thereafter discharging into the main conduit downstream from the impact opening, said smaller conduit terminating at the point of discharge thereof into said main conduit, said main conduit being provided with a segmental orifice plate at the upstream end of said discharge point at about the same inclination as the discharge end of said smaller conduit.

3,314,291

DIAPHRAGMS FOR METERING DEVICES
Parker S. Anderson, Lexington, Va., assignor to Reeves Brothers, Inc., New York, N.Y., a corporation of New York

Filed Dec. 23, 1963, Ser. No. 332,801
7 Claims. (Cl. 73-278)



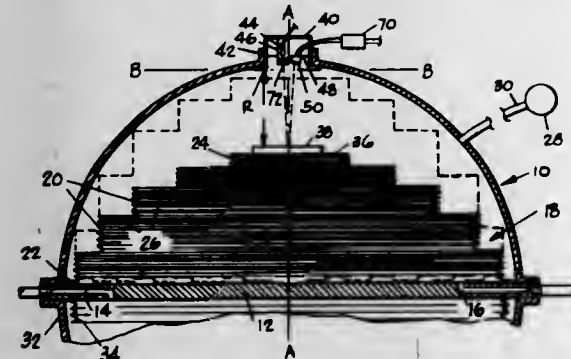
1. An improved gas meter diaphragm assembly comprising a pan having a bottom and a side wall extending upwardly for a distance from said bottom at an angle thereto, thence turning outwardly and downwardly and terminating in an annular lip; and a diaphragm membrane comprising a flexible, impermeable sheet formed with a central portion, an endless trough of substantially uniform cross-sectional size and shape surrounding said central portion and extending toward the bottom of said pan, an endless ridge of substantially uniform cross-sectional size and shape surrounding said trough and extending away from said bottom; the annular portion of said membrane being formed substantially in the outline of the lip of said pan, said annular portion being bonded to said lip.

3,314,292

PROPELLANT TANK AND MEASURING SYSTEM

Louis O. Schulte, Covina, and Horst F. Wolf, Costa Mesa, Calif., assignors, by mesne assignments, to Douglas Aircraft Company, Inc., Santa Monica, Calif.

Filed July 29, 1963, Ser. No. 298,214
20 Claims. (Cl. 73-290)



1. The combination of a propellant tank, a pressure housing therefor, and a propellant measuring system; said housing including a shell member in the general shape of a dome and a generally planar cross-member secured thereto in pressure-tight relation; said tank including

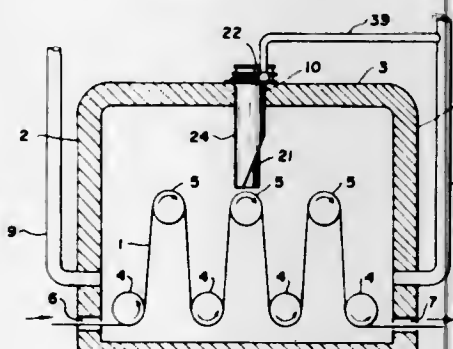
a bellows type side wall and a generally planar free end wall forming an envelope having an expanded shape corresponding generally to the interior of said housing dome and being collapsible into generally planar form close to said cross-member to expel the propellant contents; the outer margin of the base of said tank being secured in pressure-tight relation between said housing and said cross-member; said housing containing gas under pressure to urge said tank toward collapsed condition; said measuring system including a support member located centrally of said dome, and a light source and a light sensitive receiver mounted side by side on said support member; said light source being arranged to direct light rays toward said end wall of said tank and substantially normal thereto; said receiver being arranged to receive rays reflected from said end wall substantially parallel to the incident rays and adapted to transmit signals proportional to the energy of said reflected rays and indicative of the distance of said end wall from a reference point.

3,314,293

APPARATUS FOR MEASURING TEMPERATURE CHANGES IN STRIP METAL

Albin E. Schraeder, Glassport, Pa., assignor to Jones & Laughlin Steel Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 10, 1964, Ser. No. 336,966
5 Claims. (Cl. 73-355)



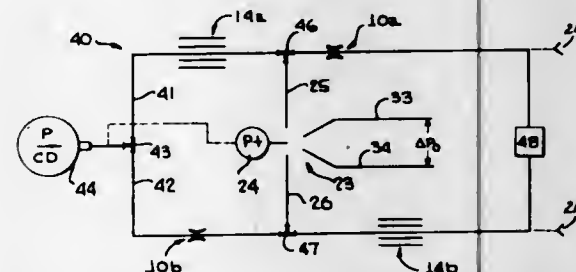
5. Apparatus for measuring the temperature of work in a furnace provided with means for supplying a controlled atmosphere thereto comprising a radiation pyrometer sighted on the work, a plurality of concentric shields surrounding the sight path and spaced from each other, means for supplying at least a portion of the controlled atmosphere as a cooling gas to the shield, and means for causing the cooling gas to travel through the spaces between the shields to maintain the shields at constant temperature.

3,314,294

TEMPERATURE MEASURING SYSTEM

John R. Colston, Silver Spring, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland

Filed Oct. 4, 1963, Ser. No. 313,956
17 Claims. (Cl. 73-357)



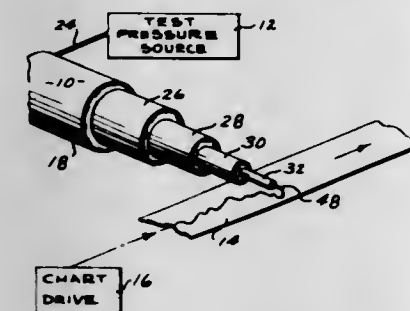
1. A temperature measuring system comprising in combination, a pure fluid amplifier of the analog type including a power nozzle for issuing a constricted fluid power

stream and a pair of substantially opposed control nozzles for issuing opposing control jets in interacting relationship with the power stream; a source of gas at constant pressure; means connected to said source for receiving gas at some constant pressure therefrom; orifice and laminar flow type restriction elements formed in series in said means, means connected between a point between the two types of flow restriction elements and one control nozzle of said pair for supplying fluctuations in pressure to said one control nozzle resulting from fluctuations in the temperature of the gas flowing through said elements, and means for conveying gas from said source to the other control of said pair at some predetermined pressure.

3,314,295

PRESSURE-RESPONSIVE INDICATOR

William I. Wukovitz, 534 W. 31st St., Long Beach, Calif. 90806
Filed July 6, 1965, Ser. No. 469,441
6 Claims. (Cl. 73-419)



1. A pressure-responsive indicator comprising:
a casing having a closed inner end and an open outer end and including means in said closed end for providing a connection to a source of pressure differential;
a plurality of extensible pressure sections in said casing in spaced relation thereto and in spaced relation to each other to define a plurality of spring compartments between said pressure sections and between said casing and the one of said pressure sections adjacent thereto, said pressure sections each including a piston portion adjacent said inner end and defining a pressure chamber therewith, each said piston portion being slidable in fluid sealing engagement upon the adjacent one of said casing and said pressure sections;
a plurality of springs in said spring compartments, respectively, each engaged at its opposite ends, respectively, upon the adjacent ones of said casing and said pressure sections and exerting a bias tending to maintain said pressure sections in retracted positions relative to said casing whereby said pressure sections are progressively extended upon application of differential pressures to said pressure chamber; and
stylus means carried by the most outwardly extensible one of said pressure sections to provide an indication on a moving chart or the like corresponding to the pressure differential in said pressure chamber.

3,314,296

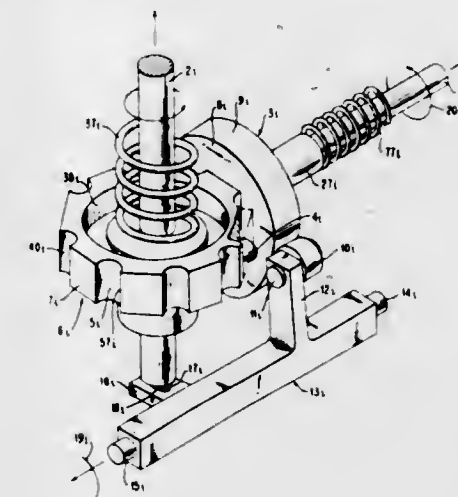
INDEXING DRIVE MECHANISM

Kendall Clark and Thomas J. Rajac, both of Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed May 27, 1965, Ser. No. 459,345
11 Claims. (Cl. 74-24)

1. An indexing drive mechanism comprising:
a rotatable and axially movable input shaft,
a member secured to said shaft,

a rotatable and axially movable output shaft, an index plate secured to said output shaft, said member having drive means to intermittently engage and drive said index plate to angularly displace the latter and said output shaft in response to rotation of said input shaft,



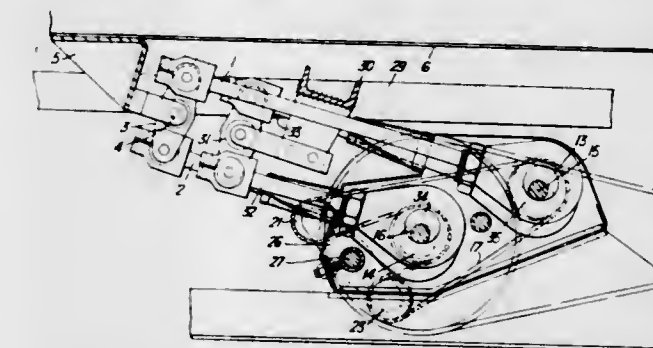
bias means for said input shaft for yieldably urging said member into abutment with said index plate to restrain movement of said index plate during disengagement of said drive means therewith, and actuator means operatively connected to said output shaft and said input shaft for axial movement thereof in response to rotation of said input shaft.

3,314,297

VIBRATORY APPARATUS

Rowland John James de Courcy, London, England, assignor to Baker Perkins Incorporated, Saginaw, Mich., a corporation of Michigan

Filed May 15, 1964, Ser. No. 367,759
Claims priority, application Great Britain, May 17, 1963, 19,751/63
7 Claims. (Cl. 74-26)



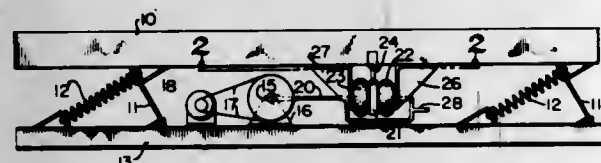
1. Variable speed driving mechanism for a vibratory or reciprocatory device, said mechanism comprising a first link having means for pivoting it midway between its ends on said device; a driven, first rotatable, eccentric shaft; a second rotatable, eccentric shaft spaced from said first shaft; a first connecting rod journaled at one end on said first eccentric shaft and pivoted at its other end to one end of said link; a second connecting rod journaled at one end on said second eccentric shaft and pivoted at its other end to the other end of said link; drive transmitting means drivably interconnecting said first and second shafts for transmitting rotation of either of said shafts to the other, said transmitting means including an endless member forming a closed path of greater length than twice the distance between said shafts thereby providing an excess length of said transmitting means; a second link; pivotal means mounting said second link to rock about an axis; a pair of idler members journaled

respectively on said second link on opposite sides of said axis in driving engagement with said transmitting means and taking up said excess in length thereof; and means for rocking said second link about said axis, whereby said transmitting means may effect relative rotation of said first and second shafts.

3,314,298

VARIABLE RATE FEEDERS

Robley W. Evans, New Albany, Ind., assignor to Rex Chainbelt Inc., a corporation of Wisconsin
Continuation of application Ser. No. 130,637, Aug. 10, 1961. This application Aug. 19, 1965, Ser. No. 486,253
6 Claims. (Cl. 74-26)

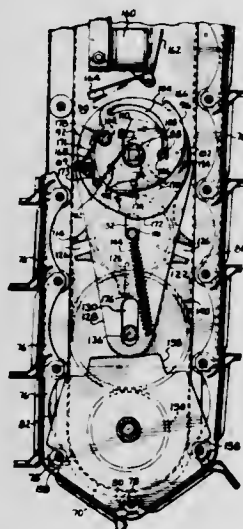


1. A method of controlling the amplitude of vibration of a vibratory apparatus that comprises a vibratory work member, a base member, resilient means connecting the members to form a vibratory system having a natural frequency, a crankshaft journaled in one of the members, and means including an adjustable rate spring means connecting the crankshaft to the other of the members that consists in operating the crankshaft at a speed at which the inertia force of the work member differs appreciably from the spring force of the resilient means and adjusting the spring rate of the adjustable spring to vary its deflection in overcoming the difference in said forces and thus the amplitude of vibration of the work member.

3,314,299

DRIVE MECHANISM FOR MERCHANDISE VENDING MACHINE

William C. Phillips, Roderick W. Phillips, and William H. Callahan, Aurora, Ill., assignors to Lektro-Vend Corp., Aurora, Ill., a corporation of Delaware
Original application Jan. 21, 1963, Ser. No. 252,630, now Patent No. 3,164,294, dated Jan. 5, 1965. Divided and this application Nov. 30, 1964, Ser. No. 435,763
12 Claims. (Cl. 74-112)



1. A drive mechanism comprising:
driving means;
driven means;
at least one positioning element connected to said driving means but capable of relative movement with said driving means and capable of being held in first and second positions relative to said driving means;

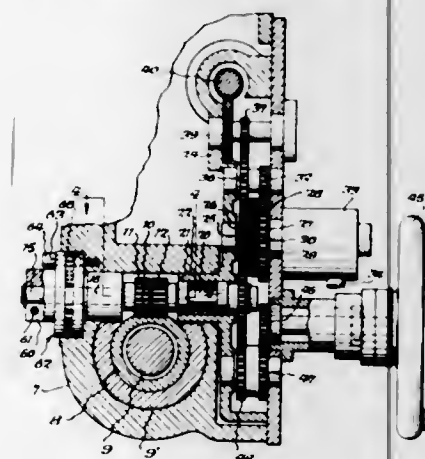
selectively operated first latch means for causing said positioning element to move from said first position relative to said driving means to said second position relative to said driving means;
a second latch means for retaining said positioning element in said second position;
a movable member slidably connecting said positioning element to said driving means and movable from a trailing position to a leading position responsive to the movement of said positioning element from said first position to said second position relative to said driving means;
engaging means formed in said driven means to engage said movable member when said movable member is in said leading position and movable with said movable member; and
unlatching means positioned exterior to said driving means for releasing said second latch means after said second latch means has retained said positioning element in said second position relative to said driving means;
whereby said driven means is selectively driven by said driving means.

3,314,300

SPINDLE STOP MECHANISM

William A. Kilmer and Thomas E. Patykula, Elmira, N.Y., assignors to Hardinge Brothers, Inc., Elmira, N.Y.

Filed Jan. 22, 1965, Ser. No. 427,416
5 Claims. (Cl. 74-409)



1. A device for moving and holding a member in stop position,
said member having rack teeth thereon,
a pair of pinions with teeth meshing with said rack teeth,
adjustable stop means cooperating with one of said pinions to limit the rotation thereof for holding said member against movement beyond a stop position, and drive means for yieldingly applying torque to the other of said pinions to move said member into a position in which the first of said pinions is in its stop position and to continue the application of torque to hold said first pinion in its stop position.

3,314,301

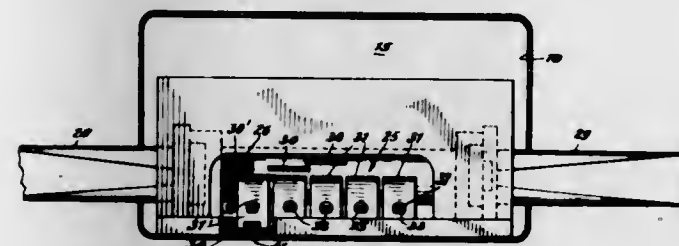
PRECISION DETENT SYSTEM

Arling W. Ryberg, Southport, Conn., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Sept. 4, 1964, Ser. No. 394,509
8 Claims. (Cl. 74-527)

1. A detent system for a rotary member comprising at least one detent section composed of a detent follower coactable with a corresponding groove on the peripheral surface of the member and a clamp bar for

maintaining said follower pressed against the member and for engaging it with its associated groove in detenting action for the rotary member, said clamp bar having



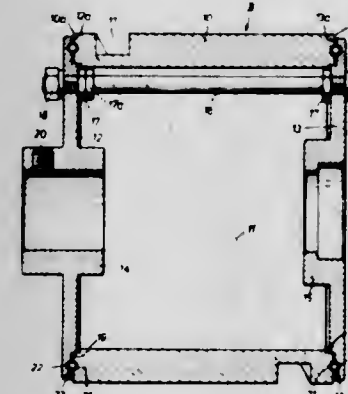
a projection coupled with said follower and disposed to bias it towards the member, and a set-screw for the vernier adjustment of said follower.

3,314,302

DRUM CAM HAVING AXIAL CUSHIONING MEANS

Bernhard Schrott, Zollikon, Zurich, Switzerland, assignor to Maschinenfabrik Scharer, Erlenbach, Switzerland

Filed June 11, 1965, Ser. No. 463,307
Claims priority, application Switzerland, July 10, 1964, 9,085/64
2 Claims. (Cl. 74-567)



1. A drum cam for winding machines comprising a cylinder having oppositely disposed frontal ends and a cam groove defined around the exterior of said cylinder between said frontal ends for receiving a follower, a plate member for supporting said cylinder arranged in confronting relationship to each frontal end of said cylinder, each said plate member and the associated confronting frontal end of said cylinder being provided with a respective annular groove of substantially semi-circular shape configuration in cross section, a hose member inserted in each of said annular grooves at each frontal end of said cylinder and the confronting associated plate member, said hose member being filled with a dampening fluid medium providing cushioning means effective in an axial direction of said cylinder.

3,314,303

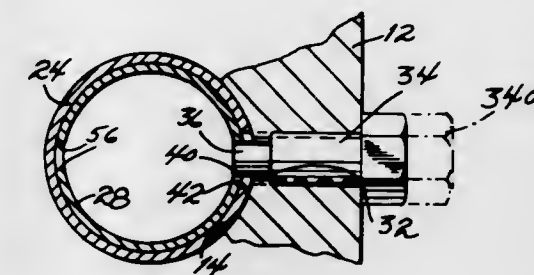
NONROTATABLE CAMFOLLOWER

George J. Maat, Batavia, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed June 28, 1965, Ser. No. 467,378
7 Claims. (Cl. 74-569)

1. In a camfollower,
a cam actuated tubular member having reciprocatory motion and having a longitudinally extending slot in the side thereof;

means receiving the tubular member comprising guide pin means cooperatively arranged with a projecting pin in said slot and with clearance space at the sides of the projecting pin in excess of running clearance; and



interconnecting means having no more than a running fit with the pin and having a tight frictional fit with the tubular member, for preventing turning of the interconnecting means and tubular member relative to one another and to the pin, and for preventing relative sliding movement sufficient to separate said means axially from the tubular member.

3,314,304

SERIES COMPOUND TORSIONAL VIBRATION DAMPER

Ralph H. Katzenberger, Sanford A. McGavern, Jr., and Harnek Singh Gill, Indianapolis, Ind., assignors to Wallace-Murray Corporation, a corporation of Delaware
Filed Feb. 12, 1965, Ser. No. 432,081
7 Claims. (Cl. 74-574)



1. A torsional vibration damper assembly for mounting in operative relation to a torsionally vibrating rotating shaft comprising a driving member adapted for rotation by said rotating shaft, said driving member having a surface concentric with the axis of rotation of said rotating shaft, a first driven inertia member mounted concentrically of said driving member and encircling said concentric surface thereof, first elastic means interposed between said driving and driven members prohibiting permanent displacement of the driven member with relation to the driving member, a second driven inertia member mounted concentrically of said driving member, and second elastic means interposed as the sole physical connection between said first and second driven inertia members and preventing permanent displacement of said second driven member with relation to said first driven member, whereby the elastic systems formed by paired driven members and elastic means are series connected.

3,314,305

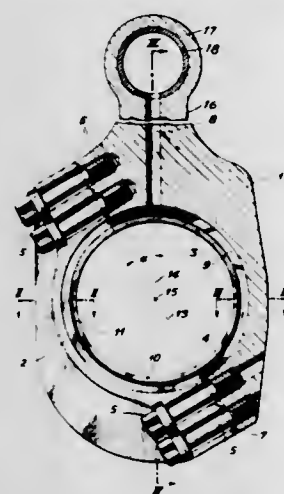
SPLIT CONNECTING ROD

Arnold Friedrich, Winterthur, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company

Filed Feb. 16, 1965, Ser. No. 433,006

Claims priority, application Switzerland, Feb. 28, 1964, 2,571/64

4 Claims. (Cl. 74-579)



1. A connecting rod comprising a cap and a shank, the shank having a wrist pin bearing portion at one end, a crankpin bearing portion at the other end, and a bore for the passage of lubricant extending from the crankpin bearing portion to the wrist pin bearing portion, the cap and shank having mating surfaces lying in a plane containing the axis of the crankpin bearing and inclined at less than 45° to the length of the shank, the crankpin bearing portion of the shank having formed therein two pluralities of blind, tapped holes without communication with the bore, the holes of each of said pluralities having unlike spacings from the axis of the crankpin bearing, said connecting rod further comprising two pluralities of screws passing through the cap and threadably engaging said holes to hold the cap against the shank.

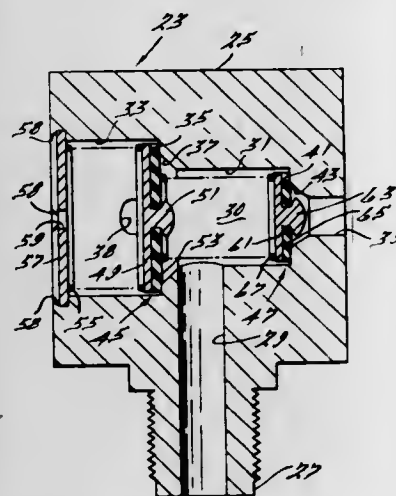
3,314,306

AIR VENT DEVICE FOR SEALED HOUSINGS

Anthony L. Barclae, Ferndale, Mich., assignor to Falcon Industries, Inc., Ferndale, Mich., a corporation of Michigan

Filed June 8, 1965, Ser. No. 462,452

2 Claims. (Cl. 74-606)



1. An assembly including a sealed differential housing having movable parts therein immersed in a lubricant and a pair of leg portions, said movable parts and lubricant being heated during operation of said parts and cooled when said parts are not in use causing pressure build-up and subatmospheric or vacuum conditions, respectively,

within said housing, means for relieving said pressure build-up and vacuum conditions comprising a body secured to one of said housing leg portions above the normal level of the lubricant, said body having a passageway communicating with said housing and first and second apertures opening to the atmosphere and communicating with said passageway, pressure responsive means within said body, means biasing said pressure responsive means toward a position overlying and closing said apertures, said pressure responsive means being movable to open said first aperture when the pressure within said housing exceeds a first predetermined level and being movable to open said second aperture when said pressure falls below a second predetermined level.

3,314,307

TRANSMISSION

Earl L. Egbert, Northville, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 5, 1963, Ser. No. 328,254

4 Claims. (Cl. 74-688)



1. In a transmission, the combination of a power source, a hydrodynamic torque transmitting device drive connected to the power source, a planet carrier having first and second intermeshing planet pinions revolvably supported thereon, an output ring gear meshing with the second planet pinion and connected to a load, a reaction sun gear also meshing with the second planet pinion, an input sun gear meshing with the first planet pinion, clutch means operative to drive connect the input sun gear to the hydrodynamic torque transmitting device, a one-way brake preventing rotation of the planet carrier in one direction so that with the clutch means operative a forward low speed drive ratio is provided, a forward drive brake operative for holding the reaction sun gear so that with the clutch means still operative a forward intermediate speed drive ratio is provided, a clutch operative for directly connecting the planet carrier to the power source so that with the clutch means also operative a direct drive ratio is provided with part of the drive proceeding through the hydrodynamic torque transmitting device and the other part of the drive proceeding directly from the power source and with both the forward drive brake and the clutch operative an overdrive ratio is provided with all of the drive bypassing the hydrodynamic torque transmitting device and proceeding directly from the power source to the planet carrier.

3,314,308

ACCESSORY DRIVE MECHANISM

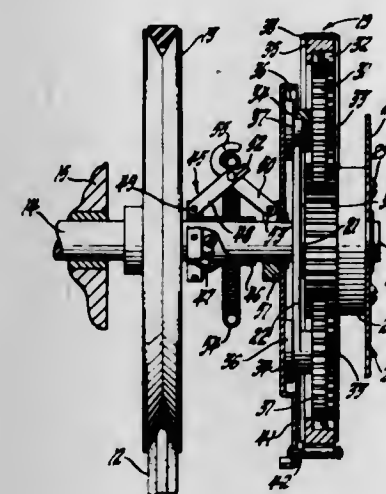
Eugene R. Ziegler, Spencerport, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 28, 1964, Ser. No. 399,529

8 Claims. (Cl. 74-752)

1. In an accessory driving mechanism adapted to be driven by an engine, the combination of an engine driven power input shaft, an output member connected to said accessory for driving the same, a power transmission device for driving said output member, said device including a planet carrier driven by said input shaft and supporting a planet pinion in mesh with a ring gear and a sun gear, means for establishing direct drive including a one-way clutch having one race driven by said input

shaft and a second race rotatable with said output member, an engageable and releasable brake effective when engaged to prevent rotation of said ring gear, means for applying said brake including an engageable and releas-



able clutch effective when engaged to transmit torque to said brake to engage said brake, and speed responsive means for controlling engagement and release of said clutch.

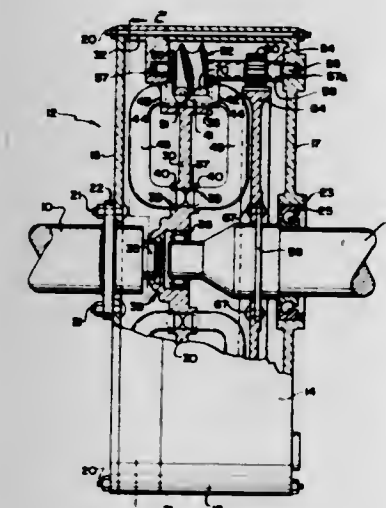
3,314,309

INERTIA COUPLING APPARATUS

Hugh J. C. Rickard, 116 E. Carisbrook Road North Vancouver, British Columbia, Canada

Filed Mar. 1, 1965, Ser. No. 436,028

6 Claims. (Cl. 74-752)



1. An inertia coupling for operatively connecting a pair of relatively rotatable coaxially aligned members comprising a sun gear connected to a driven member for rotation therewith, at least one planetary gear mounted for idling on a driving member and engaged with the sun gear, an endless tube formed as a single loop fixedly mounted on the driving member for rotation therewith, said tube being located to one side of the rotational axis of said driving member with the plane of its loop extending radially to the latter, said tube being partially cut away at its radially outermost side to form an opening therein, a series of balls held loosely in the tube, a fine threaded worm connected to the planetary gear for rotation therewith and having a portion extending into the opening in the tube to engage the balls, said worm having a pitch greater than the diameter of the balls so as to space apart any of the latter simultaneously engaged with said worm.

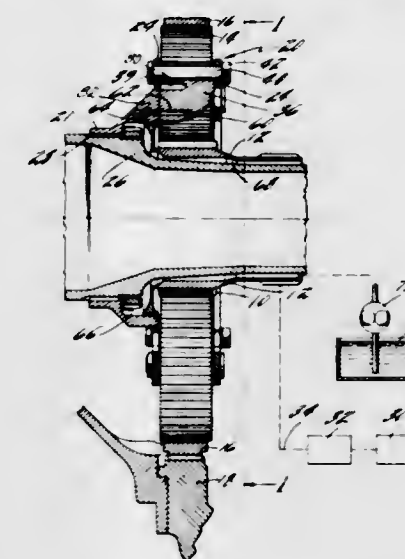
3,314,310

PLA JET GEAR CONSTRUCTION

Raymond N. Quenneville, Granby, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Oct. 8, 1964, Ser. No. 402,439

12 Claims. (Cl. 74-801)



1. Gear alignment means for a planetary gear system comprising a planetary cage adapted to rotatably support a plurality of planet gears, said planetary cage having an annular body portion, a plurality of spokes extending outwardly from said annular portion, said spokes including a U-shaped member having one leg attached to the body portion, and having the other leg supporting the associated planet gear, said U-shaped member being deflectable in the plane of rotation of the planet gears.

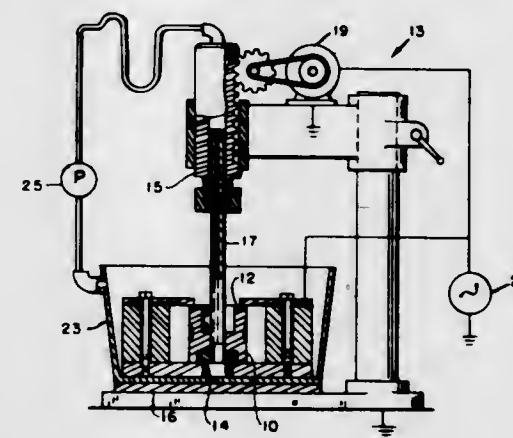
3,314,311

CARBIDE INSERTED BUTTON DIE

Ronald G. Burnet, Detroit, Mich., assignor of one-fourth to Lloyd Bastian, one-fourth to Walter S. Smith, both of Detroit, Mich., and one-fourth to Robert Moore, New Hudson, Mich.

Filed June 22, 1964, Ser. No. 377,005

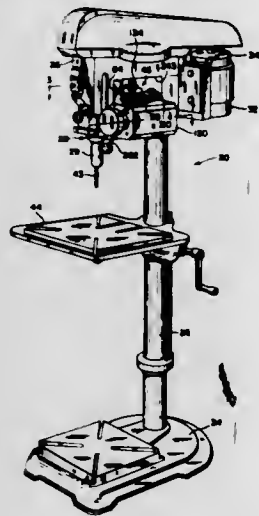
9 Claims. (Cl. 76-107)



4. The method of producing a carbide inserted button die comprising forming a die case blank of air hardened tool steel, machining the blank to a desired form, heat treating the blank, securing a carbide insert blank to the die case blank with cushioning means positioned therebetween by silver soldering the cushioning means to the die case blank and to the carbide insert blank, centerless grinding the outside diameter of the button die to a predetermined exact size and subsequently simultaneously electrically machining the die opening through the die case blank and carbide insert blank.

3,314,312
VARIABLE SPEED POWER FEED MECHANISM FOR DRILL PRESSES AND LIKE POWER TOOLS
 Edward J. Niehaus, Jr., and Edward C. Warrick, both of Pittsburgh, Pa., assignors to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania

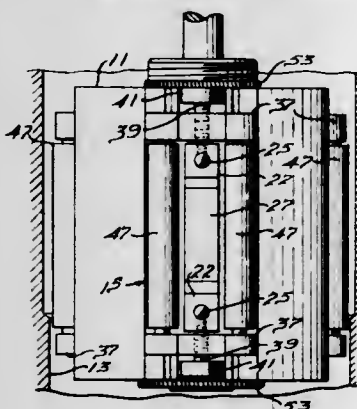
Filed July 7, 1964, Ser. No. 380,819
 15 Claims. (Cl. 77—33.8)



1. In a drill press or the like, a rotatable and axially reciprocable tool spindle, means providing a power source, a selectively adjustable steplessly variable speed pulley transmission having an input and an output, means for selectively drive connecting said output to axially advance said spindle in a tool-feeding direction, and variable speed drive train means drivingly connecting said power source to said input side and to said spindle for simultaneously rotating and axially advancing said spindle at correlated rotational and linear speeds.

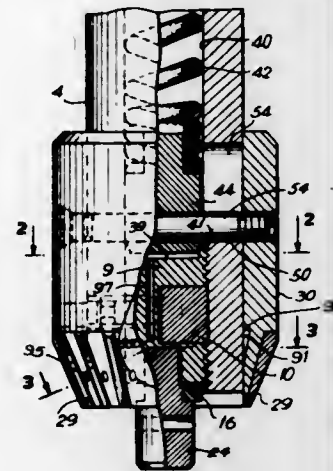
3,314,313
EXPANDABLE BORING TOOL
 Randal T. Murphy, Royal Oak, Mich., assignor to Micro-matic Hone Corporation, Detroit, Mich., a corporation of Michigan

Filed Aug. 27, 1964, Ser. No. 392,443
 7 Claims. (Cl. 77—58)



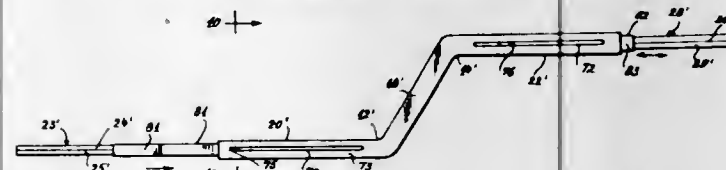
6. An expandable boring tool assembly including an elongate tool body rotatable about a longitudinal axis thereof, at least one elongate cutter holder having a main portion carried by said tool body for rotation therewith and a pair of spaced integral end portions extending radially outwardly of said tool body, a cutting tool carried by each said tool holder end portion and adapted to engage a bore wall during movement of said tool body therein, a pair of plates fixed to said cutter holder main portion at each end thereof for rotatably supporting a pair of rollers, one adjacent each side of each said cutting tool, cutter adjustment means carried by each said plate means and adapted to independently deflect each said cutter carrier end portion outwardly of said main portion and indicator means for said adjustment means.

3,314,314
BORING TOOL
 William Halpern, Haviland Road, Harrison, N.Y. 10528
 Filed Feb. 9, 1966, Ser. No. 526,110
 11 Claims. (Cl. 77—58)



1. A boring tool which is adapted to cut away the side wall of an original hole in a workpiece and which comprises, the combination of, a boring bar having a tool end which is adapted to project into an original hole in a workpiece while it is supported at its other end, a boring bit rigidly mounted upon said tool end of said boring bar and presenting a cutting edge which extends radially through a boring zone from a minimum radius which is less than the minimum radius of said original hole to a maximum radius which is the radius of the final hole which is being bored, a nose cone slidably mounted to move axially upon said boring bar, said nose cone including a plurality of elongated contact portions which converge and present bearing surfaces which are along a cone frustum which has a minimum radius which is less than the minimum radius of said original hole and a maximum radius which is greater than the maximum radius of said original hole whereby said bearing surfaces are adapted to be projected against and rest upon the end of said original hole, and resilient means resiliently urging said nose cone longitudinally of said boring bar toward a rest position wherein a portion of said bearing surfaces is in leading relationship with respect to said boring bit, said resilient means permitting said boring bar to be projected longitudinally against the action of said resilient means to a cutting position wherein the cutting edge of said boring bit intersects the cone frustum of said bearing surfaces and wherein said bearing surfaces are resiliently nested in said original hole.

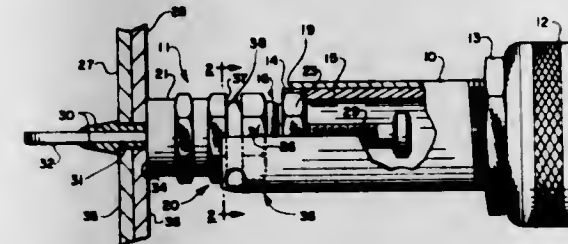
3,314,315
SAFETY LEVER AND OIL SEAL BREAKING TOOL FOR ROTARY TABLES
 Jule A. Scholl, 41—31 51st St., Woodside, N.Y. 11377
 Filed Apr. 28, 1965, Ser. No. 451,504
 9 Claims. (Cl. 81—3)



1. A tool for breaking an oil seal between a rotary table and a base plate in a rotary table and plate assembly for a machine tool, wherein said table has at least one radial dovetail groove and extending inwardly from the periphery thereof, comprising a bar having a central section doubly bent at spaced points to define two horizontal parallel socketed end portions spaced laterally

from each other at opposite ends of said section, and a dovetail tongue aligned with and received in one of said portions of the central section, said tongue fitting in said groove, whereby the oil seal between the rotary table and base plate is broken when said tongue is inserted longitudinally into said groove and the other end portion of said central section is manually grasped and moved laterally.

3,314,316
NUT RUNNER ATTACHMENT
 Lewis C. Finkle, Temple City, Calif., assignor to Wedge-lock Corporation of California, North Hollywood, Calif., a corporation of California
 Filed Dec. 4, 1964, Ser. No. 415,935
 1 Claim. (Cl. 81—55)



In a nut runner having a first tubular member adapted to support an outer body of a fastener having a non-circular outer configuration in non-rotative relationship to said first member and a second driven tubular member co-axial to said first tubular member and adapted to engage an actuator nut of non-circular configuration for rotation thereof so as to axially move a stud of said fastener in said second tubular member while rotating the actuator nut with the second tubular member, the combination comprising:

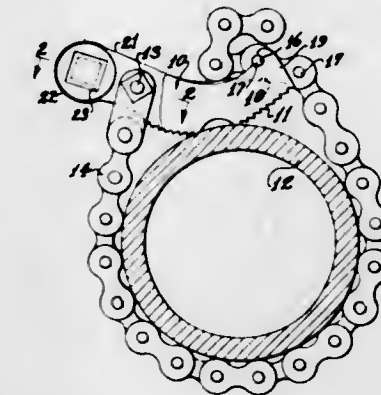
said fastener having an annular slot formed in said outer body extending along a plane normal to the major longitudinal axis of said fastener;
 locking means fixed to said first tubular member having a portion receivable in said fastener slot to retain said fastener in detachable engagement with said first tubular member against axial movement of said fastener body;
 said locking means portion having a rounded leading edge and a central notch opening into the bore of said first tubular member to accommodate the insertion of said fastener outer body into said first tubular member bore;
 said first tubular member having a cutout formed therein opposite to said locking means for facilitating said fastener insertion into and removal from said first tubular member.

3,314,317
WRENCH
 James M. Ashley, 306 S. 8th, East Gadsden, Ala. 35903
 Filed Feb. 16, 1966, Ser. No. 527,935
 1 Claim. (Cl. 81—68)

In a wrench for applying torque to an article:

(a) a first gripping member having an article engaging surface thereon and a socket-like member adjacent one end thereof in spaced relation to said article engaging surface,
 (b) a second gripping member adjustably connected to said first gripping member intermediate said socket-like member and said article engaging surface in position to engage and grip an article between said first and second gripping members with said socket-like member positioned outwardly of said second gripping member and the article gripped between said first and second gripping members, whereby said second gripping member is tightened about said article upon rotating said first gripping member in one direction,

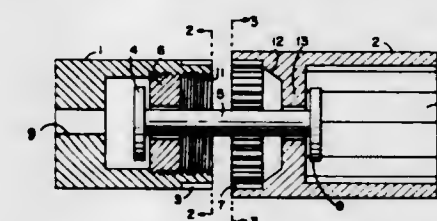
(c) a ratchet and pawl unit detachably connected to said socket-like member, and



(d) an actuating lever operatively connected to said ratchet and pawl unit to apply torque to said first gripping member and the article gripped between said first and second gripping members.

3,314,318
MICRO-SOCKET HAVING A DRIVE COUPLING MEANS AND INTERNAL CONNECTING BAR THEREFOR

Robert A. Shoults, 1303 Atlanta St., Cullman, Ala. 35055
 Filed Dec. 7, 1965, Ser. No. 512,249
 4 Claims. (Cl. 81—177)

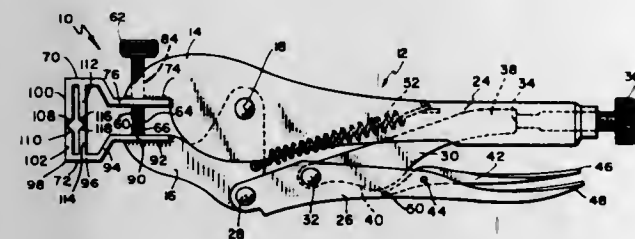


1. A micro-socket including: a driving member, said driving member having tool actuating means at one end for applying torque thereto, and a positive drive coupling means at the other end; a driven member, said driven member having a polygonal-shaped opening at one end for engaging a bolt head and a positive drive coupling means at the other end for positive driving engagement with positive drive coupling means of said driving member; and connecting means interconnecting said driving member and said driven member, said connecting means being interconnected to said driving member and said driven member such that at least one of said driving and driven members are rotatable relative to said connecting means, and said connecting means limits axial movement of said driving and driven members relative to each other such that said positive drive coupling means of said driving member and said driven member can be moved apart a sufficient distance to be disengaged and allow said driving and driven members to be rotated relative to each other by the rotary connection maintained by said connecting means to allow for angular adjustments of the driving member relative to the driven member and thereafter reengagement of said positive drive coupling means of said driving and driven members.

3,314,319
PLIERS-TYPE HAND TOOL
 Charles C. Schmidt, 3126 Arnold, Topeka, Kans. 66614
 Filed June 25, 1965, Ser. No. 466,911
 7 Claims. (Cl. 81—367)

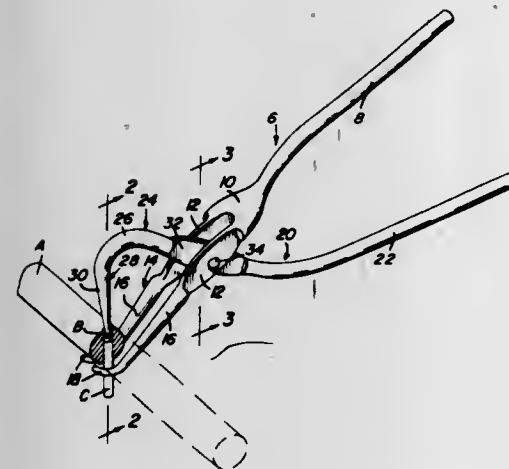
1. In a toggle-type gripping device of the class including pivotally connected jaws having portions constituting coacting work engaging elements, and handles

connected by toggle link means for releasably securing the jaws against moving from each other when the jaws are loaded against an object gripped between the work engaging elements; the combination therewith of said jaws being provided with stop means spaced from the portions



of the jaws constituting said work engaging elements for positively limiting closure of the jaws to constitute a gripping load for the jaws, whereby the jaws can be releasably secured against movement from each other when the portions of the jaws constituting the work engaging elements are spaced apart.

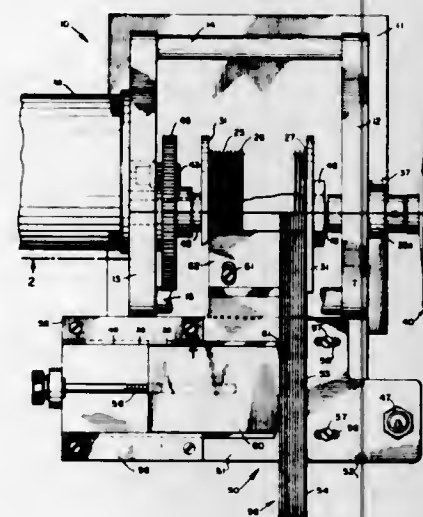
3,314,320
SHEAR PIN PLIERS
Hallie O. Early, 1407 Ave. E,
Brownwood, Tex. 76801
Filed Oct. 18, 1965, Ser. No. 497,285
5 Claims. (Cl. 81-419)



1. A pliers-type hand tool comprising: a first lever unit embodying an elongated handle provided at its forward end with an integral fork characterized by a pair of spaced parallel arms terminating in a pair of elongated claw-like fingers having free curvate tip portions oriented and coordinating to bridge, seat and grippingly hold a portion of a shaft or similar workpiece, a second lever unit complementary to said first lever unit and embodying an elongated handle similar to and cooperable with said first-named handle, the handle of said second lever unit being provided at its forward end with an elongated shank passing between and forwardly beyond median portions of the fork arms, a median portion of said shank being pivotally connected with coaxing median portions of said arms, the free forward end portion of said shank embodying a hook-shaped force-applying end thrust finger aligned with the space between said arms and movable through an arcuate path toward and from as well as through and beyond said space and said first-named fingers, said fingers being gradually decreased in cross-section from their rearward toward their forward ends whereby they are thus suitably attenuated and tapered for

piloting, guidance and position finding and placement needs, said tip portions being convexly rounded and blunt.

3,314,321
APPARATUS FOR SLITTING RIBBON CABLES
Felice Fauconiere, Chesapeake City, Md. 21915
Filed Oct. 4, 1965, Ser. No. 492,705
12 Claims. (Cl. 83-1)



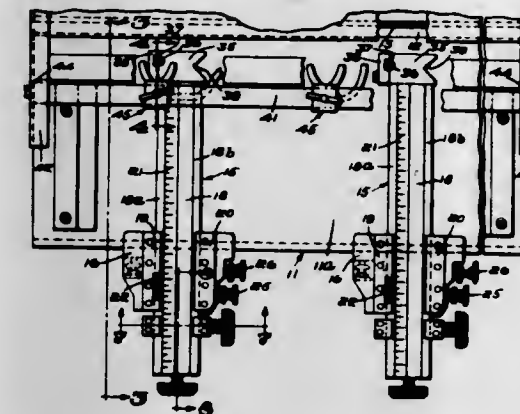
1. Apparatus for simultaneously separating the ends of a plurality of longitudinal electric conductors which are independently enveloped by insulation and have a predetermined center to center spacing, which conductors are bonded together in side-by-side relationship in the form of a ribbon having a predetermined thickness, comprising

- (a) a rotatable shaft means,
- (b) a plurality of circular cutting blades mounted on said shaft means,
- (c) means spacing said blades axially along said shaft at said predetermined center to center spacing,
- (d) selectively operable means rotating said shaft means for predetermined angular displacements,
- (e) rotatable supporting drum means cooperating with said rotatable cutting blades to support the lower surface portions of said ribbon and with said blades to define a slitting nip,
- (f) guide means located adjacent said nip and adapted to align a ribbon of bonded conductors with said nip in a manner whereby the planes of said blades are located intermediately of and parallel to said conductors,
- (g) means limiting the rotation of said cutting blades to less than one full revolution,
- (h) whereby rotation of at least one of said rotatable means in a predetermined direction will draw said ribbon through said nip to effect a predetermined separation of said insulated conductors and rotation of said at least one rotatable means in an opposite direction will withdraw the separated ends of the ribbon from said nip.

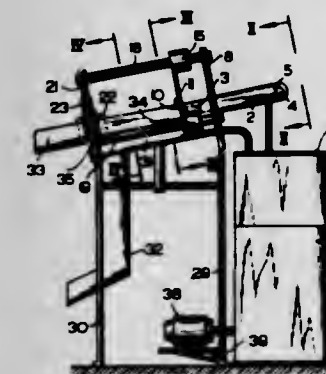
3,314,322
SHEAR GAGE
Edward L. Cutter, Jr., 50 Woodland Road,
Milton, Mass. 02186
Filed July 14, 1965, Ser. No. 471,952
5 Claims. (Cl. 83-451)

1. A gage, for a shear having a bed and a knife, comprising a gage bar mounted on said bed and slidable transversely of said bed and toward and away from said knife, an upwardly projecting pin mounted on said gage

bar, and a hold down mechanism slidable above said gage bar transversely of said bed and toward and away



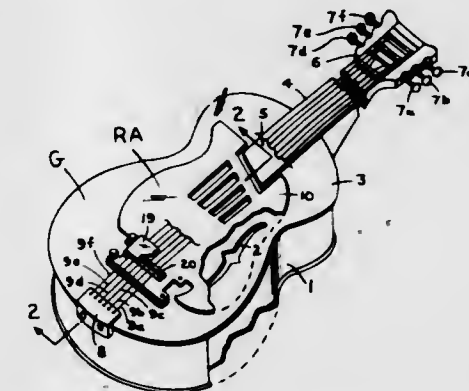
3,314,323
LABEL CUTTING MACHINE WITH A STATIONARY CUTTING KNIFE
Gerhard Busch, Heldenkampsweg 48, Hamburg, Germany, and Willi Lenzner, Hohe Liedt 56, Hamburg-Langenhorn, Germany
Filed June 10, 1964, Ser. No. 373,932
Claims priority, application Germany, June 10, 1963, B 53,527
7 Claims. (Cl. 83-569)



1. A machine for cutting labels or the like comprising, in combination, support means; a stationary cutting die having an end face provided with a cutting edge; a ram having a working face facing said end face of said die and being movable along a rectilinear path toward and away from said die so that sheet material fed between said faces may be cut along said cutting edge when the sheet material is pressed by said ram against said cutting edge of said die; adjustable mounting means mounting said stationary cutting die on said support means, said adjustable mounting means including a plurality of elongated holding members arranged spaced from each other substantially in a plane parallel to said faces and each engaging with one end thereof said stationary cutting die at the end thereof opposite from said end face, and means mounting each of said holding members on said support means adjustable in longitudinal direction toward and away from said stationary cutting die and adjustable in transverse direction toward and away from each other and each tiltable about an axis normal to said plane; rectilinear guide means extending substantially normal to said faces and engaging said ram for guiding the latter during its movement; drive means for moving said ram back and forth along said rectilinear path and including cylinder means having one closed end and piston means projecting with one end beyond the other end of said cylinder means, said cylinder and piston means extending substantially in direction of movement of said ram and one of said last mentioned two means being pivotally mounted at said one end thereof on said support means;

and connecting means connecting said one end of the other of said two means for limited universal movement to the end of the ram opposite to said working face thereof.

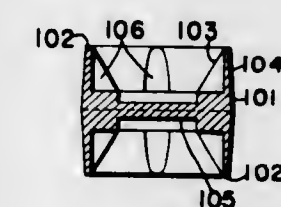
3,314,324
MEANS FOR ENHANCING AND REINFORCING THE TONES EMITTED BY A MUSICAL INSTRUMENT HAVING A RESONANCE CHAMBER
John Williams, 50 Beacon Ave.,
Jersey City, N.J. 07306
Filed Oct. 1, 1965, Ser. No. 491,973
9 Claims. (Cl. 84-294)



1. In a string type musical instrument having a resonance chamber the combination with said resonance chamber of,

- (a) a relatively thin resonating plate of substantial area,
- (b) connecting means on said plate to dispose said plate in cantilevered and spaced relation to the outer surface of said resonance chamber and to transmit the vibration from the strings of the instrument thereto,
- (c) and adjustment means formed on said plate a spaced distance from said connecting means to permit adjustable positioning of the resonating plate relative the string of said musical instrument and to obtain optimum enhancement and reinforcement of the tones emitted by said resonance chamber.

3,314,325
CONCEALED INTERNAL MECHANICAL FUSION FOR METALLIC MEMBERS
Victor F. Zahodiak, P.O. Box 689,
Summit, N.J. 07901
Filed May 25, 1965, Ser. No. 458,727
7 Claims. (Cl. 85-14)

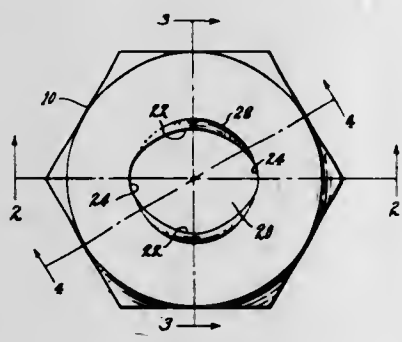


1. A structure for concealed internal mechanical fusion for metallic members, comprising a prong constituted as a body of revolution about an axis providing an uninterrupted circular cutting edge in a plane perpendicular to said axis, said prong being hollow backwardly from said cutting edge and constituted with a rearwardly uniformly increasing thickness of the prong wall as straight-line conical inside and outside surfaces meeting at said

cutting edge with said thickness increasing at a substantial angle and obtaining a penetration in use on a said metal member measured normal to the penetrated surface approximating the radially outward deflection of the cutting edge the angle of taper on the outside surface being substantially less than the angle of taper on the inside surface relative to the axis, and said prong having symmetrically disposed scorings at the interior surface of the prong wall extending rearwardly from said cutting edge.

3,314,326 SELF-THREADING NUT WITH INTERRUPTED THREADS

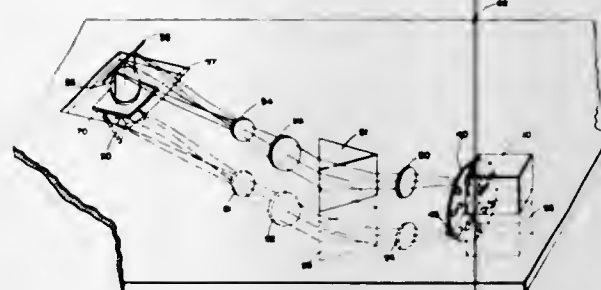
William A. Bedford, Jr., Littleton, Colo., assignor to Republic Industrial Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 20, 1964, Ser. No. 405,033
2 Claims. (Cl. 85-32)



1. A self-threading nut for assembly onto a taper ended unthreaded stud of appropriate size, said nut having an oblong aperture having a major axis and a minor axis, the wall of said aperture defining from the intersections of said aperture wall and said minor axis smoothly progressing curves substantially meeting at said intersections of said aperture wall and said major axis, said aperture wall having opposed minor substantially unthreaded end portions at said intersections of said major axis and said aperture wall and opposed major threaded portions at said intersections of said minor axis and said aperture wall intermediate said minor substantially unthreaded wall end portions, said major threaded wall portions having a thread in common and each including a plurality of thread convolution segments rising therefrom, the root of said thread lying on a helix which intersects the crest of said thread at ends of said segments in proximity to said intersections of said major axis of said aperture and said aperture wall, said ends of each of said segments being spaced apart less than 180° whereby the points of intersection of said aperture wall and said root are substantially nearer to said intersections of said major axis and said aperture wall than to said intersections of said minor axis and said aperture wall, said root having maximum depth at the approximate centers of said segments longitudinally between said ends of the segments, the crest of said thread curving longitudinally inwardly toward said root from each of said minor substantially unthreaded wall end portions to the other of said minor substantially unthreaded wall end portions and to the level of said root at said ends of said segment, and the depth of said root progressively diminishing similarly in said thread segments and in each of opposite directions from each of said approximate centers of said thread segments to zero at said ends of said segments, whereby a taper ended unthreaded stud of appropriate size brought into contact relatively rotationally at the tapered end thereof with said curved crest in said aperture is swaged on a helix generated by said thread and is subjected to bite of said curved crest progressively from about the level of said thread root.

3,314,327 COLORIMETER EMPLOYING TRISTIMULUS VALUES

Joseph E. Killpatrick, Minneapolis, and Herman G. Sperling, St. Louis Park, Minn., assignors to Honeywell Inc., a corporation of Delaware
Filed Dec. 13, 1961, Ser. No. 149,016
2 Claims. (Cl. 88-14)

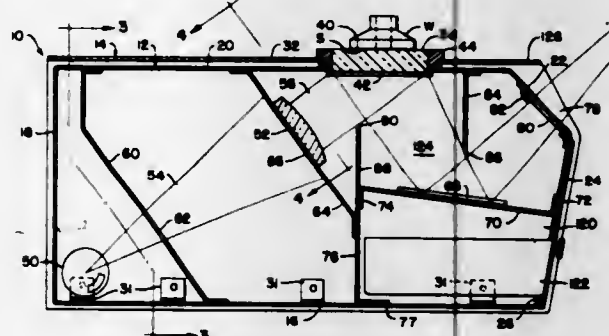


1. A colorimeter for determining the color of a sample comprising in combination:
optical means to transmit light from said sample;
chopping means to chop separate portions of said light, each portion being chopped at a separate frequency;
means in optical alignment with said chopping means to form an individual spectrum from each of said separate portions of the chopped light;
masking means in optical alignment with said spectrum forming means for transmitting only selected different portions of said individual spectra;
detecting means in optical alignment with said masking means for converting said transmitted portions of said individual spectra to electrical signals, which signals alternate at the frequencies of said chopping means;
electrical filtering means electrically connected to said detecting means for isolating from each other said electrical signals alternating at the frequencies of said chopping means; and
computing means electrically connected to said electrical filtering means for converting said signals into electrical outputs varying in magnitude as a function of the color of said sample.

3,314,328 SURFACE MEASURING DEVICE

Stephen A. Boettcher, Evanston, Ill., assignor to Speedlap Supply Corporation, Skokie, Ill., a corporation of Illinois

Filed Apr. 22, 1963, Ser. No. 274,627
5 Claims. (Cl. 88-14)



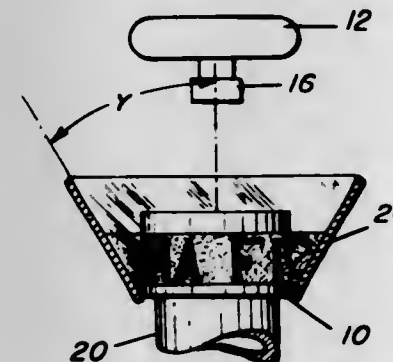
1. A device for checking the surface flatness of a work piece comprising a horizontally-disposed grating having closely spaced parallel lines on which to rest the side of the work piece which is to be checked for surface flatness, means for directing a beam of collimated light from beneath and through said grating at an angle other than one lying in the plane defined by a grating line and an intersecting vertical to said grating line to form grating line shadows on the surface of a work piece rested on said

grating, and a mirror spaced below said grating and offset therefrom in a direction away from said collimated light beams by means of which the grating lines and their shadows may be viewed from a position above and to one side of the grating, and baffle means confining the angle of viewing the reflector to one such that said grating lines and their shadows will be visible to the viewers as comprising a pattern of dark and light bands which deviate from parallelism in accordance with the departure of said surface of the work piece from flatness, said baffle means further serving to prevent the viewer from directly viewing the collimated light beam.

3,314,329 METHOD OF OPTICAL CORRECTION FOR PREPRINTING DRAWN ARTICLES

Harris Jay Wolbert, Prospect Heights, Ill., assignor to American Can Company, New York, N.Y., a corporation of New Jersey

Filed Oct. 6, 1964, Ser. No. 401,863
10 Claims. (Cl. 88-24)



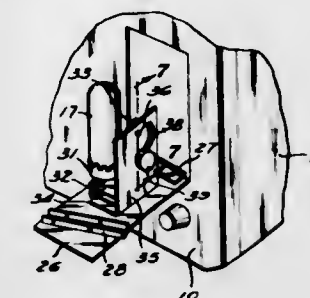
1. A method of optical correction for preprinting a container to be subsequently drawn into a tubular shape, said method comprising the steps of:
providing a label having a linear undistorted image thereon;
photographing said label so as to produce an image of foreshortened height;
wrapping the photograph of said foreshortened height image about a suitably sized mandrel;
disposing the mandrel coaxially within a generally frusto-conical mirror or predetermined size and angularity so that said foreshortened height image will be reflected into said mirror;
photographing the image reflected in said frusto-conical mirror to produce an image having a selective distortion;
imprinting the selectively distorted image onto a blank and drawing at least a part of said blank into a tubular container wherein said selectively distorted image appears in undistorted form upon the side walls of said tubular container.

3,314,330 OVERHEAD PROJECTOR

Arthur A. Finke, Newbury, Ohio, assignor to Applied Sciences, Inc., a corporation of Ohio
Filed Mar. 4, 1965, Ser. No. 437,114
4 Claims. (Cl. 88-24)

1. In a projector comprising a housing with a bottom, sides and a top, means defining a stage area normally in the top of the housing, and a projection head outside the housing supported in spaced confronting relationship to said stage area and overlying said stage area when the housing is in its normal bottom-down position, a light bulb inside said housing and means for directing light emitted from the side of said bulb onto said stage area, and a bulb support means carried by said housing and permitting turning of the bulb angularly with respect to

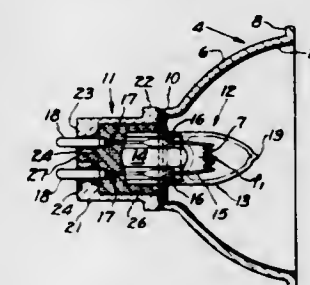
the housing from a first position in which the bulb extends upright when the housing is positioned bottom down to a second position in which the bulb extends upright when the housing is rested on one of its sides and



said projection head is in front of the stage area, whereby, in either said first or second position, the side of the bulb is positioned to avoid damage from heat generated by said bulb.

3,314,331 PHOTOGRAPHIC PROJECTION SYSTEM AND LAMP

Emmett H. Wiley, Chesterland, Ohio, assignor to General Electric Company, a corporation of New York
Filed Apr. 29, 1965, Ser. No. 451,874
11 Claims. (Cl. 88-24)



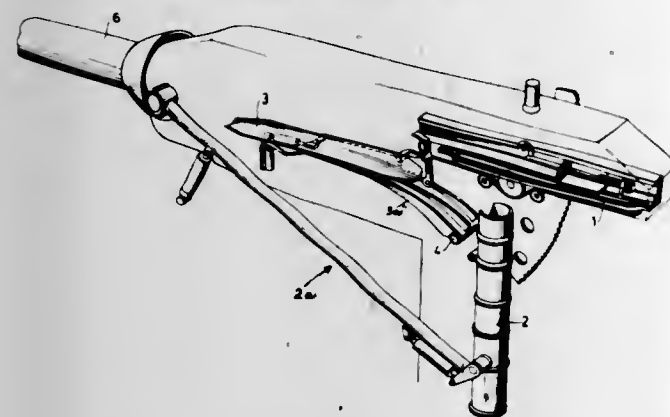
3. In a photographic projection system including means providing a film aperture, a projection lens in front of said aperture and light projecting means behind said aperture for concentrating a beam of light therethrough, said light projecting means comprising a compact lamp unit including a concave light-concentrating reflector of glass having thereon a multiple layer interference film which reflects light and transmits heat, said reflector facing said aperture and having an annular flange at its rim and an opening at its apex, a base member attached fixedly to the back of said reflector at the margin of said opening, said base member having opposite flat sides defining a narrow lateral base dimension, a light source comprising an unbased compact miniature lamp bulb containing a tungsten filament and supported fixedly in said base with its filament located in said reflector in fixed predetermined accurate relationship to the focus thereof and to the said flange, said bulb containing a halogen for operation of a tungsten-halogen regenerative cycle which maintains said compact bulb free from blackening, contact members at the rear of said base electrically connected to the filament of said lamp bulb, support means including an annular seating shoulder portion located in fixed predetermined accurate relationship to said film aperture and engageable with the said flange on said reflector, means holding said reflector flange securely against said seating shoulder with said reflector and light source in accurate predetermined relationship to said film aperture, and indexing means carried by said supporting means and engaging the said flat sides of said base member to orient the lamp unit in a predetermined angular position.

3,314,332 CARTRIDGE-GUIDING DEVICE OF AN AUTOMATIC GUN

Sten Olov Wallin, Karlskoga, Sweden, assignor to Aktiebolaget Bofors, Bofors, Sweden, a corporation of Sweden

Filed May 19, 1965, Ser. No. 456,970
Claims priority, application Sweden, May 21, 1964,
6,202/64

8 Claims. (Cl. 89—45)

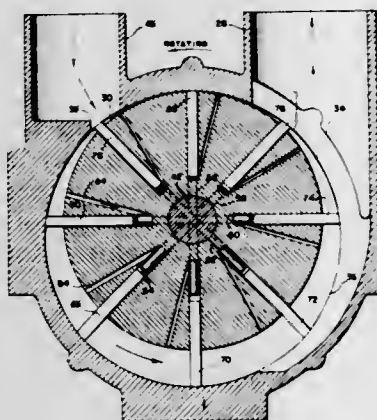


1. In a device for guiding a loaded cartridge while being rammed into the cartridge chamber of an automatic gun and for deflecting an empty cartridge case downwardly when ejected during firing, a cartridge guide member movable in reference to the cartridge chamber between a lower ramming position and an upper ramming position, said guide member in its upper ramming position guiding the forward portion and in its lower ramming position the rear portion of the cartridge to be rammed into the cartridge chamber, releasable means holding said guide member in said upper ramming position, ramming means forwardly movable in reference to said guide member for ramming a loaded cartridge into the cartridge chamber, and actuating means coacting with said releasable means for releasing the same when the ramming means has completed a predetermined first part of its ramming movement, release of said releasable means freeing said guide member for movement into its lower ramming position.

3,314,333 ROTARY EXPANSION MOTOR

O. J. King and Ray E. Hudson, both of Odessa, Tex., assignors to Basin Recovery Corporation, Midland, Tex., a corporation of Texas

Filed Dec. 27, 1965, Ser. No. 516,601
4 Claims. (Cl. 91—129)



1. A rotary expansion motor of the type used in extraction of gasoline from small natural gas sources comprising:

- (A) a housing enclosing a progressively expanding chamber, having
(i) a gas inlet port mounted at the smaller end of said chamber, and

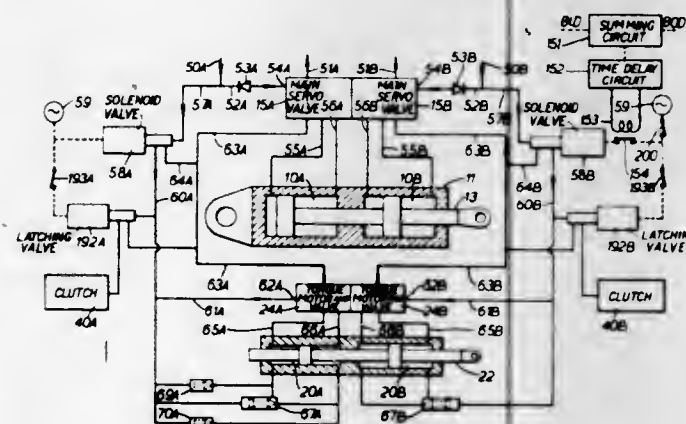
- (ii) a gas outlet port mounted at the larger end of said chamber;
(B) an eccentrically mounted rotor supported upon a shaft within said chamber and having radially extending blades, resiliently urged outwardly against the walls of said expansion chamber, and
(C) a foraminous grill supported within said chamber, so as to limit radial extension of said vanes during rotation across said inlet port and across said exhaust port.

3,314,334 SERVO SYSTEM WITH MAIN AND STANDBY CHANNELS

Francis C. Palmer, Heston, England, assignor to Fairey Engineering Limited, Heston, England, a company of Great Britain

Filed Dec. 11, 1964, Ser. No. 417,629
Claims priority, application Great Britain, Dec. 12, 1963,
49,217/63

7 Claims. (Cl. 91—438)



1. A duplicated servo system which includes two control channels, referred to as the main and standby channels, which are both normally permanently energized and which incorporate respectively two servo motors whose outputs are both coupled to a common output member, means for putting the main motor out of action in the event of a fault in the main control channel, and bypassing means for bypassing the standby motor to render it ineffective to drive the output member but without de-energizing the standby channel, the bypassing means being normally held in its operative condition, in which it bypasses the standby motor, by means controlled by the main channel so long as the main motor remains in action but being automatically rendered inoperative so as to bring the standby motor into action in response to the operation of the means for putting the main motor out of action.

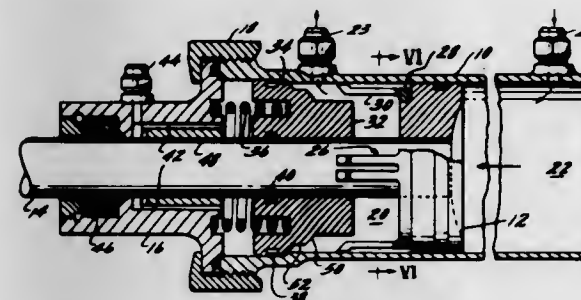
3,314,335 ACTUATOR LOCKING MECHANISM

William K. Gulick, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York

Filed May 6, 1965, Ser. No. 453,794
4 Claims. (Cl. 92—26)

1. Locking mechanism for an actuator comprising, a cylinder and a piston reciprocable in a bore therein, said piston dividing the interior of said cylinder into chambers of variable volume on opposite sides thereof,
a port for the alternate introduction and discharge of actuating fluid into and from one of said chambers, said locking mechanism comprising,
a plurality of locking fingers projecting from said piston into said one chamber and normally spaced from the piston bore,
a locking shoulder,

a lock actuator reciprocable at the opposite end of said one chamber and displaced from said locking shoulder when said one chamber is pressurized, spring means urging the lock actuator toward said locking shoulder,
said lock actuator having a camming surface engageable by said locking fingers for displacement of said lock actuator while said locking fingers are spaced from said bore as the piston moves towards one end of said cylinder,



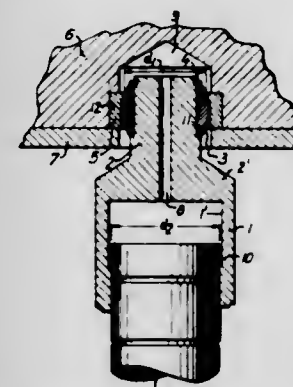
said lock actuator having a camming surface flexing said fingers into alignment with said locking shoulder, only when said lock actuator is displaced to the end of said one chamber,
whereby the piston will be locked at said one end of the cylinder by engagement of the fingers with the locking shoulder if said one chamber is not pressurized, and if said one chamber is pressurized, the lock actuator is maintained in spaced relation from said locking shoulder, permitting the locking fingers to return to their normal position clear of the locking shoulder.

3,314,336 BALL AND SOCKET JOINT FOR CYLINDER HEAD

Bernard Jorgl, Hamburg-Lokstedt, Germany, assignor to Licentia Patent-Verwaltungs, G.m.b.H., Frankfurt am Main, Germany

Filed May 19, 1964, Ser. No. 368,603
Claims priority, application Germany, May 20, 1963,
L 44,923

2 Claims. (Cl. 92—118)



1. A ball and socket joint device for connecting a cylinder head with a support body, comprising, in combination:

- a cylinder head having an axial pivot provided with a bore therethrough one end of which communicates with the cylinder chamber of said cylinder head;
an inner ring of a ball and socket joint sealed on said pivot pin;
a support body having a recess and a space disposed behind said recess;
means for supplying fluid to said cylinder chamber; and
an outer ring of a ball and socket joint bearing fixedly mounted in said recess and receiving said inner ring so that the other end of said bore communicates with said space;

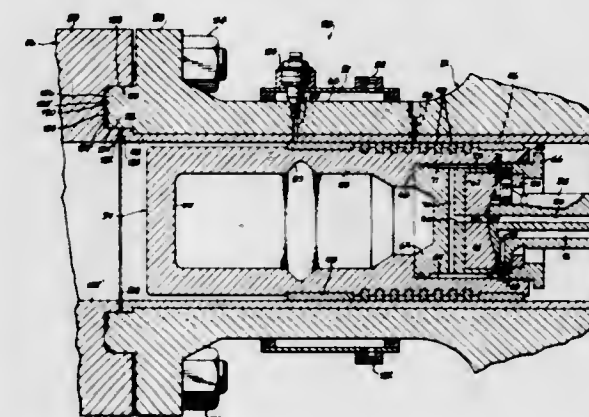
837 O.G.—29

the dimensions of said inner ring, said pivot pin, and said cylinder chamber being such that the force applied to the end face of said chamber by fluid therein is always slightly greater than the force applied by the fluid in said space to the end of said pivot pin and to the portion of said inner ring disposed in said space for creating a sealing pressure between said inner ring and said outer ring which is sufficient to prevent the passage of fluid between said rings.

3,314,337 PISTON FOR AN EXPANSION ENGINE

William H. Payne, Olean, N.Y., and Ralph E. Henry, Rixford, Pa., assignors to Dresser Industries, Inc., a corporation of Delaware

Filed Jan. 31, 1964, Ser. No. 341,565
6 Claims. (Cl. 92—157)



1. In an expansion engine including a cylinder having a bore and a cylinder head having a recess aligned with said bore, the combination therewith of an elongated piston reciprocally arranged in said bore and recess, a first annular wear band on said piston adjacent the end thereof remote from said head, a second and wider annular wear band arranged generally centrally on said piston so as to provide said piston with an end portion projecting axially toward said head, said second wear band never contacting said head during reciprocation of said piston, and sealing rings carried by said piston intermediate said wear bands.

3,314,338 MACHINE FOR FOLDING CARTON BLANKS

Richard G. Birkholz, Milwaukee, Wis., assignor to Dorr Sales & Engineering Co., Inc., Milwaukee, Wis., a corporation of Wisconsin

Filed Nov. 27, 1964, Ser. No. 414,144
5 Claims. (Cl. 93—49)



1. A machine for folding flat carton blanks along parallel end scores to bring the end flaps defined thereby flatwise down onto the blank, said machine having a loading end for blanks to be folded and having a delivery end from which folded blanks discharge, and being characterized by the following:

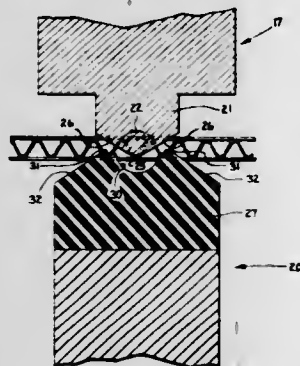
- (A) a pair of parallel blank supporting rails extending horizontally from one end of the machine to the other, and adapted to flatwise support carton blanks to be folded with the end scores of such blanks substantially in line with the outer sides of the rails so that the carton end flaps extend laterally outwardly beyond the rails at the loading end of the machine;

- (B) a pair of endless blank advancing chains carried by the rails at the inner sides thereof, with their upper stretches constrained to travel in unison toward the delivery end of the machine along paths lengthwise adjacent to the tops of the rails;
- (C) blank engaging fingers on said chains to engage transversely spaced rear edge portions of carton blanks loaded onto the machine and carry the blanks through the machine;
- (D) a pair of blank folder chains carried by the rails at the outer sides thereof, with their upper stretches constrained to travel toward the delivery end of the machine in unison with the blank advancing chains, along paths lengthwise adjacent to the tops of the rails;
- (E) elongated transversely opposite cam means fixed with respect to the rails at a folding zone intermediate the ends of the machine;
- (F) hinged cam follower means carried by the folder chains for engagement with the undersides of carton end flaps and cooperable with said cam means as the cam follower means travel through the folding zone to swing said end flaps upwardly and inwardly, flatwise down onto the carton blanks;
- (G) a drive sprocket for each of said chains, over which the chain is trained;
- (H) a drive shaft from which said drive sprockets are driven;
- (I) and means providing a disruptable driving connection between the drive shaft and the drive sprocket for one of the folder chains by which the latter can be either advanced or retarded relative to the other folder chain, when said driving connection is disrupted, so as to provide for setting of the hinged cam means on the folder chains either at transversely opposite locations or with those on one folder chain either leading or trailing those on the other folder chain.

3,314,339

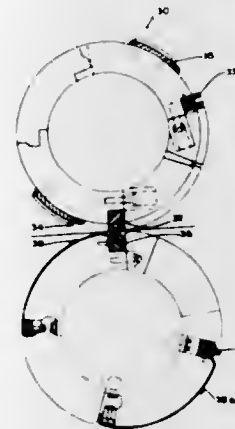
SCORING DEVICE

Willie E. Guffy and Willis B. Lincoln, Jr., Indianapolis, Ind., assignors to Inland Container Corporation, Indianapolis, Ind., a corporation of Indiana
Filed May 4, 1964, Ser. No. 364,596
2 Claims. (Cl. 93—58.1)



1. In a scoring apparatus including a pair of scoring rollers arranged to rotate about parallel axes, said rollers having adjacent peripheries between which board moves to be scored, the improvement which comprises one of said rollers having a resilient external periphery, the other of said rollers being formed of rigid material at its external periphery, said resiliently periphered roller having an outwardly facing generally semi-circularly cross-sectioned recess extending therearound, annular portions of said first roller on opposite sides of said recess tapering toward the roller axis to form continuous beads along the side margins of said recess, said other roller have a projection extending therearound, said projection extending toward said recess for cooperating therewith to score the board.

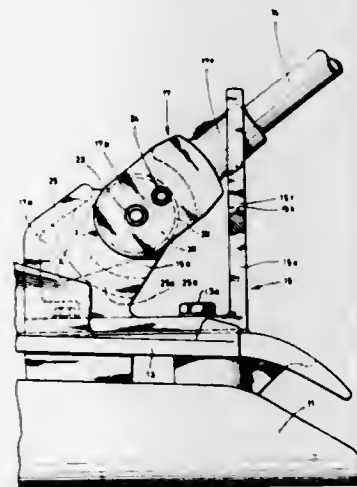
3,314,340
APPARATUS FOR USE IN THE MANUFACTURE OF BOXES AND THE LIKE
Thomas Desmond Bishop, Solihull, England, assignor to The Deritend Engineering Company Limited, Birmingham, England, a British company
Filed Oct. 16, 1964, Ser. No. 404,228
Claims priority, application Great Britain, Nov. 9, 1963, 44,306/63
2 Claims. (Cl. 93—58.2)



1. Apparatus for use in the manufacture of boxes and the like comprising a first roll pair with butt-flap cutting means and bar-bender means for transversely creasing blanks fed through the pair, a second roll pair with slotting means for separating flaps one from the next along the blanks, said second roll pair being disposed after the said first roll pair, means for carrying out of the plane occupied by the remainder of the blank the cut-off pieces from the butt-flaps as the blank proceeds through the apparatus.

3,314,341
POLE CONTROLLED VIBRATING TAMPING DEVICE

Gotthilf Schulz, Fellbach, and Heinz Stellwag, Delzisaue, Germany, assignors to Delmag-Maschinenfabrik Reinhold Dornfeld, Esslingen (Neckar), Germany
Filed Oct. 14, 1964, Ser. No. 403,947
Claims priority, application Germany, Oct. 19, 1963, D 42,761
4 Claims. (Cl. 94—48)

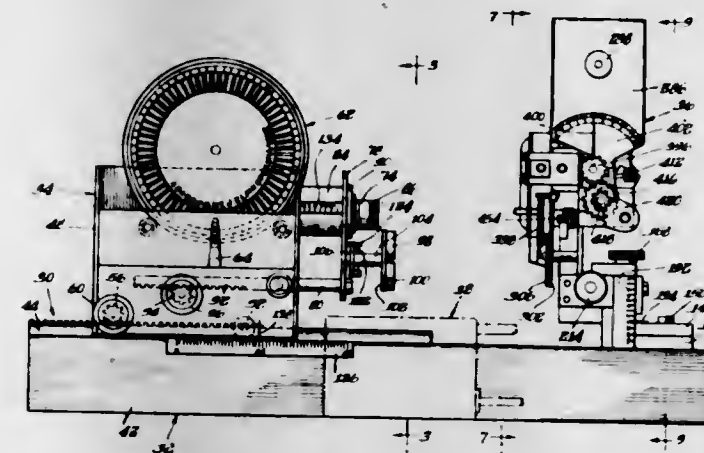


1. A soil tamping and compacting apparatus having a bottom member adapted to vibrate; a cover member provided with a connecting portion, and means for vibrating said bottom member, said apparatus including pole means for manually handling said apparatus and having a connecting member on the front end adjacent said cover

means and handle means on the rear end, at least two elastomeric coupling elements between said connecting member and said connecting portion and connecting said cover means to said pole means so that said pole means is connected to said cover means by a plurality of resilient coupling elements for movement about a transverse axis and universal angular movement about the point of intersection of said transverse axis and the axis of said pole means, said connecting member having an extension on the front end forward of said transverse axis, said connecting portion being provided with an abutment means spaced from and underlying said pole means and a second abutment means on the opposite side of said transverse axis spaced from and overlying said extension, said abutment means being adapted to engage said pole means and extension, respectively, simultaneously upon depression of said pole means to provide a positive engagement between said pole means and said cover means and tilt said cover means.

3,314,342
PHOTOTYPGRAPHIC STRIP PRINTING MACHINE

Bruno Radtke, Libertyville, Ill., assignor to Fototype, Incorporated, Chicago, Ill., a corporation of Delaware
Filed Nov. 5, 1964, Ser. No. 409,113
13 Claims. (Cl. 95—4.5)

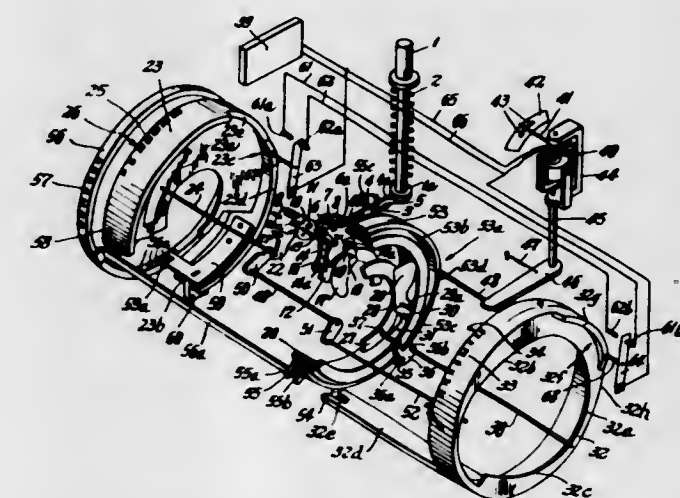


1. An optical printing machine comprising: means for providing a type font adapted to selected optical projection of the characters thereof, said type font having a plurality of index marks respectively associated with the characters thereof and positioned in accordance with the size of the respective characters; optical projection means for selectively optically selecting a character of said type font; a printing station; means providing a supply of photosensitive printing material in strip form; feeding means for intermittently advancing said strip of photosensitive printing material relative to said printing station and including a pair of opposed strip feed roller means bearing on said strip on opposite sides thereof; and control means connected to said optical projection means and to said feeding means, said control means comprising photosensitive means initially positioned away from the projection path of the index mark corresponding to the character being projected and movable into position to intersect the projected index mark, said photosensitive means being activated by said projected index mark to actuate said control means and limit movement of said photosensitive printing material relative to said printing station, said control means further including moving means driven in synchronism with said roller means, said moving means including a driven roller, means mounting said driven roller for movement transverse of its axis into and out of driving engagement with said strip feed roller means, means normally holding said driven roller

in driving engagement with said strip feed roller means to move said photosensitive means from an initial position to the position intersecting the projected index mark, and means for disabling said moving means for return of said photosensitive means to an initial position, said disabling means comprising means for retracting said driven roller from driving engagement with said strip feed roller means.

3,314,343
PHOTOGRAPHIC CAMERA WITH SETTING MEANS FOR EXPOSURE TIME AND DIAPHRAGM AND HAVING AN EXPOSURE METER AND A COOPERATING RESETTING DEVICE

Waldemar T. Rentschler, Calmbach (Enz), Germany, assignor to Alfred Gauthier, G.m.b.H., Calmbach (Enz), Germany, a corporation of Germany
Filed Oct. 22, 1963, Ser. No. 318,010
Claims priority, application Germany, Oct. 27, 1962, G 36,243
6 Claims. (Cl. 95—10)

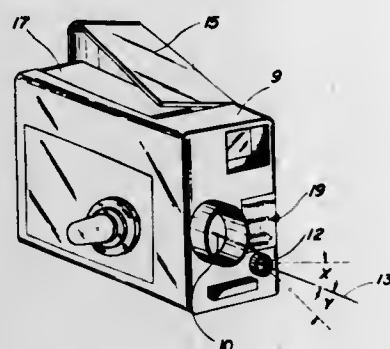


1. In a photographic camera, a shutter mechanism comprising: a shutter blade; a variable aperture diaphragm; driving means connected to operate said shutter blade; a shutter speed control connected to said driving means to control the speed of operation of said shutter; a shutter speed scale associated with said shutter speed control to indicate the operating speed of said shutter; a diaphragm control to vary the size of the aperture of said diaphragm; a scale associated with said diaphragm control to indicate the aperture value of said diaphragm aperture; a resetting device comprising an exposure meter comprising a photosensitive device and first and second members movable with respect to each other in response to light striking said photosensitive device and linkage means controlling the position of one of said members, said members comprising an indicator member and a frame member; a first one of said controls having an additional setting position beyond the scale associated therewith and a second one of said controls having additional setting range beyond the scale associated therewith; a plurality of cams connected to said second one of said controls to be controlled thereby and to control said driving means and said diaphragm when said second control is to its additional range; a second set of cams, a first cam of said second set being connected to said first control to be actuated thereby, a second cam of said second set being connected to said second control to be actuated thereby, said cams of said second set being connected together whereby actuation of one of said cams of said second set actuates the other of said cams of said second set; and means connecting said linkage means to said second set to be controlled in response to the combined setting of both of said cams of said second set to set said indicator member to a predetermined position.

3,314,344

FILTER COMPENSATION MECHANISM

Robert D. Anwyl and Allen G. Stimson, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 11, 1964, Ser. No. 366,271
5 Claims. (Cl. 95-10)

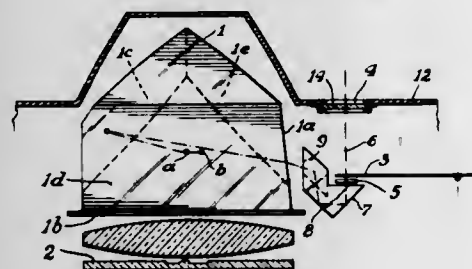


1. In a camera having exposure-determining means controlled as a function of the output of a photoresponsive device positioned to be exposed to scene light received through an aperture having an acceptance angle of predetermined upper and lower vertical limits, and a filter selectively positionable in alignment with the picture-taking axis of said camera to alter the spectral composition and reduce the intensity of light passing along said axis, the improvement comprising: masking means positioned between said aperture and said photoresponsive device and being simultaneously movable into blocking relation to said aperture when said filter is aligned with said axis, said masking means altering only one of said vertical limits to reduce the exposure and output of said photoresponsive device as a function of said reduction in intensity of light passing along said axis.

3,314,345

SINGLE LENS MIRROR REFLEX CAMERA

Helmut Ebertz and Willi Günther, Stuttgart-Möhringen, and Roland Rudat, Württemberg, Germany, assignors to Zeiss Ikon Aktiengesellschaft, Stuttgart, Germany
Filed Sept. 2, 1964, Ser. No. 393,922
Claims priority, application Germany, Sept. 21, 1963, Z 10,370
4 Claims. (Cl. 95-10)

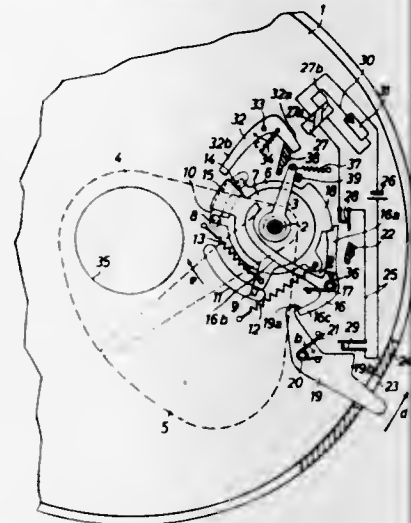


1. In a single lens mirror reflex camera provided with a viewfinder employing a penta roof edge prism and provided with an electric exposure meter having a movable pointer playing over a fixed scale, and in which an image of said pointer is projected by one of the reflecting faces of said roof edge prism into the viewfinder image, the improvement comprising the arrangement of said movable pointer in a plane which is conjugated to the focussing plane of the viewfinder so that the projection of the image of said pointer into said penta roof edge prism takes place by a mirror (9) through the side face (1a) of said prism which is adjacent said pointer, said mirror (9) being arranged at substantially the same inclination as the adjacent roof face (1e) of said prism, and a carrier for said mirror, said carrier, said mirror and said penta roof edge prism being formed of a single member.

3,314,346

LIGHT CONTROLLED SHUTTER

Rudolf Kremp, Grunwald, Munich, and Gerd Kiper, Unterhaching, Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany
Filed Sept. 28, 1964, Ser. No. 399,799
Claims priority, application Germany, Sept. 28, 1963, A 44,161
16 Claims. (Cl. 95-10)



1. In a camera, in combination, spring-loaded shutter means including blade means movable from a closed position to an open position and back to closed position, and operating means movable to effect movement of said blade means back to closed position; manually controlled means including means for holding said operating means in a first position corresponding to the open position of said blade means and operative to release said operating means for movement to a second position corresponding to the closed position of said blade means; and control means separate from said manually controlled means and including retaining means for releasably retaining the operating means in said first position, and an electric circuit comprising light-sensitive electromagnetic means operative to effect movement of said operating means from first position to second position and to thereby effect movement of said blade means back to closed position with a delay which is a function of the intensity of scene light, and control switch means actuated by said manually controlled means to operate said electromagnetic means in the course of release of said operating means by said manually controlled means for movement to second position.

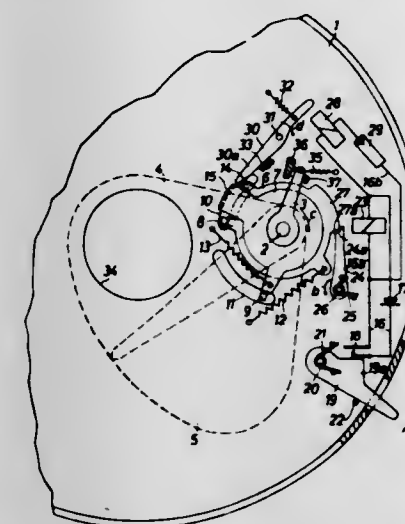
3,314,347

CAMERA SHUTTERS

Rudolf Kremp, Grunwald, Munich, and Gerd Kiper, Unterhaching, Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany
Filed Oct. 20, 1964, Ser. No. 405,096
6 Claims. (Cl. 95-10)

1. In a camera, in combination, shutter means including a leading blade and a trailing blade, said leading blade moving from a cocked to a rest position in advance of said trailing blade to open the shutter and expose film while said trailing blade then moves from its cocked to its rest position to close the shutter and terminate the exposure; delaying relay means including a photosensitive resistor and cooperating with said trailing blade for delaying release of the latter for movement from its cocked to its rest position in accordance with the intensity of light received by said photosensitive resistor; second immediately actuating relay means cooperating with said leading blade for immediately releasing the latter for immediate movement from its cocked to its rest position in order to initiate an exposure; switch means directly and simultaneously operating both of said relay

means to actuate said immediately actuating relay means and to simultaneously start the delay of said delaying relay means; and manually operable means including cocking means for cocking said shutter means and co-

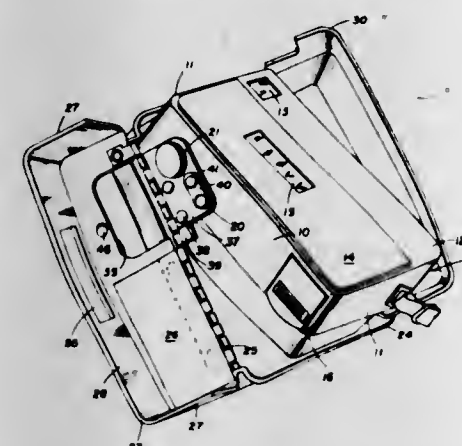


operating after cocking of said shutter means with said switch means for actuating the latter as soon as said cocking means cocks said shutter means to operate said relay means for release of said cocked shutter means so as to make an exposure.

3,314,348

CAMERA CARRYING CASE

Vincent F. Lang, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Sept. 11, 1964, Ser. No. 395,694
4 Claims. (Cl. 95-11)



1. A carrying case for a photographic camera having a bottom wall, a pair of substantially parallel end walls, a top wall and a rear door which is movable to and from an open position to permit loading of the camera with film; and comprising in combination,

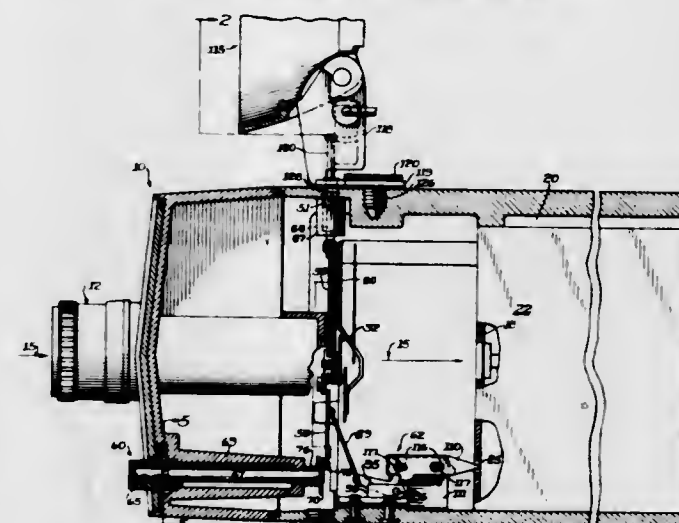
- (1) a base plate,
- (2) means for detachably connecting a wall of said camera to said base plate,
- (3) first and second members individually hinged to the same edge of said base plate to selectively move between a closed position, wherein they combine to enclose a camera attached to said base plate, and an open position, wherein said second member extends downwardly from said base plate to expose the front wall of said camera and said first member extends downwardly from said base plate to expose said rear door to permit it to be opened, and
- (4) cooperating means on said base plate and said first member for releasably latching said first member in its closed position.

3,314,349

LIGHT SOURCE CONTROLLED FILTER ACTUATING MECHANISM FOR MOTION PICTURE CAMERA

Henry J. Koeber, Jr., Deerfield, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

Filed Aug. 14, 1964, Ser. No. 389,634
13 Claims. (Cl. 95-12.20)



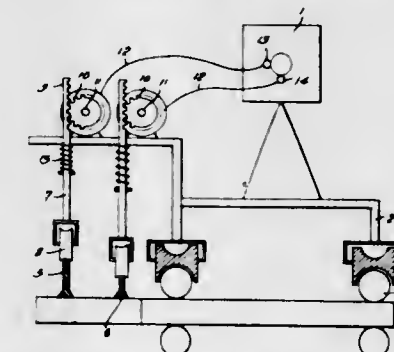
1. In combination with a motion picture camera having a housing and an objective through which light rays pass along an optical path to a film, a light source on said housing, movable switch means for actuating said light source, filter means selectively movable into and out of the optical path, a filter actuating assembly movable between a first position wherein said filter means is in said optical path and a second position wherein said filter means is out of said optical path, and means movable by said switch means to cooperate with said filter actuating assembly in said camera whereby said filter means is caused to be moved relative to said optical path when said switch means is moved.

3,314,350

AUTOMATIC DEVICE FOR FILMING FIXED-SIZE IMAGES WITH VARIED FOCAL LENGTH LENS

Sergiu Ioan Husum, Bucharest, Rumania, assignor to Comitetul de Stat pentru Cultura si Arta, Bucharest, Rumania

Filed Apr. 8, 1964, Ser. No. 358,305
Claims priority, application Rumania, Apr. 8, 1963, 46,286
5 Claims. (Cl. 95-45)



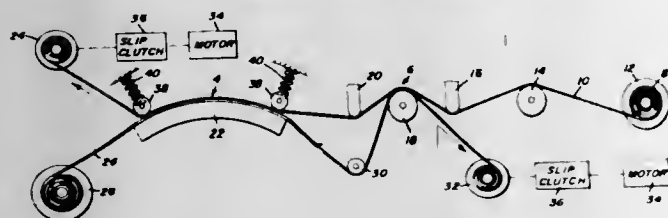
1. An automatic camera device having zoom lens means and adjustable focusing means, comprising in combination, longitudinally extending cam means in said automatic camera device, a support member movably mounted along said cam means, means responsive to the configuration of said cam means mounted on said support member, said camera means also being mounted on said support member, said zoom lens means and said focusing means forming part of the optical system of said

camera means, said means responsive to the configuration of said cam means being operatively connected to said zoom lens means and adjustable focusing means and being adapted to adjust the latter two means in accordance with said configuration of said cam means, whereby said camera means will take a sequence of photographs of all objects lying in a predetermined plane, said objects being recorded as constant size images by said camera means, while all objects lying in other planes are recorded as variable size images thereby changing continuously the perspective of said objects lying in said other planes.

3,314,351

WEB PROCESSING APPARATUS

Stanley H. Duffield and John N. Rice, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 16, 1964, Ser. No. 338,032.
4 Claims. (Cl. 95-94)

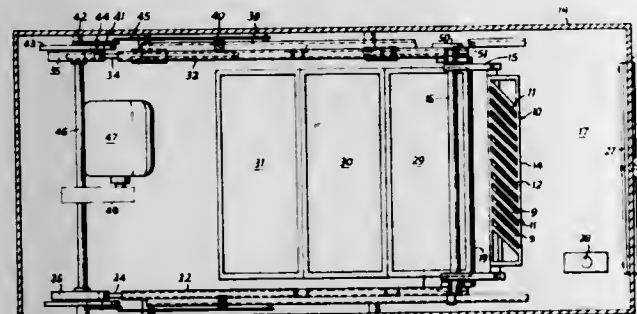


1. In an apparatus for processing an exposed photographic film strip by moving the emulsion surface thereof in wiping engagement with a web carrying a processing solution on its surface, the combination comprising:
means for advancing said exposed film strip in one direction in succession through adjacent processing and rinsing stations;
means for advancing a web through said processing and rinsing stations in a direction opposite to that of the film;
means located between said processing station and said rinsing station for applying a given amount of processing solution to said web;
means located in advance of said rinsing station with respect to the direction of movement of said web for applying a given amount of rinsing solution to the surface of said web; and
means for urging the surface of said web carrying said processing and rinsing solution into wiping contact with the emulsion surface of said film strip at said processing and rinsing stations to process and then rinse the same as it is moved along.

3,314,352

APPARATUS FOR PHOTOGRAPHIC DEVELOPING

Sidney Grant, London, England, assignor to N. & J. Motors Limited, London, England
Filed Oct. 19, 1964, Ser. No. 404,626
5 Claims. (Cl. 95-94)



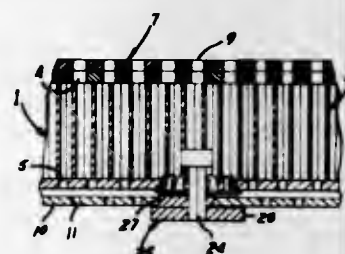
1. Photographic developing apparatus comprising: at least one treatment tank; a vertically-movable support bar at each side of said tank; a carrier rod resting on said support bars; an arm fixed to and extending from said

carrier rod; a carrying device pivotally mounted on said arm; a longitudinally reciprocable traction bar above and generally parallel to each support bar; a cam on each end of said carrier rod, said cam being engageable with said traction bar upon lifting of said support bar to effect rotation of said carrier rod and consequent lifting of the carrying device on the end of the arm; projections on each of said traction bars to engage said cams when in their raised and turned position and thereby draw said carrier rod along said support bars; and drive mechanism for lifting and lowering said support bar and reciprocating said traction bar in synchronism to lift and transport the photographic material carried by the carrying device into and out of said tank.

3,314,353

VENTILATED FLOOR MODULAR SYSTEM

James V. Knab, Grand Rapids, Mich., assignor to Weber Showcase & Fixture Co., Div. of Walter Kidde & Company, Inc., Grand Rapids, Mich., a corporation of New York
Filed Oct. 18, 1965, Ser. No. 496,863
11 Claims. (Cl. 98-31)



1. In a clean room having means in the ceiling for supplying filtered and conditioned air, a floor system comprising:
a plurality of pedestals, each said pedestal having a quadratured planar corner retaining and support plate elevated above its base;
a plurality of floor modules suspended between said pedestals such that each support plate supports the corners of four separate modules at least some of said modules having a support assembly with a plurality of upper and lower air apertures in the top and bottom thereof;
a damper sheet with a plurality of damper apertures matching the lower air apertures in said support member;
means for movably mounting said damper sheet adjacent the bottom surface of said support member;
a shaft mounted in said support assembly, said shaft protruding out of the bottom of said support assembly;
a bearing cylinder eccentrically mounted on said shaft around which is positioned a bearing cylinder receiving aperture in said damper sheet; and
means for rotating said shaft whereby the airflow capacity of said floor module may be adjusted.

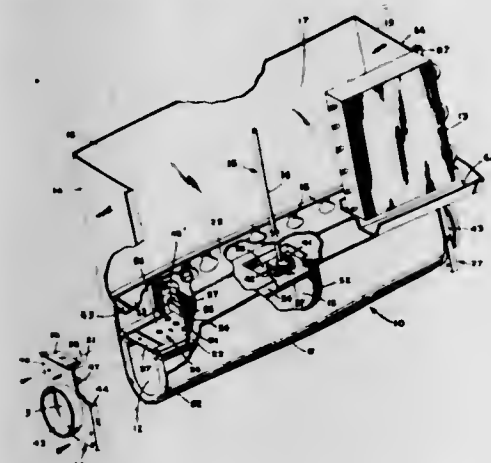
3,314,354

INDUCTION UNIT FOR AIR CONDITIONING SYSTEM

Hrant H. Yousoufian, Verona, N.J., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware
Filed Sept. 9, 1964, Ser. No. 395,154
6 Claims. (Cl. 98-38)

1. An induction unit for an air conditioning system having a source of pressurized conditioned air comprising:
a casing forming a plenum having an inlet connected to the supply of conditioned air;
the casing having a first section and a second section;

one of the sections having groove means formed therein to receive the other section therein;
a pair of end covers disposed to engage the first and second sections and prevent disengagement of said sections from each other;
nozzle means formed in one of the sections through which the conditioned air is discharged;
a mixing chamber formed in the induction unit in communication with a second source of air and to receive the conditioned air from the nozzle means for mixing with air from the second source prior to its discharge from the induction unit;

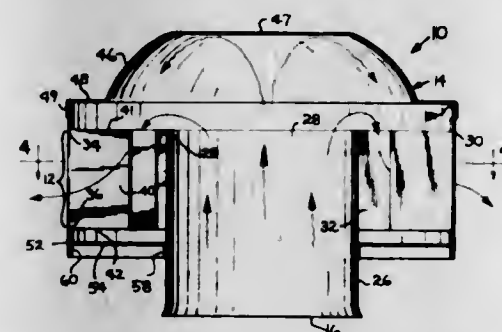


a wall means extending from the casing to define the mixing chamber, the end cover engaging the wall means to maintain its assembled position;
a receiving means formed on the wall means;
a heat exchanger, through which air from the second source passes into the mixing chamber, slidably engaged with the receiving means formed on the wall means; and
a drain pan disposed below the heat exchanger and having an outwardly extending trough to receive condensate dripping from the heat exchanger, the drain pan held in operative position by engagement with the heat exchanger.

3,314,355

CHIMNEY CAP

Kenneth S. Bassett, La Grange, Ind., assignor to Motor Wheel Corporation, Lansing, Mich., a corporation of Ohio
Filed July 26, 1965, Ser. No. 474,870
5 Claims. (Cl. 98-66)



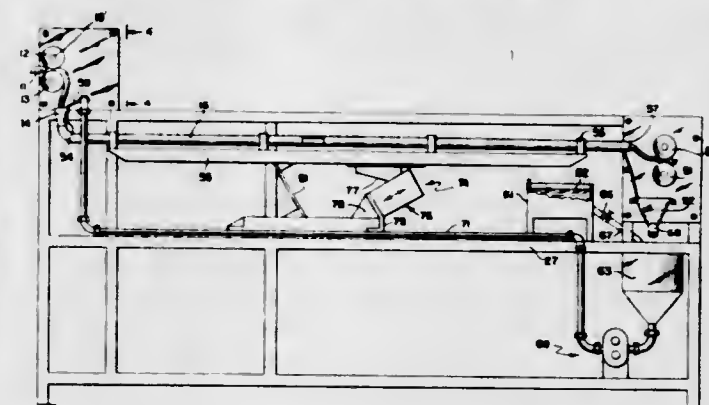
1. A chimney cap comprising a flue pipe adapted to be oriented in operative position with its axis vertical, said pipe being open at the upper and lower ends thereof and being substantially imperforate between said ends thereof, a side wall spaced radially outwardly from and encircling said flue pipe adjacent the upper end thereof to define with said flue pipe an annular passageway radially therebetween, said side wall being disposed with at least the major portion of its axial dimension extending downwardly from the plane of the upper end of said flue

pipe, said side wall having circumferentially spaced openings therein establishing communication between said annular passageway and the exterior of said cap, said openings having upper and lower edges disposed generally axially between the ends of said flue pipe, a series of vanes disposed one adjacent each of said openings and projecting from said side wall into said passageway for directing air currents therein in one circular direction about said flue pipe in response to wind currents entering said passageway via the openings in the windward side of the cap and leaving via the openings on the leeward side of the cap, a substantially imperforate cover spaced above the upper end of said flue pipe and closing the upper end of said side wall to form a substantially imperforate upper baffle over the upper end of said flue pipe for directing gases leaving said flue pipe into said passageway and a substantially imperforate lower baffle extending radially between said side wall and said flue pipe below said vanes to define a bottom wall of said annular passageway.

3,314,356

APPARATUS FOR PROCESSING PROTEIN FIBER

Robert C. Dechaine and Robert W. Callaghan, Minneapolis, Minn., assignors to General Mills, Inc., a corporation of Delaware
Original application Feb. 5, 1963, Ser. No. 256,467, now Patent No. 3,269,841, dated Aug. 30, 1966. Divided and this application Apr. 21, 1964, Ser. No. 361,493
6 Claims. (Cl. 99-234)



1. A vibratory apparatus for treating edible spun protein fibers which comprises means for confining said fibers, means for introducing said fibers into said means for confining, means for introducing a treating fluid into said means for confining, and means for imparting vibratory movements having vertical and horizontal components to said means for confining to agitate and convey said fibers and treating fluid along said means for confining.

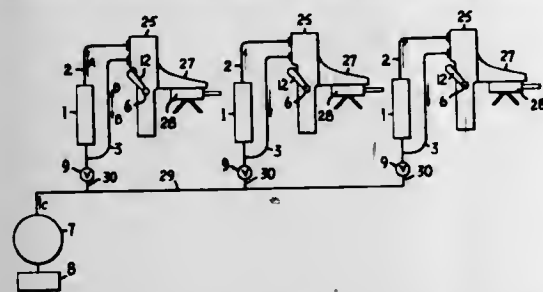
3,314,357

MACHINE FOR MAKING CREAM-COFFEE

Carlo Ernesto Valente, Via G. Ventura 5, Milan, Italy
Filed Aug. 10, 1965, Ser. No. 475,162
4 Claims. (Cl. 99-282)

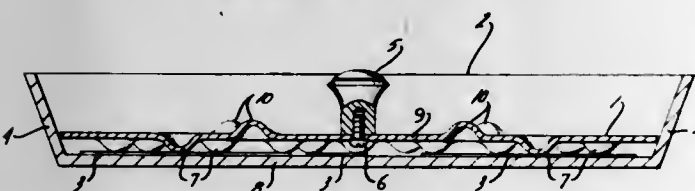
1. In a coffee-making machine having a water boiler, in combination, at least one recirculation circuit comprising a heat exchanger disposed upright in said boiler for extracting heat therefrom and heating water in said circuit, a coffee delivery head having an infusion chamber chargeable with coffee, a manually operable valve for controlling delivery of water from said heat exchanger to said delivery unit, a pump connected to supply water to said circuit and connected to a source of water, conduit means communicating between said pump and said heat exchanger for supplying water from said pump to said heat exchanger, said conduit means opening in the heat exchanger nearer the lower end than the upper end of the heat exchanger,

said circuit further comprising conduit means communicating externally of the boiler between the lower end of the heat exchanger and said valve and conduit means communicating externally of the boiler between the upper



end of the heat exchanger and said valve, an electric motor driving said pump, and a timing and control unit connected to control and time the interval said valve is open in the absence of manual force holding said valve in an open condition.

3,314,358
COOKING UTENSIL
Eola R. Burns, 401 Winsor Drive,
Antioch, Ill. 60002
Filed Oct. 20, 1965, Ser. No. 498,812
7 Claims. (Cl. 99-349)



1. A utensil to be used in conjunction with a cooking device to cook generally flat articles of food, comprising a body section, a first series of projections spaced generally throughout the surface of said body section and extending downwardly from said body section, the lower extremities of said first series of projections lying in a common plane and adapted to engage the article of food and hold the article against a surface of the cooking device, and a second series of generally hollow projections extending upwardly from said body section and spaced from each other and spaced from said first series of projections, said second series of projections being arranged generally centrally of the body section and serving as heat distributing domes to thereby aid in providing a uniform distribution of heat throughout the entire area of said body section.

3,314,359
ACTUATING MECHANISM FOR PRINTING HAMMERS

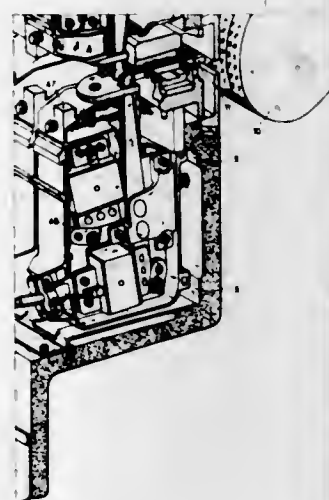
Claude Raymond Marie Martin, Paris, France, assignor to Société Industrielle Bull-General Electric (Société Anonyme), Paris, France
Filed June 21, 1965, Ser. No. 465,567
Claims priority, application France, July 10, 1964, 981,399

1 Claim. (Cl. 101-93)

In a printing machine which comprises on the one hand a printing device comprising a movable character support and striker hammers mounted in a frame, and on the other hand a series of hammer actuating mechanisms, an actuating module comprising:

a frame with a single rigid partition extending substantially through a plane of symmetry, the said frame comprising two plane positioning bosses trued to bear against two bearing surfaces of the printing machine to permit positioning of the said frame, perpendicularly to a reference plane defined by the said bearing surfaces,

a first set of hammer actuating mechanisms disposed on one of the two faces of the said partition and comprising a straight lever pivotally mounted on a first pivot pin secured perpendicularly to the said partition, a lever bent at an angle of about 90° and pivotally mounted on a second pivot pin secured perpendicularly to the said partition, each of the said levers consisting of a thin web assembly with a relatively long hub by which it is pivotally mounted on its respective pivot pin, the said straight lever being formed with an aperture for the passage of one end of the hub of the bent lever to permit oscillatory motion of the said straight lever, each of the said levers having one of its two ends profiled to constitute a surface of contact with a corresponding striker hammer, the said first set of mechanism comprising in addition a first electromagnet secured to



the said partition and having pole pieces opposite to the other end of the said straight lever to attract the said other end of the straight lever, when the said first electromagnet is energized, and a second electromagnet secured to the said partition and having pole pieces opposite to the other end of the said bent lever to attract the said other end of the bent lever when the second electromagnet is energized, a second set of hammer actuating mechanisms similar to the first set of mechanisms and disposed on the other face of the said partition, and a retractable centering point disposed close to the profiled ends of the levers and perpendicularly to a plane extending through the said positioning bosses so as to be engaged in a centering hole in the frame of the machine to enable the said levers to be positioned exactly opposite to the corresponding striker hammers.

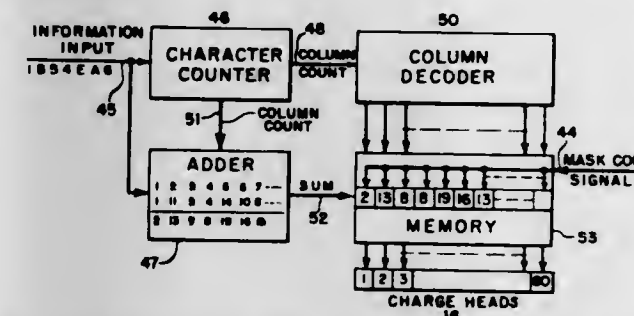
3,314,360
INFORMATION TRANSFER SYSTEM HAVING PLURAL STAGE MEMORY
William P. Foster, Paoli, Pa., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed July 19, 1965, Ser. No. 473,080
17 Claims. (Cl. 101-122)

1. In an electrostatic printing system in which a stencil electrode defining a series of character-shaped apertures is displaced between an array of charge heads and a dielectric web so that energization of a charge head provides a cloud of ions for passage through an aperture in the stencil electrode to impinge on the web and represent information signals in the appropriate column locations on the web, a control system for regulating firing of the charge heads comprising:

a memory having a number of storage stages;

means for converting received information signals into sum signals, each sum signal being referred to a particular column location and denoting which information signal is to be represented at said particular column location;

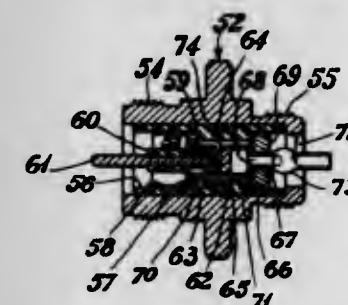
means for loading the sum signals into the respective memory storage stages at the appropriate column locations; and



means for applying a mask code signal to the storage stages, so that responsive to agreement between the sum signal previously stored in a particular memory stage and receipt of a corresponding mask code signal at said particular stage denoting registration of the appropriate aperture between the charge head and the web, the correct charge head is energized.

3,314,361
MINIATURE TRIGGERED GAP IN COAXIAL SQUIB

Keith W. Olson, Neptune, Albert V. Bazarian, Springfield, and Jon M. Cokefair, Pt. Pleasant, N.J., assignors to The Bendix Corporation, Eatonville, N.J., a corporation of Delaware
Filed May 7, 1965, Ser. No. 454,123
6 Claims. (Cl. 102-70.2)



2. A coaxial spark gap assembly comprising a cylindrical metallic housing, a cylindrical insulating lining secured in said housing, a trigger electrode, an adjacent main electrode surrounding said trigger electrode and concentric therewith, insulating means between said adjacent main electrode and said trigger electrode, a cuplike member supporting said adjacent main electrode and said trigger electrode in said insulating lining and forming a hermetic seal therewith, an opposite main electrode, an inverted cuplike member supporting said opposite main electrode adjacent to and concentric with said adjacent main electrode in the insulating liner opposite said first cuplike member and forming a hermetic seal therewith, and a tubulation extending from said inverted cuplike member.

3,314,362
SELF-DESTRUCTION FUZE FOR SPIN PROJECTILES

Ferdinand Irion, Emmetshausen, Aargau, Switzerland, assignor to Oerlikon-Bührle Holding A.G., Zurich-Oerlikon, Switzerland
Filed Apr. 9, 1965, Ser. No. 446,861
8 Claims. (Cl. 102-71)

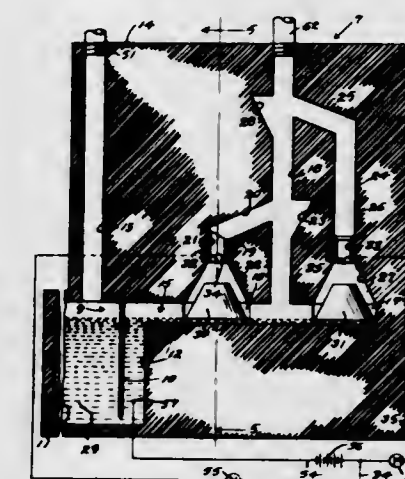
1. A self-destruction fuze for spin projectiles comprising in combination: a fuze body, a hood screwed to said fuze body, a bearing body mounted inside said fuze body

and hood, an axle arranged in said bearing body perpendicular to the projectile axis, a centrifugal body pivotally mounted about said axle, a plastically upsettable element mounted in said bearing body opposing the angular deflection of said pivotally mounted centrifugal body in response to centrifugal force generated by the spin of



said projectile, the rotational speed of the projectile at which self-destruction occurs being adjusted to a predetermined value depending on the maximum rotational speed of the projectile, and the resistance of said plastically upsettable element to deformation increasing with progressive deformation thereof.

3,314,363
AUTOMATIC PUMP CONTROL
William H. Pearce, 465 Church St., Many, La. 71449
Filed Apr. 27, 1965, Ser. No. 451,267
5 Claims. (Cl. 103-25)



1. An automatic pump control comprising a block of electrical insulating material, said block being recessed to provide a reservoir, a horizontal passage, a vertical passage and a branch passage, said reservoir having a large chamber and a small chamber, a passageway connecting said chambers adjacent the bottom of the reservoir, a liquid of electrical conducting material contained in the reservoir, said horizontal passage communicating with the upper part of the small reservoir chamber and the lower end of said vertical passage, said branch passage connecting with the vertical passage above the horizontal passage and having a flared lower end forming a valve seat opening into the horizontal passage and spaced from said vertical passage and the reservoir, a buoyant valve of electrical conducting material for closing said valve seat, pressure responsive means adapted to connect the top of said large reservoir chamber to a receptacle containing liquid whereby a change in the liquid level in the receptacle will effect a change in the pressure in the top of the large reservoir chamber so that as the pressure increases in the top of the large reservoir chamber the liquid contained therein will be forced through the small

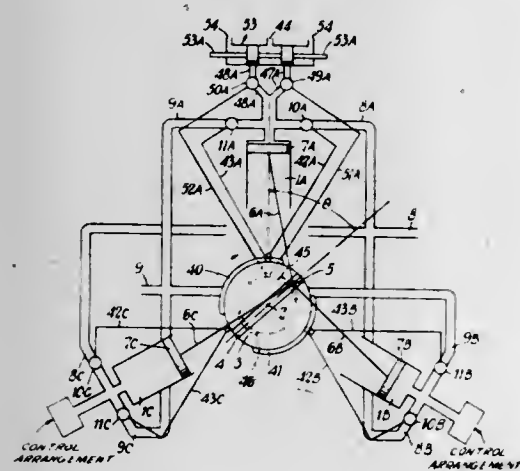
reservoir chamber into the horizontal passage for lifting the buoyant valve to close the valve seat and will thereafter rise in said vertical passage and overflow into the branch passage therefrom, an electrical conductor submerged in the liquid of the reservoir below said valve, an electrical conductor submerged in the liquid above said valve and spaced from the valve, and an electric circuit including said conductors and adapted to include an electric motor of a pump of the receptacle whereby said circuit will be closed when the liquid in the vertical passage overflows into the branch passage to operate the pump to effect a change in the liquid level in the receptacle and to reduce the pressure in the top of the large reservoir chamber.

3,314,364

CONTROL SYSTEMS FOR PUMPS AND MOTORS
Jack Raymond Green, Weybridge, Surrey, England, assignor to Vickers Limited, London, England, a British company

Filed May 5, 1964, Ser. No. 364,928
Claims priority, application Great Britain, May 6, 1963, 17,890/63

19 Claims. (Cl. 103—38)



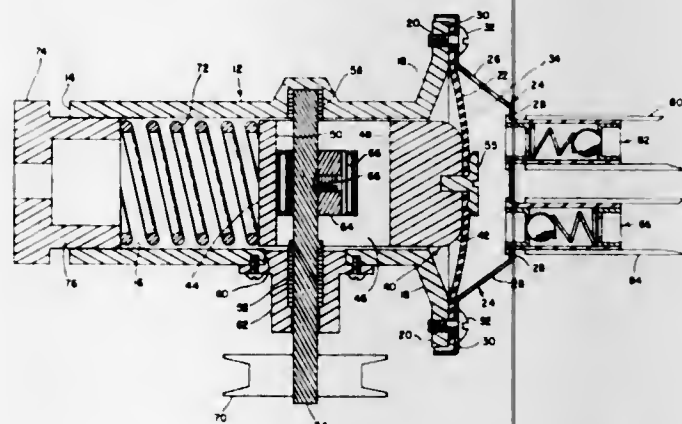
1. A multi-chamber machine comprising a crank pin, a plurality of piston and cylinder assemblies, each defining a variable-volume chamber and equally spaced about a central axis and rotatable relative to said pin, means connecting said pin to said assemblies for varying the volume of said chambers upon relative rotation between the pin and said assemblies when the pin is offset from said axis, a fluid inlet having a connection to each chamber, a fluid outlet having a connection to each chamber, valve means for opening and closing said chambers to the inlet and outlet, means mounting said crank pin to permit variation in eccentricity of said crank pin with respect to said axis by movement of said pin on said mounting means towards and away from said axis and thus alteration of the total change of volume of all the chambers in one cycle of the machine, means for actuating said valve means in accordance with said relative rotation to cut-off the chambers for periods when they are at maximum and minimum volume, to open the chambers to the fluid inlet during a period when their volume is increasing and to open the chambers to the fluid outlet when their volume is decreasing, whereby fluid in said chambers serves to maintain the eccentricity of the crank pin, said crank pin being responsive to the variation of the effect of the fluid in a cut-off chamber to alter said eccentricity by movement of the pin on said mounting means the valve means being arranged to cut-off the assemblies twice during each cycle of the machine, the proportion of cut-off time per cycle of the machine being the same for each assembly, and control means for varying the effect of the fluid in the cut-off chamber including further valve means associated with at least

one of said assemblies for enabling an alteration of the fluid content of that assembly to be made when that assembly is cut-off thereby to alter the relative positions of the piston and cylinder of that assembly during the cut-off period thereof and thus to move said pin on said mounting means.

3,314,365

DIRECT ACTING VARIABLE PUMP
Douglas E. Ritchie, 8416 Woodhome Road, Tacoma, Wash. 98499

Filed Aug. 24, 1964, Ser. No. 391,404
8 Claims. (Cl. 103—38)



1. A demand controlled, variable pressure pump, comprising: (a) a tubular drive housing having a front end and a rear end; (b) a reciprocally movable piston follower means of uniform transverse dimension and slidably engaging the inner surface of said housing and located generally at said front end, said follower means including a cavity opening therethrough having a cam follower surface; (c) a drive shaft means mounted in said housing and extending through said cavity, said shaft having a cam lobe means thereon engaging said cam follower surface for moving said follower means rearwardly as said shaft rotates; (d) a compressible pressure spring located to the rear of and bearing on said follower means to urge said cam follower surface against said cam lobe means, said drive housing having spring pressure adjustment means received on the rear end thereof confining said pressure spring; (e) a material pumping housing detachably received on the front end of said drive housing and including a non-resilient, flexible, non-porous diaphragm received between said housings for sealingly isolating one housing from the other, said diaphragm being attached to the forward end of said follower means for reciprocation therewith, and said pumping housing having check valve operated inlet and outlet means for pumped material.

3,314,366

COMPRESSORS OR PUMPS WITH HYDRAULIC TRANSMISSION

Helmut Bauer, Basel, Switzerland, assignor to Maschinenfabrik Burckhardt A.G., Basel, Switzerland, a Swiss company

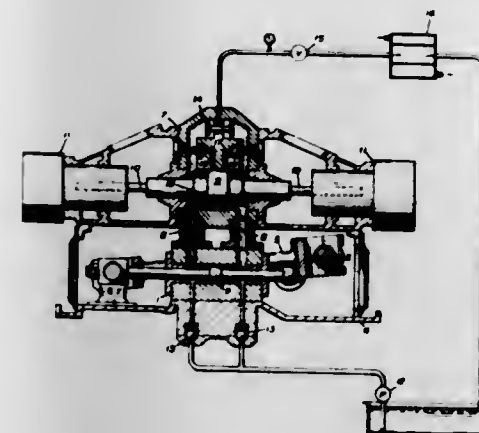
Filed Dec. 20, 1965, Ser. No. 515,091
Claims priority, application Switzerland, Dec. 22, 1964, 16,494/64

7 Claims. (Cl. 103—44)

1. A machine comprising a compressor or pump and driving gear therefor incorporating a hydraulic transmission, said driving gear including a double acting primary cylinder disposed approximately centrally in the machine, a primary piston working in the primary cylinder, a driving crank disposed beyond one end of the primary cylinder, a primary piston rod on said primary piston projecting from the other end of the primary cylinder, at least one connecting rod connecting the

crank to the primary piston rod beyond the other end of the primary cylinder, a horizontal secondary cylinder disposed approximately centrally in the machine, and

and having reduced necks connecting said heads to their respective pistons; said control means comprising a nutating wobble-plate having peripheral socket means, and bearing pads confined in said socket means in universally-pivotal, embracing bearing engagement with the abutting heads of respective piston pairs so as to tie the sets of pistons together to transmit return strokes to the valve pistons, with the heads of the respective pairs in pressure-transmitting relation so as to directly transmit pressure from one piston of a pair to the other along the common longitudinal axis of the pair of pistons.

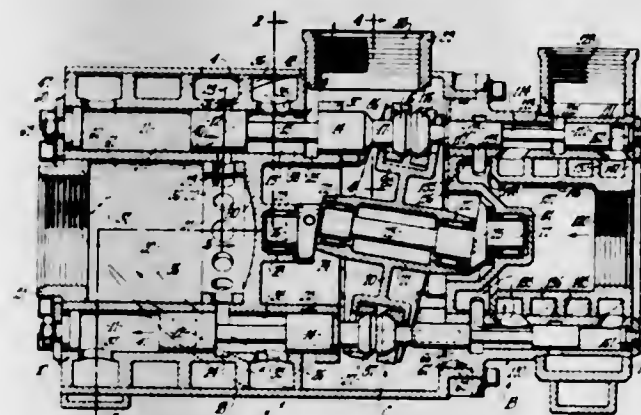


hydraulic liquid displaced by the primary piston and acting on the secondary piston, said secondary piston actuating the compressor or pump.

3,314,367

HYDRAULIC TRANSFORMER
Carlos B. Liver, Studio City, Calif., assignor to Crane Co., Burbank, Calif., a corporation of Illinois
Filed Sept. 20, 1965, Ser. No. 488,679

5 Claims. (Cl. 103—49)

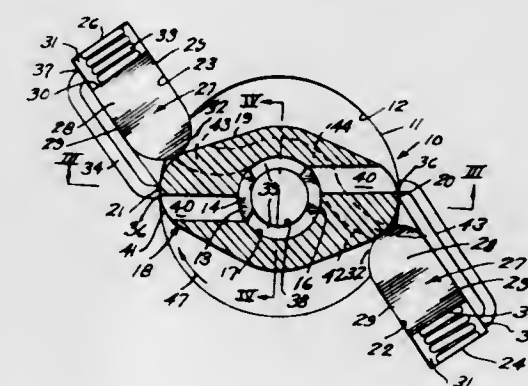


1. A hydraulic transformer comprising a motor unit operable by one fluid and an axially-opposed pump unit for pumping another fluid, said units including means defining respective annular arrays of reaction cylinders and valve cylinders; and respective piston sets each including pistons slidable in the respective reaction cylinders and spool valve element slidable in the respective valve cylinders to provide respective flow-control valves; inlet and outlet ports connected to the respective valve chambers in axially-spaced relation; transfer passages each connecting a respective valve cylinder to a respective circumferentially-displaced reaction cylinder; and control means coupling said piston sets for precessive stroking of said pistons such that said valves will operate to connect said transfer passages alternately to said inlet and outlet ports so as to switch from intake to return flow precessively in said reaction cylinders; said annular arrays of cylinders being arranged with each reaction cylinder aligned with a respective valve cylinder and with the cylinders of one array aligned with the cylinders of the other array; said pistons being arranged in opposed, aligned pairs, each pair having abutting ends in the form of heads with universally pivotal bearing surfaces,

3,314,368

ROTARY PISTON PUMP WITH RETRACTABLE CAM SEALING ELEMENTS
Gilbert H. Drutchas and Hubert M. Clark, Birmingham, Mich., assignors to TRW Inc., Cleveland, Ohio, a corporation of Ohio

Filed Aug. 20, 1965, Ser. No. 481,222
4 Claims. (Cl. 103—123)



1. A pump comprising:
a casing including:

a center section,
a rear header, and

a housing bushing assembly,

said center section having a generally circular pumping chamber formed therein,

said center section further including at least a pair of diametrically opposed slots extending outwardly of said pumping chamber in parallel chordal relation thereto,

a rotary piston in said pumping chamber having an irregular peripheral surface characterized by two circumferentially spaced sealing areas slidably sealing against the adjoining wall of said pumping chamber upon rotation therein,

a retractable cam in each of said slots having a motive surface spaced from the adjoining bottom wall of the corresponding slot to form a pressure control chamber and having a curved cam action surface projecting out of said corresponding slot to slidably seal against said peripheral surface of said rotary piston,

a coil spring bottomed in each slot and engaging said motive surface of the corresponding cam to preload the cam into engagement with said rotary piston, passage means in said casing between said pumping chamber and the bottom of each said slot to conduct fluid at pump-generated pressure into said pressure control chambers to pressure-load said cams into sealing relation with said rotary piston,

said rear header having a side face for closing one side of said pumping chamber,

a pintle in said rear header having a bearing portion projecting into said pumping chamber,

said pintle having a hollow interior forming an inlet passage and including radial inlet ports in said bearing portion,

said rotary piston having a bearing recess formed therein for journaling said rotor on said bearing portion of said pintle and a pair of radially outwardly extending inlet passages opening into said pumping chamber on one circumferential side of each corresponding one of said sealing areas,

thereby to conduct pumping fluid into the pumping chamber,

said housing bushing assembly having a side face for closing the other side of said pumping chamber and being characterized by an outlet port formed therein,

said rotary piston having outlet passages extending inwardly from the other circumferential side of said sealing areas and opening out of the side of said rotary piston for discharging through said outlet port,

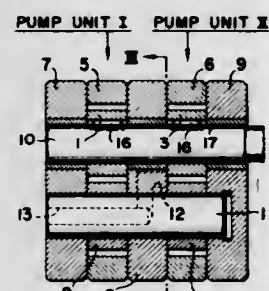
a discharge outlet on said housing bushing assembly receiving the fluid from said outlet port,

and a shaft journaled in said housing bushing assembly and having a driven connection with said rotary piston to rotatably drive said rotary piston.

3,314,369

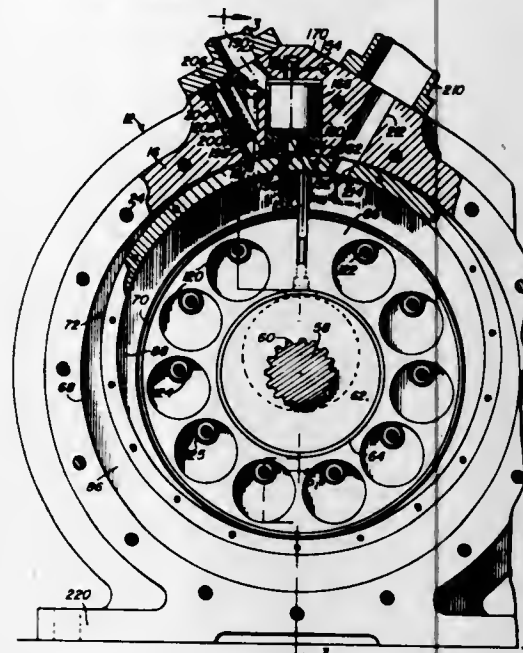
DUAL GEAR PUMPS

Masaru Yonei, Kobe-shi, and Masatoshi Yasukawa, Himeji-shi, Japan, assignors to Kawasaki Kokuki Kogyo Kabushiki Kaisha, Hyogo-ken, Japan, a corporation of Japan
Filed Sept. 15, 1966, Ser. No. 579,725
Claims priority, application Japan, Oct. 5, 1965, 40/60,636
5 Claims. (Cl. 103-126)



1. A dual gear pump comprising a first pump unit consisting of a pair of intermeshing gears and a gear plate provided with a space therein for accommodating said gears in the intermeshing condition, and having a discharge port; a second pump unit consisting of a pair of intermeshing gears and a gear plate provided with a space therein for accommodating said gears in the intermeshing condition, and having a discharge port; a middle plate arranged between said first and second pump units; a pair of side plates arranged on the exterior faces of said first and second pump units; a common drive shaft connected to one of the gears of said first pump unit and one of the gears of said second pump unit for driving the same; means to rotatably support said drive shaft in said pair of side plates and said middle plate; a common support shaft retained in said pair of side plates and said middle plate for rotatably supporting the other gear of said first pump unit and the other gear of said second pump unit; a discharge passage for said first pump unit extending from said discharge port of said first pump unit across said side plate adjacent to said pump unit; and a discharge passage for said second pump unit composed of an axial passage formed in said common support shaft from the end thereof closer to the side-plate adjacent to said first pump unit and extending to substantially the middle of said shaft and a passage formed interior of said common support shaft and said middle plate for communicating the inner end of said axial passage with said discharge port of said second unit.

3,314,370
ROTARY PISTON PUMP WITH DUAL CHAMBERS
Albert J. Jacobs, Calgary, Alberta, Canada, assignor to Edward J. Carline, Edmonton, Alberta, Canada
Filed Mar. 16, 1964, Ser. No. 352,206
16 Claims. (Cl. 103-132)



1. A rotary piston expansible chamber device comprising a stator having a chamber therein including a peripheral wall and a pair of annular side walls, a core disposed within said chamber, a ring piston in said chamber having sides slidably engaging said side walls and dividing said chamber into radially spaced outer and inner working chambers disposed respectively adjacent said peripheral wall and said core, a shaft rotatably journaled coaxially in said chamber, a hub fixed to said shaft rotatably mounting said core concentric to said chamber, eccentric support means fixedly secured to and rotatable with said shaft and supporting and maintaining said ring piston tangent to said core and said peripheral wall, stabilizing means including a pair of cooperating interengaged members fixedly secured one to said stator and the other to said ring piston and confining the latter to translational movement about said core, intake means supplying a fluid to each of said inner and outer working chambers, exhaust means discharging fluid from each of said inner and outer working chambers, said ring piston comprising a cylindrical rim and a pair of support plates each secured to said rim and journaled upon said eccentric support means, said core having a plurality of circumferentially spaced axial bores therethrough, said support plates being interconnected by a plurality of brace rods extending through said bores and in operative engagement with the core to prevent rotation thereof on the hub.

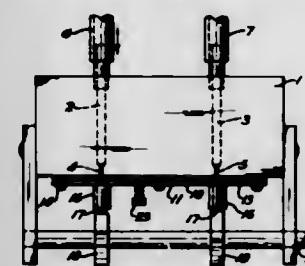
3,314,371

DIAPHRAGM PUMP

Paul Oliver W. Hopkinson, Gibsonia, Pa., assignor to St. Barnabas Free Home, Inc., Gibsonia, Pa., a non-profit corporation of Pennsylvania
Filed Sept. 22, 1965, Ser. No. 489,258
6 Claims. (Cl. 103-148)

1. A diaphragm pump comprising a block having a pair of fluid passages extending therethrough and each provided with an orifice at the same side of the block, a gasket engaging said side of the block and provided with an opening into which said orifices open, said opening having end portions substantially concentric with said orifices and connected by a narrower central portion forming a pumping chamber between the orifices, one of the orifices being an inlet into said opening and the other orifice being an outlet from it, a flexible diaphragm

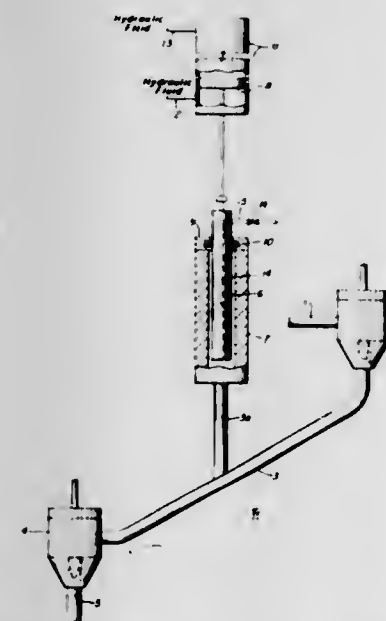
covering said opening and sealed against the gasket around it, a pin coaxial with each orifice and engaging the outer surface of the diaphragm, means supporting the pins, the pins being smaller than said end portions of the gasket opening, and continuously operating means for periodically forcing first one pin and then the other inwardly to push the adjoining portions of the diaphragm



into said opening to close said orifices alternately, said pumping chamber having a wider area adjacent the inlet orifice than adjacent the outlet orifice, the volume of the pumping chamber being reduced by the diaphragm while it is closing said inlet orifice, whereby the diaphragm will draw liquid in through the inlet orifice and force it out through the outlet orifice.

3,314,372
PUMP

Mack Sutton, Louisville, Ky., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
Filed Aug. 3, 1964, Ser. No. 386,863
2 Claims. (Cl. 103-153)



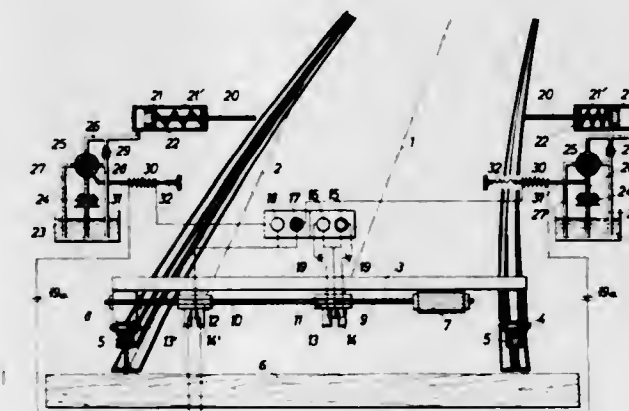
1. An apparatus for the pumping of a solid-liquid slurry, said apparatus comprising, in combination, a vertical reciprocating plunger, a plunger chamber for housing said plunger, first means for moving said plunger vertically in a reciprocating motion, said first means being fixedly connected to the top of said plunger and being located directly above said plunger, a pumping chamber having an inlet end and an outlet end, said outlet end being positioned at the lowest point of said pumping chamber, said pumping chamber being located below said plunger chamber and being connected thereto for the free passage of liquids therebetween and being positioned at an angle which places its outlet end below its inlet end at a distance which is sufficient to cause the settling of solids from the slurry to a point adjacent to its outlet end, second means for connecting said pumping chamber to said plunger chamber, the cross section and length of said second means and the volume being swept out by said plunger being correlated so that little or no solids are drawn out of said pumping chamber into said plunger chamber, an inlet

valve connected to the upper end of said pumping chamber and adapted to regulate the flow of said slurry into said pumping chamber, and an outlet valve connected to the lower end of said pumping chamber and adapted to regulate the flow of said slurry out of said pumping chamber, said valves being adapted to close completely, the positioning of said inlet valve, pumping chamber and outlet valve in relation to one another being such as to enable the solid material in the slurry that is confined within said pumping chamber to settle from the liquid to said point in said pumping chamber adjacent to said outlet valve, the operations of said plunger and said inlet valve and said outlet valve being controlled to effectively move the slurry into and out of said pumping chamber.

3,314,373

METHOD AND APPARATUS FOR ALIGNING TRACK

Franz Plasser and Josef Theurer, both of Johannesgasse 3, Vienna, Austria
Filed Nov. 19, 1964, Ser. No. 412,397
Claims priority, application Austria, Nov. 21, 1963, A 9,356/63
7 Claims. (Cl. 104-8)



1. An apparatus for indicating the difference between a desired and an existing track position in a mobile track aligning machine, which comprises, in combination:

- (a) means defining a chord extending within a curved section of the track;
- (b) a support mounted for mobility on the track;
- (c) an indicator element adjustably mounted on the support for movement transversely of the track and for cooperation with the chord defining means,
 - (1) the indicator element having a contact arranged on each side of the chord defining means for contact of a respective one of the contacts with the chord defining means; and
 - (2) two different signals controlled by said contacts, actuation of one or the other one of said signals being determined by the contact of the chord defining means with one or the other one of the said contacts as the indicator element is adjusted transversely.

3,314,374

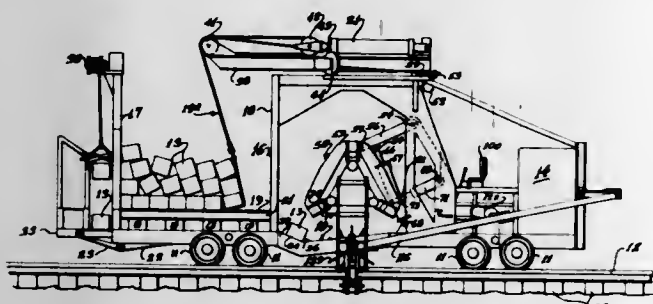
APPARATUS FOR INSERTING CROSSTIES BENEATH A RAILROAD TRACK

William H. Moorehead, Jr., and Royce G. Kershaw, Montgomery, Ala., assignors to Kershaw Manufacturing Co., Inc., a corporation of Alabama
Filed Mar. 15, 1965, Ser. No. 439,595
16 Claims. (Cl. 104-9)

1. Apparatus for inserting crossties beneath the rails of a railroad track comprising:

- (a) a supporting frame adapted for movement longitudinally of a railroad track,
- (b) means to supply crossties sequentially at a predetermined location on said supporting frame,

- (c) a transverse frame mounted on said supporting frame for movement transversely of the rails of the railroad track,
- (d) depending gripper elements carried by said transverse frame disposed to engage a crosstie positioned at said predetermined location on said supporting frame,

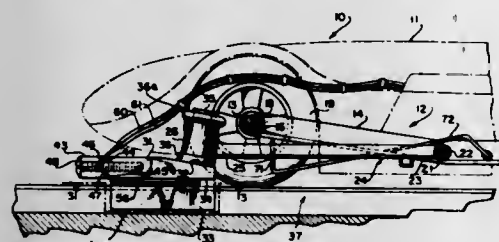


- (e) means to move said transverse frame laterally and outwardly of said supporting frame to position a crosstie carried thereby outwardly of the railroad rails,
- (f) means to move said transverse frame to a lowered position to place a crosstie carried thereby at an elevation subjacent the elevation of said rails, and
- (g) means to move said transverse frame inwardly from said lowered position to insert a crosstie beneath said rails.

3,314,375

STEERING GUIDE FOR SLOT CARS

James B. Russell, Sepulveda, and Henry S. Rose, Los Angeles, Calif., assignors to American Ruskit Company, Los Angeles, Calif., a corporation of California
Filed Jan. 5, 1965, Ser. No. 423,545
10 Claims. (Cl. 104-60)



1. A steering guide for a slot car running on a track containing a slot comprising:
- a panel located at the front end of said car and extending over the slot in the track;
 - a blade attached to the lower surface of said panel and projecting into said slot;
 - a pin projecting from the back portion of the top surface of said panel upwardly and rearwardly at an angle to said lower surface of said panel; and
 - means connected with said car for rotatably housing said pin to permit said panel and blade to rotate and cock slightly when the blade enters a curve in said slot, the cocking of said blade causing a portion of said blade to be forced against a side of said track to aid in holding said blade in said track.

3,314,376

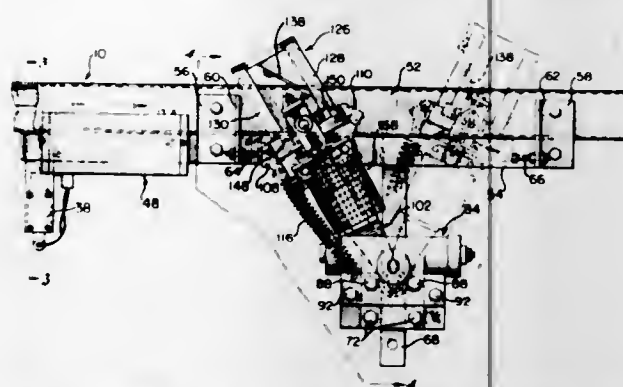
TROLLEY CONVEYOR SYSTEM

Loren W. Lerch, 124 Wakefield Ave., and Jerome T. Morrow, 345 Le Roy Ave., both of Buffalo, N.Y.
14214

Filed Dec. 14, 1964, Ser. No. 418,193
6 Claims. (Cl. 104-94)

1. In combination with an inclined trolley rail for feeding free running trolleys to a station at which they may be coupled with a trolley conveyor device,

means for gradually stopping and subsequently releasing such free running trolleys, said means comprising a mounting arm pivotally mounted at one end thereof to said trolley rail for movement parallel to the direction of trolley movement along said trolley rail, a yoke assembly pivotally mounted at the opposite end of said arm for movement in a vertical plane extending longitudinally of said arm and including a leg movable into and out of the path of movement of



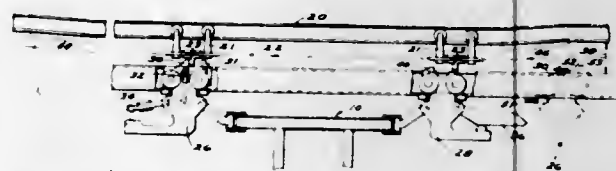
free running trolleys progressing along said trolley rail toward the aforementioned station, disabling means for swinging said yoke assembly about its pivot to move said leg out of the path of movement of free running trolleys, return means for indexing said arm to a first position thereof, and energy absorbing means for resisting movement of said arm to a second position as may be effected by engagement of a free running trolley with said leg.

3,314,377

CONSTRUCTION FOR TRANSFERRING A CONVEYOR CARRIER BETWEEN POWER LINES

Clarence A. Dehne, Garden City, Mich., assignor to Jervis B. Webb Company, Detroit, Mich., a corporation of Michigan

Filed Mar. 16, 1962, Ser. No. 180,227
16 Claims. (Cl. 104-96)



1. A conveyor system of the type having a load supporting track, a parallel power track in a normal spaced relation therewith and an endless propelling member having pusher members supported by the power track, characterized by the combination of

- (a) carriers each having a plurality of longitudinally spaced trolleys mounted on the load supporting track, a forward trolley of each carrier having a main dog projecting toward the power track a distance such as to be normally engageable by a pusher member thereof, means for moving the main dog to disengaged position in response to contact between a dog operating member on the leading trolley and an object in the path of trolley movement;
- (b) means for transferring a carrier across a gap in the power track from a first position where the main dog disengages from a pusher of a forwarding propelling member to a second position where the main dog is engaged by a pusher on a receiving propelling member comprising
- (c) a supplementary dog mounted on a following trolley of each carrier and projecting toward a power track a lesser distance such as to be normally non-engageable by a pusher member thereof,

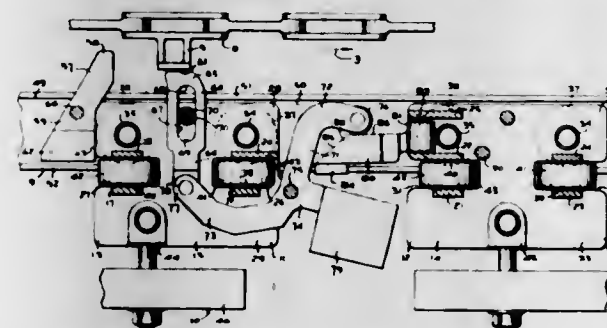
- (d) said supplementary dog of a carrier trailing the main dog thereof a distance not less than the length of said gap as measured between the said first and second carrier positions,
- (e) a drop section in advance of the gap along which the load and forwarding power tracks converge in an amount substantially equal to the difference in the distances to which the main and supplementary dogs project toward the power track whereby when the main dog of the leading trolley proceeds into the gap and loses driving engagement with a forwarding pusher, the supplementary dog is picked up by a following forwarding pusher which advances the carrier across the gap for engagement of the main dog on the leading trolley by a pusher on the receiving power track at the other side of the gap, and
- (f) a rise section for returning the load and forwarding power tracks to normal spaced relation.

3,314,378

DRIVE DISENGAGING TROLLEY SYSTEM

Omer R. Potter, Kansas City, Kans., and Alge T. Peterson, Jr., Kansas City, Mo., assignors to Midwest Conveyor Company, Inc., Kansas City, Kans., a corporation of Kansas

Filed July 2, 1962, Ser. No. 206,890
3 Claims. (Cl. 104-96)



3. In a power and free conveyor system wherein trolleys are selectively propelled in succeeding relation along curved spaced apart load tracks by means of spaced apart pusher lugs moving in a path:

- (a) said trolleys each having a drive dog and structure for reciprocating said drive dog into and out of said pusher lug path,
- (b) said reciprocating structure including an arm terminating in a contact portion located forwardly of said respective trolleys,
- (c) an actuating member located rearwardly of said respective trolleys and being pivotally connected thereto for lateral pivotal motion, said actuating members being positioned to engage the contact portion of a succeeding trolley upon contact between trolleys for withdrawing the respective drive dog from said path,
- (d) said actuating members each including a guide pad extending between and engageable with said tracks for guiding said actuating members with respect to said tracks whereby said actuating members are maintained in the path traveled by succeeding contact portions.

3,314,379

FREIGHT BRACING APPARATUS

Raymond M. Krokos, Detroit, Mich., assignor to Evans Products Company, Plymouth, Mich., a corporation of Delaware

Filed Sept. 30, 1964, Ser. No. 400,343
2 Claims. (Cl. 105-369)

1. A resilient freight bracing pad assembly adapted to be selectively secured to and supported on a support element mounted on a rack, railroad car or the like, said pad

assembly comprising attachment means for selectively securing said pad assembly to the supporting element, a screen formed from interwoven wires, means for affixing said screen to said attachment means, a resilient cushion pad presenting a surface adapted to be engaged by freight and having another surface juxtaposed to said screen, and

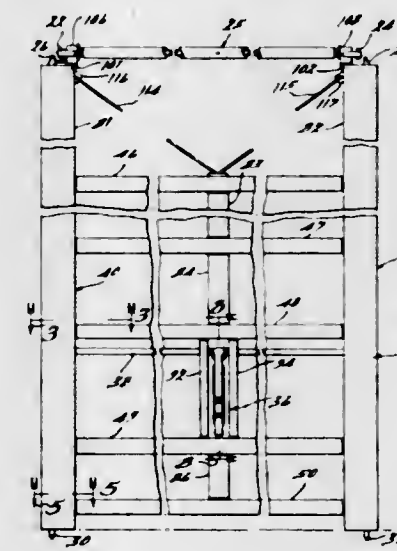


a material disposed in the apertures of said screen and at least partially encompassing the wires of said screen for fixing said material to said screen, said material having an adhesive bond to the adjacent surface of said resilient cushion pad for fixing said pad to said screen and to said attachment means.

3,314,380

BULKHEAD

Tibor Matyas, Plymouth, and John P. Moorhead, Northville, Mich., assignors to Evans Products Company, Plymouth, Mich., a corporation of Delaware
Filed Oct. 22, 1964, Ser. No. 405,775
1 Claim. (Cl. 105-376)



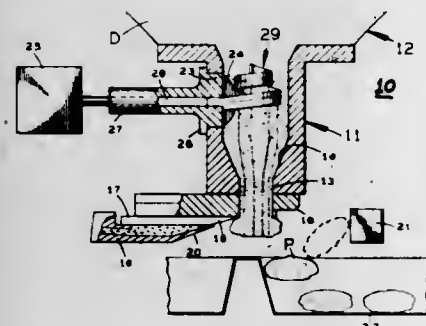
A freight bracing bulkhead assembly for bracing freight within a cargo area comprising a bulkhead frame consisting substantially of a pair of horizontally spaced vertically extending side rails having a generally I-shaped cross sectional configuration, a plurality of vertically spaced horizontally extending cross rails having a generally I-shaped cross sectional configuration extending between said side rails, the respective ends of each of said cross rails terminating at a spaced distance from the respective side rail to define a gap therebetween and attachment means for interconnecting the respective ends of each of said cross rails to the respective side rail and maintaining the gap therebetween for flexibility of said bulkhead frame, each of said attachment means comprising a generally L-shaped member having one leg abuttingly engaged with the web of the respective side rail and

its other leg abuttingly engaged with the web of the respective cross rail and means for fixing each of said legs to the respective web, the uppermost cross rail being positioned a substantial vertical distance below the upper ends of the side rails for cantilever support of said uppermost side rail ends, locking means carried by said side rails at the outer ends thereof for adjustably affixing said bulkhead assembly within the cargo area, operating handle means supported upon said bulkhead frame for actuating said locking means between its engaged and disengaged positions, supporting means carried at least in part by said uppermost side rail ends for supporting said bulkhead assembly for movement along the cargo area, and tensioning means interconnected between said uppermost side rail ends and substantially the mid-point of said uppermost cross rail for adjusting the position of said uppermost side rail ends upon cantilever deflection thereof.

3,314,381

APPARATUS FOR FILLING BAKED PRODUCTS
Edward W. Fries, Baltimore, Md., and Harold B. Kaufman, Jr., New York, N.Y., assignors to DCA Food Industries, Inc., New York, N.Y., a corporation of New York

Filed Nov. 27, 1962, Ser. No. 240,232
18 Claims. (Cl. 107—1)



1. A device for producing shaped pieces of dough comprising a nozzle having a discharge opening, means for extruding dough along said nozzle through said discharge opening, and a tubular injection member substantially in the shape of a helix of decreasing diameter located in said nozzle and having means along the length thereof providing access thereto for introducing fluid into the dough.

3,314,382

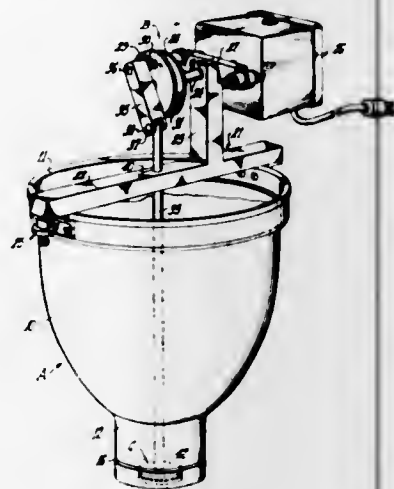
DOUGH RING FORMING AND DROPPING APPARATUS

Stanley B. Jones, Torrance, Calif., assignor to Hol'n One Donut & Supply Co., Los Angeles, Calif., a corporation of California

Filed July 13, 1964, Ser. No. 381,962
8 Claims. (Cl. 107—14)

1. A dough ring former and dropper comprising: a hopper having at its lower end a cylindrical extrusion throat and a coaxial cylindrical discharge nozzle of smaller diameter than said throat at the lower end thereof; an extrusion piston reciprocable in said throat, said piston having a valve opening therein; a flexible valve flap having an extremity secured to the underside of said piston and a body portion adapted to close said valve opening and to overlap and seat against the marginal areas of the underface of said piston around said opening in response to downward movement of said piston against a body of dough in said throat, whereby to move said dough downwardly into said nozzle; a forming head reciprocable in said nozzle; and means on which said piston and head are mounted in axially spaced relation, said means being reciprocable vertically in said throat and nozzle to move said piston and head downwardly

in said throat and nozzle respectively, applying pressure to said dough, to a lower limit position of said head in which it is projected out of said nozzle whereby said piston will effect extrusion of dough out of said nozzle and around said head in the form of a ring and then to move said piston and head upwardly whereby said

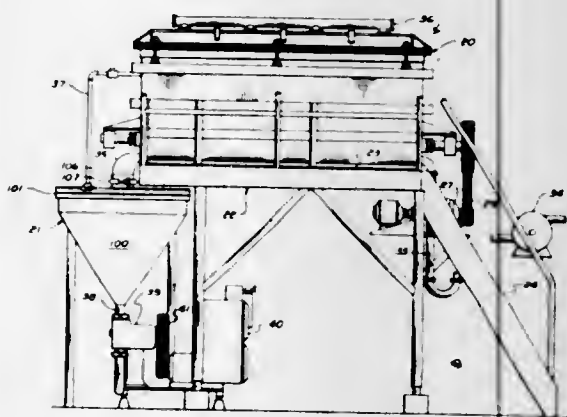


head will reenter said nozzle, shear off said ring, and close the lower end of said throat so that further upward movement of said piston will create within said throat a suction causing dough to be drawn downwardly from above said piston through said valve opening into said throat.

3,314,383

METHOD AND APPARATUS FOR VACUUM MIXING FOOD EMULSIONS

Edward A. Schlernitzauer, Chicago, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois
Filed May 11, 1964, Ser. No. 366,362
8 Claims. (Cl. 107—54)



1. An improved method for continuously vacuum-mixing a stream of meat emulsion, said method comprising: exhausting the atmosphere of a mixing zone to a vacuum of about 15-27½ inches Hg; continuously delivering a stream of meat emulsion to one end of said mixing zone, said stream being conducted to said mixing zone through an enclosed passage at least part of which is disposed upwardly whereby the weight of emulsion and frictional drag therein substantially overcomes the pull of said vacuum in said zone; constantly agitating a flowing body of said emulsion throughout said mixing zone; transferring a continuous stream of said emulsion from the opposite end of said mixing zone downwardly to a holding zone; evacuating said holding zone through said mixing zone to substantially the same level of vacuum therein; and pumping emulsion from the bottom of said holding zone.

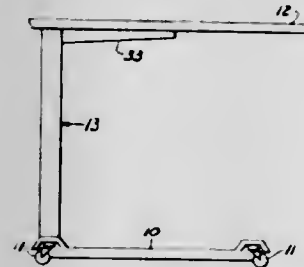
2. An improved apparatus for continuously vacuum-mixing food emulsion, said apparatus comprising: a mixing chamber means for maintaining a flowing body of emulsion; a delivery means for introducing a continuous stream of emulsion to one end of said mixing chamber means; an evacuating means connected to exhaust the atmosphere from within said mixing chamber means; agitating means mounted within said mixing chamber means for mixing the emulsion flowing therein; holding chamber means positioned for receiving a continuous stream of emulsion from said mixing chamber means; transfer means for removing emulsion from an opposite end of said mixing chamber means and delivering said emulsion to said holding chamber means; means to exhaust the atmosphere from said holding chamber means; and discharging means connected to said holding chamber means for removing emulsion therefrom.

3,314,384

OVER-BED TABLE

Stuart N. Mann, Derby, and William Garfield Steel, Tonawanda, N.Y., assignors to The Hard Manufacturing Co., Buffalo, N.Y.

Filed Aug. 30, 1965, Ser. No. 483,452
4 Claims. (Cl. 108—146)



1. In an over-bed table, a horizontally extending base and a table top generally overlying said base, column means extending vertically between said base and said table top adjacent to an edge of each, said column means comprising a first hollow column member fixed to and extending upwardly from said base and a second hollow column member depending from said table top and telescoping with said first hollow column member, said member being relatively vertically movable for adjusting the height of the table top, one of said column members including a vertical locking rod and the other of said column members having a vertical channel member receiving said rod and including slots lying at opposite sides of said rod, one of said slots being of greater vertical extent than the other, a locking means extending through said slots and pivoted adjacent the smaller of said slots, said locking means having an opening through which said locking rod extends whereby in locking position the locking means binds the rod and prevents relative movement between the column members, means responsive to upward movement of said second column to release the locking means thus permitting raising movement of said second columns, and manual means for releasing said locking means for lowering said second column.

3,314,385

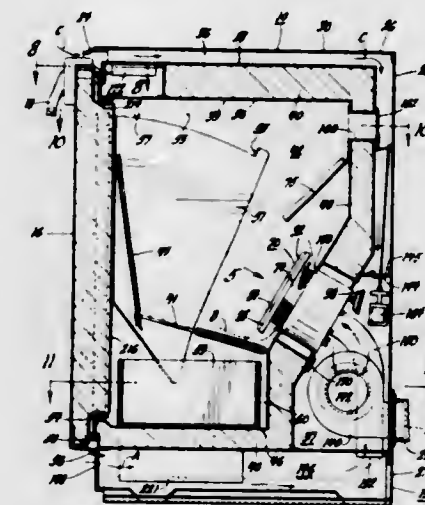
WASTE INCINERATOR

Byron L. Brucken and Harold P. Cassidy, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 28, 1964, Ser. No. 399,733
16 Claims. (Cl. 110—8)

1. In combination, a waste incinerator having casing means defining an air-tight destructive distillation chamber and a combustion chamber interconnected with said distillation chamber, heater means for said distillation chamber, first duct means for supplying oxidation air to said

combustion chamber, second duct means openable for supplying oxidation air to said distillation chamber and closable for maintaining said distillation chamber airtight, common catalyst means for said combustion chamber and said distillation chamber and in thermal heat exchange relation with said chambers, means thermally responsive to temperatures in said distillation chamber and said combustion chamber by way of said catalyst means for energizing said heater means to control the dis-



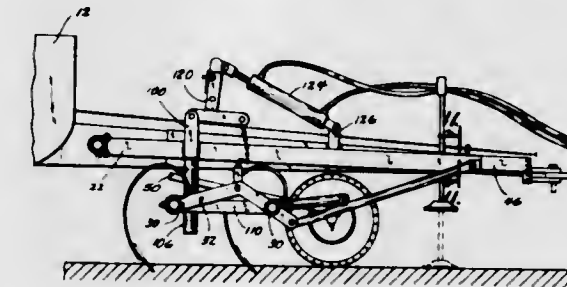
tillation of said waste, and means connected to said first duct means through said combustion chamber for cooling said oxidized products of distillation and for maintaining said distillation chamber under a negative pressure during the distillation of said waste when said second duct means is closed and connected to said second duct means through said combustion and distillation chambers for supporting oxidation of any carbonaceous residue remaining in said distillation chamber after the distillation of said waste when said second duct means is open.

3,314,386

MINIMUM TILLAGE IMPLEMENT

Arnold F. Kopaska, Guthrie Center, Iowa 50115
Continuation of abandoned application Ser. No. 386,927, Aug. 3, 1964. This application Oct. 27, 1966, Ser. No. 590,092

13 Claims. (Cl. 111—52)



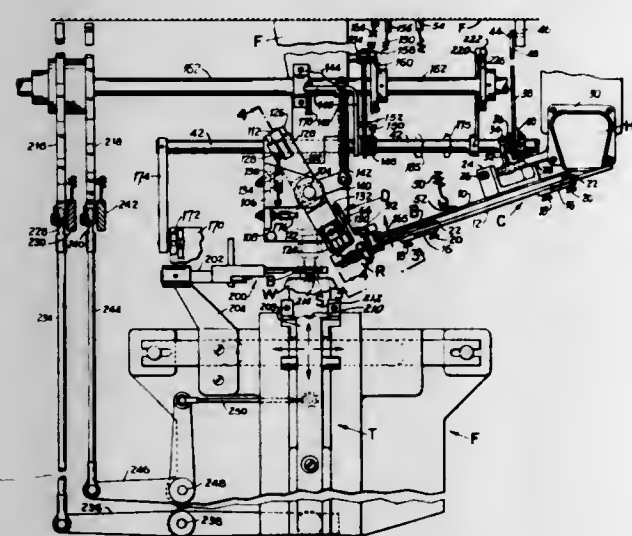
1. In combination, a seed planter having a forwardly extending tongue assembly for detachable engagement with a prime mover, means on said planter for lowering and raising said planter relative to the ground, a ground working implement positioned forwardly of said planter and rearwardly of the forward end of said planter tongue, said implement extending transversely of said tongue, said implement having a frame extending parallel to the longitudinal axis of said implement,

a pair of plates extending in parallel relationship outwardly of said frame and at an acute angle thereto, said implement further including a wing implement section, a tongue member on the inner end of said wing implement section and disposed in a position offset from the longitudinal axis of said wing section, means pivotally connecting said pair of plates to said tongue member, and said tongue member including a hollow bearing member having a length greater than the distance between said pair of plates, said pair of plates having a slot formed in each end, said bearing member being received therein with said means pivotally connecting said pair of plates to said tongue member extending through said bearing member.

3,314,387

BUTTON STITCHING MACHINE AND METHOD OF STITCHING

Carl W. Johnson, Brooklyn, and Mathias Pedersen, Valley Stream, N.Y., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed Apr. 3, 1964, Ser. No. 357,053
17 Claims. (Cl. 112-108)



5. The mechanical method of sewing buttons to an article comprising folding an article on a support which comprises positioning an article of clothing on a support with a folded portion to which a shank button is to be attached extending therebeyond, supporting a shank button with its shank located in a predetermined position relative to said folded portion and with the eye of the shank positioned for passage of a needle threaded with a short length of thread completely therethrough, passing said needle and thread back and forth completely through said folded portion of said article and the eye of said shank and displacing said support and said button diagonally along one path of movement relative to said needle to form a predetermined number of continuous loops of thread attaching said button to said article, then displacing said support and said button diagonally along another path opposed to said first-named path of movement of said support and button and passing said needle and thread completely through said portion of said article and the eye of said shank and forming a predetermined number of continuous loops of thread connecting said button to said article with the ends of the last-formed loops of thread in said portion of said article spaced laterally from the ends of the first-formed loops, and forming locking stitches adjacent said ends of said loops of thread in said portion of said article to lock said thread against loosening.

3,314,388
SIDE SEAM SEAL FOR METAL CONTAINERS
Everett R. Davis, Westwood, Edward W. Merrill, Belmont, and Donald D. Hundt, Arlington, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

Filed June 23, 1964, Ser. No. 377,222
4 Claims. (Cl. 113-120)

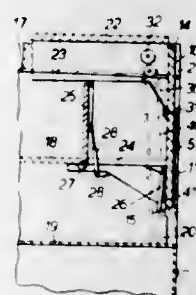


1. A method of forming cemented can body side seams which comprises providing a can body blank having its opposed longitudinal edges reversely bent to form an external body hook and an internal body hook adapted for sealing engagement to form a side seam, applying a sealant having a tensile modulus of 0 to about 200 pounds per square inch at 100 percent elongation to the external body hook, applying an adhesive having a tensile modulus above about 750 pounds per square inch at 100 percent elongation to the internal body hook, interengaging said internal and external body hooks, and thereafter bumping the interengaged body hooks to lock said hooks together.

3,314,389

PIVOTABLE LOADING RAMP FOR SHIPS
Karl Albert Glaever-Enger and Ragnar Jonas Nes, both of Bergen, Norway, assignors to Ingenioren Lund, Mohr & Glaever-Enger, a corporation of Norway
Filed Sept. 18, 1964, Ser. No. 397,592
Claims priority, application Norway, Sept. 20, 1963, 150,167

4 Claims. (Cl. 114-72)



1. A combined side port and loading ramp for ships comprising, a side port which when in an approximately vertical position normally covers an opening in the side of the ship and is supported in a mounting capable of being pivoted about a horizontal axis to permit the side port to be swung to a position where freight can be directed over it through said opening, the side port being vertically adjustable by an elevating arrangement operable independently of a driving arrangement for pivoting the side port about the horizontal axis, the driving arrangement comprising a pair of parallel wires each secured at one end to the side port substantially radially of the pivotal axis thereof, said wires passing over a corresponding one of a pair of pulleys, both of which are disposed at the upper end of the side port's opening, and each secured at the other end to a means for adjusting the length of the wires, said adjusting means consisting of a

two-armed link mechanism having a first arm pivotally mounted at one end about an axis extending at right angles to the side of the ship and at the other end about a horizontal axis passing through the upper end of a piston rod, the lower end of which is received in a pressure cylinder mounted at its bottom end, said piston rod and said pressure cylinder constituting a second arm, and additional pulleys mounted in the first arm adjacent to the upper end of the piston rod over which pass the pair of wires divided into a plurality of longitudinal wire portions, said adjusting means being such that the angle between the two arms is less than 90° when the side port is in the closed position and less than 180° when the side port is fully swung out.

3,314,390

CENTERBOARD SNUBBER

Gerald H. Young, Summit, N.J.
(Irvin and Welch Ave., P.O. Box 113, Deale, Md. 20751)
Filed Mar. 2, 1965, Ser. No. 436,548
7 Claims. (Cl. 114-127)



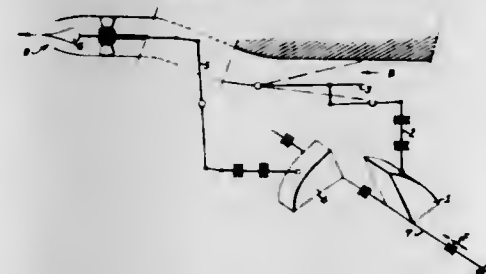
1. A releasable locking means for centerboards comprising a mounting means, a substantially rigid arm means pivotally mounted on said mounting means, the length of said arm means from the point of pivotal mounting on said mounting means to one end thereof being greater than the longitudinal length of said mounting means from the point of pivotal mounting to the end thereof, resilient means connected to said mounting means between said point of pivotal mounting and said one end of said mounting means and said arm means between said point of pivotal mounting and said end of said arm means, and roller means mounted on the end of said arm means spaced from said resilient means and the point of pivotal mounting respectively and said resilient means urging said arm means in the normal position thereof to be inclined with respect to said mounting means with said roller means in an overhanging position with respect to an end portion of said mounting means.

3,314,391

METHODS AND MEANS FOR EFFECTING OPTIMUM PROPULSION OPERATING CONDITIONS IN A JET PROPELLED SHIP

Jacques Dupont, Montbonnot, Isere, France, assignor to Societe Grenobleise d'Etudes et d'Applications Hydrauliques, Grenoble, France, a corporation of France
Filed Mar. 12, 1965, Ser. No. 439,283
Claims priority, application France, Mar. 17, 1964, 4,660

11 Claims. (Cl. 115-16)



1. A method of effecting optimum propulsion operating conditions in a jet propelled ship, comprising pumping water through a passage provided with a discharge

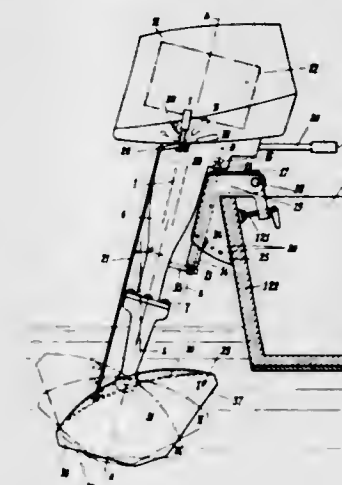
orifice for the propelling jet of water capable of being modified in cross-sectional form, measuring the speed of the ship, providing a given input to the pump so that the water output thereof is at a rate in conformance with the speed of the ship, and then simultaneously modifying the cross-sectional area of the discharge orifice, said given input to the pump, and the output thereof under such modified input to provide an optimum combination of pump operation and discharge orifice configuration for the instantaneous speed of the ship.

3,314,392

HYDRODYNAMIC PROPULSION UNIT FOR BOATS

Justin Molas, 17 Blvd. Vital-Bouhot, and Bernard Zimmern, 27 Rue Delabordere, both of Neuilly-sur-Seine, France

Filed Mar. 22, 1965, Ser. No. 441,544
19 Claims. (Cl. 115-18)



1. A hydrodynamic propulsion unit for boats comprising a driving shaft having a substantially upright position when said unit is operatively fitted on a boat, a propeller mounted on said driving shaft, said propeller having a mean plane of rotation perpendicular to said shaft, a nonrotating casing fitted around said driving shaft, a shield mounted on said casing only partially surrounding said propeller, a series of substantially aligned inlet deflector blades and a series of substantially aligned outlet deflector blades borne by said shield, said blades of both series extending in transverse directions with respect to said driving shaft, said inlet deflector blades having in forward motion a profile adapted to guide the streams of water towards said propeller, whereas said outlet deflector blades have a profile adapted to convey the streams of water beyond said propeller and wherein in forward motion a part at least of said inlet deflector blades is located above said propeller mean plane of rotation and a part at least of said outlet deflector blades is located below said plane.

3,314,393

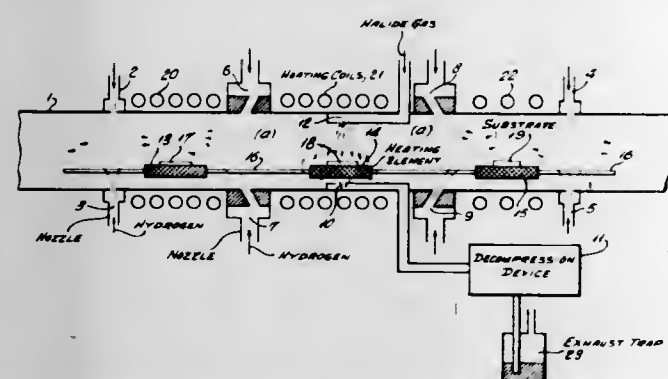
VAPOR DEPOSITION DEVICE

Yuiti Haneta, Tokyo, Japan, assignor to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan

Filed July 1, 1963, Ser. No. 291,805
Claims priority, application Japan, July 5, 1962, 37/28,240
6 Claims. (Cl. 118-48)

1. An apparatus for the continuous manufacture of thin film semiconductor single crystals comprising a cylindrical tube open at both ends; means connected to said tube for creating a pair of gas curtains therein; means connected to said tube, intermediate said first mentioned means for creating a second pair of gas curtains in said

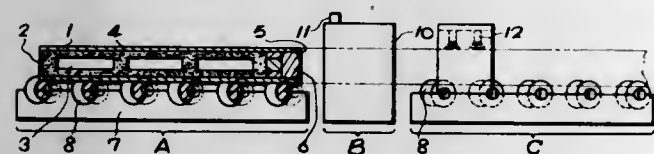
tube the first pair of gas curtains being substantially perpendicular to said tube axis and each of the second pair of gas curtain means being inclined with respect to the said tube axis, whereby three distinct tube regions are defined; semiconductor substrate positioning means dis-



posed through said tube and adapted for axial movement with respect thereto; means for heating said regions; decompression means communicating with the central region of said tube; and means for injecting a film growing gas into said central region.

3,314,394 HEAT-TREATING APPARATUS FOR DIFFUSION COATING

Shogo Izumi, Nishinomiya, Japan, assignor to Nippon Karoraizu Kogyo Kabushikikaisha, Osaka, Japan
Filed Oct. 21, 1963, Ser. No. 317,655
2 Claims. (Cl. 118-48)



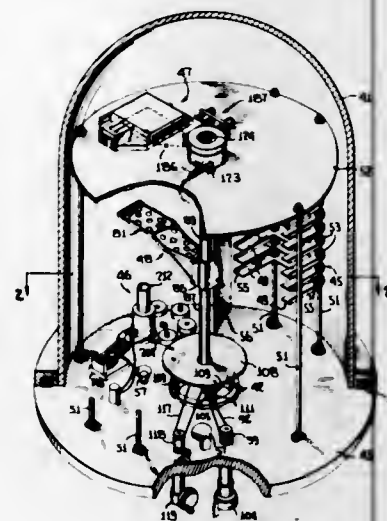
1. A heat treatment apparatus for the diffusion coating of the surface of metal articles, comprising a tubular metal container having a closed end and an open end, said container being adapted to be charged with the article to be coated and an impregnating agent through the open end, a mortar brick sealing the open end of the container and serving as an exhaust port for gases developed within the container, a conveyor for said containers including a plurality of rolls arranged obliquely to the direction of travel of the container for moving the container axially while imparting rotation thereto around the container's axis as a center, heating means located in the path of movement of the container along the conveyor in which the container is heated while rotating and moving axially therethrough thereby coating the surface of the article with the gases developed being discharged through the exhaust port, and a cooling means located in the path of movement of the container along the conveyor following said heating means for cooling the heated container.

3,314,395 THIN FILM CIRCUIT VACUUM PROCESSING FACILITY

Ferdinand J. Hemmer, Alexandria, Va., assignor to Mel-par, Inc., Falls Church, Va., a corporation of Delaware
Filed Oct. 23, 1964, Ser. No. 405,964
29 Claims. (Cl. 118-49)

1. A vacuum vapor deposition facility for forming thin film circuits on insulating substrates comprising rack means for storing plural pallets, said pallets carrying substrates and masks determining the circuit configuration deposited on said substrates, a station for evaporating

materials to be deposited onto said substrates, a station for holding a substrate carrying pallet in registration with a mask carrying pallet, said holding station being posi-



tioned downstream of said evaporating station to receive the material evaporated, and means for transferring said pallets between said rack and said holding station.

3,314,396 ALGAE PROPAGATING AND FISH FEEDING SYSTEM

Allan H. Willinger, New Rochelle, N.Y., assignor to Aquariums Incorporated, Maywood, N.J., a corporation of Delaware
Filed June 17, 1965, Ser. No. 464,749
14 Claims. (Cl. 119-5)



1. A fish feeding device comprising a housing, electric heater means mounted within said housing, and a smooth surfaced foraminous matrix enclosing said housing and adapted to propagate the growth of aquarium vegetation.

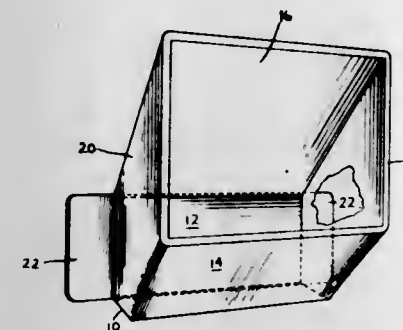
3,314,397 BIRD FEEDER

Walter H. Jacobsen, Ivy Land, Pa., assignor to General Plastic Corporation of America, Philadelphia, Pa., a corporation of Pennsylvania
Filed Jan. 5, 1966, Ser. No. 518,894
1 Claim. (Cl. 119-18)

A bird seed holder including:

- a base wall,
- a back wall extending upwardly from the rear edge of said base wall,
- a front wall slanting upwardly and forwardly from the front edge of said base wall and disposed at an obtuse angle relative thereto,
- an upper wall slanting forwardly and upwardly from the upper edge of said back wall and disposed in a plane at an angle relative to the plane of said back wall,

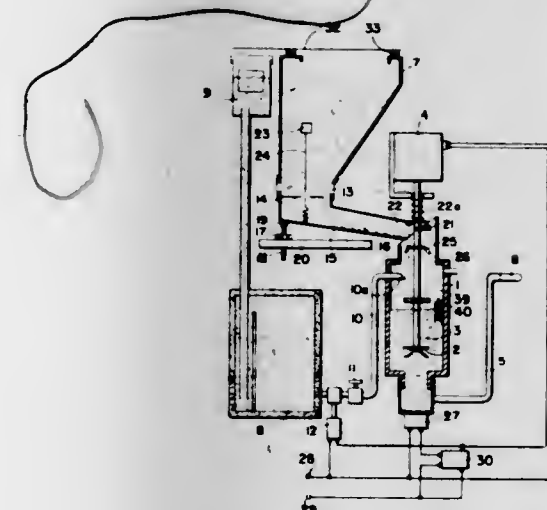
said upper wall being substantially parallel to said front wall and the front edge of said upper wall overhanging said front wall, and



end walls connecting the adjacent edges of said base wall and said upper and front walls to said back wall, said walls being proportioned to enable a bird perched in front of the holder to reach the entire interior of the holder.

3,314,398 AUTOMATIC ANIMAL SUCKLING APPARATUS

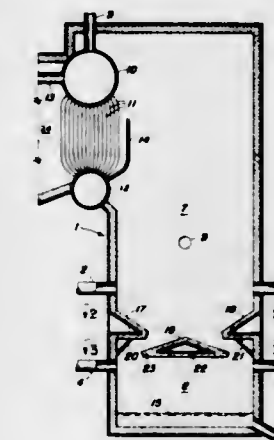
André Francois Legourd, Thiais, France, assignor of one-half to Michel Aime Joseph Legrain, Foulbec, Eure, France
Filed Jan. 28, 1965, Ser. No. 428,644
Claims priority, application France, Feb. 1, 1964, 7,031, Patent 1,392,672
5 Claims. (Cl. 119-71)



1. An apparatus for the feeding of animals comprising a mixing chamber having an inlet end and an outlet end, outlet means located at said outlet end, a powder hopper having a sloping outlet transfer passage including a vibrated element connected to said inlet end of said chamber, a liquid tank connected to said chamber, a liquid control means connected to said tank, a stirrer assembly including driving means and agitator shaft means mounted in said chamber, a vibrator mounted on said shaft adjacent the chamber end of said transfer passage and in intermittent contact with said vibrated element, pressure-actuated means at said chamber outlet end for controlling the liquid flow from said tank to said chamber and for selectively operating said driving means, said pressure-actuated means being responsive to liquid quantity, whereby when the level of the liquid in said mixing chamber is depleted, powder from said hopper and liquid from said tank are introduced into said mixing chamber and mixed, maintaining the desired level of mixed liquid in said chamber.

3,314,399 APPARATUS

Adolf W. Gessner, Montclair, and Theodore J. Kayhart, Caldwell, N.J., and Gordon L. Dibble, New York, N.Y., assignors to The Lummus Company, New York, N.Y., a corporation of Delaware
Filed Nov. 15, 1965, Ser. No. 507,750
11 Claims. (Cl. 122-7)

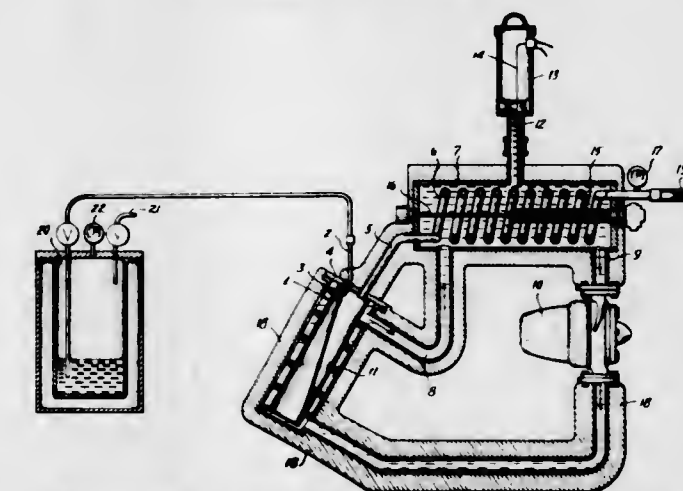


1. A black-liquor recovery furnace comprising:
 - (a) a furnace housing containing a hearth combustion zone and a secondary combustion zone, said secondary combustion zone being above the hearth combustion zone;
 - (b) means for introducing black-liquor into said secondary combustion zone;
 - (c) means separating said zones, said means preventing line of sight between said zones but permitting liquor to flow from said secondary combustion zone to said hearth combustion zone; and
 - (d) means for introducing air into each of said zones.

3,314,400 EVAPORATING AND DEPOLYMERIZING DEVICE

Pierre Sarraz and Roland Vuilleme, Grenoble, France, assignors to Commissariat à l'Energie Atomique, Paris, France

Filed June 30, 1964, Ser. No. 379,136
Claims priority, application France, July 30, 1963, 943,234
4 Claims. (Cl. 122-33)

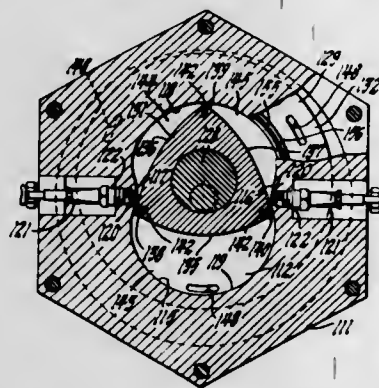


1. Apparatus for evaporating and depolymerizing liquids whose vapor pressure increases very rapidly with temperature comprising in combination
 - (a) an annular vessel including means for storing said liquid at constant pressure and for maintaining said liquid at a temperature slightly below its boiling point;
 - (b) a second annular vessel for evaporating said liquid;
 - (c) means for transferring a portion of said liquid to said second vessel;

- (d) means for communicating with said evaporating vessel for depolymerizing said evaporated vapors consisting of a metallic coil and a housing for said coil;
- (e) means for the controlled heating and forced circulation of heat transfer fluid through the annular space of the evaporating vessel and through the housing around said depolymerizing coil for maintaining a precise temperature in both said second vessel and coil and
- (f) a sonic venturi communicating with the exit of said depolymerizing coil for the discharge of depolymerized vapors.

3,314,401

TWO-STROKE CYCLE ROTARY ENGINE
Nathaniel B. Kell, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 24, 1965, Ser. No. 442,364
8 Claims. (Cl. 123-8)



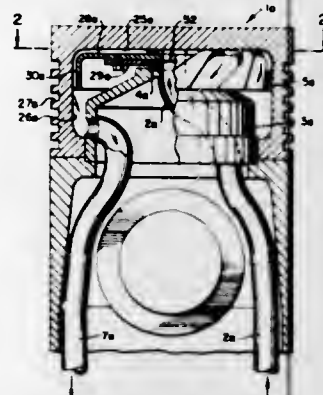
1. A two-stroke cycle rotary engine comprising a casing having an inwardly facing peripheral wall and a pair of axially spaced outwardly facing end walls connecting with and extending radially outwardly from said peripheral wall.
- a rotor rotatably received in said casing and including a piston adapted to cooperate with said peripheral wall to form a plurality of combustion chambers therebetween, said rotor further including a pair of end plates disposed one at each end of said piston and extending radially outwardly thereof into overlapping relationship with said end walls thereby closing the ends of said combustion chambers, said piston being adapted to rotate eccentrically within said peripheral wall so as to cause the volume of said combustion chambers to be sequentially increased and decreased in a ratio sufficient for internal combustion engine operation,
- inlet and exhaust means opening to said end plates and inlet and exhaust ports in said end plates and arranged to communicate each of said combustion chambers with both said inlet and exhaust means during a portion of each cycle near the maximum volume condition of each said combustion chamber.

3,314,402

APPARATUS FOR COOLING A PISTON
Dietrich Tillack, Rostock, Germany, assignor to Veb Dieselmotorenwerk Rostock, Rostock, Germany
Filed June 3, 1965, Ser. No. 460,972
12 Claims. (Cl. 123-41.35)

1. For use in an internal combustion engine, a hollow piston having an elongated hollow interior extending longitudinally along said piston and terminating at one end in an inner transverse surface from which a substantially cylindrical inner surface of said piston extends, support means carried by said hollow piston in the interior thereof, rotary means mounted on said support means for free rotation with respect to said piston,

said rotary means being situated between said support means and said inner transverse surface of said piston so that said rotary means is surrounded by said inner cylindrical surface of said piston, said rotary means having a transverse surface directed toward said transverse inner surface of said piston, fluid guide means carried by said transverse surface of said rotary means and

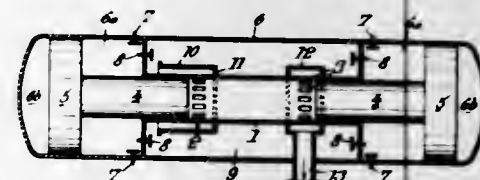


situated between the latter and said transverse surface of said piston for guiding a cooling fluid, and conduit means situated in the interior of said piston and communicating with a space defined between said transverse surfaces for directing a cooling fluid to said guide means to be guided thereby for engagement with said transverse and cylindrical surfaces of said piston for cooling the latter.

3,314,403

AUTOGENERATORS
Maurice Bouvier, Villeurbanne, and Auguste Moiroux, Lyon, France, assignors to Societe d'Etudes et de Participations, Eau, Gaz, Electricite, Energie, S.A., Geneva, Switzerland, a society of Switzerland
Filed Feb. 1, 1965, Ser. No. 429,298
Claims priority, application France, Feb. 7, 1964, 963,088

3 Claims. (Cl. 123-44)



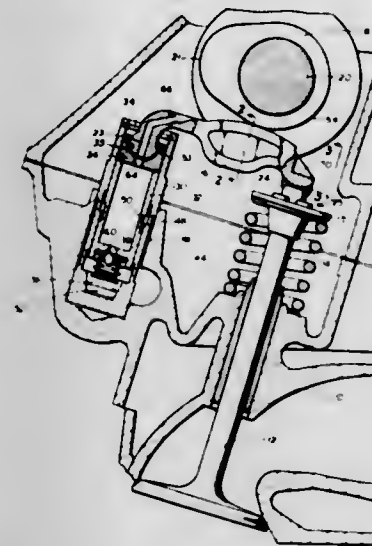
1. A free piston gas autogenerator comprising a motor cylinder and a motor piston reciprocating therein, an air reservoir casing surrounding said motor cylinder, the volume of the former being greater than the volume of the latter, compressor means comprising a compressor cylinder and a compressor piston reciprocating therein to feed compressed air into said casing, inlet ports positioned in said motor cylinder to be uncovered by said motor piston when the same approaches one of its dead end centres, an enclosure comprising a peripheral wall, at least the greatest portion of which is within said casing, radially spaced from said intake ports, said enclosure defining around the same a space separated from the internal space of the casing and comprising a free opening longitudinally offset with respect to said inlet ports permitting the communication with each other of said spaces.

3,314,404

ENGINE VALVE OPERATING MECHANISM
Earl A. Thompson, Bloomfield Hills, Mich.
(1300 Hilton Road, Ferndale, Mich. 48220)
Filed Mar. 21, 1966, Ser. No. 535,913
8 Claims. (Cl. 123-90)

8. An internal combustion engine comprising in combination a reciprocable valve supported in the engine, a rocker arm bearing on the valve and having an external

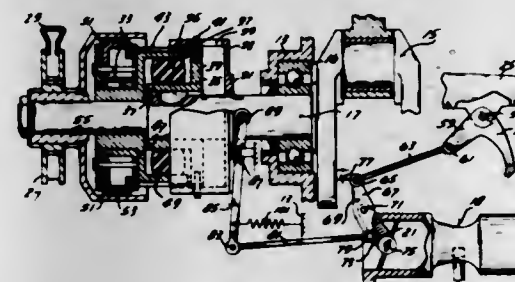
spherical surface pivoted in a cup-shaped surface on a fulcrum which is reciprocable within a guide, a cam bearing against the rocker arm for operating the valve, and an automatic lash adjuster for the fulcrum including a



plunger slidable in the guide and supporting the fulcrum, the fulcrum being piloted in the guide independently of the plunger to transmit directly to the guide components of force in the direction of the length of the rocker arm.

3,314,405

CHAIN SAW
Finn T. Irgens, Milwaukee, Wis., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Dec. 14, 1964, Ser. No. 418,026
6 Claims. (Cl. 123-108)



1. The combination of an engine having energy supply control means, a first member rotatably driven by said engine, a second member mounted for rotation, a resilient member drivingly connecting said first and second members for transmission of power between said first and second members, and subject to flexure in response to said transmission, and means connected to said energy supply control means and sensitive to flexure of said resilient member to operate said energy supply control means in response to flexure of said resilient member.

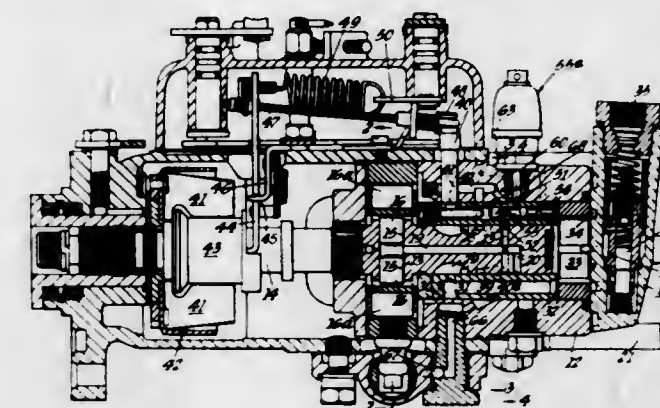
3,314,406

LIQUID FUEL PUMPING APPARATUS FOR INTERNAL COMBUSTION ENGINES
Kenneth Albert Walters Kemp, Ealing, London, and Kenneth Frederick Gubb, Greenford, Middlesex, England, assignors to C.A.V. Limited, London, England
Filed Jan. 7, 1965, Ser. No. 423,926
Claims priority, application Great Britain, Jan. 9, 1964, 994/64

10 Claims. (Cl. 123-139)

1. A liquid fuel pumping apparatus comprising in combination a body part, an injection pump mounted in the body part and arranged to partake of alternate filling and delivery strokes, a feed pump for feeding fuel to the injection pump during a filling stroke thereof at a pressure dependant upon the rate at which the apparatus is

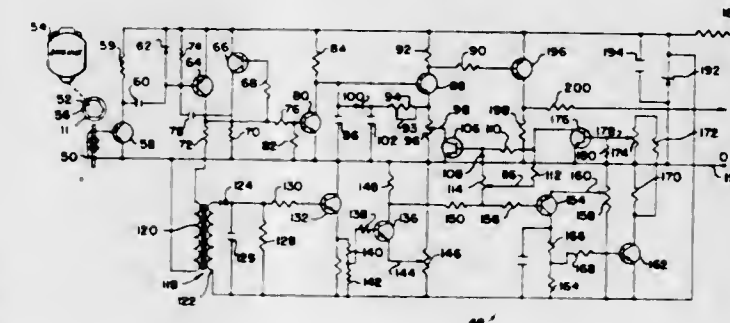
driven, means for controlling the quantity of fuel delivered to the injection pump during the filling stroke, a by-pass passage through which fuel in excess of the normal maximum quantity can be fed from the feed pump to the injection pump, a valve controlling said by-pass passage, resilient means loading said valve to a first position



in which the by-pass passage is open, said valve being exposed to the pressure of fuel delivered by said feed pump and arranged to move against the action of the resilient means when the pressure of fuel delivered by the feed pump exceeds a predetermined value, to a second position in which the by-pass passage is closed.

3,314,407

ELECTRONIC ADVANCE FOR ENGINE IGNITION SYSTEMS
Alfred Schneider, Detroit, Mich., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed Sept. 28, 1964, Ser. No. 399,566
25 Claims. (Cl. 123-148)



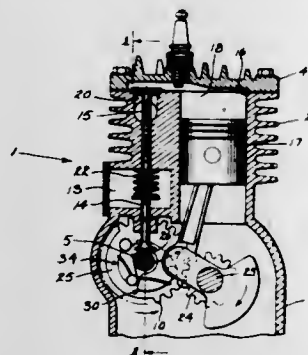
1. In conjunction with an engine, a pulsed ignition system for supplying ignition spark to the engine and electronic spark advance structure connected to the ignition system for advancing the ignition spark supplied to the engine by the ignition system responsive to an engine parameter and including means for initiating spark advance only after the parameter is above a selectable predetermined value and further including means for selecting the rate of spark advance relative to rate of parameter increase when spark advance is initiated and thereafter.

3,314,408

CENTRIFUGALLY OPERATED COMPRESSION RELEASE MECHANISM
Alvin P. Fenton, Kohler, Wis., assignor to Kohler Co., Kohler, Wis., a corporation of Wisconsin
Filed May 17, 1965, Ser. No. 456,225
13 Claims. (Cl. 123-182)

8. In a compression release mechanism for an internal combustion engine, the combination comprising: a rotatable cam shaft to be driven at a speed proportional to engine speed;

a centrifugal cam member mounted to rotate with said cam shaft about a cam shaft axis and pivoted for pivot in a plane substantially perpendicular to the cam shaft axis, said cam member having a radially movable cam surface and a radially movable weight so that when engine speed is below a preset minimum said cam surface is extended radially outward and



when engine speed exceeds said preset minimum said weight is moved by centrifugal force radially outward to cause said cam surface to be retracted radially inward; and

a compression release valve adapted to be opened during at least a portion of each compression stroke of said engine by said movable cam surface when said cam surface is extended radially outward.

3,314,409
MANUALLY OPERATED PROJECTOR
Roy H. Olson, 83 S. Deere Park Drive,
Highland Park, Ill. 60035
Filed May 15, 1964, Ser. No. 367,647
7 Claims. (Cl. 124-1)

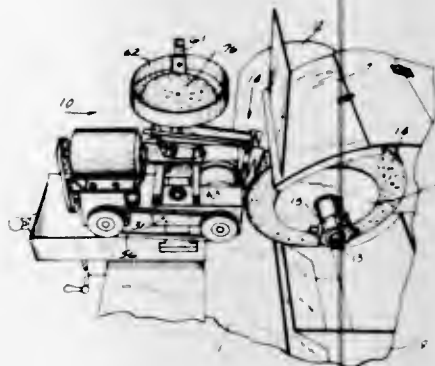


1. A toy device of the type described including a frame adapted to be supported by a surface such as the surface of the ground, substantially horizontally disposed bearing means associated with said frame for accommodating a diabolo type rotatable toy member, shiftable foot accommodating means associated with said frame member and means responsive to shifting of said foot accommodating means for controlling said bearing means to permit the release of an associated toy member after relatively high speed has been imparted thereto.

3,314,410
WHEEL DRESSING MACHINE
Arthur R. Knauer, Dearborn, Mich., and Joseph B. Stinson, Fremont, Ohio, assignors to Frank Bancroft Company, Inc., Dearborn, Mich., a corporation of Michigan
Filed July 6, 1964, Ser. No. 380,572
16 Claims. (Cl. 125-11)

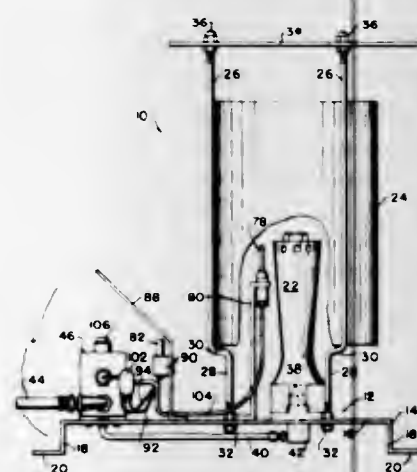
1. An apparatus for dressing a rotatable grinding wheel which is comprised of grit disposed in a body of bonding material, the combination comprising:
a roller having a continuous pressure surface movable about the axis of rotation of said roller;

means for positioning said roller adjacent said wheel so that said pressure surface is opposed to and is closely spaced from a downwardly movable surface of the grinding wheel, said positioning means including means supporting said roller for rotation so that the portion of its pressure surface adjacent the surface of said grinding wheel moves downwardly therewith; means for feeding a stream of particles into the space between said pressure surface and said downwardly movable surface of said grinding wheel so that drive



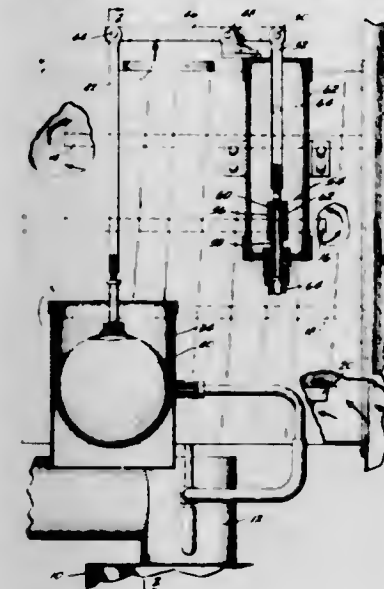
force is transmitted from said grinding wheel to said roller through said particles, said roller being caused to rotate by said drive force; and means for controlling the speed of rotation of said roller to provide a small differential peripheral speed between said wheel and roller so that said particles are urged to move angularly about substantially horizontal axes in order to press said particles into the bonding material and remove portions thereof from the grinding wheel to expose the grit.

3,314,411
TIP-OVER SHUT-OFF FOR GAS HEATERS
Gerard L. Power, Dearborn Heights, Mich., assignor to Insto-Gas Corporation, Detroit, Mich., a corporation of Michigan
Filed May 24, 1965, Ser. No. 458,219
6 Claims. (Cl. 126-85)



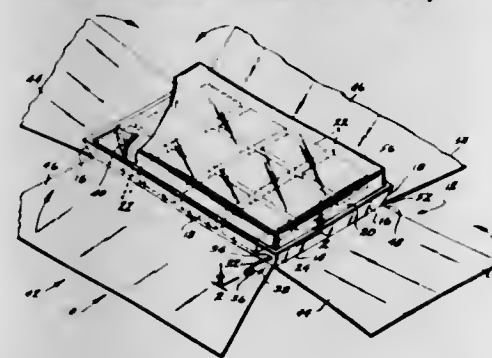
6. A portable heater assembly adapted to rest upon a supporting surface in upright position, said heater assembly including a gas burner, a gas line leading to said burner for delivering gas thereto for combustion, a valve in said gas line, a mercury switch mounted on said heater assembly and operated in response to the tipping over of said heater assembly, and means for closing said valve when said mercury switch is operated.

3,314,412
HUMIDIFIER
Norman R. Krause, 3710 Wright Ave.,
Racine, Wis. 53405
Filed Oct. 23, 1965, Ser. No. 503,768
6 Claims. (Cl. 126-113)



1. In a humidifier, the combination with a humidifying pan, of a float chamber communicating with the pan, and means for replacing in the pan water evaporated therefrom, said means including a float in the float chamber, a valve having a stem operatively connected mechanically with the float, a water supply pipe controlled by the valve, a valve chamber into which water from the supply pipe enters when the valve is open, and means for the gravity delivery of water from said chamber to said pan, the valve stem connection being above water level in the valve chamber and hence being free of packing, said pan being provided with a water circulating and heating system including a heat absorbing coil adapted to be mounted in a position where it will be exposed to temperature of the flue gas in the heating plant.

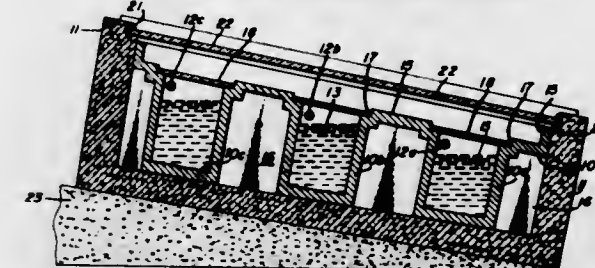
3,314,413
FLAMELESS COOKING APPARATUS AND COMPOUND
Arnold M. Cambridge, 522 N. Canon Drive,
Beverly Hills, Calif. 90210
Filed Mar. 9, 1965, Ser. No. 438,232
4 Claims. (Cl. 126-263)



2. A flameless cooking apparatus, comprising container means having an open top, a closed bottom wall and an encompassing side wall, liquid dispensing means mounted in said container means, said liquid dispensing means having a liquid outlet controlling the flow of liquid therefrom; and a liquid-actuated heat-generating compound mounted in said container means in communication with said liquid outlet, said compound heating said container when moistened with a liquid from said liquid dispensing means, and said liquid-actuated, heat-generating compound comprising 17 parts by volume of gravel;

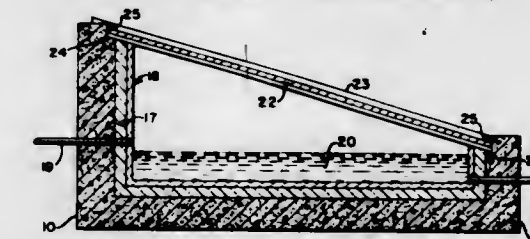
3½ parts by volume of fine table salt; 1½ parts by volume of copper sulphate; 7½ parts by volume of aluminum; and 24 parts by volume of sodium hydroxide.

3,314,414
TROUGHS-IN-A-POOL SOLAR COLLECTOR
Richard J. Rowekamp, 3626 Glenmore Ave.,
Cincinnati, Ohio 45211
Filed May 1, 1964, Ser. No. 364,236
3 Claims. (Cl. 126-271)



1. A batch-type heat accumulator capable of raising, by sunlight, the temperature of relatively large bodies of water to near the boiling point two or three times daily in summer; said heat accumulator comprising the combination of a series of U-shaped troughs enclosed within a much larger empty pool which forms an air gap around the top of the troughs; said pool also comprising a well insulated frame around the base and end walls of the troughs, and having a series of glass panes mounted on the upper portion of its walls; said glass panes being mounted on said pool so that they slant to face toward the sun; said troughs running parallel to each other in a horizontal direction through the pool so that they will hold said large bodies of water in a stationary position while they are being heated by sunlight; said troughs being formed from a continuous piece of untempered aluminum sheet metal which contains such alloys as silicon and manganese, which will cause the aluminum to turn black through the action of sunlight and water; said troughs being designed so that sunlight shines half upon the water in the troughs and half upon the bare metal connecting each individual trough; said troughs having an air gap along both their front and rear sides that is formed by the sheet metal; each of said troughs having an individual glass cover mounted upon the upper portion of its walls; means for introducing water into each individual trough, and means for periodically removing the heated water from each individual trough.

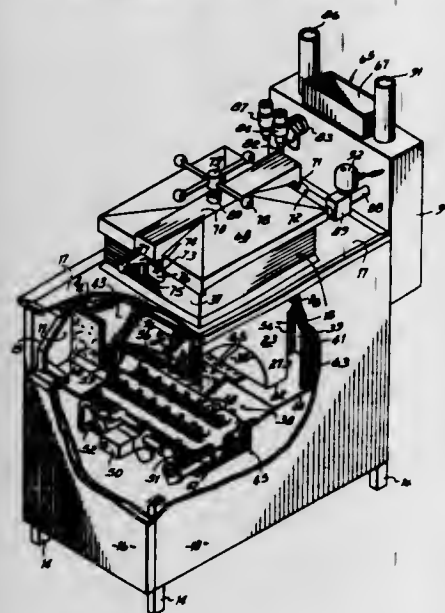
3,314,415
STRUCTURAL MODIFICATIONS TO A POOL-TYPE SOLAR COLLECTOR
Richard J. Rowekamp, 3626 Glenmore Ave.,
Cincinnati, Ohio 45211
Filed May 1, 1964, Ser. No. 364,237
5 Claims. (Cl. 126-271)



1. A heat accumulator for collecting solar energy in a liquid, which comprises a pool having a base and walls extending upwardly from said base, transparent sheet means spanning the walls, said base and walls being formed of air entrained concrete, insulating material lining the interior walls and base of said pool, a black interior surface covering said insulating material, said black interior surface comprising a sheet of aluminum containing silicones

and manganese which will turn black through oxidation when in contact with sunlight and water, means for introducing a liquid into the pool to be heated by the sun, and means for removing heated liquid from the pool.

3,314,416
GAS FIRED PRESSURIZED DEEP FAT FRYER
Chester Wagner, 217 N. Barron St.,
Eaton, Ohio 45320
Filed Apr. 8, 1965, Ser. No. 446,585
9 Claims. (Cl. 126-369)

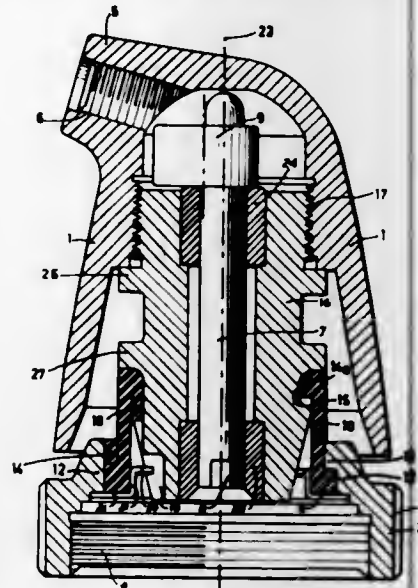


1. A pressurized deep fat fryer including a pressure sealed pot adapted to receive cooking fat for frying food, said pot having its lower portion of substantially smaller area than the remainder of said pot, said lower portion of said pot being formed by a bottom wall, a pair of parallel walls extending upwardly from said bottom wall and substantially perpendicular thereto, a curved wall joining one end of each of said parallel walls and extending upwardly from said bottom wall, and a wall extending upwardly from said bottom wall to join the other end of each of said parallel walls and being substantially perpendicular to each of said parallel walls and to said bottom wall, said lower portion having a substantially rectangular cross sectional area of increasing size from said bottom wall, means to apply gas heat to the upper part of said curved wall of said pot, an exhaust flue to carry off the products of combustion from the gas heat, first duct means connected to the interior of said pot for venting said pot when the pressure in said pressure sealed pot exceeds a predetermined value, second duct means connected to the interior of said pot for venting said pot when said pot has been pressure sealed for a selected period of time, and each of said first duct means and said second duct means having a portion disposed in heat exchange relation with said exhaust flue to prevent freezing of moisture and congealing of cooking fat in each of said first duct means and said second duct means.

3,314,417
MASSAGE FIXTURE IN PARTICULAR FOR DRY-SHAVING APPARATUS
Gerrit Starre and Karel Martin Tiemes, Drachten, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 4, 1963, Ser. No. 321,237
Claims priority, application Netherlands, Nov. 29, 1962, 286,151

3 Claims. (Cl. 128-36)
1. A massage device for attaching to a rotating shaft of a driving motor comprising a ring for attaching to the motor, a central spindle having an eccentric weight on one

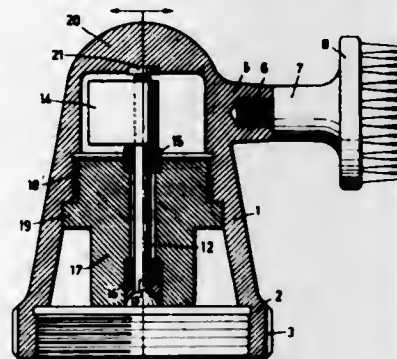
end and means on the other end for coupling to said rotating shaft, a sleeve in which said central spindle is journaled, a casing enclosing the upper portion of said sleeve and rigidly secured thereto, an annular, resilient connector member surrounding the lower end of said sleeve and



fastened at one end thereto, the other end of said connector being secured to said ring concentrically therewith, a recess in one side of the lower end of said sleeve, and rigid means extending from the inside of said ring into said recess with a limited freedom of movement therein.

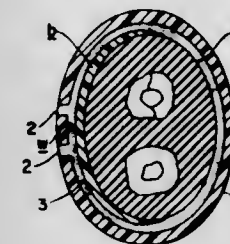
3,314,418
MASSAGE FIXTURE IN PARTICULAR FOR DRY-SHAVING APPARATUS
Karel Martin Tiemes, Drachten, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 4, 1963, Ser. No. 321,242
Claims priority, application Netherlands, Nov. 28, 1962, 286,073

1 Claim. (Cl. 128-36)



A vibrating massage device adapted for coupling to a rotating drive shaft of an electric motor positioned in a housing comprising a hollow, round cap, a sleeve located in said cap, a rod journaled in said sleeve and extending along the longitudinal axis of said cap, one end of said rod being adapted for coupling to said rotating drive shaft and the other end of said rod being provided with an eccentric weight that provides vibration for said massage device, said cap having an internal shoulder and said sleeve being provided with a rib which is screw-connected to the interior of said cap whereby when said sleeve is screwed a certain distance into said cap said rib engages said internal shoulder to form a stop for the further upward movement of said sleeve, said other end of said rod also having a bearing member mounted in the upper portion of said cap for maintaining said rod substantially vertical in said housing, and said cap being provided with a collar at the bottom thereof having means for removable connection to said housing.

3,314,419
ORTHOPEDIC DEVICES AND METHODS OF USING THE SAME
Carl F. Quick, St. Louis County, Mo.
(11147 Pritchard Drive, St. Louis, Mo. 63136)
Filed Nov. 15, 1963, Ser. No. 324,129
20 Claims. (Cl. 128-90)



1. The method of rigidly confining injured limbs, which method comprises forming a tubular element from a heat-shrinkable synthetic resin, said tubular element being formed with an original internal peripheral size smaller than the outside peripheral size of the injured limb, expanding the tubular element diametrically to an internal peripheral size larger than the outside peripheral size of the injured limb, placing the expanded tubular element around the injured limb, and then heat-shrinking the tubular element down into snug-fitting embracing engagement around the injured limb.

3,314,420
PROSTHETIC PARTS AND METHODS OF MAKING THE SAME
Lyman W. Smith, Barrington, and Joseph F. Estes, Dundee, Ill., Roderick J. Cowles, Needham, Mass., and Helmut Bruchmann, Algonquin, Ill., assignors to The Haeger Potteries, Inc., Dundee, Ill., a corporation of Illinois
Filed Oct. 23, 1961, Ser. No. 146,976
26 Claims. (Cl. 128-92)



1. A prosthetic part for incorporation into the muscular-skeletal system of an animal, said part comprising a body, and structure on said body for attaching said part to the muscular-skeletal system of an associated animal, said body and said attaching structure being formed of a ceramic having a plurality of open cells distributed uniformly therethrough and interconnected to form passages extending from each area therein to other and remote areas therein and to and terminating in pores at the surface thereof, said ceramic being inert to animal fluids and being of a character such that the body tissues of the associated animal will grow thereupon and in contact therewith and into said pores.

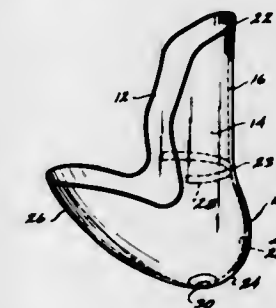
3,314,421
BELT

Henry S. Wingard, Cranford, N.J.
(R.D. 1, Box 43, New London, N.C. 28127)
Filed May 4, 1965, Ser. No. 453,055
12 Claims. (Cl. 128-102)



1. A support comprising a tensioned body encircling belt-like member, and guard means of plastically deformable material mounted thereon, said guard means having end portions and a center portion therebetween, said end portions engaging said belt-like member, said end portions being in engagement with the body of the wearer when in use and said center portion being displaced relative to said end portions for spacing a portion of said belt-like member from the surface of the encircled body.

3,314,422
CONTOURED POUCH FOR MEN'S WEARING APPAREL
Billy S. Phillips, 1757 Royal Blvd.,
Glendale, Calif. 91207
Filed Apr. 12, 1965, Ser. No. 447,244
8 Claims. (Cl. 128-132)

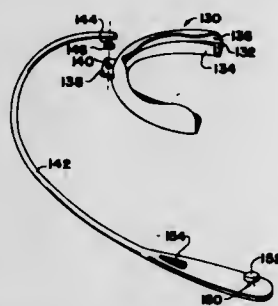


1. A naturally contoured pouch for male wearing apparel, comprising a front contoured portion; a rearwardly and upwardly extending portion; a bottom portion joining said front portion to said rearwardly and upwardly extending portion, whereby said pouch will completely and naturally embrace the male genitals; a shield portion extending outwardly and upwardly from said front portion for supporting a male user's lower abdominal muscles; a body strap and a crotch strap, said body strap being attached to said shield and extending upwardly and rearwardly over the hips of said male user, and having a downwardly dipping portion positionable at the small of the back of said male user, said crotch strap having one end connected to said downwardly dipping portion and another end connected to said rearwardly and upwardly extending portion of said pouch.

3,314,423
MEANS FOR PROTECTING THE MOUTH
Paul L. Boatwright and Fredric E. Clark, both of
4301 Huntoon, Topeka, Kans. 66604
Filed Aug. 9, 1962, Ser. No. 215,938
5 Claims. (Cl. 128-136)

1. A mouth protector comprising, in combination, an integrally formed deformable member made from a natural rubber compound, said member being generally U-shaped in plan view and generally U-shaped in transverse cross section, said member being open at the ends thereof and having a generally flat resilient base portion shaped and of size to be positioned between and engageable by the upper and lower teeth of the user and flexible buccal

and lingual flange portions projecting from opposite side edges of said base portion in spaced relation, said flange portions tapering from relatively thick inner portions at said base portion to thin outer edge portions with said outer edge portions being curved inwardly toward each other and overlying said base portion at the posterior portions thereof, said buccal flange portion extending from said base portion a distance greater than said lingual flange portion and adapted to snugly engage the buccal aspect of the posterior teeth and the alveolar mucosa of the user when positioned in the mouth, said lingual flange portion adapted to snugly engage the lingual convexity of the posterior teeth and terminating at the junction of the teeth and the palatal mucosa of the user when positioned in the mouth, the most anterior portion of said buccal flange portion having a shallow recess in said outer edge portion thereof positioned and of size to accommodate the labial frenum of the user when positioned in the mouth, the intermediate portions of the posterior portions of said buccal flange portion each having a shallow recess therein positioned and of size to accommodate the buccal frena of the user when positioned in the mouth, an integral flexible tab projecting anteriorly from the most anterior portion of said inner portion of said buccal flange



portion, said tab having a centrally located aperture there-through, an elongated flexible strap having a projecting stud on one end portion thereof with said stud being enlarged at the outermost end portion thereof and with said stud removably positioned in said aperture in said tab to attach said strap to said member, another stud projecting from the other end portion of said strap with said last-named stud being enlarged at the outermost end portion thereof, a slit in said other end portion of said strap in spaced relation to said last-named stud with said other end portion of said strap being positionable around a chin strap or the like and with said last-named stud being removably received by said slit to attach said first-named strap to said chin strap, said mouth protector being constructed and adapted to be worn in the mouth on the teeth to protect the user's teeth and lips from direct and indirect trauma with said buccal and lingual flange portions being deformed slightly when positioned in the mouth of the user so that said buccal flange portion exerts gentle pressure on the buccal and labial aspects of the teeth and alveolar mucosa and said lingual flange portion exerts gentle pressure on the lingual aspect of the bicusps and molars to thereby hold said protector in position in the mouth.

3,314,424

MICROPHONE SUPPORT DEVICE FOR A MASK
Maxwell Berman, Los Angeles, Calif., assignor to Douglas Aircraft Company, Inc., Santa Monica, Calif.
Filed Nov. 14, 1962, Ser. No. 237,587
2 Claims. (Cl. 128-142.4)

2. Mask means comprising:

a microphone;

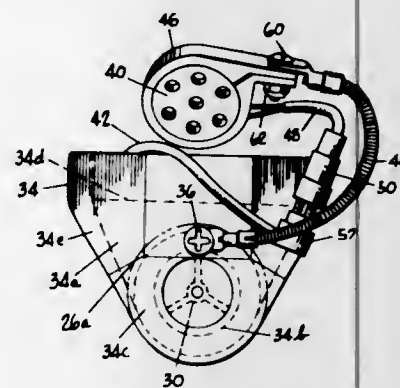
a mask subject to frequent, vigorous and sharp motions having a very limited space for accommodating said microphone, and including

attachment structure having very limited area for attaching support means for mounting said microphone in said limited space;

support means including

an angularly bent wire, said wire being of a first predetermined straight length and fabricated from a relatively pliable metallic material and initially bent angularly to a predetermined maximum curvature,

a tubular spring coil of a second predetermined straight length of wire longitudinally positioned on said wire, and having coil end points secured in substantially fixed relationship with respective predetermined points near corresponding ends on said wire so that said coil is initially placed in a predetermined, maximum stretched condition between said predetermined points when said wire is bent to said predetermined maximum curvature, and



mounting means comprising a first terminal lug secured to one end of said wire, a second terminal lug secured to the other end of said wire, and clamp means attached to said second lug for mounting said microphone, whereby a co-operative combination is obtained for providing a flexible support means which can be fixedly adjusted to any desired normal curvature, less than said predetermined maximum curvature, over a wide angular range and to various configurations; and means for attaching said first lug substantially to a single point on said very limited area of said attachment structure of said mask.

3,314,425

REINFORCED ABSORBENT PAD AND METHOD OF MAKING

Sydney Coppick, Ridley Park, Pa., assignor to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Oct. 29, 1963, Ser. No. 319,694
13 Claims. (Cl. 128-156)

1. A bandage-like material suitable for fluid absorption comprising a reinforcing scrim adhesively attached to a highly-absorbent, compressed urea-formaldehyde structure, said structure being characterized by high-fluid absorbency rates and adaptability for tension contact applications.

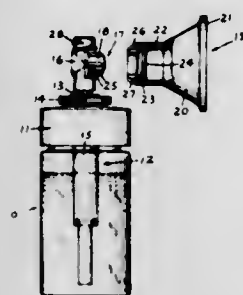
3,314,426

EYECUP AND SPRAY DISPENSER

Albert Carroll, Hartsdale, N.Y., assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine
Filed May 20, 1964, Ser. No. 368,844
4 Claims. (Cl. 128-173)

4. A spray dispenser for applying a medicament to the human eye and furnishing an illuminated target for attracting the eye to enable the medicament to be introduced into the center of the eye, comprising a container for a medicament, a cover for said container, means mounted on said cover extending into said container and

below the level of said medicament for flow of said medicament therethrough and having a plunger for discharging said medicament from said container, an actuator on said plunger, a boss extending laterally from said actuator having an orifice therein for directing a spray of said medicament laterally from said actuator upon actuation of said plunger, an eye shield, means on said eye shield for detachably connecting said eye shield to



said container with said eye shield substantially coaxial with said plunger and covering said boss, and spaced frictionally engageable means on said boss and said eye shield spacing portions of said eye shield from said boss to provide openings extending lengthwise of said boss for passage of light therethrough whereby light is visible from the interior of said eye shield through said openings between said boss when said eye shield is in engagement with the space around the eye.

3,314,427

INTRAVENOUS CATHETER APPARATUS
Thomas P. Stafford, Glendale, Calif., assignor to Don Baxter Inc., Glendale, Calif., a corporation of Nevada
Filed Sept. 28, 1964, Ser. No. 399,547
1 Claim. (Cl. 128-214.4)



In a sterilely encased intravenous catheter apparatus including a hollow adapter with an end portion carrying a pointed cannula and having a catheter axially slideable through the hollow adapter and cannula, the improvement of a means for gaining easy access to the catheter comprising the combination of:

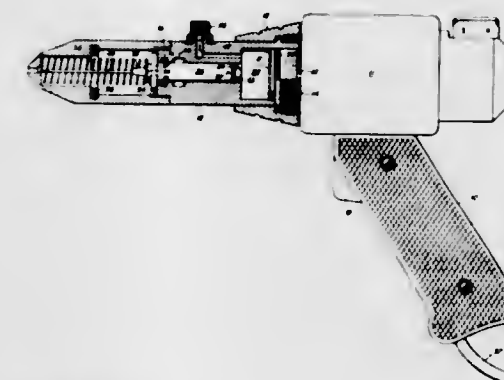
(a) an elongated tubular bag having one end closed and having an open mouth at an opposite end, said tubular bag having an opening in a wall thereof, which opening extends between inner and outer surfaces of the bag wall and is located adjacent the bag's open mouth;

(b) a tapered outer surface of an adapter which wedges into the open mouth of the tubular bag and engages the bag's inner surface, said adapter's tapered outer surface being spaced from the cannula-carrying end portion of the adapter; and

(c) an adhesive tape band encircling the exterior surface of said tubular bag adjacent its mouth, said adhesive tape band covering the opening in said bag wall, with the adhesive tape band bonding to the adapter's tapered outer surface in an area defined by said opening, said elongated tubular bag and tapered outer surface of the adapter having substantially the same longitudinal axis which extends through the bag and adapter, whereby the elongated tubular bag can be separated from the tapered surface of the adapter by a slight axial pull along this longitudinal axis thus giving access to the encased catheter.

3,314,428

VETERINARY HYPODERMIC SYRINGE
Alvin P. Johnson, 11004 Mansel Ave., Inglewood, Calif. 90304, and James W. Kennan, Inglewood, Calif. (601 Paseo de los Reyes, Redondo Beach, Calif. 90277)
Filed Dec. 4, 1963, Ser. No. 328,002
7 Claims. (Cl. 128-218)



1. A hypodermic syringe comprising a medication chamber, a power operated plunger, one face of which forms the rear wall of the chamber, a main bore communicating with the chamber, and a needle-piston assembly movable forwardly by fluid pressure as the plunger is moved, said piston having a central bore through which medication passes to the needle, said needle having a cylindrical hub fitting snugly in said central bore and resilient coupling means for resisting separation of the hub and the piston, whereby the needle and the piston always move as a unit when the syringe is in use; said resilient coupling means being located within the piston bore and engaging the outer surface of the needle hub.

3,314,429

GELATIN CAPSULE WITH DISPENSER
Norman J. Boehm, Grosse Pointe Woods, and Charles C. Cochran, Hamtramck, Mich., assignors to R. P. Scherer Corporation, Detroit, Mich.
Filed Sept. 14, 1964, Ser. No. 396,188
2 Claims. (Cl. 128-232)



1. A dispensing device to be used with medication filled capsules for treatment of mastitis and the like comprising, in combination;

a vessel part of which is a smooth surfaced cylindrical shaped portion of cold flow deformable material, an elongated cannula constructed of a material harder than said deformable material, said cannula having an enlarged internally threaded base end and a tip end, said base end being screwed onto and forming threads on said vessel at said smooth surfaced portion in fluid tight relationship,

a separate and removable pointed needle, shaped to conform to and slidably mounted in the tube of said cannula with said pointed end extending into said base end of said cannula, said needle extending the length of said tube and protruding from said tip end so that it may be manually displaced to pierce said vessel and then removed from said cannula.

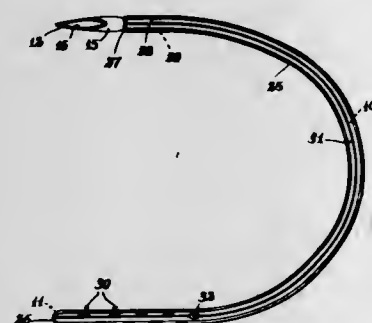
3,314,430

SUMP DRAIN CATHETER

Ralph D. Alley, Loudonville, and David S. Sheridan, Argyle, N.Y., assignors to Brunswick Corporation, a corporation of Delaware

Filed June 22, 1964, Ser. No. 376,879

16 Claims. (Cl. 128—350)



1. A medical sump drain for use during surgical operations and in postoperative periods comprising:
 - a flexible, transparent, plastic cannula having a distal end, a proximal end, and a wall, said wall being flared to a larger external and internal diameter near its proximal end,
 - four inlet apertures disposed in said wall near said distal end circumferentially 90° apart,
 - an end opening at said proximal end lying substantially in a plane which forms less than a 45° angle with a center line of said proximal end,
 - a flexible, transparent, exteriorly longitudinally grooved, plastic tubular casing having a distal end, a proximal end and a wall surrounding said cannula and spaced therefrom by having the casing distal end secured to the cannula distal end and the casing proximal end secured to the flared wall portion of the cannula near the cannula proximal end, said casing having a beveled exterior edge on its proximal end and an exterior land diameter approximately equal to said larger exterior diameter of said cannula,
 - a plurality of inlet apertures in said casing wall near said casing distal end of which at least one is located in a longitudinal groove,
 - a pair of vent holes oppositely spaced in said casing wall near said casing proximal end which communicate with the space between said cannula and casing walls, and
 - a longitudinal line of X-ray opaque material embedded in said casing.

3,314,431

STYLET FOR INSERTION OF ENDOTRACHEAL CATHETER

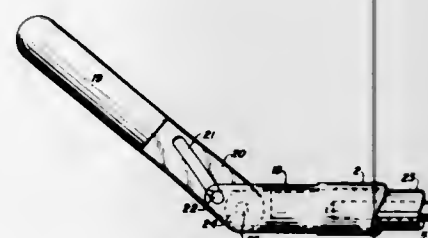
Raymond M. Smith, Jr., 1123 N. 18th St., Allentown, Pa. 18104

Filed Oct. 5, 1964, Ser. No. 401,310

10 Claims. (Cl. 128—351)

1. A stylet adapted to insert an endotracheal catheter into a trachea, comprising:
 - (a) a hollow shaft having a first end and a second end,
 - (b) a pair of spaced arms secured to the first end of said hollow shaft,

- (c) a pilot having a central blade along its longitudinal axis, said central blade being slidably mounted between said pair of spaced arms,
- (d) a slot extending obliquely to the longitudinal axis of said pilot formed in said central blade,
- (e) a pin extending through said pair of spaced arms and through said slot,
- (f) an operating wire in said hollow shaft and having a first end and a second end,
- (g) a collar secured to the first end of said operating wire and having a pair of spaced ears, said collar being slidably mounted within said hollow shaft,



- (h) a second pin extending through said pair of spaced ears and through said central blade to pivotally mount said central blade to said pair of spaced ears,
- (i) manipulating handle means mounted to the second end of said hollow shaft and operatively connected to the second end of said operating wire, said manipulating handle means being adapted to be operated by one hand alone to move said operating wire longitudinally in said hollow shaft and thereby vary the angular deflection of said pilot relative to said hollow shaft,
- (j) said hollow shaft and said pilot being adapted to be removably inserted in said endotracheal catheter.

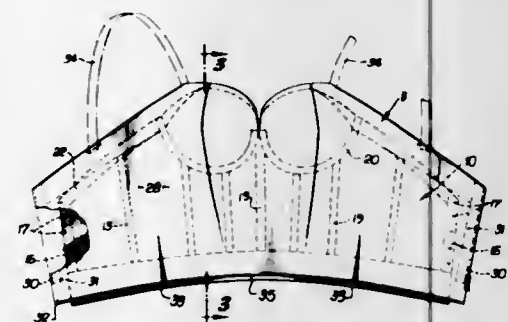
3,314,432

WOMEN'S COMBINATION GARMENT

Olga Erteszek, Los Angeles, Calif., assignor to Olga Company, Van Nuys, Calif., a corporation of California

Filed Jan. 5, 1965, Ser. No. 423,550

5 Claims. (Cl. 128—455)



1. A combination garment of the character described, comprising an understructure including a brassiere having cups and an integral depending portion adapted to be tensioned about the wearer, fastener means carried by terminals of the brassiere and interengageable at the rear thereof, a blouse overlying the brassiere and attached thereto by the blouse upper edge being interturned over the brassiere upper edge to provide for free suspension of the blouse, and second fastener means carried by the blouse and interengageable at the rear thereof in overlying relation to the brassiere fastener means, the bottom extent of the blouse being free from said brassiere to permit the blouse to freely overlap a skirt worn below the brassiere.

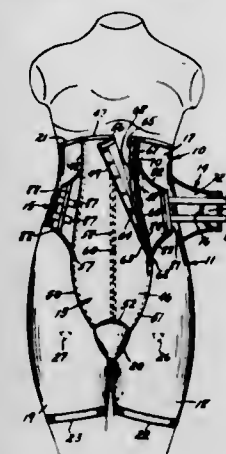
3,314,433

SURGICAL GIRDLE AND PANTY

Emory C. Champagne, Woodbridge, and Thomas J. McGuire, New Haven, Conn., assignors to The Berger Brothers Company, New Haven, Conn., a corporation of Connecticut

Filed May 10, 1965, Ser. No. 454,525

3 Claims. (Cl. 128—520)



1. A surgical-type girdle comprising: a resilient tubular element adapted to enclose the lower trunk of a wearer, a back panel element of substantially non-resilient material overlying said tubular element, and having a pair of steels incorporated along the vertically disposed side edges thereof, a front panel element of substantially non-resilient material interconnecting portions of said tubular element, and first and second tensioning elements interconnecting said front and back panel elements on each side of the tubular element; said tensioning elements each including first and second planar members connected to said front and back panel elements, respectively, said first and second planar members being mutually interconnected by a plurality of strap means, each of which is individually adjustable.

3,314,434

BREAKABLE CIGARETTE WITH SLIDEABLE HOLDER

Charles N. Payne, 2318 Cedley St., Baltimore, Md. 21230

Filed July 1, 1966, Ser. No. 562,167

4 Claims. (Cl. 131—8)



1. A dividable cigarette with a sliding holder, comprising a cigarette body having a tubular slide on said body, stopping means for said slide on said cigarette body, co-operating stopping means interiorly of said slide, and breaking means operative right-planarly upon said slide and cigarette body, whereby said slide and body can be broken into a plurality of pieces, and said slide pieces slid axially to become cigarette holders upon said body pieces.

3,314,435

HAIR STYLING ROLLER WITH RECTILINEAR RIBS INTEGRALLY JOINED WITH LONGITUDINALLY EXTENDING COIL

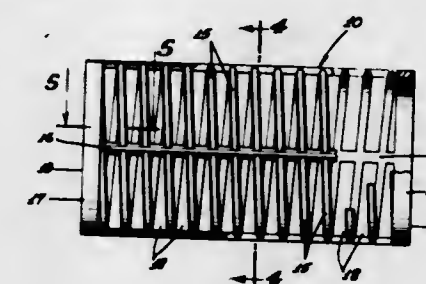
Morris B. Winkler, Los Angeles, Calif., assignor to Morwin Products, Inc., Gardena, Calif., a corporation of California

Filed Mar. 16, 1964, Ser. No. 352,286

2 Claims. (Cl. 132—40)

1. A one piece hair styling roller, consisting of longitudinally spaced elastic circumferentially continuous open end rings, an elastic continuous helical portion having a

plurality of coils longitudinally spaced from each other and disposed between said end rings with the ends of said helical portion integral with said rings, and a plurality of circumferentially spaced longitudinal rectilinear elastic



ribs integral with said end rings and with said coils adapted to hold said coils in relatively fixed longitudinal spaced relation with respect to each other while enabling said coils to deflect and deform laterally of the roller axis.

3,314,436

COMPACT

Richard J. Nichol, Chappaqua, N.Y., assignor to Avon Products, Inc.

Filed June 4, 1964, Ser. No. 372,485

17 Claims. (Cl. 132—83)



1. A compact comprising:
 - (a) a cup-shaped container having a support portion and a wall portion spaced from the periphery thereof to define a first ledge and terminating at a predetermined height in a second ledge,
 - (b) a flat container band seated on said first ledge and covering the outer surface of said wall with one edge thereof defining a continuation of said second ledge,
 - (c) at least three lugs on said container band extending into said wall between said first and second ledges,
 - (d) a cup-shaped lid having a cover portion and a wall portion spaced from the periphery thereof to define a third ledge and terminating at a predetermined height in a fourth ledge complementary in shape to said second ledge,
 - (e) a flat, lid band seated on said third ledge and covering the outer surface of the wall of said lid with one edge defining a continuation of said fourth ledge,
 - (f) at least three lugs on said lid band extending into said wall between said third and fourth ledges, and
 - (g) hinge means pivotally connecting said lid to said container with said second and fourth ledges abutting each other.

3,314,437

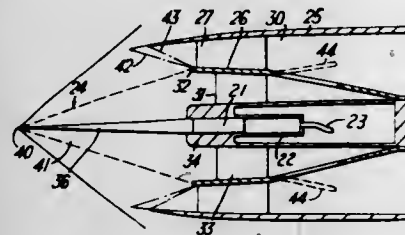
SUPERSONIC INTAKE FOR A JET ENGINE
Malcolm Roy Pike, Woodthorpe, Nottingham, England,
assignor to Rolls-Royce Limited, Derby, England, a
company of Great Britain

Filed July 16, 1965, Ser. No. 472,494

Claims priority, application Great Britain, Aug. 5, 1964,

31,901/64

3 Claims. (Cl. 137-15.1)



1. A supersonic air intake for a jet propulsion engine comprising an outer casing, a fixed structure mounted in said outer casing and defining with the outer casing an annular air intake duct therebetween, the said structure incorporating an inner casing which has an interior open to ram air and which has an annular surface at the upstream end thereof, means provided in said inner casing for permitting air from the interior of said inner casing to flow into said intake duct, a coaxially disposed spike mounted in said fixed structure for axial movement with respect thereto, power means for effecting axial movement of the spike, the maximum diameter of the spike being substantially smaller than that of the said surface, the spike extending forwardly of the said surface and having an outer tip which, during supersonic flight, defines with the said surface a substantially conical flow separation zone.

3,314,438

VALVE FOR FLUID PRESSURE BRAKE SYSTEM AND THE LIKE

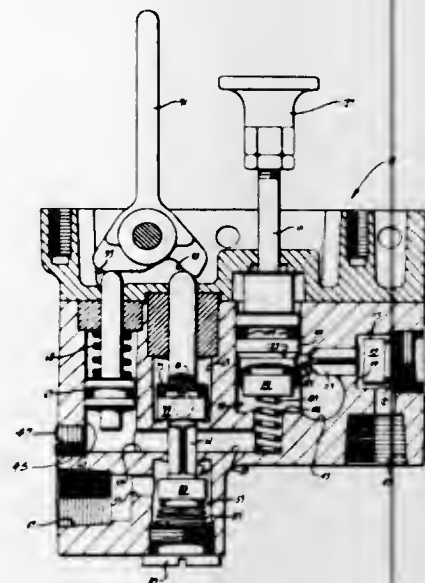
Ernest C. Ike, Lafayette, Calif., assignor to Western Die Casting Company, Emeryville, Calif., a corporation of California

Original application Aug. 12, 1963, Ser. No. 301,360, now Patent No. 3,181,426, dated May 4, 1965. Divided and this application Nov. 5, 1964, Ser. No. 419,263

3 Claims. (Cl. 137-102)

1. A valve for use in spring brake systems and the like comprising a body, first and second chambers in said body, first and second pistons disposed in said first and second chambers respectively, the active pressure area of said first piston being greater than the active pressure area of said second piston to provide a differential pressure area, said body defining an inlet port adapted to be connected to a source of air pressure, said first chamber being in selective communication with said inlet port, resilient means coupled to said first piston urging the first piston against pressure at said inlet port, movable means relating said first and second pistons for opposed movement in their respective chambers, said differential pressure area being sufficient such that at a preselected minimum pressure the force of said resilient means is overcome and said first and second pistons are urged, via said movable means, in accordance with the pressure on said first piston, means responsive to movement of said first piston in overcoming the force of said resilient means by said pressure, serving to interrupt communication between said second chamber and said inlet port, means permitting the free movement of the second piston when said resilient means is released responsive to reduction of pressure at said inlet means below the predetermined minimum, said resilient means

urging the first piston against the lowered pressure and serving to free said second piston for independent movement to an exhaust position, a cylinder port, and means



for venting said cylinder port to the atmosphere in response to said movement of said second piston to said exhaust position.

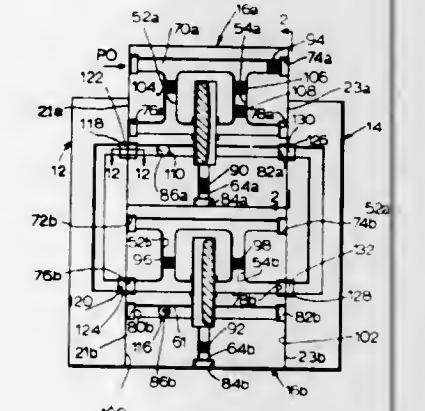
3,314,439

PNEUMATIC COMPUTER

Frank Samet, New York, N.Y., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware

Filed Dec. 1, 1964, Ser. No. 414,970

9 Claims. (Cl. 137-109)



1. A module containing a pneumatic digital computer circuit and comprising a plurality of blocks fitted together with some of said blocks having an identical size and shape and containing an identical basic pneumatic-digital-computer circuit element;

each module block having two interconnected plates with opposite inner faces, the faces being in sealing contact along a sealed joint, and at least one of said faces having a pattern of grooves forming at least a portion of said circuit;

each module block having a peripheral wall with an axis and a pair of axially-spaced end walls forming a cavity adapted to contain a shuttle displaceable along said axis relative to said cavity walls for substantially, but not completely, sealing said cavity and for assuming a plurality of stable positions maintained solely by the effect of pressure and flow forces acting on the shuttle;

said peripheral wall and said end walls having a common supply header passage extending therethrough with coupling ports disposed in the axially-outer sides of said end walls;
said end walls having respective first and second axial passages with respective passage ends connected to said header and having respective valve-seat ports at their opposite ends opening into said cavity and coaxial with each other and with said cavity and cooperating with said shuttle for sealing-off said axial passages when the shuttle is at a stable position over their respective valve seats;
said end walls having respective third and fourth passages with respective ports opening into said cavity adjacent said valve seats and having respective coupling ports at their opposite ends disposed in the axially-outer sides of said end walls; and
said peripheral wall having a central passage with a port opening into said cavity intermediate said end walls and with a coupling port at its opposite end disposed in the radially-outer side of said peripheral wall for forming said basic pneumatic-digital-computer circuit element.

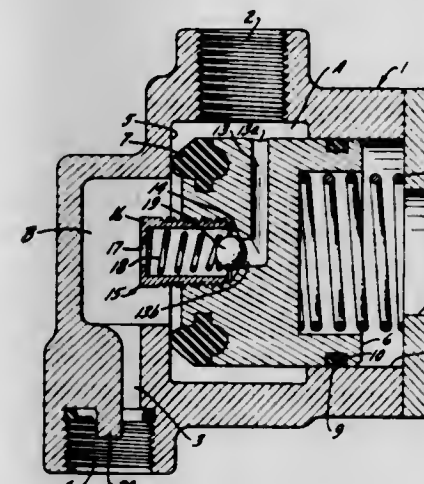
3,314,440

VALVE FOR TIRE STEMS

Charles Horowitz, Skokie, Ill., assignor, by mesne assignments, to Berg Mfg. & Sales Co., Des Plaines, Ill., a corporation of Illinois

Filed Oct. 5, 1964, Ser. No. 401,581

2 Claims. (Cl. 137-226)



1. A tire inflation and balancing device for balancing pressure between a pair of vehicle tires above a predetermined value and isolating one tire from another below said predetermined value, comprising a valve including a housing, a first chamber in said housing, a second chamber positioned in said housing for communication with said first chamber, a valve seat between said chambers, an inlet communicating with said first chamber, an outlet configured for mounting of the housing on a conventional tire valve stem and communicating with said second chamber, a valve piston carrying a valve face for seating on said valve seat and yielding means urging said valve face toward said valve seat, a passage through said valve piston for communicating said first chamber with said second chamber, a check valve in said passage yieldingly urged toward a position closing said passage against the flow of pressure from said passage to said second chamber and precluding flow of pressure from said second chamber to said passage, said check valve being opened in response to pressure in said first chamber and passage above a first predetermined value, said valve piston face being movable off said valve seat in response to

pressure in said second chamber above a greater predetermined value to open communication between said chambers through said valve seat, said check valve and said valve piston being returned to closed position when pressure in said chambers falls below the value at which said valve face initially moves from said valve seat.

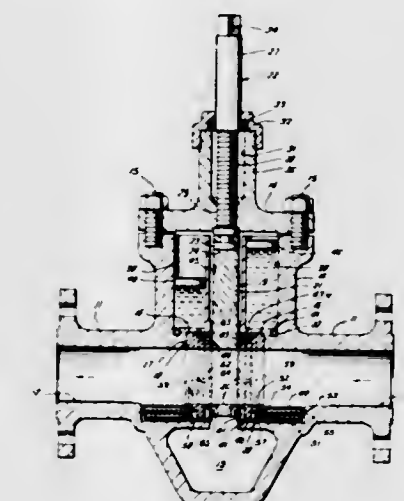
3,314,441

AUTOMATIC PLASTIC-SEALED VALVE HAVING GROOVE CLEANING MEANS

Alexander S. Volpin, 10200 W. Broadview Drive, Miami Beach, Fla. 33139

Filed Jan. 6, 1964, Ser. No. 335,774

8 Claims. (Cl. 137-246.12)



1. An automatic plastic-sealed valve including a housing having a flowway therethrough, a closure member for the flowway movable between positions opening and closing the flowway, a seat in the flowway engageable by the closure member, a full-port sealant groove disposed about the flowway between the seat and the closure member, a sealant reservoir in the housing, passage means arranged to connect the reservoir to said groove in the flowway-closing position of said closure member, barrier means in the reservoir movable in response to fluid pressure differentials across the valve when the closure member is in the flowway-closing position to force sealant through said passage means into said groove, trap chamber means in the housing, and duct means operable in said flowway-closing position of the closure member to connect said chamber means to said groove to receive non-sealant material displaced from said groove by entry therein of said sealant.

3,314,442

AUTOMATIC SEALANT-SEALED VALVE

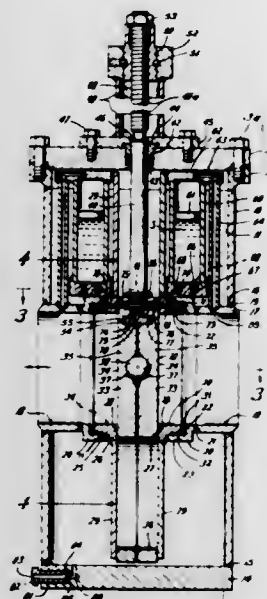
Alexander S. Volpin, 10200 W. Broadview Drive, Miami Beach, Fla. 33139

Filed Apr. 27, 1964, Ser. No. 362,802

15 Claims. (Cl. 137-246.12)

1. In an automatic sealant-sealed valve, a housing having a closure chamber therein, an operable closure in the chamber having upstream and downstream sealing faces, aligned flow ports opening into said chamber, seat members slidably mounted in the inner ends of said flow ports, means biasing the seat members toward said sealing faces, and a sealing system for said sealing faces including a sealant reservoir in the housing, a movable barrier therein, conduit means providing direct communication for upstream line pressure between the upstream flow port and the portion of said reservoir on one side of said barrier, and discharge passage means communicating the portion of said reservoir on the opposite side of said barrier with

both said sealing faces, said sealing system being operable when said closure is in flow port-closing position to force



sealant from said reservoir to both said sealing faces in response to pressure differentials between the upstream and downstream sides of the valve.

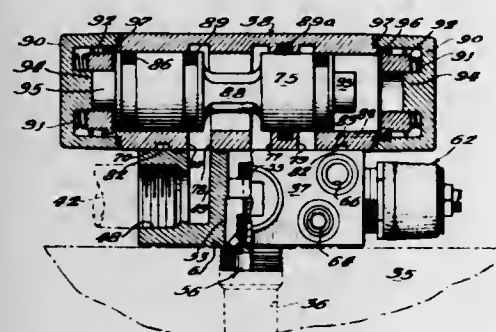
3,314,443

VALVING STRUCTURE

Francis S. Flick, Oak Park, and Richard M. Morgan, River Forest, Ill., assignors to Flick-Reedy Corporation, a corporation of Illinois

Original application Nov. 8, 1963, Ser. No. 322,355, now Patent No. 3,272,221. Divided and this application June 17, 1965, Ser. No. 472,751

8 Claims. (Cl. 137-270)



1. A valving unit, comprising:

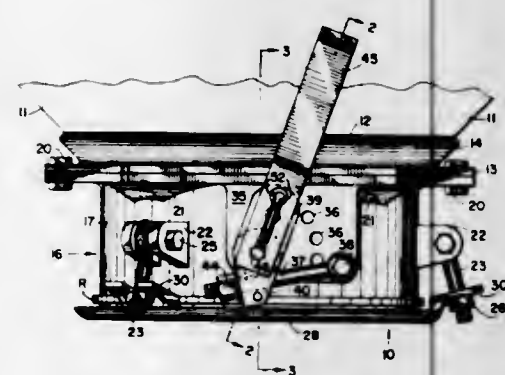
- a generally box-like subplate having a substantially flat upper surface with ports within the confines of said surface,
- a spool-type valve having a flat bottom surface with ports within the confines of said bottom surface,
- a plurality of fasteners having mating parts in said valve and subplate engageable for removably securing said valve to said subplate with said ports in register,
- said subplate having a central passage from one of its ports extending through the subplate for conducting fluid to and from the valve to a member supplied with fluid through the valving unit,
- said subplate having a web extending across a portion of said central passage and a fastener secured against said web and to said member supplied with fluid through the valving unit for securing the subplate to such member,
- said fastener being wholly within the passage for fluid through the subplate and into such member requiring no seals about the fastener,

means forming separate passages on either side and adjacent of said central passage in the subplate from its other ports, each having a lateral passage to the exterior of the subplate for connection of fluid supply and exhaust whereby fluid may be supplied to the subplate independently of the valve and flow thereof to the central passage is controlled solely by the valve secured to the subplate.

3,314,444
VALVE

Herbert Vernon White, Jr., Borger, Tex., assignor to J. M. Huber Corporation, Locust, N.Y., a corporation of New Jersey

Filed Nov. 20, 1964, Ser. No. 412,745
1 Claim. (Cl. 137-377)



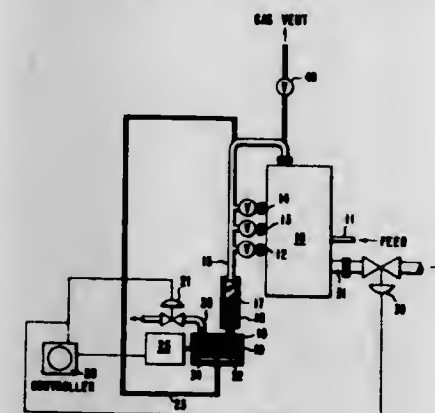
A valve for hopper cars of the type having downwardly converging side walls terminating at their lower ends in an outwardly extending horizontal flange plate said valve comprising an upright cylindrical valve body, a horizontal flange integrally formed on the upper end of said body and extending outwardly therefrom, said horizontal flange being adapted for engagement with said flange plate, means detachably securing said flange plate to said flange in underlying relation thereto, a horizontal shaft extending transversely of said valve body with its opposite end portions journaled in said valve body, said shaft having an elongated slot formed therein intermediate the opposite end portions thereof, a valve plate extending through said slot and detachably secured to said shaft within said valve body, said valve plate being moveable upon rotation of said shaft from an open position parallel to the axis of said valve body to a closed position substantially transverse of said valve body with the peripheral edge of said valve plate in contact with the inner face of said valve body, a boss formed on the outer surface of said valve body with one end of said shaft extending through said boss, an offset extension integrally formed on the end of said shaft adjacent said boss, a handle detachably secured to said offset extension, a sleeve rigidly secured to said handle, a latch pin mounted in said sleeve for sliding movement toward said boss, means spring biasing said latch pin toward said boss, said boss having a plurality of arcuately spaced bores for receiving said latch pin, means for detachably securing said latch pin in retracted position out of engagement with said bores, a bolt pivotally secured to said boss, a pair of closely spaced ears integrally formed on said offset extension, a nut detachably mounted on said bolt, said bolt being adapted for engagement between said ears with said nut in engagement with said ears whereby said shaft is locked against rotation with said valve plate in closed position, a cover, means securing said cover to said valve body comprising a plurality of bolts pivotally secured to said valve body and adapted for detachable engagement with said cover for detachably securing said cover to the lower end of said valve body in underlying relation to said valve plate.

3,314,445

LIQUID LEVEL CONTROL DEVICE

Burton Pardee Brodt, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Aug. 24, 1964, Ser. No. 391,402
2 Claims. (Cl. 137-396)



1. In combination with a liquid fed pressure vessel having a free space above the liquid therein, a device for controlling the liquid level in said vessel comprising overflow outlet means connected to said vessel, vertical conduit means connected to said outlet, diaphragm means at the base of said conduit means having a high pressure chamber and a low pressure chamber separated by a resilient diaphragm element, said high pressure chamber being connected both to the base of said conduit means and to an effluent flow regulator, said low pressure chamber being in communication with the free space of said vessel, said diaphragm element being movable responsive to varying liquid levels in said conduit, and control means for regulating the liquid flow through said effluent flow regulator responsive to movements of said diaphragm element.

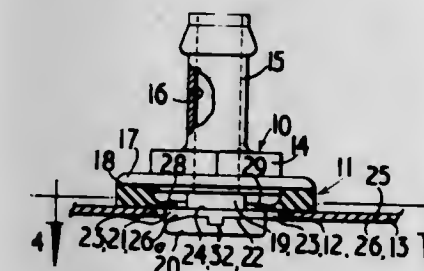
3,314,446

ONE-WAY VALVE

Denis Bryan Saunders, Sheldon, Birmingham, England, assignor to Girling Limited, Birmingham, England, a British company

Filed Dec. 27, 1963, Ser. No. 333,975
Claims priority, application Great Britain, Dec. 30, 1962, 45,295/62

19 Claims. (Cl. 137-516.15)



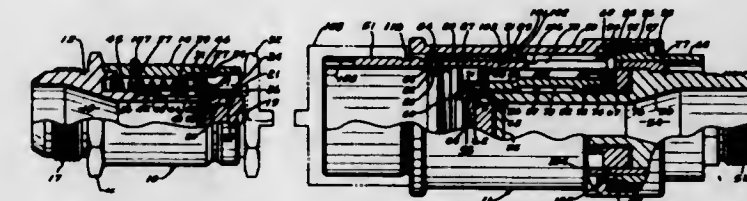
1. A one-way valve for mounting in an aperture in a plate to prevent the flow of fluid through the aperture in one direction, comprising, a valve body, a passage in said body for fluid flow therethrough, an extension on said body, clamping means on said extension engageable with the edges of the plate defining said aperture, a valve seat on said extension, a combined valve closure member and seal carried on said body and movable towards and away from a closed position in which flow of fluid through said passage in one direction is prevented, said closed position being defined by engagement of said valve closure member with said valve seat, in the assembled position said combined valve closure member and seal defining an annular seal surrounding said aperture between the valve body and the surface of said plate.

3,314,447

QUICK CONNECT COUPLING

Roland W. Collar, Sun Valley, Calif., and Austin E. Pettyjohn, Wickliffe, and Leonard P. Spontelli, Cleveland, Ohio, assignors to Lear Siegler, Inc., Los Angeles, Calif., a corporation of Delaware

Filed July 3, 1963, Ser. No. 292,576
5 Claims. (Cl. 137-614.06)



1. A quick connect valved coupling comprising a nipple body and a socket body which telescope together and which each have a coaxial hollow stem closed at its forward end, said stems having generally radial passages extending from their interior to their exterior and being axially aligned with their closed forward ends juxtaposed and adjacent when said coupling bodies are telescoped together,

locking means carried in said socket for engaging said nipple body and locking the coupling together when said nipple and socket bodies are telescoped together, an annular external forward stem seal on each of said stems forward of said generally radial passages therein,

an annular external rearward stem seal on said nipple stem rearward of said generally radial passages therein,

a nipple valving sleeve on and axially slidable along said nipple stem and having its rearward portion slidingly and sealingly engaging said rearward nipple stem seal in all positions and resilient means biasing said nipple valving sleeve forwardly into a closed position and into sealing engagement with said forward nipple stem seal,

a socket valving sleeve on and axially slidable along said socket stem and having end portions and an enlarged bore portion intermediate its end portions and internal annular forward and rearward socket sleeve seals in its end portions forwardly and rearwardly of said enlarged bore portion, respectively, and which slidingly and sealingly engage the exterior of said socket stem forwardly and rearwardly respectively of said generally radial fluid passages therein, said socket valving sleeve being movable forwardly from a closed rearward position on said socket stem to a first forward position of telescoping sealing engagement of said forward socket valving sleeve seal and the exterior of said nipple valving sleeve for establishing a fluid seal between said coupling parts while maintaining a closed condition of said valves in both coupling parts,

said socket valving sleeve being movable forwardly to a second and further forward position with said enlarged bore portion of said socket valving sleeve radially opposite and spaced from sealing engagement with said forward socket stem seal and with the forward portion of said socket valving sleeve in telescoping and abutting sealing relationship with said nipple valving sleeve while maintaining said nipple valving sleeve closed,

said socket valving sleeve being movable forwardly to a third position to effect opening of said socket valving sleeve while moving said nipple valving sleeve rearwardly to an open position thereby establishing a continuous fluid passage through the coupling and while maintaining said fluid seal between the nipple and the socket,

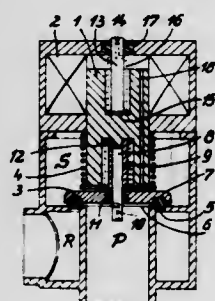
a protective bleed orifice and vent in the forward end of said socket stem and extending between the exterior surface of said socket stem forwardly of said forward socket stem seal and said forward closed end of said socket stem for bleeding off and venting and relieving deleterious pressure on said forward socket sleeve seal during its transfer between said nipple valving sleeve and stem and said socket stem, an external collar on said socket body axially slidable thereon from a rearward coupling unlocking and valve closing position to a forward coupling locking and valve opening position, said collar having co-operative engagement with said locking means and said socket valving sleeve whereby axial movement of said collar when said coupling bodies are telescoped together successively actuates said locking means to lock the coupling together and then moves said socket valving sleeve from its rearward to its forwardmost position.

3,314,448

SEQUENTIALLY OPERATED PLURAL VALVE FOR VACUUM INSTALLATION

Otto Wolff and Emil Hentschel, Berlin, Germany, assignors to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany
Filed Feb. 27, 1964, Ser. No. 347,954
Claims priority, application Germany, Feb. 28, 1963, S 83,953

16 Claims. (Cl. 137—627.5)



1. Magnetic valve for vacuum systems, such as a pre-vacuum valve for vacuum systems of corpuscular radiation devices like electron microscopes, comprising a valve body formed with a chamber communicating with an area of lower pressure such as a vacuum pump, a chamber communicating with an area of higher pressure, and a lock chamber having a wall in common with and abutted by the other chambers, said wall being formed with valve openings affording communication between said first-mentioned two chambers through said lock chamber; a valve member, preferably having suitably shaped sealing means thereon, disposed in said lock chamber; a valve stem associated with said valve member; magnetic actuating means for actuating said valve stem and said valve member therewith to move relative to said common wall so as to seal all of said valve openings in vacuum-tight relation; and means associated with said lock chamber for connecting said lock chamber to atmosphere after said valve member has vacuum-tightly sealed said valve openings.

3,314,449

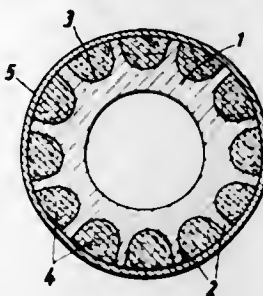
PLASTIC TUBE

Gustav Krone, Berlin-Dahlem, and Horst Forberg, Berlin-Zehlendorf, Germany, assignors, by mesne assignments, to Krone Kommanditgesellschaft, Berlin, Germany
Filed Feb. 12, 1964, Ser. No. 344,328
Claims priority, application Germany, Feb. 14, 1963, K 48,954; Mar. 22, 1963, K 49,276; Sept. 23, 1963, K 50,899, K 50,900

2 Claims. (Cl. 138—125)

1. A plastic tube comprising a tubular core of thermoplastic or thermosetting plastic having inner and outer

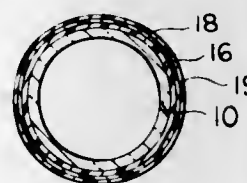
surfaces, said outer surface being provided with alternate axially extending ribs and grooves, glass filament rovings



extending axially of and filling said grooves, and an outer bandage for the core.

3,314,450

TRANSPARENT REINFORCED GLASS PIPE
William E. Doering and Robert R. Kegg, Toledo, Ohio, assignors to Owens-Illinois Inc., a corporation of Ohio
Filed Aug. 5, 1963, Ser. No. 299,933
12 Claims. (Cl. 138—146)

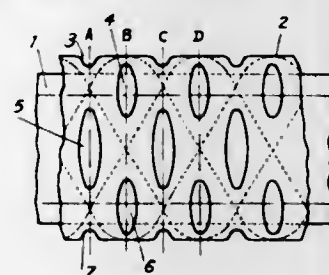


9. A composite transparent reinforced glass pipe comprising a glass tube having outwardly-flared exterior surfaces at its ends and essentially uniform internal surfaces throughout its length, a first-applied adherent coating of randomly-disposed relatively short-length glass fibers bonded in a polymerized unsaturated polyester resin containing material disposed essentially coextensive with the exterior surfaces of said glass tube, a second-applied adherent coating of polymerized unsaturated polyester resin containing material surrounding and fully embedding the glass fibers of said first coating, a last-applied adherent coating of polyvinyl acetate containing material extending fully coextensive with said first and second coatings, said glass tube having an index of refraction of about 1.47, said first, second, and third coatings having indices of refraction sufficiently complementary to said glass tube to render said composite glass pipe transparent.

3,314,451

FLEXIBLE METALLIC SHEATHS FOR CABLES
Marcel Heupgen, Jeumont, France, assignor to Forges et Ateliers de Constructions Electriques de Jeumont
Filed Sept. 18, 1963, Ser. No. 309,798
Claims priority, application France, Sept. 28, 1962, 910,685

4 Claims. (Cl. 138—177)



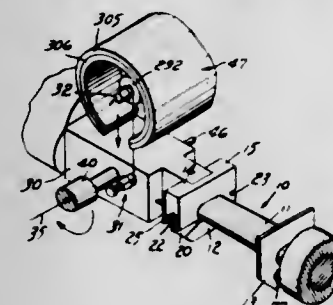
1. Flexible tubular metallic cable-sheathing comprising: a series of recesses or indentations on the external surface of the sheathing arranged circumferentially in rows about said sheathing, individual recesses or indentations of each said row being staggered with respect to the individual recesses or indentations of the rows immediately adjacent thereto, said staggering of alternate rows

thereby defining undulations between said recesses or indentations, whereby said undulations entwine a cable in doubly-helical fashion to enhance the flexibility of said tubular sheathing over that displayed in a non-indented condition.

3,314,452

METHODS OF AND APPARATUS FOR WINDING WIRE

John S. Cartwright, Hopewell Township, Mercer County, Clifford W. Henderson, Princeton Township, Mercer County, George E. Melvin, Hamilton Square, Richard C. Steen, Raritan Township, Hunterdon County, and Edward S. Tice, New Brunswick, N.J., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed June 25, 1964, Ser. No. 377,857
27 Claims. (Cl. 140—92.2)



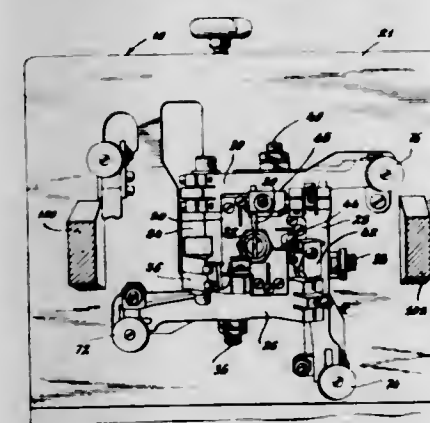
1. In the method of winding an indefinite length of wire into successive coils wherein relative rotational and to-and-fro traversing movements are caused between a spool and a wire guide to pull the wire from a wire supply through the wire guide and wind the same in a coil on the spool, the improvement which comprises:

interrupting the rotational and to-and-fro movements when a desired coil of the wire has been wound on the spool;
moving the wire guide relative to the spool to form a span of wire extending from the wound coil;
anchoring the end of said span of wire adjacent to the wire guide to a relatively fixed point; and
severing the span of wire between said fixed point and the spool to form a lead of a predetermined length for the coil wound on the spool, the new leading end of the wire supply extending from the wire guide and remaining anchored to the fixed point preparatory to winding a subsequent coil.

3,314,453

WIRE FORMING MACHINES

Frank C. Holmes, Trumbull, Conn., assignor to The U.S. Baird Corporation, Stratford, Conn., a corporation of Connecticut
Filed June 10, 1964, Ser. No. 374,040
6 Claims. (Cl. 140—103)



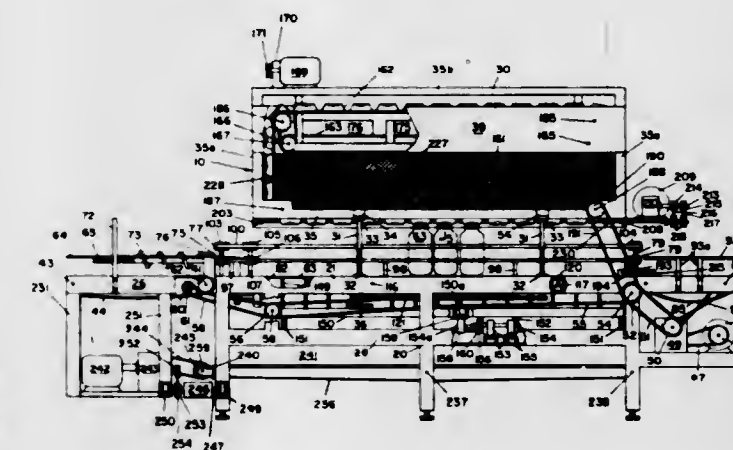
1. A wire forming machine which comprises: a fixed wire guide having a rear end and a forward end and a bore therethrough terminating at said forward end in a feed

orifice; feed means for advancing wire through said bore from said rear to said forward end; a coil forming tool mounted to be selectively advanced to a coil forming position adjacent the forward end of said guide; a coil spacing tool mounted to be advanced into a coil spacing position intermediate said wire guide and the coils being formed by said coil forming tool; and means for selectively advancing said coil spacing tool into said coil spacing position.

3,314,454

CONTAINER FILLING APPARATUS

Phillip G. Wood, 210 E. Cedar St., Pulaski, Wis. 54162
Filed Apr. 19, 1965, Ser. No. 449,040
6 Claims. (Cl. 141—72)



1. Filling apparatus for compactly packing produce in substantially rigid, open-topped containers, comprising:

(a) an endless filling belt having a lower run extending along a substantially straight path, an upper run, and a plurality of openings extending there-through;
(b) a track disposed longitudinally along at least one side of the lower run of said filling belt;
(c) an endless drive chain attached to the side of said belt adjacent said track, said drive chain being carried by said track along the lower run of said belt;
(d) means for driving said chain to continuously advance said attached filling belt along said lower run;
(e) means for oscillating said track to impart vibration to said filling belt along its lower run during continuous movement thereof;
(f) conveyor means for continuously advancing a plurality of said containers in upright position along a substantially straight path in vertical alignment with said openings in the lower run of said filling belt and at the same speed as said filling belt; and
(g) a produce conveyor disposed above the lower run of said filling belt for continuously delivering produce by gravity to the lower run of said filling belt for discharge through said belt openings into said containers.

3,314,455

BAND SAW RESAWING MACHINE

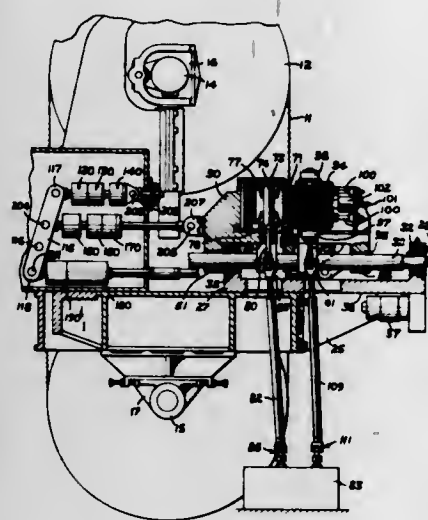
James G. Taylor, Seattle, Wash., assignor to The Black Clawson Company, Hamilton, Ohio, a corporation of Ohio

Filed July 24, 1964, Ser. No. 384,993

16 Claims. (Cl. 143—5)

1. Indexing apparatus for a feedworks comprising, a frame, a set roll assembly and a press roll assembly mounted on said frame for movement toward and away from a center line therebetween, an actuator lever mounted on a said frame for movement about a pivot, first actuator means interconnecting said lever and said frame, second actuator means interconnecting said lever

and said set roll assembly, third actuator means interconnecting said lever and said press roll assembly, said second and third actuator means being connected to said lever, and automatic control means movable to a side cutting position wherein said first and second actuator means are held in a preset position so that said set roll assembly is positioned against movement a preselected



distance from said center line and said press roll assembly is urged toward said center line or alternately to a center cutting position wherein said second and third actuator means are locked so that movement of said lever effects movement of said set and press roll assemblies in opposite directions and said first actuator means urges said lever to move each of said assemblies toward said center line.

3,314,456

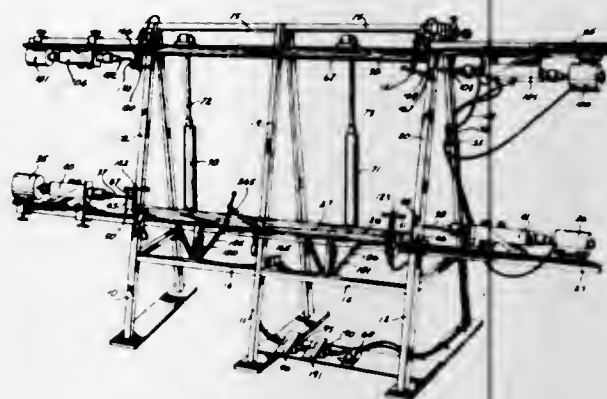
RECIPROCATING SAW BLADE WITH BURNISHING EDGE

Wilbur J. Craven, Glastonbury, Conn., assignor to The Capewell Manufacturing Company, Hartford, Conn., a corporation of Connecticut
Filed Dec. 10, 1963, Ser. No. 329,463
3 Claims. (Cl. 143—133)



1. A saw blade comprising a shank portion of generally rectangular cross section having means for attaching the blade to a reciprocating member, a cutting portion having a toothed cutting edge and an untoothed noncutting burnishing edge extending longitudinally of the blade, said cutting and burnishing edges having the same thickness, and said cutting portion having a pair of longitudinally rolled concave side walls arcuately extending the full width of said cutting portion of the blade between the cutting and burnishing edges and meeting the burnishing edge along longitudinally extending lines.

3,314,457
DOOR MANUFACTURING MACHINE
Andrew W. Salter, Jr., Tucson, Ariz., assignor to Jiffy-Dor Company
Filed Feb. 8, 1965, Ser. No. 431,077
19 Claims. (Cl. 144—2)



19. In a machine for manufacturing folding doors, the combination comprising:

- (a) a frame forming an inclined plane for supporting a pair of panels of a folding door,
- (b) a first gripping member secured to said frame; a second gripping member slidably mounted on said frame and movable toward and away from said first gripping member; said gripping members having opposing surfaces perpendicular to said inclined plane and parallel to each other,
- (c) pneumatic extension means secured to said frame and to said second gripping member for moving said second gripping member toward and away from said first gripping member,
- (d) pneumatic lifting means for contacting one of said panels and for lifting said panels out of contact with said gripping members while permitting the panel contacted by said lifting member to remain in contact with said frame,
- (e) a plurality of guide plates secured to said gripping members for positioning the panels of a folding door in contact with said frame, each guide plate including:
 - (1) a door panel contacting surface perpendicular to said inclined plane and to said gripping member surfaces,
 - (2) means defining a hole extending through said guide plate perpendicular to said door contacting surface,
- (f) a plurality of drills, each positioned opposite a hole in a different one of said guide plates, each of said drills movable axially through the corresponding hole,
- (g) means responsive to the relative position of said gripping members for rotating said drills, and
- (h) pneumatic means for axially moving said drills a selected distance through said guide plates to drill holes in said panels to a predetermined depth.

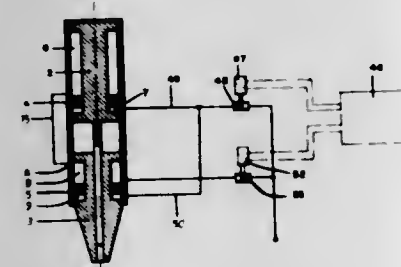
3,314,458

AUTOMATIC SCREWING DEVICE

Karl Heinz Weber, Ulrichstrasse 51, Icking, Germany
Filed Oct. 9, 1964, Ser. No. 402,754
Claims priority, application Germany, Oct. 9, 1963, W 35,393
8 Claims. (Cl. 144—32)

1. In a power screw driver for presenting screws to a workpiece and for driving the screws into the workpiece and for ejecting screws from the driver which are not accepted by the workpiece; cylinder means, a first piston in said cylinder means having first and second fluid

operable areas responsive to fluid pressure to advance the first piston toward the work and retract it therefrom respectively, a screw holding clamp chuck on the workpiece end of said first piston, a central axial bore in said first piston, a second piston in said cylinder means spaced from said first piston on the side thereof opposite said workpiece and having first and second fluid operable areas responsive to fluid pressure to advance the second piston toward said first piston and to retract it therefrom respectively, a rotatable sleeve carried by said second piston and projecting toward said first piston, a driven shaft engaging said sleeve to drive it in rotation, a driver shank coaxial with said sleeve and extending from the end of the sleeve toward said first piston and adapted for passing through the said bore in said first piston, a clutch interconnecting the adjacent ends of said sleeve and driver shank for driving the shank by the sleeve,

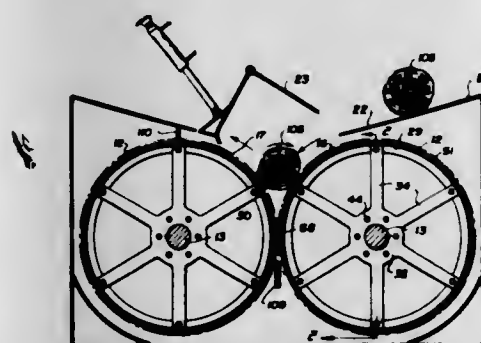


first means for supplying pressure fluid to both of said first fluid operable areas at one time to cause said chuck to present a screw therein to a workpiece and to cause said driver shank to engage the screw through said bore in the first piston and drive the screw into the workpiece and for interrupting the said supply to said first areas at the end of a driving operation, second means for supplying pressure fluid to the second fluid operable area of said first piston only to cause it to retract from the workpiece, and a passage leading from said second fluid operable area of said second piston to a point in said cylinder means which is covered by said first piston when the latter is advanced and which is uncovered by said first piston when the latter moves to its retracted position whereby the retraction of said second piston is delayed until said first piston has retracted and whereby a screw retained in said clamp chuck will be ejected therefrom by said driver shank.

3,314,459

WOOD CHIPPING APPARATUS

Eugene F. Beaubien, 3244 Ash St., R.R. 1, Chemainus, British Columbia, Canada
Filed Mar. 3, 1964, Ser. No. 349,051
19 Claims. (Cl. 144—172)



1. Wood chipping apparatus comprising a rotatable hollow drum having a plurality of axially spaced openings in a peripheral wall thereof, a plurality of chipper blades mounted in the drum one at a time and projecting outwardly from each opening, each blade being inclined in the direction of rotation of the drum and having a cutting

edge on an outer end thereof facing substantially in said direction of rotation, an anvil extending axially of said drum and spaced from the drum peripheral wall, and a plurality of axially spaced blades on the anvil extending in substantially the opposite direction to the drum blades, said drum blades being axially offset relative to the anvil blades and positioned to pass therebetween when the drum is rotated, each drum blade being of inverted U-shape in cross section with reference to the direction of rotation of the drum, whereby chips cut by each drum blade can travel within the latter blade into said drum.

3,314,460

NUTCRACKER

John E. Styers, Salem, Oreg., assignor to Mardell Ellis, Salem, Oreg.
Filed Apr. 15, 1964, Ser. No. 359,847
4 Claims. (Cl. 146—13)

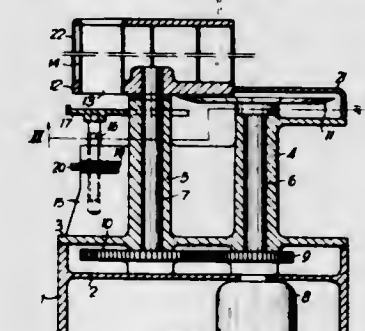


1. A nutcracker comprising a pair of leg members each having opposite end portions, pivot means connecting said leg members intermediate said end portions in crossing relationship, the end portions of said leg members on one side of said pivot means defining opposed jaw means, said jaw means including portions defining a nut receiving cavity and opposite edge portions defining shell cracking flanges, said leg members being movable about said pivot means between an open position wherein a nut may be placed in said nut receiving cavity with the opposite ends of its shell extending across the edge portions of one jaw means, and a closed position wherein said shell cracking flanges on said opposed jaw means engage the ends of the shell to crack the same, each of said jaw means comprising a bifurcated element having spaced arm members, each arm member having a recessed portion disposed toward the center of the jaw means, and an upstanding side edge portion, the recessed portions of the arm members and the spaces therebetween defining said nut receiving cavity, and said upstanding side edge portions taken together defining said shell cracking flanges.

3,314,461

FROZEN MEAT SLICER HAVING TRANSMISSION WITH IRRATIONAL RATIO

Kurt Einar Sixten Larsson, Johannesbo, Sweden, assignor, by direct and mesne assignments, to Louis A. Bettcher, Amherst, Ohio
Filed Apr. 6, 1964, Ser. No. 357,673
Claims priority, application Sweden, Apr. 10, 1963, 4,029/63
2 Claims. (Cl. 146—105)



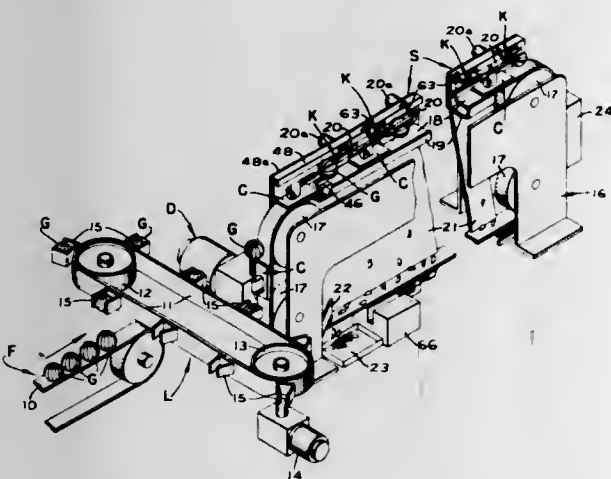
1. A cutting device especially suitable for cutting frozen or bony meat products and the like into slices, said device including a circular cutting blade supported in a prede-

terminated plane for rotation about a central axis, a magazine having not more than three spaced stations for holding separate pieces of meat to be cut, means to move the magazine and the rotating cutting blade relative to each other in an endless path with a portion of the meat in the plane of the cutting blade, and a transmission connecting the magazine and the cutting blade, said transmission having interengaging means that define a fixed ratio of revolutions between the magazine and the cutting blade to cause the cutting blade to initially contact the meat at progressively different locations about the periphery of the blade so that wear on the blade is spread over substantially the entire periphery.

3,314,462

METHOD OF SECTIONIZING CITRUS FRUIT

Henry A. Oldenkamp, Saratoga, and William J. Adams, Jr., San Jose, Calif., assignors to FMC Corporation, a corporation of Delaware
Original application May 25, 1961, Ser. No. 112,673, now Patent No. 3,172,440, dated Mar. 9, 1965. Divided and this application Feb. 10, 1964, Ser. No. 349,522
4 Claims. (Cl. 146—236)



2. The method of separating the juice cell segments of a peeled citrus fruit from their radial boundary membranes comprising the steps of impaling the fruit core while accommodating rotation of the fruit about its axis, providing relative longitudinal motion between the fruit and a row of diverging blade cutters to separate a segment from its associated membranes, resiliently urging the segment adjacent to that being separated against an outer wall of the associated knife, indexing the fruit about its axis after separation of each segment and with the fruit disposed between adjacent knives to present to a succeeding cutter a new segment adjacent to the segment removed by the previous knife, and continuing said segment separating and fruit indexing steps until all segments of the fruit are separated from their membranes.

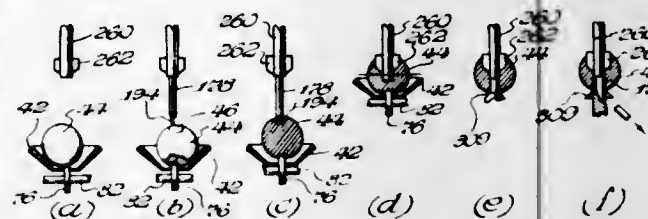
3,314,463

FRUIT PROCESSING METHOD

Thomas B. Keesling, Los Gatos, Calif., assignor to FMC Corporation, a corporation of Delaware
Application Oct. 17, 1961, Ser. No. 148,789, now Patent No. 3,225,892, dated Dec. 28, 1965, which is a division of application Ser. No. 658,846, May 13, 1957, now Patent No. 3,016,076, dated Jan. 9, 1962. Divided and this application Feb. 11, 1965, Ser. No. 444,478
12 Claims. (Cl. 146—238)

1. The method of preparing fruit having two indents disposed at opposite ends of the core axis thereof comprising rotating the fruit relative to a first finder element to find the first indent therein, shifting the fruit relative

to a second finder element to find the second indent therein, aligning the found indents along a predetermined axis,

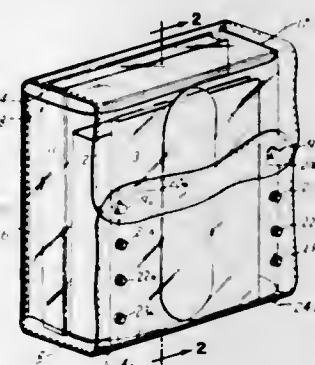


and driving a coring member into the fruit along said predetermined axis to core the fruit.

3,314,464

PROTECTIVE COVER

Roger L. Velleux, 36 Sisson Ave.,
Hartford, Conn. 06106
Filed Sept. 25, 1964, Ser. No. 399,199
1 Claim. (Cl. 150—52)



An adjustable protective cover of flexible synthetic plastic sheet material comprising a generally rectangular base portion defined by length and width dimensions, a first pair of opposed flaps integrally formed with said rectangular base portion and extending from two parallel margins of said base portion in overlapping relationship, and a second pair of opposed flaps lying upon said base portion in flattened, substantially planar disposition in the empty condition of said cover so as to extend inwardly of said base portion in substantially planar, parallel relationship thereto, said second pair of opposed flaps in said empty condition having their inner edge portions overlapping and their outer edges closely adjacent said remaining parallel margins, said second pair of flaps being separately formed from said base portion and means spaced from but closely adjacent to said outer edges affixing said second pair of flaps to said base portion, said second pair of flaps extending directly inwardly in planar relationship from the area of affixation in the closed condition of said cover, a first pair of fastening means affixed to the inside of one of said first pair of flaps adjacent the free edge thereof, and a plurality of second fastening means removably engageable with said first fastening means affixed at spaced intervals along the side margins of said first pair of flaps in paired alignment with said first fastening means.

3,314,465

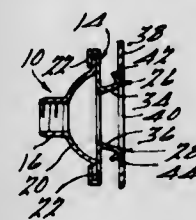
NUT WITH RESILIENT ARMS

Alfred A. Bien, Dearborn, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

Filed July 22, 1963, Ser. No. 296,716
6 Claims. (Cl. 151—41.75)

1. A device to adapt a relatively thin structure for the reception of a screw, comprising a nut body carrying secured thereto a metal base member adapted to be urged against one surface of said thin structure, said base member being secured to said nut body in a manner precluding any substantial relative movement therebetween, said

base member including a pair of relatively resilient hooks for engaging another surface of said structure oppositely disposed to said one surface, said hooks including leg portions integrally formed with said base member and extending outwardly therefrom and being deflectable towards

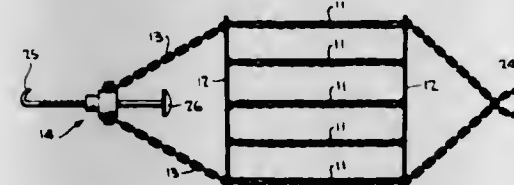


each other, and a cavity formed by said nut body for at least the partial reception therein of said leg portions and of said hooks whenever said screw is engaged with said nut body and tightened thereagainst so as to urge said leg portions and said hooks towards said nut body.

3,314,466

TIRE TRACTION AID

Richard G. Robinson, 6616 Braddock Road,
Annandale, Va. 22003
Filed June 28, 1965, Ser. No. 467,794
1 Claim. (Cl. 152—237)



In a traction aid means for a vehicular wheel and tire: a plurality of traction means each having two ends, a pair of spacing means, one end of each of said traction means connected to one of said spacing means and the other end of each of said traction means connected to the other of said spacing means, and means for securing said traction means to a tire including a hook and eye coupling means, means for connecting said eye means to one of said spacing means and means for connecting said hook means to the other of said spacing means, said means for connecting said hook means having a body, a rigid ratchet rod with said hook means integral with one end thereof, a handle on the other end thereof, ratchet teeth along a portion of the circumference of said ratchet rod, and aperture means in said body confining the movement of said ratchet rod to be one dimensional therethrough, and keeper means mounted in said aperture means to engage said ratchet teeth to oppose movement of said hook away from said body, said hook means engaging said eye means when said traction aid means is mounted on said vehicular wheel and tire, said ratchet rod readily disengageable from said keeper means when said handle is turned, and said rigid ratchet rod enabling said hook means to readily engage said eye means when said traction aid is mounted on said vehicular wheel and tire.

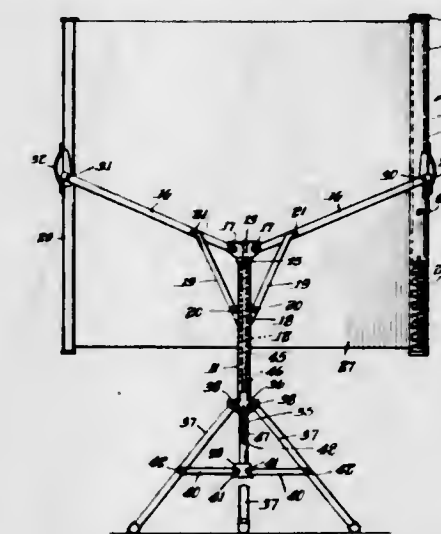
3,314,467

COLLAPSIBLE PORTABLE PROJECTION SCREEN

Robert E. Jacobson, Elk Grove Village, Ill., assignor to Radiant Manufacturing Corporation, Morton Grove, Ill., a corporation of Illinois
Filed June 4, 1964, Ser. No. 372,477
7 Claims. (Cl. 160—24)

1. A collapsible portable projection screen comprising a supporting post, a first member slidably carried by the supporting post, a spring wound roller substantially paral-

lel to the supporting post, a suspension slat substantially parallel to the supporting post, a flexible screen connected to the spring wound roller and the suspension slat and normally rolled on the spring wound roller, a plurality of arms each pivotally connected at one end to the first member and the other end to the spring wound roller and suspension slat, respectively, a plurality of links each having one end pivotally connected to an arm and the other end to said supporting post, said arms and said links being arranged for moving said first member in one direction and for positioning said spring wound roller and suspension slat in one position adjacent the supporting post, and for moving said first member in the other direction and for positioning said spring wound roller and suspension slat in another position away from the supporting post, a second member slidably carried by said supporting post, a plurality of legs each pivotally connected adjacent one end thereof to said supporting post, a plurality of links



each pivotally connected between a leg intermediate the ends thereof and said second member for positioning said legs in one position substantially parallel to said supporting post and moving with said second member in one direction, and for positioning said legs in another position extending away from the supporting post and moving with said second member in the other direction, a spring in the supporting post operatively connected between said supporting post and said first member for resiliently urging said first member in said other direction, and a two-way lost motion connection between said first member and said second member for allowing relative movement between said first and second members, for positively moving said second member in said other direction during the latter part of the movement of said first member in said other direction, and for positively moving said second member in said one direction during the latter part of the movement of said first member in said one direction.

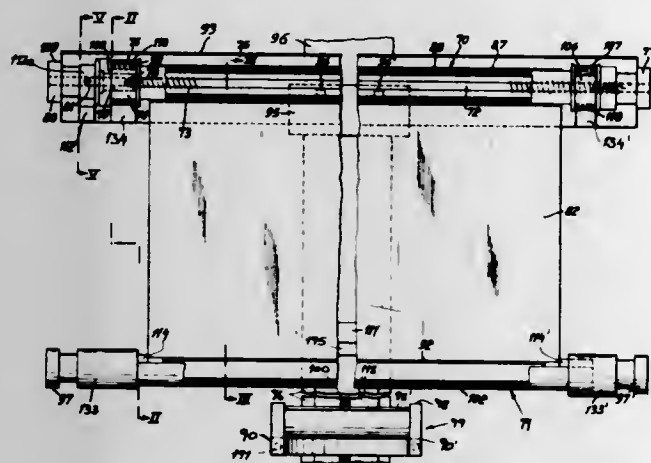
3,314,468

RETRACTABLE PROJECTION-SCREEN ASSEMBLY

Herbert Riedel, Spitalmuhlenstr. 13,
Schwabisch-Hall, Germany
Filed Nov. 18, 1965, Ser. No. 508,488
Claims priority, application Germany, July 21, 1961,
R 30,809
7 Claims. (Cl. 160—24)

1. A projection-screen assembly comprising a flexible projection screen of substantially rectangular outline with upper and lower horizontal edges; a mounting stand for said screen provided with an elongated transverse element; a tubular first support member engaging said screen along one of said edges, said tubular member being rotatably journaled on said transverse element, an elongated second support member engaging said screen along the other of said edges; detent means on said stand releasably

engageable with said second support member for holding said support members vertically spaced apart, thereby maintaining said screen in an unfurled state; and spring means within said tubular member anchored to the latter and to said transverse element for exerting upon said tubular element in the unfurled state of said screen a torque tending to wind said screen around said tubular member, said transverse element being provided with a pair of horizontally spaced-apart bearings rotatably engaging respective terminal portions of said tubular member, the latter consisting of resilient material and being free to flex be-



tween said terminal portions, said second support member also consisting of resilient material and being provided with an elongated stiffening element substantially coextensive therewith, said stiffening element gripping the ends of said second support member while leaving same free to flex between said ends, said detent means being engageable with said second support member through the intermediary of said stiffening element, said stiffening element being constituted as a trough-shaped rail surrounding said second support member with clearance, except at said ends, over an arc greater than 180°.

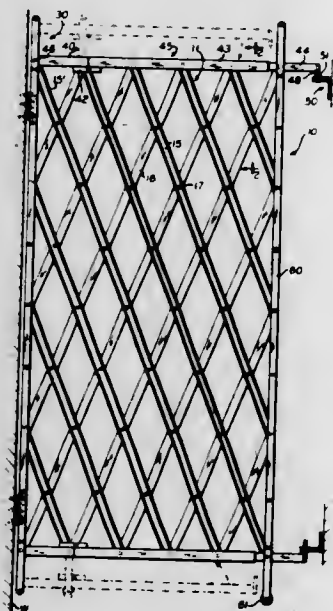
3,314,469

COLLAPSIBLE GATES

Stanley R. Kaufman, 10 Stokes Road, Yonkers, N.Y. 10710, and David M. Kaufman, 701 Palmer Court, Mamaroneck, N.Y. 10543

Filed Apr. 20, 1964, Ser. No. 360,979

6 Claims. (Cl. 160—159)



1. A collapsible open grill gate, said gate comprising: an end post, said end post having a slideway formed therein;

a lazy tong lattice of angularly disposed criss-crossing pivotally connected truss bars, one edge of said lattice arranged in the slideway of said end post and slidably connected thereto; and a guide track slidably accommodating at least one edge of the lattice, said track comprising a slide strut slidably arranged in the slideway of said end post, a pivot strut pivoted to said slide strut, and a telescoping strut telescoping within said pivot strut.

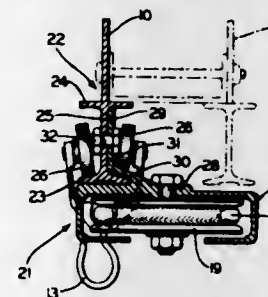
3,314,470

STAGE CURTAIN PULLEY MOUNT CONSTRUCTION

Richard W. Janson, 400 Meyerson Ave. SE. 44707, and Wilford S. Janson, 1220 18th St. NW. 44703, both of Canton, Ohio

Filed July 13, 1964, Ser. No. 382,186

4 Claims. (Cl. 160—344)



1. Pulley mount construction for movable stage curtains of the type in which a stage curtain is supported by a plurality of curtain carriers movable horizontally along a curtain track, and in which the carriers are aligned with and moved by curtain cord means located below and aligned with the track; the pulley mount including a body member, integral flange means projecting from the body member, track means having a generally vertical web, the track and web having first and second angularly arranged surfaces, the body and flange means having first and second angularly arranged surfaces engaging and coacting with said first and second track surfaces, the track web being located generally in a vertical plane, a curtain cord also located in said vertical plane, a pulley having a pulley groove, means mounting the pulley for rotation on the body member below the track, a portion of the pulley groove being located by said coacting surfaces in said vertical plane and being aligned with the curtain cord, and means for rigidly attaching the flange means to the curtain track.

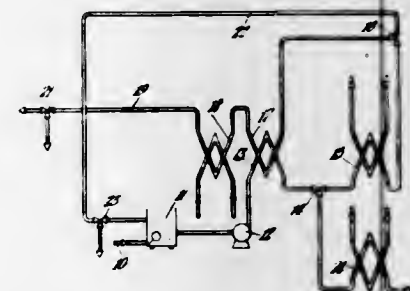
3,314,471

APPARATUS FOR THE HEAT TREATMENT OF FLUIDS

Harry C. Cooper, Crawley, England, and Katsuto Okada, Tokyo, Japan, assignors to The A.P.V. Company Limited, Crawley, England, a British company

Filed Feb. 4, 1965, Ser. No. 430,328

9 Claims. (Cl. 165—2)



1. In a continuous process of heat treating a process fluid wherein the process fluid is passed successively in indirect heat exchange with outgoing treated process fluid

in a regeneration heating stage, a heating fluid in a treatment stage, and with incoming process fluid in a regeneration cooling stage: a starting-up procedure comprising the steps of introducing an auxiliary fluid into the flow path of the process fluid at a point between the regeneration heating stage and the treatment stage at a temperature substantially identical to that of the process fluid at the said point in normal operation, continuously passing the said auxiliary fluid through the treatment stage and the regeneration cooling stage out of the system until the temperature stabilizes, subsequently commencing to pass process fluid and cutting off the auxiliary fluid, continuing to pass auxiliary fluid and mixed auxiliary fluid and process fluid out of the system and subsequently passing pure process fluid to a product outlet.

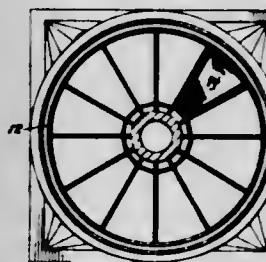
3,314,472

ELEMENT BASKET FOR HEAT EXCHANGER

Eugene D. Krumm and Norman Casagrande, Wellsville, N.Y., assignors to The Air Preheater Company Inc., a corporation of Delaware

Continuation of application Ser. No. 391,841, Aug. 25, 1964. This application Apr. 6, 1966, Ser. No. 540,778

7 Claims. (Cl. 165—10)



6. An element bundle for a heat exchanger comprising a plurality of stacked element plates, curved loading means abutting each bundle of stacked element plates, and means combining the spring loading means with the element bundle to permit the spring action of said loading means to maintain the element plates in a continuously compressed relation.

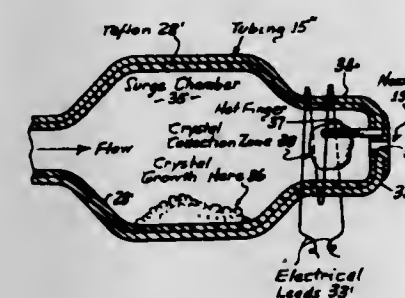
3,314,473

CRYSTAL GROWTH CONTROL IN HEAT EXCHANGERS

Keith A. Smith, Diamond Bar, and Donald E. Wilson, Pomona, Calif., assignors to General Dynamics Corporation, Pomona, Calif., a corporation of Delaware

Filed July 16, 1965, Ser. No. 472,476

15 Claims. (Cl. 165—30)

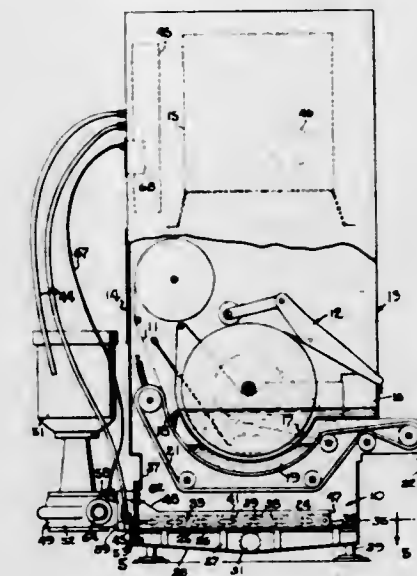


6. In a heat exchanger having a counterflow tubing arrangement and an expansion chamber interposed between the inlet tubing exhaust and the outlet tubing intake, the improvement comprising means for controlling crystal growth within the inlet tubing and the associated flow reduction therein including a lining of Teflon on at least the internal surface of the inlet tubing exhaust portion, a surge chamber positioned immediately upstream from the inlet tubing exhaust, and electrical heating means positioned around said inlet tubing exhaust portion.

3,314,474

LIQUID HEAT EXCHANGER

Mark R. Estabrook, Rockford, Ill., assignor to Barnes Drill Co., Rockford, Ill., a corporation of Illinois
Filed Mar. 9, 1965, Ser. No. 438,326
5 Claims. (Cl. 165—76)



1. In a liquid heat exchanger, the combination of, a housing having an inlet for receiving liquid whose temperature is to be changed and having a side wall formed with an opening therethrough, a frame disposed against the exterior of said side wall around said opening to close the latter and being formed with an opening smaller than said side wall opening and defining an outlet, a casing disposed within said housing below said inlet and having an outlet end secured to the inside of said frame and communicating with said frame outlet, the opposite end of said casing constituting an inlet opening within said housing, a heat exchanger coil disposed within said casing and having inlet and outlet tubes extending through and supported by said frame, means communicating with said tubes for circulating heat exchanging fluid through said coil, means for directing liquid delivered into said housing to said casing inlet for flow through the casing, a pump disposed externally of said housing and against the outside of said frame and having an intake communicating with said frame outlet to draw the liquid through said casing and out through said casing outlet and said frame outlet, first means detachably clamping said frame against the exterior of said housing, said frame, casing, coil and pump being fastened together as a unitary assembly movable upon release of said clamping means for removal from said housing with said casing passing through said opening in said housing side wall, and second means detachably clamping said pump to said frame to enable exposure of said frame outlet upon detachment and separation of said pump from said frame whereby cleaning fluid may flow reversely through said frame outlet, into said casing through said casing outlet, and into said housing through said casing inlet.

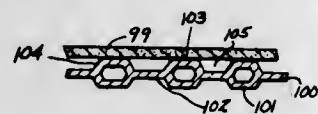
3,314,475

COMPOSITE STRUCTURE

Emery I. Valyi, Riverdale, N.Y., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Application Sept. 21, 1964, Ser. No. 398,128, now Patent No. 3,289,750, dated Dec. 6, 1966, which is a division of application Ser. No. 202,612, June 14, 1962, now Patent No. 3,201,858, dated Aug. 24, 1965. Divided and this application May 14, 1965, Ser. No. 464,892
10 Claims. (Cl. 165—170)

1. A composite structure comprising a one-piece integral sheet metal member internally laminated with said laminations distended into internal fluid passages forming

bulges out of at least one face of said member, a sheet-like porous body superimposed on said face in abutting



relationship with the crest of said bulges and disposed in spaced relationship to the portions of said member disposed between adjacent crests on said face.

3,314,476

INITIATION OF IN SITU COMBUSTION

Dallas R. Staples, Houston, and Joseph C. Allen, Bellaire, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 26, 1963, Ser. No. 333,704
15 Claims. (Cl. 166—32)

1. In the method of initiating in situ combustion in a permeable petroleum bearing underground formation traversed by a borehole wherein combustion of the petroleum in the formation is initiated by placing a spontaneously combustible material in the formation and passing an oxygen-containing gas therethrough, the improvement comprising the introduction into said formation prior to the introduction of said spontaneously combustible material of a gelling composition comprising a spontaneously oxidizable saponifiable constituent and having the property of being relatively fluid under dynamic conditions and of setting to a gel under static conditions.

3,314,477

WELL TREATMENT EMPLOYING A HYPERGOLIC SYSTEM

Billy G. Boevers, Broken Arrow, and Paul E. Woodward and Curtis W. Crowe, Tulsa, Okla., and Archie N. Barron, Houston, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Dec. 11, 1964, Ser. No. 417,791
13 Claims. (Cl. 166—38)

1. The method comprising the steps of: (1) Admixing with a first component of a hypergolic mixture selected from liquid fuels and liquid oxidizers a polymer swellable and dispersible in said component but insoluble therein in an amount sufficient to imbibe said component; (2) admixing a liquid, with the polymer containing the so imbibed component, selected from the class consisting of additional liquid component and aqueous and hydrocarbon liquids substantially chemically inert to the component of said hypergolic mixture and to the polymer in an amount to render the resulting composition flowable; (3) injecting the flowable first component composition into the wellbore of a well; (4) positioning a spacer means in the wellbore above said flowable first component composition; (5) injecting a second component of a hypergolic mixture selected from the class consisting of an oxidizer, when said first component is a fuel, and a fuel which makes a hypergolic mixture when admixed with the oxidizer, when said first component is an oxidizer; and (6) injecting a displacing liquid into the wellbore at sufficient pressure to displace substantially all of said first and second components from the wellbore and into the formation whereby they are intermixed in the formation.

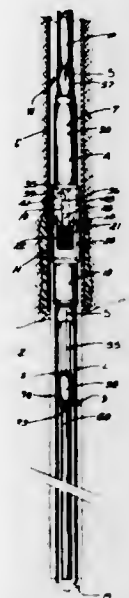
3,314,478

METHOD AND APPARATUS FOR DRILLING OIL WELLS

Erwin Burns, Los Angeles, Calif.
(8346 Salt Lake Ave., Bell, Calif. 90201)
Filed June 16, 1964, Ser. No. 375,566
10 Claims. (Cl. 166—49)

1. The method of arranging and setting a liner in an oil-producing formation below a cased well bore including,

arranging a bit on the lower end of a liner, securing the liner to a rotating liner hanger construction, fixing a setting tool to the lower end of a drill pipe, releasably securing said liner hanger construction, to the setting tool, introducing the assembled drill pipe, setting tool liner hanger construction, liner and bit into the cased well bore so that the bit engages the bottom of the bore and the formation, then rotating and advancing the assembly into



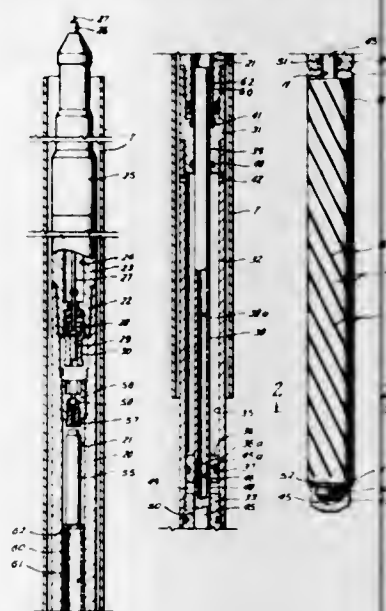
the formation whereby the bit establishes new hole and circulating fluid downwardly through the assembly and upwardly through the well structure about said assembly to remove formation cuttings established by the bit, then actuating the liner hanger to engage the casing whereby the liner is suspended from the casing, then releasing the liner hanger from the setting tool and then withdrawing said drill pipe and setting tool from the well.

3,314,479

BRIDGING PLUG

Otis J. McCullough, % McCullough Tool Co., P.O. Box 2575, Houston, Tex. 77001, Ira J. McCullough, % McCullough Tool Co., 5820 S. Alameda, Los Angeles, Calif. 90058, and Volle M. Hocut, Houston, Tex.; said Hocut assignor to said Otis J. McCullough and said Ira J. McCullough

Filed Jan. 25, 1965, Ser. No. 427,796
10 Claims. (Cl. 166—63)



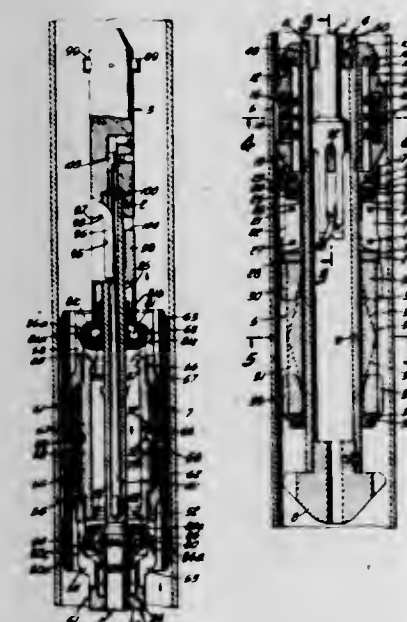
1. A through-tubing bridging plug for use in wells, comprising, a cylindrical metallic body having an initial diameter to pass through a relatively small diameter pipe and having an axial through-bore, a plurality of generally helical slots cut radially entirely through the wall of

the body to intersect said bore and define a plurality of generally parallel helical segments, said slots terminating at points spaced from the opposite ends of the body to define non-slotted annular end-portions on the body, said body being radially expandable to a substantially larger diameter by application of end-wise compressive force to the opposite ends thereof, whereby to effectively plug a relatively large diameter pipe.

3,314,480

BRIDGE PLUG WITH COMPOUND BY-PASS VALVE

Lyle B. Scott, South Gate, Calif., assignor to Byron Jackson Inc., Long Beach, Calif., a corporation of Delaware
Filed Dec. 3, 1964, Ser. No. 415,645
12 Claims. (Cl. 166—121)



1. In a retrievable bridge plug, comprising: an elongated tubular body having thereon well wall engaging packer means for forming a seal with the well wall, well wall engaging anchor means operable for anchoring said body to said well wall, well wall engaging friction means for effecting operation of said anchor means upon the application of pressure differential across said packer means, said body having a passage therethrough, an inner member extending longitudinally in said passage and having means for controlling operation of said anchor means, said body having a valve seat, valve means carried by said inner member closable against said seat responsive to fluid pressure to prevent flow of fluid through said passage and openable upon movement of said inner member in said body, the improvement wherein said valve means comprises first valve means having a small area responsive to fluid pressure holding the same closed and openable responsive to initial movement of said inner member, and second valve means engageable with said seat and having a larger area responsive to fluid pressure holding the same closed and openable responsive to further movement of said inner member.

3,314,481

DOWNHOLE WATER FILTER

Bertram T. Willman, Tulsa, Okla., and Carl T. Hester, Corpus Christi, Tex., assignors, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Aug. 7, 1964, Ser. No. 388,100
8 Claims. (Cl. 166—205)

1. A downhole filter assembly comprising a central perforated tubular member, a check valve below the perforated interval of said tubular member, a cylindrical filter element surrounding the perforated interval of said

inner tubular member, an outer cylindrical shield substantially concentric with said inner tubular member, said shield being substantially imperforate opposite the per-



forated interval of said inner tubular member, and slidable fluid seal means mounted on the outer periphery of said shield member.

3,314,482

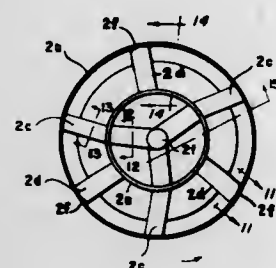
VALVE CONTROL MECHANISMS AND TECHNIQUES

John R. Young, Quincy, Mass., assignor to Factory Mutual Research Corporation, Norwood, Mass., a corporation of Massachusetts
Filed Apr. 9, 1964, Ser. No. 358,433
12 Claims. (Cl. 169—38)



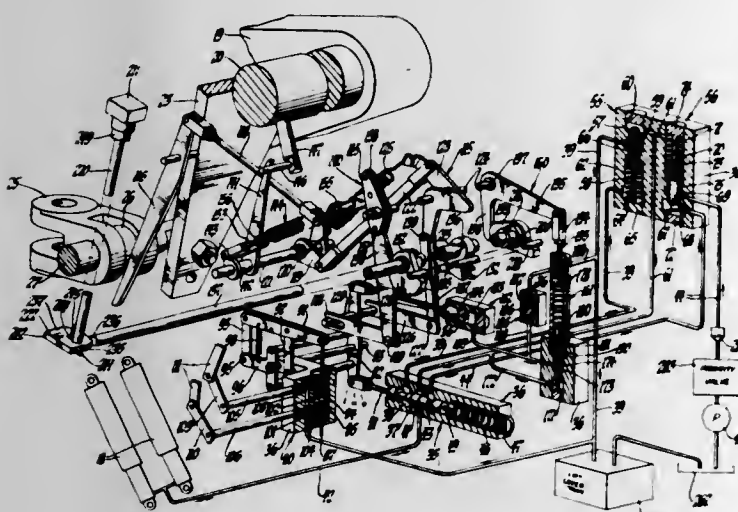
1. A method of increasing the temperature at which an automatic sprinkler will open, said automatic sprinkler being of the type comprising a valve and first thermally responsive means for maintaining said valve in closed position below a first predetermined temperature and for opening said valve at said first predetermined temperature, said method comprising supplementing said first thermally responsive means with a second thermally responsive means which is responsive to a second predetermined temperature greater than said first predetermined temperature and which will maintain said valve in closed position at and above said first predetermined temperature and until said second predetermined temperature is reached.

3,314,483
HELICOPTER WINGED DEVICE
 Clinton August Reams, Dearborn, Mich.
 (P.O. Box 7734, Washington, D.C. 20004)
 Filed July 26, 1965, Ser. No. 474,923
 3 Claims. (Cl. 170-166)



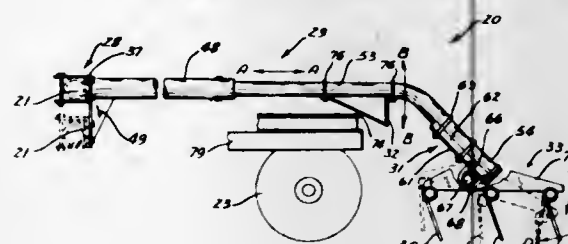
1. A helicopter rotor comprising a drive shaft, a hub mounted on the shaft, a plurality of blades extending radially outwardly from said hub and including inner and outer sections, an outer peripheral rim attached to the outer tips of the outer blade sections, a plurality of sloped blades attached to said rim between the outer tips of the outer blade sections and extending inwardly and upwardly, an inner ring attached to the inner ends of said sloped blades and lying above and spaced from the first named blades, said inner ring being located substantially midway between said hub and the outer rim.

3,314,484
TRACTOR HYDRAULIC SYSTEM
 Ernest V. Bunting, Detroit, Hans V. Lind, Royal Oak, Edwin J. Skiba, Warren, and Glennard T. Olson, Detroit, Mich., assignors to Massey-Ferguson Inc., Detroit, Mich., a corporation of Maryland
 Filed Apr. 17, 1964, Ser. No. 360,663
 10 Claims. (Cl. 172-9)



1. In a tractor having draft links hydraulically lifted by an actuator and a source of hydraulic pressure fluid, a control system comprising, a control valve for said fluid pressure source and said actuator, said valve having a shiftable element with adjacent alternate positions for hydraulically raising, holding and lowering said links, a draft control linkage for said valve element responsive to draft loads on said links, a position control linkage for said valve element responsive to the position to which said links are lifted, a pressure control linkage for said valve element responsive to the hydraulic pressure in said actuator, a manual control lever, and means including said lever for selectively clutching said lever to said linkages by manipulating said lever.

3,314,485
DISC LIFT HARROW
 Byron Le Roy Godbersen, Ida Grove, Iowa 51445
 Filed June 14, 1965, Ser. No. 463,571
 1 Claim. (Cl. 172-178)



The combination with a disc harrow including a frame having a forward end and a rearward end, a pair of transporting wheels positioned transversely of said frame between the forward and rearward ends thereof and normally spaced above a ground surface, a wheel carrying element connecting said wheels together, means rotatably connecting said element to said frame about a transverse, horizontal axis for pivotal movement of said wheels from the normal position to a position in which said wheels are in a transporting position on said ground surface, means operatively connected to said element effecting movement of said wheels from the normal position to the transporting position of a tooth drag attachment comprising:

at least a pair of reach arms disposed over the frame and the harrow and having forward ends adjacent the element and rear ends disposed rearwardly of the harrow;

mounting means attachable to said forward ends and to the element for adjustably mounting said reach arms forward ends to the element in vertically adjustable relation thereto, said mounting means rotatable with the element;

ramp means secured to said reach arms intermediate the ends thereof and engageable with the harrow, said ramp means movable longitudinally of said reach arms whereby said reach arms are pivotally adjustable at their forward ends about the element;

an elongated member rotatably secured to the reach arm rear ends and disposed normally parallel to the element and rotatably adjustable to one of a plurality of rotating positions; and

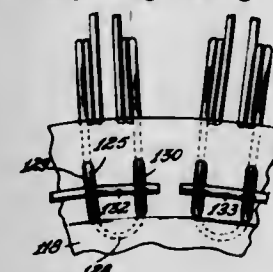
a tooth unit secured to said member, said unit including at least a pair of bars extended parallel to said member on either side thereof, and carrying a plurality of teeth arranged in spaced relation therealong and depending therefrom, said tooth unit movable with said elongated member to one of a plurality of positions where said teeth are inclined relative to the ground.

3,314,486
AGRICULTURAL IMPLEMENTS
 Albert Auguste Louis Remy, Senonches, Eure-et-Loir, France, assignor to C. van der Lely N.V., Maasland, Netherlands, a limited-liability company of the Netherlands
 Original application Apr. 22, 1955, Ser. No. 503,195, Divided and this application Sept. 12, 1963, Ser. No. 309,373

Claims priority, application France, Apr. 28, 1954, 668,087, Patent 1,104,111
 1 Claim. (Cl. 172-543)

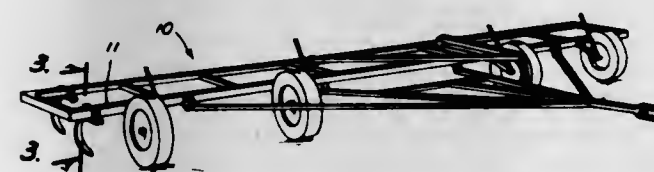
Weeding apparatus comprising a horizontal cross-member, at least one support aligned with the intended direction of travel in trailing relation to said cross-member, means pivotally connecting said support to said cross-member for free hinged movement about a horizontal axis adjacent the cross-member, an adjustable stop opera-

tively associated with said support to limit downward movement of the latter, a tined wheel, means supporting the tined wheel for rotation on a horizontal axis and connecting the tined wheel to said support for hinged adjustment about a vertical axis whereby to adjust the angle of the tined wheel relative to said direction and a ground engaging wheel coupled to and supporting said support, said tined wheel comprising facing discs, a plurality of



radial tine elements supported between the discs, each of said tine elements comprising a U-shaped portion between the discs, the U-shaped portion including cranked portions extending through one of the discs and forming loops outside the same, a locking element extending through the loops to prevent removal of the tine elements, co-axial coils on the U-shaped portion, and tines extending outwardly from said coils.

3,314,487
MOUNTING BRACKET FOR A GROUND CONDITIONING TOOL
 Arnold F. Kopaska, Guthrie Center, and John H. Rogers, Fort Dodge, Iowa, assignors to The Standard Engineering Company, Fort Dodge, Iowa
 Filed Sept. 20, 1965, Ser. No. 488,535
 4 Claims. (Cl. 172-710)



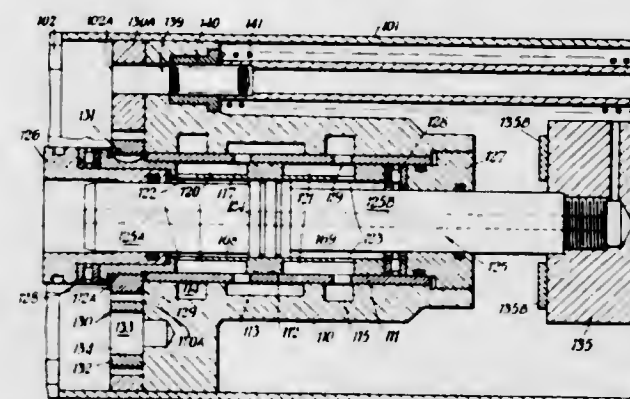
3. A means for detachably securing a ground conditioning tool having a normally horizontal upper end and an opening formed in said upper end, to a frame member, an elongated support member having rearward and forward ends and a top portion, said support member having a yoke member extending downwardly from its rearward end which is adapted to pivotally receive the upper end of said tool extending forwardly therethrough, said support member having a slot formed in its top portion adjacent its forward end, the longitudinal axis of said slot being parallel to the longitudinal axis of said support member,

a bar means operatively secured to said support member and having rearward and forward ends, the rearward end of said bar member abutting and operatively pivotally engaging said yoke member, said bar member adapted to engage and be co-extensive with the normally horizontal upper end of said tool, said bar having an opening formed therein adjacent its forward end which is adapted to register with a portion of said slot and the opening in said tool upper end,

a bolt member extending through said opening in said tool, said opening in said bar member and said slot and having a spring means operatively mounted thereon to yieldably resist the downward pivotal movement of the forward ends of said bar member and said tool, and means detachably securing said support member to said frame means,

said means detachably securing said support member to said frame member including a pair of bolt members extending upwardly through said support member at opposite sides of said frame member, a plate member received by said pair of bolt members and extending therebetween across the upper portion of said frame member, and threadable means maintaining said plate member on said bolt members, said bolt members having a portion thereof protruding below said support member, said bar member having a pair of openings formed therein to freely receive the protruding portions of said bolt members respectively.

3,314,488
HYDRAULICALLY OPERATED TOOL
 Christopher Val Chester-Browne, Soberton, Southampton, and Edward Addison and David McCandlish, Weymouth, Dorset, England, assignors to Vickers-Armstrongs (Engineers) Limited, London, England, a British company
 Filed May 13, 1964, Ser. No. 367,066
 Claims priority, application Great Britain, May 23, 1963, 20,595/63; Oct. 31, 1963, 43,113/63
 15 Claims. (Cl. 173-127)



1. A hydraulically operated tool comprising a body, a ported cylinder rotatably carried in the body and maintained against axial movement with respect to the body, a piston slidably entered in the cylinder, a tool head for engaging the work on which the tool is to operate, means attaching the tool head to the body to permit limited movement of the tool head relative to the body, an element connected to the piston for imparting, upon reciprocation of the piston in the cylinder, motion to said tool head, an inlet for connection to a source of liquid under pressure, and motor means for continuously rotating said cylinder, the body being formed with ducting leading from said inlet to co-operate with the porting in said cylinder which, upon rotation, controls admission and exhaust of liquid to and from said cylinder to reciprocate said piston within the cylinder.

3,314,489
LOW INVASION CORING FLUID
 Raymond A. Humphrey, Tulsa, Okla., assignor, by mesne assignments, to Esso Production Research Company, a corporation of Delaware
 No Drawing. Filed Oct. 30, 1964, Ser. No. 407,906
 7 Claims. (Cl. 175-59)

1. An oil-base coring fluid comprising from 20 to 45 weight percent Gilsonite dispersed in a mineral oil having an aniline point of at least 175° F., and a viscosity of 10 to 100 centipoises at 100° F.

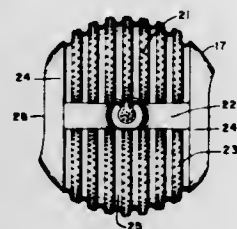
4. In the recovery of core samples from a borehole in the earth by rotary core drilling, wherein a non-invasive fluid is circulated down the hole, the improvement which comprises circulating as said fluid a composition comprising a dispersion of 20 to 45 weight percent Gilsonite in a petroleum fraction having an aniline point of at least 175° F. and a viscosity of 10 to 100 centipoises at 100° F.

3,314,490

DIAMOND DRILL BIT

Alexander B. Hildebrandt, Tulsa, Okla., assignor to Esso Production Research Company, a corporation of Delaware

Filed Mar. 31, 1965, Ser. No. 444,272
4 Claims. (Cl. 175—329)



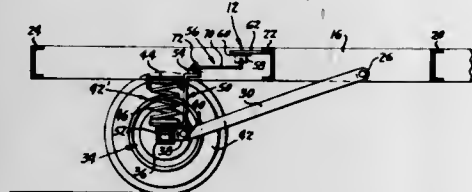
1. A rotary drill bit comprising:
 - (a) a body member containing an axial passageway for the transmission of drilling fluid, said member including means for connecting said bit to the lower end of a drill string;
 - (b) a crown connected to the lower end of said body member and extending laterally beyond said member, said crown including (i) a lower face for contacting the formation at the bottom of a borehole, (ii) an elongated slot-like throat opening in said lower face, said throat opening communicating with said passageway in said body member near the longitudinal axis of said bit, (iii) a plurality of waterways in said lower face extending from said throat opening to the crown periphery at substantially right angles to the longitudinal axis of said opening, and (iv) diversion lands extending at substantial right angles to the longitudinal axis of said throat opening at the ends thereof; and
 - (c) a plurality of diamonds embedded in lands on said lower face between said watercourses.

3,314,491

LOAD INDICATOR DEVICE

Loring L. Nelson, R.F.D. 1, Salina, Kans. 67401

Filed June 28, 1965, Ser. No. 467,564
9 Claims. (Cl. 177—138)



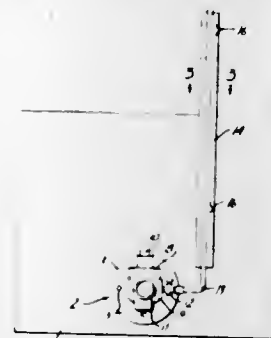
1. In combination
 - a load carrying vehicle providing a load receiving area, a plurality of ground supporting tractive means mounted on an axle, and a spring means interconnecting said axle and said frame in supporting relation and
 - a load indicating means including
 - load indicator means mounted on said vehicle having sensing means to measure the deflection of said spring means when a load is placed on said load receiving area, said sensing means including an arm pivotally mounted on said load indicator means having a free end in operative free floating engagement with said axle and electrical means for translating the angular deflection of said arm into indicia representative of the weight of said load causing said deflection, said free end of said arm being in bearing weight supported relation with said axle.

3,314,492

APPARATUS FOR WEIGHING FLUIDS

Leslie Newman Felton, Loyal, and Lee Allen Wuethrich, Greenwood, Wis., assignors to Grassland Dairy Products, Inc., Greenwood, Wis., a corporation of Wisconsin

Filed Sept. 29, 1965, Ser. No. 491,136
3 Claims. (Cl. 177—209)



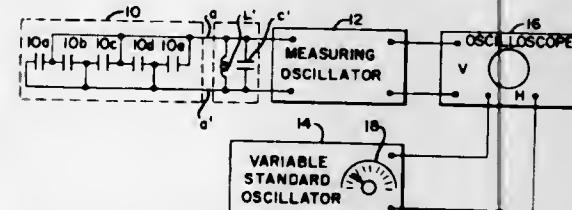
1. A device for measuring the weight of a liquid material, comprising a tank to contain the liquid material to be weighed, a tube having one end connected to the bottom portion of the tank and extending upwardly along the tank with the opposite end being located above the level of liquid material in the tank, valve means located in the tube adjacent the tank, said valve means being movable from an open to a closed position and when said valve means is in the open position the interior of the tube being connected directly to the interior of the tank, an indicating liquid different from the liquid material to be weighed and contained within the tube, and means for providing an indication of the level of the liquid in the tube, the upper level of the indicating liquid in the tube being above the upper level of the liquid material in the tank when said valve means is in the closed position so that a portion of said indicating liquid will flow from said tube into said tank when said valve means is open and the remaining portion of the indicating liquid in said tube will be balanced by the weight of the liquid material in said tank to provide an indication of the total weight of the liquid material.

3,314,493

ELECTRICAL WEIGH SCALE WITH CAPACITIVE TRANSDUCER

James Patrick Kennedy, 35 Valdez Ave., San Francisco, Calif. 94112

Filed Nov. 4, 1964, Ser. No. 408,822
3 Claims. (Cl. 177—210)



1. A capacitive transducer for converting variations in force to be measured into an electrical analogue, said transducer comprising: a plurality of glass plates formed of silica glass; said plates being in a stacked relation; support means holding said stacked plates compressively opposing the application of the force to be measured with each plate being disposed in an axis normal to the direction of application of the force; a conductive interface on a surface of each of said plates; a first electric terminal connecting alternate first interfaces of said stacked plates; a second electric terminal connecting second interfaces of said plates disposed between said first interfaces, thereby connecting said first and second conductive interfaces in an electrically capacitive relation; said first and second conductive interfaces elastically variable with respect to one another through said silica

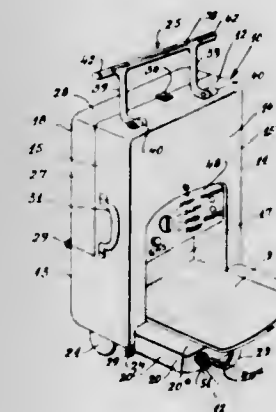
glass as force against said transducer is varied, thereby varying the capacitive relation between the first and second terminals; and means for measuring variations in said capacitive relation across said first and second terminals.

3,314,494

COLLAPSIBLE LUGGAGE SCOOTER

Dorothea M. Weltzner, 8 E. 62nd St., New York, N.Y. 10021

Filed July 12, 1965, Ser. No. 471,355
9 Claims. (Cl. 180—27)



1. A luggage scooter comprising a case bounded by a top wall, a front wall, a rear wall, side walls and a bottom end having an opening therein, a handle bar means pivotally secured to the top wall of said case, said case having a front opening and a rear opening, wheel means secured to said bottom end, a platform means connected to one side of said bottom end, steerable caster wheel means secured to said platform means, a cover hingedly mounted on an edge of said front wall and adapted to enclose said front opening, a panel tiltably secured at lower portion of said rear wall, said platform means adapted to be positioned in a perpendicular relationship with said case, said panel capable of being horizontally disposed upon said platform means when said platform means is in perpendicular relationship with said case and both said wheel means of said case and said platform means are providing riding means.

3,314,495

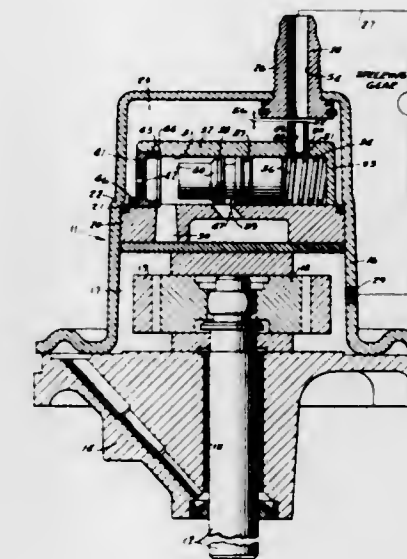
VALVING SYSTEM FOR POWER STEERING PUMP

Hubert M. Clark, Bloomfield Township, Gilbert H. Drutchas, Birmingham, and Robert E. Carlson, Livonia, Mich., assignors to TRW Inc., a corporation of Ohio

Filed Dec. 7, 1964, Ser. No. 416,457
15 Claims. (Cl. 180—79.2)

2. A valving system for a vehicular power assisted hydraulic system comprising,
 - means forming a hydraulic circuit including an internal circuit and an external circuit,
 - a pump in said internal circuit driven as an accessory of the vehicle at speeds which are generally proportional to vehicular speeds,
 - thereby to drive a supply of fluid in said circuit in the form of a stream,
 - utilization means in said external circuit for utilizing the pressurized stream,
 - valve means including
 - a flow control orifice for controlling the admission of fluid from said internal circuit to said external circuit,
 - means forming a by-pass passage from said internal circuit ahead of said flow control orifice to the inlet side of said pump,

said valve means further including flow responsive means regulating the operation of said by-pass passage as a function of the flow rate through said orifice,



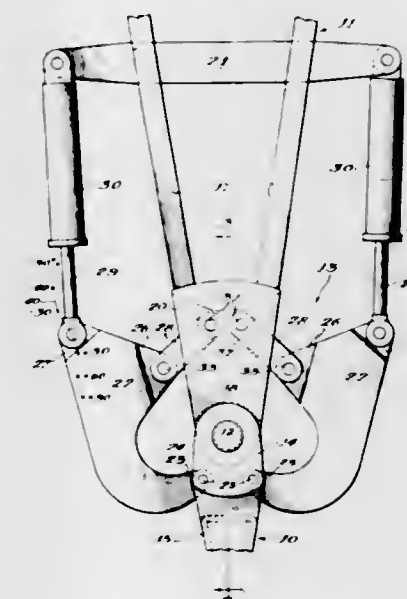
and means for rendering said flow responsive means less effective as a function of conditions corresponding to increased vehicular speed, thereby countering any rising flow characteristics.

3,314,496

POWER STEERING MECHANISM

Michael Gabriel Thassy, Chicago, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey

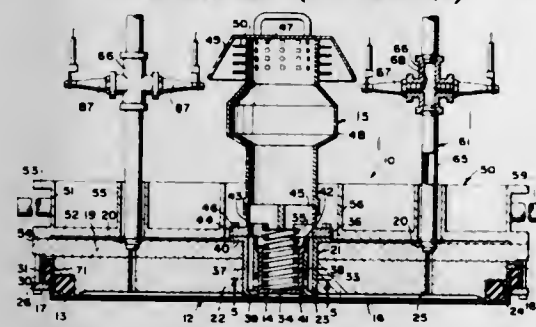
Filed Apr. 28, 1965, Ser. No. 451,391
11 Claims. (Cl. 180—79.2)



1. Steering mechanism for the fifth wheel-gooseneck connection of a trailer-two-wheel tractor combination comprising a supporting frame, a steering arm pivotally connected with said frame, a pair of hydraulic cylinders having one end anchored to said frame, two levers, each having its ends pivotally connected to and extending between the other end of one of said cylinders and said steering arm, each lever having a fulcrum point, and two struts, each strut pivotally connecting a fulcrum point to said supporting frame.

3,314,497

GAS EXPLODER SEISMIC ENERGY SOURCE
 Lauren G. Kilmer, Tulsa, Okla., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
 Filed Oct. 7, 1963, Ser. No. 314,230
 8 Claims. (Cl. 181—5)

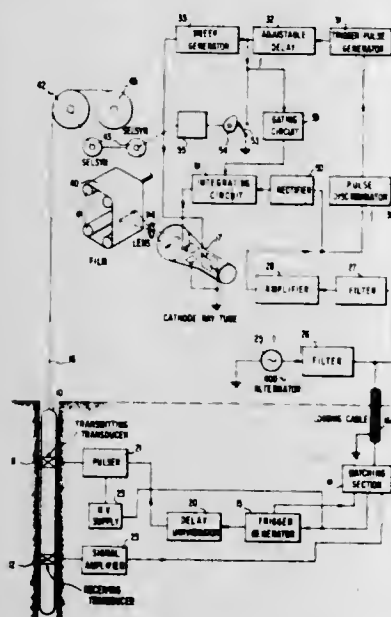


1. A device for propagating a seismic wave at the surface of the earth including means defining a chamber having a rigid bottom and rigid top, a joint, defined between said top and bottom at their sides having clearances therebetween, means resiliently fastening said top to said bottom to permit limited vertical movement of said top relative to said bottom, and a resilient sealing ring disposed between said top and bottom on the inner side of said joint positioned against the clearances thereof.

3,314,498

INTEGRATED INDICATION OF SEISMIC WELL LOGGING SIGNALS

Terry O. Anderson, Bruce A. Blackman, and Robert H. Winn, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
 Filed Nov. 25, 1964, Ser. No. 413,870
 1 Claim. (Cl. 181—0.5)



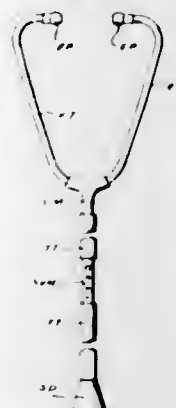
The seismic method of logging a well comprising:

- (a) Producing an acoustical pulse in a borehole,
- (b) Receiving said pulse at another location in said borehole,
- (c) Converting the received pulse to a variable amplitude electrical signal which is the electrical analog of said pulse,
- (d) Electrically integrating said signal,
- (e) Displaying the instantaneous value of the integrated signal as a variable amplitude display along a horizontal time axis while it is being integrated,
- (f) Cyclically repeating steps (a) to (e),
- (g) Displaying successive integrated signals with the time axis parallel and spaced a distance from the time axis of the preceding signal display, and
- (h) Displaying selected depths at which pulses were produced.

3,314,499

INSTRUMENT FOR QUANTITATING SOUND INTENSITIES

Norman S. Blackman, 2056 81st St., Brooklyn, N.Y. 11214
 Filed Sept. 1, 1965, Ser. No. 484,323
 12 Claims. (Cl. 181—24)

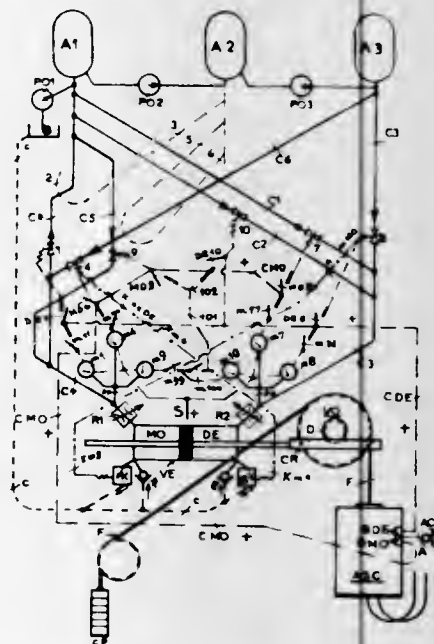


1. In a sound detecting instrument, particularly a stethoscope, sound detecting means; sound receiving means; elongated sound transmitting means connecting said detecting means with said receiving means; sound quantitating means, for selectively varying the intensity of sounds transmitted through said sound transmitting means to said receiving means, said sound quantitating means comprising a tubular portion arranged in said transmitting means and provided with a plurality of longitudinally spaced apertures of differing cross-sectional areas, so that blocking and unblocking of any aperture results in a variation of predetermined scope in the intensity of sound transmitted, whereby such sounds may be quantitated by selective blocking and unblocking of said apertures; and means associated with said tubular portion for closing said apertures, when desired.

3,314,500

ELEVATOR SYSTEM

Raoul Albert Rougemont, 6 Allée de la Residence de la Peuplerie, Fresnes, France
 Filed Nov. 30, 1965, Ser. No. 510,560
 Claims priority, application France, Dec. 2, 1964, 997,027; Nov. 24, 1965, 39,528, Patent 1,443,892
 4 Claims. (Cl. 187—17)

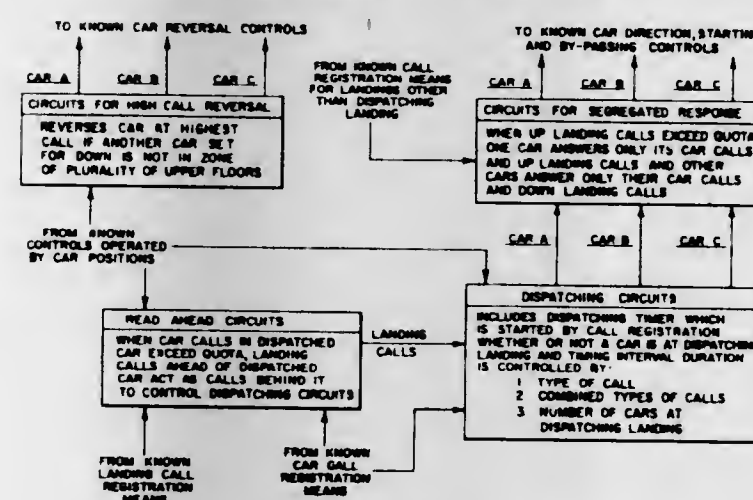


1. An elevator system including a cabin counter-balanced by a counterweight connected to said cabin by a cable, said cable passing around a driving pulley fastened to a toothed pinion engaging a rack forming an extension of a piston rod, the piston of which slides in a double-acting cylinder fed with compressed oil, characterised

in that, upon movement of the elevator cabin in one direction due to an excess of weight, the oil flowing out of the cylinder during this movement is recovered in oleo-pneumatic accumulator means for subsequent re-use for at least one elevator operation requiring consumption of energy, and operative under the effect of a synchronised automatic system for recovering and re-using the energy of the oil, controlled by a control member for effecting the ascent and descent of the elevator and located in said cabin, and further characterised by an elevator-speed regulating system comprising calibrated tubes, the section and length of which are set up according to the pressure difference of each oleo-pneumatic accumulator in said accumulator means.

3,314,501 SEGREGATED DEMAND CONTROL FOR ELEVATOR SYSTEMS

John E. Magee, Greenburgh, N.Y.
 (191 Forest Blvd., Ardsley, N.Y. 10502)
 Filed July 13, 1962, Ser. No. 209,564
 20 Claims. (Cl. 187—29)



1. In an elevator dispatching and control system for a plurality of elevator cars serving a plurality of landings from a dispatching landing and having first means for registering demands for service at said plurality of landings, and second means for registering demands for service at said dispatching landing, and dispatching means controlled by the registration of a demand for service by said first means in the absence of a car at said dispatching landing and to which a car approaching said dispatching landing is to respond after arrival at said dispatching landing at the end of a first predetermined time interval commencing with registration of said demand, said dispatching means also being controlled by the registration of a demand for service by said second means in the absence of a car at said dispatching landing and to which a car approaching said dispatching landing is to respond after arrival at said dispatching landing and in the absence of the registration of a demand by said first means for service by said last-mentioned car for dispatching said car from said dispatching landing at the end of a second predetermined time interval, longer than said first interval, commencing with the registration of said demand by said second means.

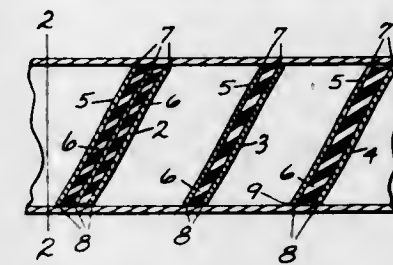
3,314,502

DAMPED TUBE

Richard P. Thorn, Erie, Pa., assignor to Lord Corporation, Erie, Pa., a corporation of Pennsylvania
 Filed June 16, 1965, Ser. No. 464,438
 5 Claims. (Cl. 188—1)

1. In combination with a tube, a damping element with its principal axis extending at an acute angle to the axis of the tube and fixed at opposite ends to the bore of the

tube, said element comprising a layer of viscoelastic damping material sandwiched between and bonded to two plates of structural material, said viscoelastic material being characterized by an internal damping or loss factor

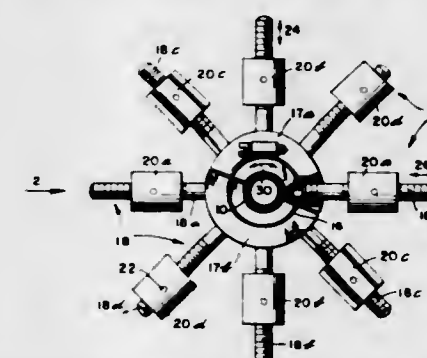


at least one order of digits higher than the internal damping or loss factor of the structural material and a modulus of elasticity at least one order of digits lower than the modulus of elasticity of structural material.

3,314,503

VIBRATION DAMPER

Vernon H. Neubert, Centre Hall, Pa., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
 Filed Aug. 31, 1965, Ser. No. 484,138
 6 Claims. (Cl. 188—1)



1. Apparatus for damping vibrations of an elongated member, such as a rod or pipe, comprising:

- (a) a central support adapted to be secured to the elongated member at a desired axial position therealong,
- (b) a plurality of pairs of diametrically opposed radially outwardly extending resilient members disposed in angular relation and in substantially the same plane perpendicular to the axis of the elongated member, and
- (c) a weight secured to each resilient member for radial adjustment therealong, whereby each pair of resilient members and their attached weights may be tuned or vibrate at a desired frequency of vibration of the elongated member.

3,314,504

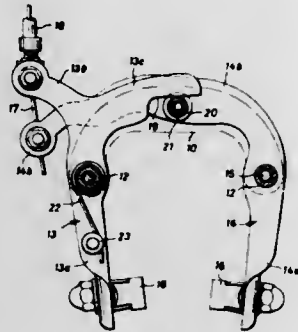
RIM BRAKE

Karl Altenburger, Saar-Strasse 299, Jestetten, Baden, Germany
 Original application Feb. 6, 1962, Ser. No. 171,480. Divided and this application Jan. 11, 1965, Ser. No. 426,470
 Claims priority, application Switzerland, Feb. 8, 1961, 1,501/61

2 Claims. (Cl. 188—24)

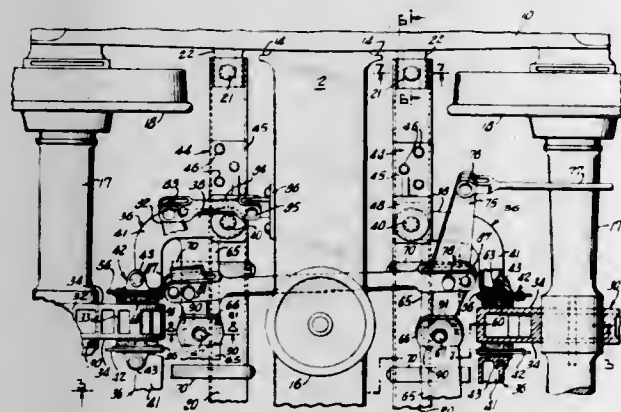
1. Rim brake, particularly for bicycles and the like, comprising two levers swingable on separate bolts, each of said levers having a first arm which carries a brake block and a second arm crossing the corresponding second arm of the other lever, said second arms being connected to a wire and a sheath of a cable for actuating the brake, coupling means for positively coupling the two levers to each other as to their pivoting in the manner of mutual approach of the brake blocks and so that they

are constrained to carry out symmetrical and opposing movements with respect to each other, one of said levers having a third arm adjacent the second arm of the other lever, said coupling means including an open downwardly facing control cam and a cam follower means cooperating with said cam, said control cam and said cam follower means being arranged one at said third arm and the other one at said second arm adjacent thereto, said cam follower means being arranged substantially in a median plane between the bolts having said levers pivoted thereon, the control cam extending substantially at right



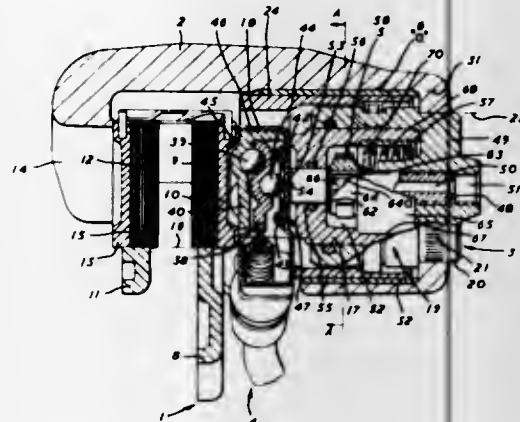
angles to said median plane, said bolts being disposed midway between the cam and follower means and said brake blocks, a stationary bracket carrying the bolts having the levers pivoted thereon, and a single torsion spring associated with at least one lever urging said levers to pivot in a direction for moving said brake blocks away from each other, said stationary bracket being provided with a central fastening bolt for connection with a vehicle frame, and said wire and sheath of the cable being connected to said second arms at points provided in a line substantially parallel with said median plane.

3,314,505
RAILWAY CAR BRAKE MECHANISM
George A. Pelikan, Closter, N.J., assignor to Buffalo Brake Beam Company, a corporation of New York
Filed June 4, 1965, Ser. No. 461,345
12 Claims. (Cl. 188-59)



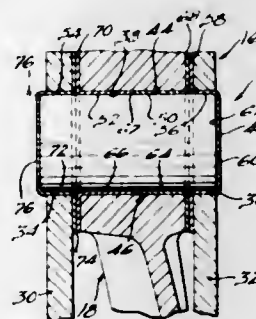
1. In a railway car truck, the combination comprising a pair of coaxial car wheels, an axle rigidly connecting said wheels together for rotation in unison, a double brake disc member on said axle rigid therewith and presenting opposite brake faces, a pair of brake head levers, brake heads carried by said brake head levers respectively, means pivotally supporting said levers for angular movements about respective support axes causing said brake heads to move towards said brake faces respectively for wheel braking action and away from said brake faces respectively in brake releasing positions, said levers having rigid therewith respective arms pivotally jointed together to form an elbow-joint therebetween, and lever means for moving said elbow-joint in directions to cause said angular movements of said brake head levers about said support axes.

3,314,506
CALIPER TYPE, SPOT DISC BRAKE
Juan Belart, Walldorf, Fritz Ostwald, Buchschlag, and Karl Schlör, Biebesheim, Germany, assignors to Dunlop Rubber Company Limited, London, England, a corporation of Great Britain.
Filed Mar. 1, 1965, Ser. No. 433,840
7 Claims. (Cl. 188-73)



1. In a disc brake including a rotatable disc, the structure comprising a caliper having a pair of limbs straddling a periphery of said disc, a pair of friction elements associated with the caliper one on each side of the disc, a nonrotatable support for the caliper having an axially-extending guide sleeve on one side of said disc proportioned to fit within a cylindrical surface defined by a portion of said caliper and thereby providing a support surface on which said caliper is axially slidable, and a hydraulic brake-applying mechanism fixed to one limb of the caliper and axially movably located within said guide sleeve, said brake-applying mechanism being arranged to move one of the friction elements axially relative to said caliper and into engagement with said disc, reaction on the brake-applying mechanism serving to move said caliper to bring the other friction element into engagement with the opposite side of the disc.

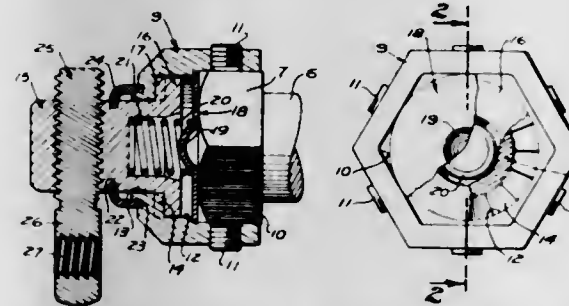
3,314,507
RETAINER PIN
Keith W. Tantlinger, Grosse Pointe Shores, and George Chieger, Birmingham, Mich., assignors to Fruehauf Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 23, 1965, Ser. No. 503,488
4 Claims. (Cl. 188-78)



1. In a brake assembly comprising an expanding brake shoe and brake spider member, a retaining pin assembly for pivotally securing one end of the brake shoe to a portion of the spider member, said pin assembly comprising a retaining pin extending through axially aligned bores in said one end of the brake shoe and in said portion of the spider member, an annular bushing coextensive of said retaining pin and interposed between the periphery of said pin and the periphery of said bores, and

means integrally formed on said bushing and extending radially therefrom for preventing any axial movement of said retaining pin relative to the brake shoe and spider member and for reducing frictional forces resisting pivotal movement between the brake shoe and the spider member.

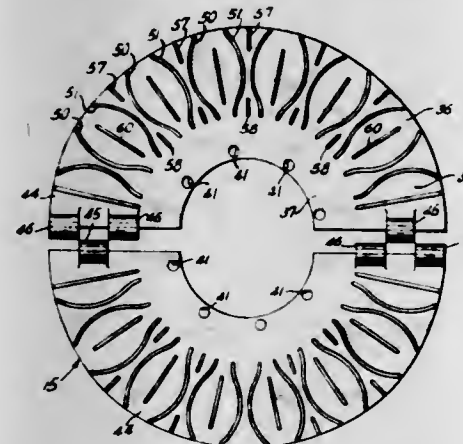
3,314,508
AUTOMATIC BRAKE ADJUSTMENT MEANS
Donald T. McGregor, La Crescenta, Calif., assignor to Carledge Corporation, Los Angeles, Calif., a corporation of California
Filed Mar. 1, 1965, Ser. No. 436,256
3 Claims. (Cl. 188-196)



1. The combination with a brake operating mechanism having a brake actuating shaft, an oscillatable lever and reciprocable rod for oscillating said shaft, wherein the lever includes a housing containing a worm gear for adjusting the brake actuating shaft to take up slack due to wear of the brakes, a worm for advancing the worm gear and an adjustment shaft for said worm including an exposed head, of an automatic slack adjuster comprising:

- a cap having a socket fitting over said shaft head, and including a coaxial journal aperture and a first ring of ratchet teeth bordering said journal aperture;
- means for securing said cap to said shaft head;
- a stub shaft journaled in said aperture and including a flanged end disposed within said cap member, and a second ring of ratchet teeth on said flange;
- a spring within said socket urging said sets of ratchet teeth into mutual engagement;
- and means interconnecting said stub shaft and said brake operating mechanism to effect oscillation of said stub shaft thereby to advance said cap member and worm adjustment shaft.

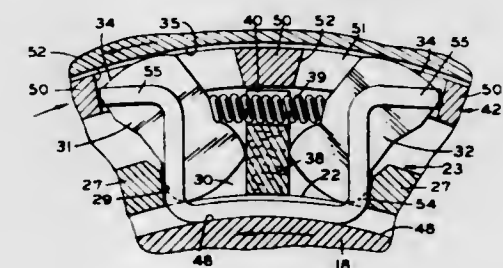
3,314,509
RAILWAY BRAKE DISCS
George A. Pelikan, Closter, N.J., assignor to Buffalo Brake Beam Company, a corporation of New York
Filed Apr. 16, 1965, Ser. No. 448,781
6 Claims. (Cl. 188-218)



1. A brake disc for a car wheel of a railway car truck, said brake disc comprising an annular web divided into similar interchangeable segmental sections, means releas-

ably securing said sections together, said web presenting a braking face on one side, and two series of vanes on the face of said web opposite the braking face, integral with said web and spaced circumferentially along said web, the vanes of the two series being curved in opposite directions, one series of vanes having their concave faces facing one circumferential direction of the disc and the other series of vanes having their concave faces facing the opposite circumferential direction of the disc, the vanes in the two series alternating along the circumference of the web.

3,314,510
DUAL DRIVE CONTROL CLUTCH
Thaddeus F. Zlotek, Center Line, Mich., assignor to Form-sprag Company, Warren, Mich., a corporation of Michigan
Filed Feb. 10, 1965, Ser. No. 431,567
5 Claims. (Cl. 192-45.1)

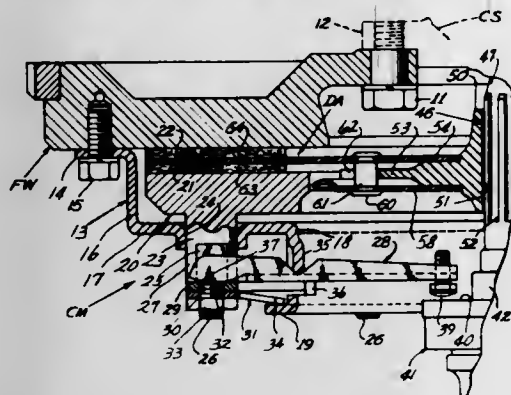


1. A clutch of the type described, comprising rotatable driver and driven members in coaxially telescoped, radially spaced relation to one another and providing mutually facing cylindrical race surfaces, a series of sprags disposed in the annular space between said surfaces for releasable wedging and non-wedging engagements, respectively, therebetween in driving and non-driving phases of operation of the clutch, an annular drive coupling member having circumferentially spaced cross pieces defining end limits of openings receiving ends of said sprags adjacent one of said races, and means resiliently biasing the sprags in a direction to interrupt wedging engagement of the sprags with said last named race, said cross pieces of said drive coupling member being engageable with the sprags to urge the same into said wedging engagement, said coupling member having an annular, generally radially extending friction surface, means providing a non-rotative annular and generally radially extending friction surface axially adjacent said coupling member friction surface, said friction surfaces being in frictional engagement with one another, thus to urge said coupling member cross pieces against said sprags, and to wedge the sprags against said last named race in a driving phase.

3,314,511
AUTOMOTIVE SPRING-ENGAGEABLE CLUTCH WITH UNIFORM OPERATING CONTROL
Glenn T. Randol, Loch Lynn, Md. (3 E. 2nd Ave., Loch Lynn, Mountain Lake Park, Md. 21550)
Filed Nov. 19, 1964, Ser. No. 412,428
5 Claims. (Cl. 192-68)

1. In a friction clutch, the combination of a driving engine-driven flywheel and driven shaft, a driven disc carried by said shaft, an annular pressure plate encircling said shaft, an actuator for actuating said pressure plate, an annular cover member secured to said flywheel and cooperating therewith to substantially house the driven disc and pressure plate, a plurality of circumferentially spaced lugs laterally projecting from said pressure plate, a corresponding number of similarly spaced holes in said cover member and through which said lugs, respectively, pass to the exterior of the cover member, to lock said pressure plate and cover member for co-rotational movement and to accommodate relative axial movement of said pressure

plate, a plurality of pressure plate operating members pivotally fulcrumed intermediately on the exterior of said cover member with their outer end portions contiguous to the exterior thereof, and which are connected to certain of said lugs, respectively, to actuate said pressure plate, and their inner end portions being adapted for actuation by a clutch throw-out bearing slidably related with said shaft to withdraw said pressure plate from said driven



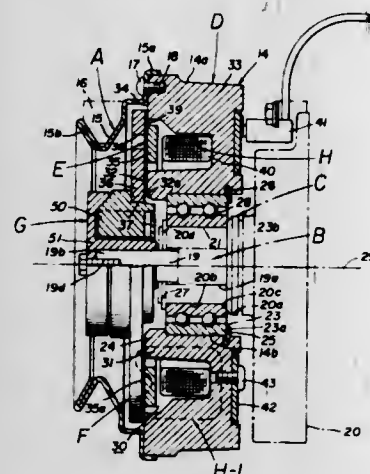
disc and said flywheel to disengage said clutch, spring means including a normally compressed spring contiguous to the exterior of said cover member and operably reacting between the latter and said lugs to oppose actuation of said pressure plate by said operating members whereby clutch engagement is effected, and means connecting said actuator to said throw-out bearing for actuating said operating members and connected pressure plate in opposition to said spring means.

3,314,512

COUPLING DEVICE EMPLOYING FLEXIBLE HUB ASSEMBLY

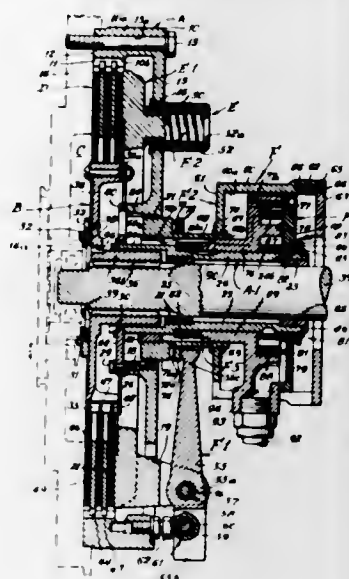
Richard D. Kerestury, Lombard, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed July 2, 1965, Ser. No. 469,176
17 Claims. (Cl. 192-84)



1. A mounting assembly for use in drivingly connecting an element to a shaft, comprising: a pair of nested hub members jointly journaled on said shaft, one member being rotatably coupled to said shaft and the other member being rotatably coupled to said element, said hub members being nested with provision for limited relative rotative movement therebetween and limited axial sliding movement therebetween, independent resilient means interposed between portions of said hub members effective to provide a cushioned torsional connection between said hub members to transmit a torsional load while limiting the transmission of radial loads between said hub members to no more than 10% of the maximum transmitted torsional load whereby axial sliding freedom between the hub members is maintained.

3,314,513
SELF-CONTAINED WET CLUTCH SYSTEM
James Lake, and Romas B. Spokas, Rockford, Ill., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed July 19, 1965, Ser. No. 473,029
10 Claims. (Cl. 192-91)



1. A self-contained wet clutch system, comprising: rotatable input means and rotatable output means co-operating to define a fluid enclosure, said output means having a driven shaft extending out of said enclosure; friction elements disposed in said enclosure and effective to be normally inter-engaged for drivingly connecting said input and output means and effective to be selectively dis-engaged for interrupting said connection; a drive sleeve mounted about said driven shaft adjacent said enclosure and effective to rotate with said input means while being fixed against axial movement relative to said driven shaft; an operating assembly having a cylinder concentrically journaled about said drive sleeve effective to be axially reciprocated thereon and having one portion operably connected with said friction elements for providing disengagement when moved in one axial direction on said drive sleeve, said cylinder being fixed against rotation; fluid pumping means interposed between said cylinder and drive sleeve with rotative reaction received from said cylinder; and fluid directing means effective to continuously direct the fluid output of said pumping means to said enclosure for bathing said friction elements during all phases of operation.

3,314,514

CONVEYOR BRAKE

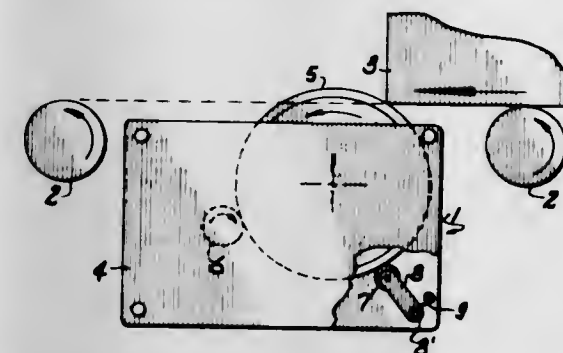
Hugo Hundhausen, Slegen, Westphalia, and Vincent Anton Ax, Gernsdorf, Kreis Slegen, Germany, assignors, by mesne assignments, of one-third to Frolo Corporation, a corporation of Illinois

Filed Sept. 6, 1966, Ser. No. 577,478
Claims priority, application Germany, Sept. 15, 1965, St 24,394
6 Claims. (Cl. 193-35)

1. A braking device for braking moving objects gravitationally flowing along a conveyor track comprising in combination:

- a housing mountable within the lateral extremities of said track;
- a friction brake secured to said housing with braking forces responsive to the rotational speed of rotatable elements thereof;
- a gear train having a rotatable input shaft, the output of said gear train being operatively connected to the rotatable elements of said friction brake so as to drive the same;

(d) an axle-free roller within and projecting above said housing into the path of conveyed objects to be braked, said roller being disposed so as to frictionally engage and rotate said rotatable input shaft when a conveyed object on said track rotates the axle-free roller from at least one direction; and



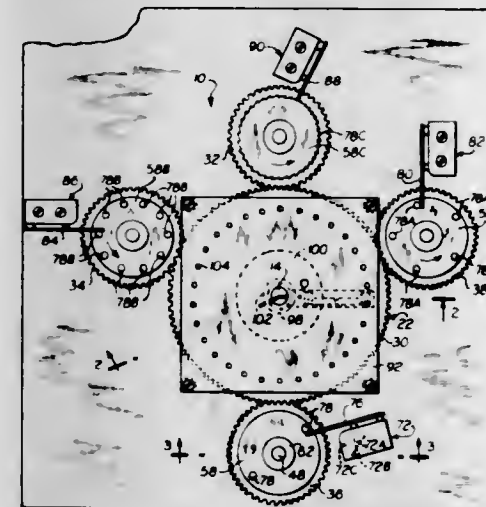
(e) means for initiating and maintaining resilient engagement of said axle-free roller with the conveyed object and with said rotatable input shaft as the conveyed object passes over said axle-free roller; whereby the braking action of the friction brake is resiliently transmitted to the conveyed object so as to decrease the speed thereof.

3,314,515

TOTALIZING COUNTER SYSTEM

Harry Greenwald, Whitestone, N.Y., assignor of one-third to Louis Wolff and one-third to Harry Silbergait, both of Brooklyn, N.Y.

Filed Sept. 7, 1966, Ser. No. 577,788
10 Claims. (Cl. 194-2)



1. A totalizing counter system for use with an associated vending machine comprising a frame, a totalizing gear rotatably mounted on said frame, said totalizing gear normally being in a first position, drive means responsive to the insertion of coins of different denominations for rotating said totalizing gear through an angle proportional to the value of the coin inserted, a first contact rotatable with said totalizing gear, a plurality of second contacts sequentially engageable with said first contact during a rotation of said totalizer gear, vend means being operable when said totalizing gear is in said first position for connecting a first terminal with a second terminal, line means for connecting the associated vending machine with said first terminal, switch means responsive to the engagement of said first contact with at least a preselected one of said plurality of second contacts to connect said second terminal with a source of energy,

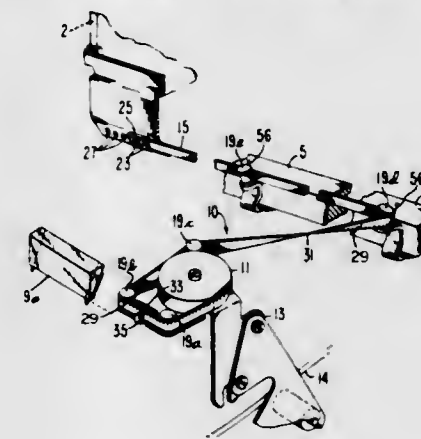
whereby the operation of said vend means connects the source of energy to the associated vending machine through said line means to actuate the vending machine to dispense an article.

3,314,516

CARRIAGE POSITION INDICATOR EMPLOYING FLEXIBLE TAPE

Frank H. Gonzales, Detroit, and Byron A. Runde, Farmington, Mich., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed July 9, 1965, Ser. No. 470,730
3 Claims. (Cl. 197-188)



1. In a machine having a stationary portion and a member reciprocally movable on said stationary portion, the combination of a self-restoring tape spool utilizing tape having indicia on one of its sides, said tape having its free end external to said spool and fastened to said member,

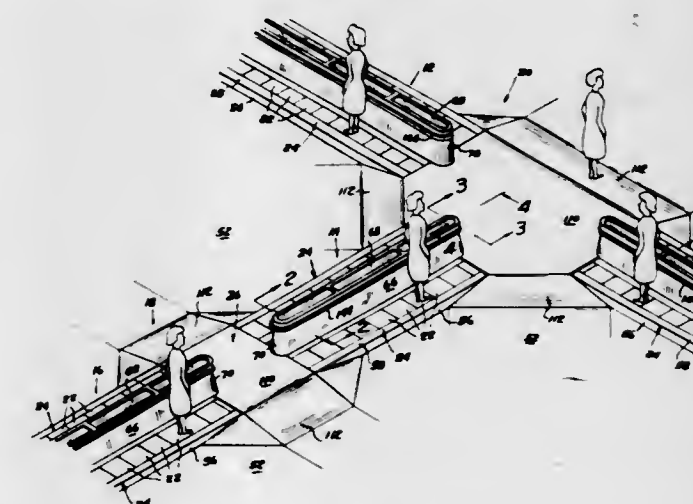
means for mounting said tape spool on said stationary portion, a reference pointer on said stationary portion, and a plurality of rollers for guiding said tape from said spool past said pointer to said member, said tape having a half-twist therein intermediate its ends for preventing the said indicia of said tape from contacting any of said rollers.

3,314,517

MOVING SIDEWALK

Willis Ford Karr, Warren, Mich., assignor, by mesne assignments, to Federal Engineering Company, Detroit, Mich., a corporation of Michigan

Filed Jan. 4, 1965, Ser. No. 423,267
3 Claims. (Cl. 198-16)



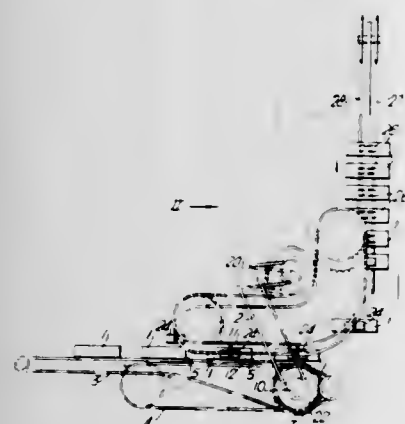
1. A conveyor section comprising: a closed chain member arrayed between two curved return end sections, said chain having freedom in at least two perpendicular

directions; rectangular pedestrian platforms attached to the top of the chain member at regular intervals so that the edges of one platform abut the edges of the adjacent platforms in the straightaway; a means for moving alternate platforms vertically in the end section so that the platforms may turn in the end sections without interfering with one another.

3,314,518

CONVEYOR MECHANISM FOR CAN BODIES
Michael Harcourt Christians Buttery, Bushey Heath, and Frederick Daniel Brookes, Pinner, Middlesex, England, assignors to The Metal Box Company Limited, London, England, a British company

Filed Mar. 20, 1964, Ser. No. 353,416
12 Claims. (Cl. 198—20)



1. Conveyor mechanism for can bodies comprising a conveyor arranged to move can bodies in succession with the axes thereof substantially co-axial and in spaced axial relation primary transfer devices supported for movement substantially at the linear speed of the conveyor and arranged to fixedly engage and remove the bodies from the conveyor and to change the displacement of the axes of the bodies from substantially co-axial to one over another; said primary transfer devices including means for maintaining the axes of the bodies parallel to one another, and secondary transfer devices movable in timed relation with the primary transfer devices and arranged to receive bodies therefrom and to continue the movement thereof in a vertical plane with their axes one over the other; all of said transfer devices being adapted to retain the can bodies in substantially one vertical plane.

3,314,519

CONTAINER TRANSFER

Frank M. Kelly, Richmond, Ind., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 14, 1965, Ser. No. 448,009
3 Claims. (Cl. 198—22)



1. The method of transferring filled containers from a linear conveyor to receiving pockets in a rotary capper so as to prevent spillage of the product from the filled

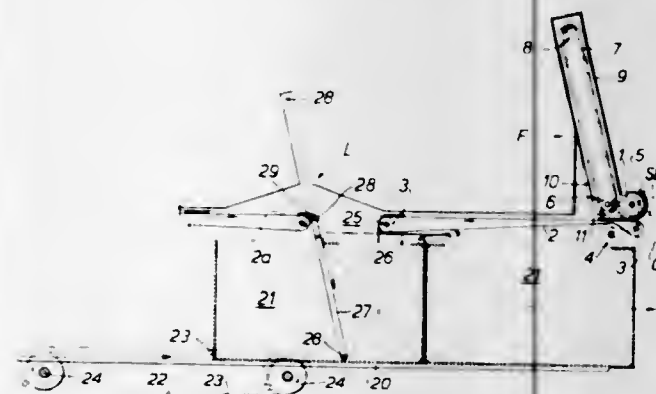
containers, said method comprising conveying filled containers in a linear direction, at uniform spacings, at a selected constant speed, on a linear moving conveyor, maintaining substantially uniform spacing of said containers by use of a screw drive having a continuous thread and uniform pitch with the groove of the screw having slightly larger curvature than the containers, regulating said conveyor and screw drive to move the containers linearly at a constant speed, transferring the containers from said conveyor to receiving pockets in a horizontal rotating capper while maintaining linear directional movement of the containers by means of the screw drive and applying transverse force to the containers in the direction of the screw drive, said capper being rotated at a pitch speed the same as the speed of the containers moving along the linear conveyor, and positioning the containers during said transfer in the rear portion of the groove of the screw drive so that the containers are in position for registration with the rotary capper receiving pockets.

3,314,520

FEEDING SYSTEMS

Desmond Walter Molins, London, England, assignor to The Molins Organisation Limited, a British company

Filed Dec. 26, 1963, Ser. No. 335,329
Claims priority, application Great Britain, Jan. 2, 1963, 229/63
1 Claim. (Cl. 198—31)



An article feeding system comprising, in combination, a first conveyor in the form of a fluted roller, a second conveyor in the form of a substantially horizontal conveyor belt, and an additional conveyor, said first and second conveyors together defining a main path along which articles may be sequentially fed, said fluted roller being disposed adjacent to one end of said belt so as to permit articles carried in the flutes of the roller to drop on to the belt, a relatively stationary guide plate arranged around part of the circumference of said fluted roller so as to prevent articles leaving said flutes while being carried around said part, means to move said guide plate between a normal position, in which it terminates just past the lowermost point of said roller so as to permit articles to drop directly on to the conveyor belt, and a diverting position, in which it prevents articles leaving the flutes until they have been conveyed to a transfer position beyond said lowermost point, the additional conveyor being arranged to receive articles from the fluted roller at said transfer point and carry them to the second conveyor by an indirect route constituting a subsidiary path of greater length than a portion of the main path thus bypassed, said additional conveyor comprising upper and lower rollers, a fluted endless conveyor belt carried by said upper and lower rollers, and a casing around said fluted belt above the lower roller, said lower roller being located adjacent to the transfer position and the casing being so disposed as to retain articles received in the flutes of the belt except at the level of the lower roller.

3,314,521

MULTI DUTY RAKE TYPE BATCH COLLATOR
Frank Hollenton, Mountainside, N.J., assignor to American Machine & Foundry Company, a corporation of New Jersey

Filed Apr. 22, 1965, Ser. No. 450,080
8 Claims. (Cl. 198—32)



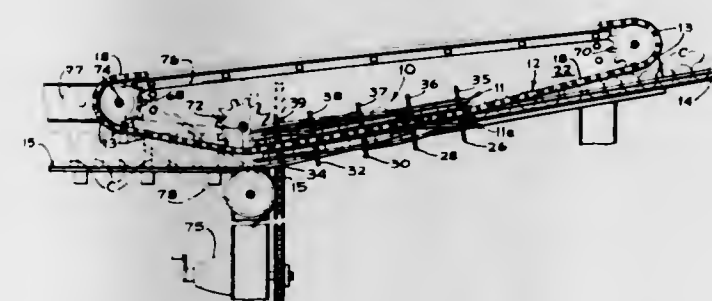
1. A multi-rake in a conveying channel in an article collating mechanism, said multi-rake comprising a plurality of transverse rake units spaced one from another longitudinally of said channel, means at the input to said channel for separating articles into groups each having a predetermined number of articles therein, means connected to said rake units for reciprocating said rake units in unison to convey articles in said channel, disabling means at the input of said channel, means responsive to a deficiency in the number of articles in a group for disabling one of said rake units only.

3,314,522

ARTICLE HANDLING APPARATUS

Milton L. Croall, Los Gatos, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed July 19, 1965, Ser. No. 472,975
12 Claims. (Cl. 198—33)



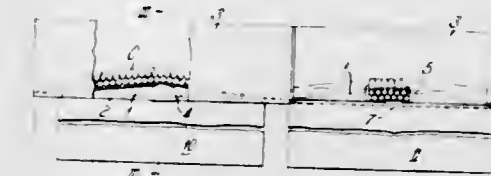
1. In an article processing apparatus the combination of an inclined article feeding chute adapted to advance abutting horizontal articles, a driven discharge conveyor adapted to receive a series of spaced vertical articles, twisting means disposed between said chute and said conveyor for engaging and progressively turning abutting articles between a position wherein the longitudinal axis of each article is horizontal and a position wherein said longitudinal axis is vertical as the article is moved past said turning means, a plurality of equally spaced pusher means movable between each article for positively engaging said articles and urging them through said twisting means while spacing said articles, and means for supporting and advancing said plurality of pusher means over said article feed chute and through said twisting means, said supporting and advancing means including an inclined portion disposed over and inclined at a greater angle than said inclined article feeding chute for simultaneously inserting a plurality of pusher means between an associated plurality of abutting articles to contact and gradually space the articles a predetermined distance apart prior to their entry into said twisting means.

3,314,523

APPARATUS FOR FEEDING CIGARETTES

Horace Alexander Stone, Deptford, London, England, assignor to The Molins Organisation Limited, London, England, a corporation of Great Britain

Filed Sept. 27, 1965, Ser. No. 490,364
Claims priority, application Great Britain, Oct. 9, 1964, 41,327/64
4 Claims. (Cl. 198—33)



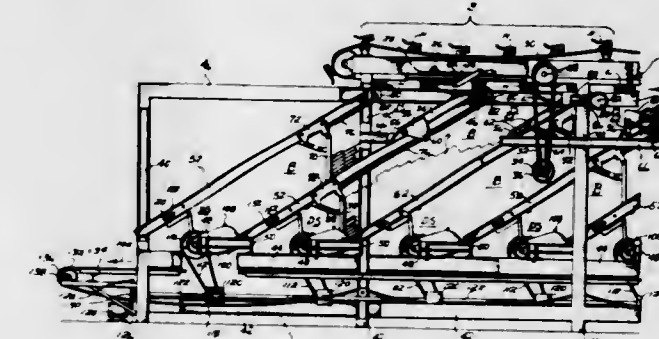
1. Apparatus for conveying cylindrical rod-like articles in a direction transverse to their longitudinal axes comprising a substantially horizontal conveyor band, at least two stationary guide means spaced from each other along said conveyor band on alternate sides thereof, each of said guide means being capable of continuously raising one side of said conveyor band above its normal level such that said conveyor band slopes downwardly towards its normal level at the opposite side thereof, whereby as said conveyor band carrying said articles moves across said guide means said articles are tilted in alternate directions enabling skewed articles to roll off the conveyor band.

3,314,524

DISCHARGE MECHANISMS FOR LUMBER ACCUMULATORS

Theodore A. Brandon, 1926 SE. Ash, Portland, Ore. 97214

Original application Nov. 29, 1960, Ser. No. 72,485, now Patent No. 3,155,245, dated Nov. 3, 1964. Divided and this application Feb. 24, 1964, Ser. No. 346,817
5 Claims. (Cl. 198—34)



1. In combination with a lumber accumulating mechanism having a relatively restricted discharge area and sloped skid means on which an accumulated group of lumber units of rectangularly shaped cross-section rests prior to discharge thereof to transport means, a lumber discharge mechanism including a laterally spaced set of unloading chains bearing spaced, laterally paired, rounded lug means and coursing an upwardly crowned path of travel extending from a point near the lower end of such skid means, through an ascending then descending path substantially to a point where discharging units drop in free fall to such transport means, said relatively restricted discharge area being defined by the descending path of said unloading chains and by gate arm means pivotally movable to either a closed position spanning said discharge area and preventing movement of lumber units through said discharge area, or to an open position where discharge of lumber units by said unloading chains is unimpeded.

3,314,525

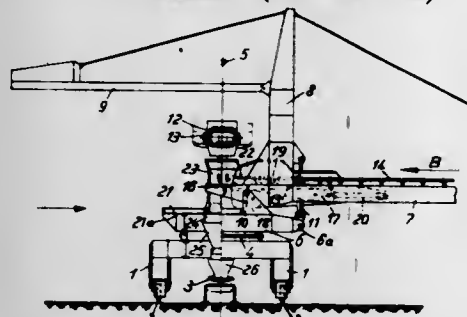
TRANSLADING DEVICE

Peter Karl Herbert Krause and Alexander Langner, both of Rheinhausen, Germany, assignors to Beteiligungsgesellschaft mit beschränkter Haftung, Essen, Germany

Filed Mar. 1, 1965, Ser. No. 435,837

Claims priority, application Germany, Feb. 28, 1964, B 75,645

3 Claims. (Cl. 198—36)



1. In combination in a transloading arrangement: a lower frame structure, an upper frame structure supported by said lower frame structure and rotatable about a vertical axis, a boom supported by said upper structure and tiltable in a vertical plane, first conveyor means supported by said boom and including first endless conveyor belt means and also including a feeding head comprising a first reversing drum passed over by said first belt means and also comprising a loop drum likewise passed over by said first belt means, second conveyor means including a second reversing drum located at a level higher than the level of said first reversing drum, said second conveyor means also including second endless conveyor belt means having a portion of its upper section extending below said lower frame structure and having another portion passing over said second reversing drum for dumping material thereover, said feeding head being displaceable relative to said boom from a rearward position in the dumping path of said second reversing drum to a forward position substantially out of said dumping path and vice versa, and chute means supported by said upper frame structure and movable relative thereto selectively into a first position and into a second position, said chute means including a first conveying section adapted in said first position of said chute means to receive material from that respective portion of said second belt means which is passing over said second reversing drum whereby said first conveying section in said first position of said chute means is adapted to convey material received from said second belt means over said second reversing drum onto the respective portion of said first belt means which passes over said feeding head while the latter is in its rearward position, said chute means also including a second conveying section movable into the drop path of said second reversing drum in response to said chute means moving into its second position whereby while said feeding head is in its forward position material dropped from the respective portion of said second conveyor belt means passing over said second reversing drum is conveyed onto that portion of said second conveyor belt means which is below said lower frame structure.

3,314,526

ENDLESS CHAIN CONVEYORS

Jozef Tadeusz Franek and Frederick Price, London, England, assignors to The Metal Box Company Limited, London, England, a British company

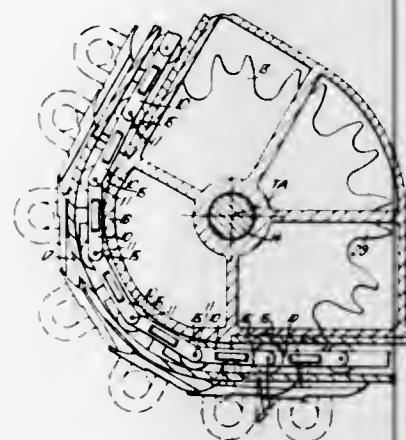
Filed Apr. 13, 1965, Ser. No. 447,820

Claims priority, application Great Britain, Apr. 22, 1964, 16,742/64

4 Claims. (Cl. 198—137)

1. An endless conveyor including a long link chain comprising a series of links of which the opposite ends of

each link are connected by pivot pins one to an end of the preceding link and one to an end of the succeeding link, a drive sprocket over which said chain is trained, said sprocket having a pitch circle of predetermined diameter along which said pivot pins would normally be carried as the chain passes around the sprocket, a roller carried by each pivot pin, and a stationary guide member having a curved outer surface adjacent said sprocket and with which said rollers engage as the chain passes around



said sprocket, said sprocket and said curved outer surface of said guide member having a common turning axis so that the teeth of said sprocket engage said pivot pins throughout the length of the path defined by the chain as it passes around the sprocket, the roller engaging face of said guide member having a contour defined by a series of intersecting arcs each of which is of a radius less than the pitch radius of said sprocket and in which the points of intersection of the arcs are displaced inwardly of said pitch circle of the sprocket.

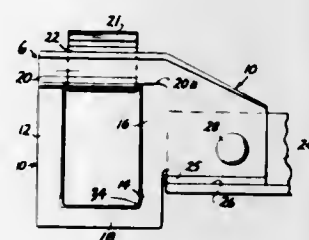
3,314,527

STEEL DETACHABLE ATTACHMENT LINK

Nels E. Pearson, Evergreen Park, Ill., assignor to Rex Chainbelt Inc., Milwaukee, Wis., a corporation of Wisconsin

Filed Nov. 3, 1965, Ser. No. 506,210

3 Claims. (Cl. 198—175)



1. In a chain attachment link of the type which is of integral stamped steel construction and rectangular form and includes an attachment plate which projects from one side of the link for securement to the end of a substantially rigid conveyor flight, a curled rear barrel, a flat forward pintle, and a side bar joining the corresponding ends of said pintle and barrel, the other end of said barrel being joined directly to said plate; a connecting bar extending parallel to said side bar and joining said other end of the pintle and said plate and being of a length and section so as to provide such relative flexibility therebetween which prevents the tensile stress in the inside corner of the link between said pintle and connecting bar from being materially increased when normal movement of the link is resisted by the flight and the force applied to the pintle tends to bend the link to a rhomboid form.

3,314,528

DOUGH BREAD BAKING BELTS

Fausto Celorio Mendoza, Cumbres de Acultzingo, near Mexico City, Mexico

Filed Dec. 10, 1965, Ser. No. 512,899

6 Claims. (Cl. 198—195)



1. An improved movable, flexible belt assembly for transporting by means of spaced rotating pulleys products to be heated comprising:
a plurality of elongated links,
each link having a central planar portion and curved end portions,
said curved end portions having a radius of curvature approximately equal to the radius of curvature of the rotating pulleys, and being in frictional engagement with said pulleys in order to be moved by rotation of said pulleys, and
means connecting each said link to adjacent links whereby the central portion of each link forms with adjacent central portions of adjacent links a planar flexible belt between said spaced pulleys.

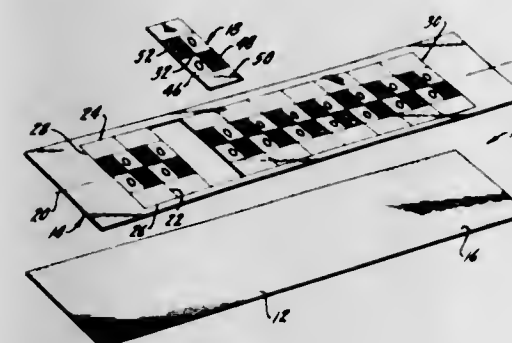
3,314,529

TAB STRUCTURE

Raymond P. Glowiak, 723 S. Wells St., Chicago, Ill. 60607

Filed June 15, 1965, Ser. No. 464,110

6 Claims. (Cl. 206—56)



3. In a tab unit, carrier means, and a tab forming structure removably secured to the carrier means,
said tab forming structure including relatively stiff sheet material having adhesive on the surface which contacts the carrier means, said adhesive being removable with the relatively stiff sheet material from the carrier means,
said tab forming structure having a fold line about which it may be folded to thereby form a multi-layer structure,
means for forming an area of self adhesion at the top of the folded multi-layered tab structure,
said means comprising a slit extending completely through the tab forming structure,
said slit being substantially coincident with the fold line and substantially medially located with respect to the end portions of the tab which flank the fold line,

said slit having no nominal width whereby the opposed, severed edges which form the slit lie in substantially abutting engagement with one another, the terminal edges of the slit being located inwardly of the side edges of the tab forming structure to thereby form connecting means for the portions of the tab forming structure which lie on either side of the fold line,
said slit extending a distance sufficient to present no resistance to folding of the tab forming structure along the fold line to thereby provide means for self adhering abutting adhesive surface portions of the tab structure.

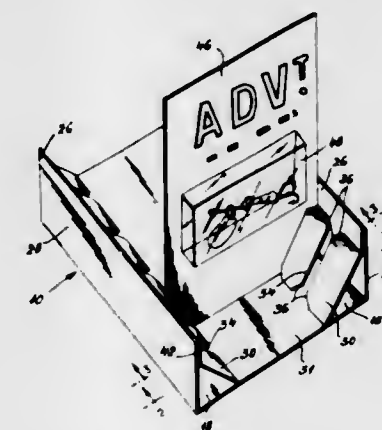
3,314,530

DISPLAY TRAY WITH SLOTTED OPENINGS

Alois M. Michalka, Rte. 6A, Portland, Conn. 06480

Filed May 6, 1964, Ser. No. 365,340

1 Claim. (Cl. 206—44)



A display stand comprising a rectangular-shaped one-piece shallow collapsible body of cardboard having a main bottom wall, auxiliary bottom walls at the sides of the main bottom wall, and upstanding side walls and being open at the top and ends, slanting walls disposed between the edges of the main bottom wall and points closely spaced from the top of the side walls, instruct portions from the slanting walls to form elongated slots in the slanting walls and said slanting walls serving as braces for the side walls, flat cards removably received in the slots therefor and on the bottom wall mounting articles of merchandise in upright condition in the slots and secured on the cards, the end edges of said elongated slots being tapered to more readily receive the cards, and a number of said instruct portions being interlocked with the auxiliary bottom walls and others of said instruct portions interlocked with the side walls.

3,314,531

SHIPPER DISPLAY

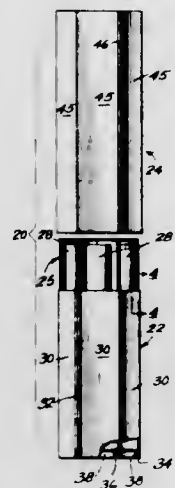
Irving R. Cheris, Glencoe, and Robert G. Kennedy, Crete, Ill., assignors to Sterling Automotive Manufacturing Company, Elk Grove Village, Ill., a corporation of Illinois

Filed Sept. 30, 1964, Ser. No. 400,328

9 Claims. (Cl. 206—44)

1. A shipper display comprising a carton portion having a hexagonal perimetrical wall adapted for retaining a plurality of boxes and an open end, a closure end attached to said wall at the other end of said carton portion, a plurality of boxes shaped and retained collectively by said wall adjacent each other, to form a hexagonal perimetrical shape fitting said perimetrical wall of said carton portion and abutting said closure end, each box comprising a triangularly-shaped cross-section first box portion for receiving and containing goods and having an open side portion, and a second closure box portion

formed as a similarly triangularly-shaped sleeve carried by said first box portion and being relatively movable with relationship to said open side thereof, and a spacer

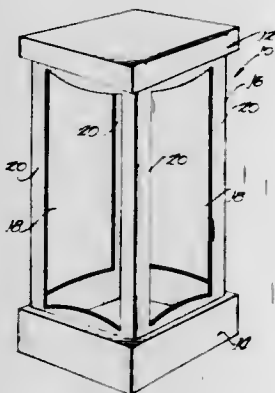


cooperable with both said box portions and said closure end for maintaining said box in partially open position for displaying the goods in each box adjacent and exterior of the open end of said carton portion.

3,314,532 DISPLAY CARTONS

James W. Henry, Clarksville, Ind., assignor to The Finn Industries, Inc., Chicago, Ill., a corporation of Delaware

Filed Oct. 30, 1964, Ser. No. 407,634
28 Claims. (Cl. 206—45.31)



1. A carton constructed and arranged to hold an article and to show on display, as much of said article as possible, comprising: a first carton having at least one open end and a plurality of side walls, each of said side walls being substantially cut-away so as to provide windows for displaying an article and to form pillar-like supports at each of its corners, a flange formed on each of said plurality of side walls at said open end which is arranged to be folded to overlie its respective side wall on the exterior of said first carton; and a second carton for closing said open end of said first carton, said second carton having a closed top wall and a bottom wall with an aperture formed therein which substantially corresponds in size and configuration to said open end of said first carton so as to receive said open end therein and smaller than said bottom wall so that a ledge is formed about the periphery of said bottom wall, said flanges engaging said ledge when said open end is received within said aperture to secure said second carton to said open end of said first carton.

3,314,533 LENS CONTAINER AND DISPENSING DEVICE

John Arnold Kopfle, 5530 SE. Tolman St., Portland, Oreg. 97206

Filed Nov. 15, 1965, Ser. No. 507,746
1 Claim. (Cl. 206—56)

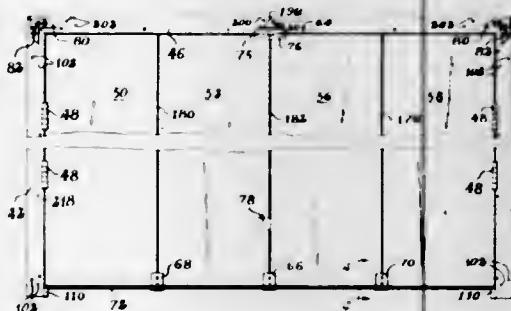


A lens container of hollow cylindrical form open at one of its ends and having vertical guideways formed lengthwise of the inner walls thereof, removable closure means for said open end, a lens carrier disposed within said container and including a stem providing a finger grip to permit manual outward movement of said carrier relative to the container, said carrier further including a pair of upwardly turned laterally extending flexible shelves, and means carried by the carrier subjacent said shelves and slidable within said guideways whereby said means will limit the upward travel of said lens carrier.

3,314,534 PRE-ASSEMBLED, PRE-HUNG DOOR UNIT

Russell M. Winnan, Miami, Fla., assignor to American Screen Products Company, Chicago, Ill., a corporation of Florida

Filed Apr. 30, 1963, Ser. No. 276,728
12 Claims. (Cl. 206—60)

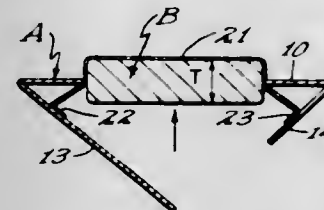


1. A shippable, pre-assembled, pre-hung door unit adapted for installation in such pre-assembled condition in a rough opening of a room or the like comprising a pair of vertical side jambs, a horizontal header spanning and connecting said jambs, door means pre-hung to at least one of said jambs, removable spacer means positioned in the space between the top edge of said door means and the facing surface of the bottom edge of said header for spacing said door means from said header, adhesive strip means adhesively secured to said header and to said door means and spanning said space to prevent accidental removal of said spacer means from said space, a removable member spanning the bottom edge surface of said door means and secured to said side jambs, and adhesive strip means adhesively secured to said door means and to said member to hold said member adjacent the bottom edge of said door means in position for preventing movement of said door means relative to said side jambs, said adhesive strip means, said spacer means and said member being discardable after installation of said door unit in said rough opening of a room.

3,314,535 DISPLAY PACKAGE AND METHOD OF FORMING THE SAME

James J. Jarecki, Minneapolis, Minn., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota

Filed Aug. 4, 1965, Ser. No. 477,191
4 Claims. (Cl. 206—80)



1. A display comprising:
a display panel having an aperture therethrough of proper size and shape to accommodate an article to be displayed,
a backing panel hingedly connected to an edge of said display panel and foldable substantially into face contact with the rear surface of said display panel,
a strip of shrink film of a width not substantially exceeding the width of said aperture secured overlying said aperture and the line of fold connecting said panels, one end of the film being secured to said backing panel along an area parallel to said fold line and spaced therefrom, the other end of said film being secured on the opposite side of said aperture from said one end, the distance between the nearest edges of the areas of adhesive when the panels are in a common plane exceeding the distance between these edges when the panels are in face contact by at least twice the thickness of the article, whereby when said backing panel is folded toward said display panel, the article may be inserted through said aperture, forcing the intermediate portion of said film strip into article enclosing position.

3,314,536 PACKAGING ADHESIVES IN CASINGS

Rudolph B. Janota, Lansing, and Dino J. Zari, Western Springs, Ill., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Dec. 10, 1962, Ser. No. 243,605
8 Claims. (Cl. 206—84)

1. A method for packaging a molten, hot-melt adhesive which sticks to regenerated cellulose comprising: extruding a molten, hot-melt adhesive having a temperature between about 310° F. and about 400° F. into a shirred regenerated cellulose casing whereby said shirred casing is simultaneously extended by and filled with said molten, hot-melt adhesive and subsequently reforming the filled casing into a convenient package.

3,314,537 TREATMENT OF PHOSPHATE ROCK SLIMES

Ernest W. Greene, Westfield, and James B. Duke, Metuchen, N.J., assignors to Minerals & Chemicals Philipp Corporation, Woodbridge Township, N.J., a corporation of Maryland

No Drawing. Filed Nov. 23, 1964, Ser. No. 413,359
20 Claims. (Cl. 209—5)

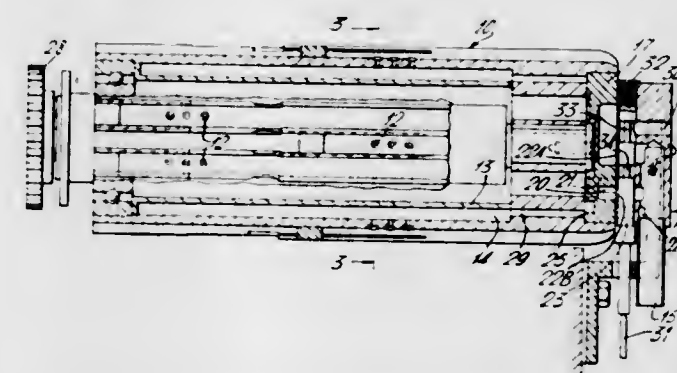
1. A method for obtaining a phosphatic concentrate from aqueous slimes produced by the hydraulic washing of a material selected from the group consisting of Tennessee phosphate rock and Western phosphate rock, said slimes comprising a mixture of phosphate mineral and argillaceous minerals and consisting of particles substantially all of which are finer than 325 mesh, Tyler standard,

and a major weight proportion of which is composed of particles finer than about 10 microns, which comprises: incorporating an alkaline deflocculating agent into said aqueous slimes with agitation so as to produce a deflocculated aqueous slip, conditioning said deflocculated slip for froth flotation with a fatty acid collector reagent and an oil material selected from the group consisting of fuel oil, kerosene, mineral oil and diesel oil, and subjecting the thus conditioned aqueous slip to froth flotation in an alkaline circuit to obtain a froth product which is a concentrate of phosphate values originally in the slimes and a tailing.

3,314,538 DEVICE FOR SEPARATING IMPERFECT CIGARETTES FROM A PROCESSION OF CIGARETTES

Gordon Francis Wellington Powell, Deptford, London, England, assignor to The Molins Organisation Limited, London, England, a corporation of Great Britain

Filed June 2, 1965, Ser. No. 460,660
Claims priority, application Great Britain, July 20, 1964, 29,482/64
4 Claims. (Cl. 209—74)



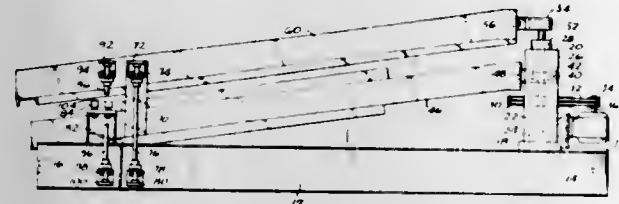
1. A device for separating imperfect cigarettes from a procession of cigarettes and for use with a detector which produces a signal on the detection of an imperfect cigarette, comprising a rotatably mounted fluted drum having a flat face at one end thereof, means for feeding cigarettes to the flutes thereof, a delivery position at which satisfactory cigarettes are discharged from the drum, a second position at which imperfect cigarettes are discharged from the drum, means defining at least one hole in each flute by which a cigarette can be suctionally held thereto, means defining air passages in the interior of the drum, one end of each air passage communicating with the hole of one flute and the other end defining an opening on the flat face of the drum, said openings together defining a ring concentric with the axis of the drum, a stationary valve device having a flat face, the valve device and the drum being so disposed that their flat faces are in rubbing contact, a suction duct in the valve device, means defining communicating passages between the flat face of the valve device and the suction duct and a movable valve piece in the valve device operable in response to a signal from said detector whereby suction can be regulated in each flute as the drum rotates so that imperfect cigarettes are discharged at the second position and acceptable cigarettes at the delivery position.

3,314,539 SCREEN APPARATUS FOR CLASSIFYING MATERIALS

Earl R. Hitchman, 3381 D St. NE., Salem, Oreg. 97301
Filed May 14, 1964, Ser. No. 367,316
4 Claims. (Cl. 209—315)

3. A vibrating screen classifier comprising
(a) a substantially horizontal frame,
(b) vibrator means mounted on the frame.

- (c) a plurality of vertically displaced inclined screens supported at their infeed ends by the vibrator means for vibrating movement relative to the frame substantially in the planes of the screens.
- (d) a plurality of vertically disposed support rods spaced apart longitudinally with respect to the frame and disposed adjacent the sides of the frame and screens adjacent the outfeed ends of the latter.



- (e) pivotal connector means securing one end of each support rod to the frame and the opposite end of each support rod to a different screen.
- (f) a plurality of stabilizer rods extending substantially horizontally adjacent the frame and screens, and
- (g) pivot means securing one end of each stabilizer rod to the frame and the opposite end of each stabilizer rod to a different screen.

3,314,540

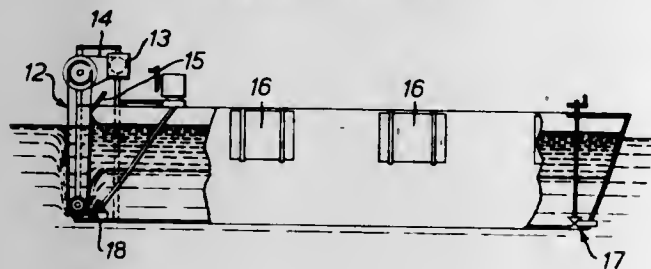
REMOVAL OF OIL FILMS FROM WATER

Edward James Lane, London, England, assignor to The British Petroleum Company Limited, London, England, a British joint-stock corporation

Filed July 5, 1963, Ser. No. 292,830

Claims priority application Great Britain, July 13, 1962, 27,002/62; Sept. 5, 1962, 34,031/62

2 Claims. (Cl. 210-77)



1. The method of recovering oil from the surface of water and transferring it to a craft having a receptacle in the craft for the transferred oil, comprising maintaining the craft afloat in the water, maintaining the base of the receptacle at least partially open to the water, forming one end of the craft with a substantially vertically positioned endless belt having one face thereof partially immersed in the water and having the other face thereof open to the receptacle, forming the operative surface of the belt of a material to which oil adheres, maintaining an opening in the craft between the bottom end of the belt and the base of the receptacle for the transference of oil thereinto, driving the belt so that the partially immersed belt face moves downwardly through the water and upwardly through the opening for transferring oil into the receptacle and causing the removed oil to flow into the receptacle.

3,314,541

AIR PURGED FILTER DEVICE

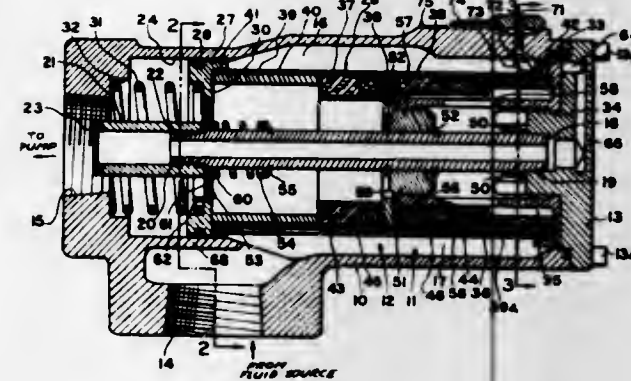
Nils O. Rosaen, Bloomfield Hills, Mich., assignor to The Rosaen Filter Company, Hazel Park, Mich., a corporation of Michigan

Filed Dec. 23, 1963, Ser. No. 332,359

15 Claims. (Cl. 210-90)

1. A filter device comprising
- (a) a housing having an inlet and an outlet,
- (b) said housing having an inner wall defining a chamber communicating with said inlet and said outlet,

- (c) said housing being positioned in use to provide an upper portion of said chamber and a lower portion of said chamber,
- (d) a filter assembly carried in said chamber intermediate said inlet and said outlet,
- (e) conduit means provided in said housing and connecting said outlet with said upper portion of said chamber upstream of said filter assembly whereby fluid entering said chamber will force air entrapped therein through said conduit means and out said outlet,
- (f) said filter assembly comprising a filter element carried in said chamber intermediate said inlet and said outlet,



- (g) a valve means provided in said chamber and being operable to regulate fluid flow from the outlet side of said filter element to said outlet in response to the pressure difference across the filter assembly, and
- (h) said valve means being operable to be closed upon initial fluid flow into said inlet and said conduit being open at all times to provide communication between said upper portion of said chamber and said outlet whereby when said valve means is closed fluid is directed from the inlet through said upper portion of said chamber to said conduit means whereby air entrapped in said upper portion will escape through said conduit means and through said outlet.

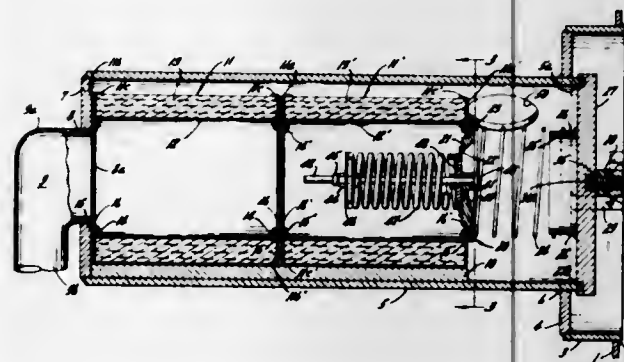
3,314,542

RESERVOIR FILTER STRUCTURE HAVING A BY-PASS VALVE

Walter J. Kudlaty, Elmhurst, Ill., assignor to Marvel Engineering Company, Chicago, Ill., a corporation of Illinois

Filed Dec. 10, 1964, Ser. No. 417,296

3 Claims. (Cl. 210-130)



1. In combination, a reservoir having a side wall, said side wall having a recessed wall portion, an aperture in said wall recessed portion, a tubular filter housing fixedly secured to and extending through said aperture and inwardly of said reservoir from said recessed wall portion,

an inlet opening in said filter housing, a filter member slidably supported within said filter housing, an outlet opening positioned in said filter housing for delivery of fluid to the area within said reservoir, said filter housing having an open end extending into the recess formed in said side wall by said recessed wall portion, a closure plate for said housing open end, a by-pass member including a valve plate, a passage through said plate, a rod carried by said plate and extending inwardly of said filter element, a valve member slidable on said rod, a first yielding means having one of its ends engaging said valve member, a retainer plate carried by said rod and engaging the opposite end of said first yielding means, a second yielding means having one of its ends engaging the inner surface of said closure plate, the opposite end of said second yielding means engaging said valve plate and urging said valve plate against said filter element, said second yielding means urging said filter element inwardly of said housing, a keeper structure secured to said recessed wall portion within said recess and a latch bar structure engaging said keeper structure and said closure plate to urge the same against said housing open end.

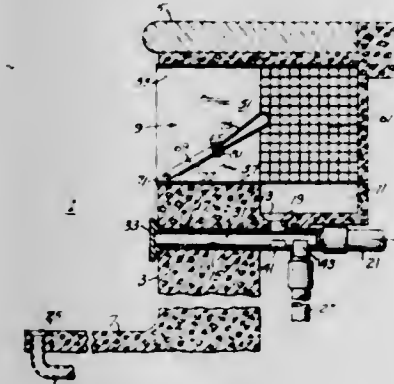
3,314,543

CLEANING SYSTEM INSTALLATION FOR SWIMMING POOLS

Floyd M. Nash, Little Rock, Ark., assignor to Jacuzzi Bros., Incorporated, a corporation of California

Filed Oct. 18, 1963, Ser. No. 317,341

6 Claims. (Cl. 210-169)



1. Swimming pool installation comprising a pool having
- a pool wall topped by a pool deck and connecting at its lower end with the pool bottom,
- said pool wall having a skimmer cavity just below said pool deck having a floor and including a downwardly directed drain opening,
- a valve passageway in said wall at an elevation below said skimmer cavity,
- means flow connecting said skimmer drain opening with said valve passageway,
- a drain in said pool bottom,
- means flow connecting said pool bottom drain with said valve passageway,
- valve in said valve passageway,
- said valve being provided with opening means, which, in the installed position of said valve, may be selectively rotated to bring said opening means either into flow communication with said skimmer drain connecting means or said pool bottom drain connecting means,
- a pool pump suction line,
- means flow connecting said valve passageway with said pump suction line, whereby said pump suction line may be selectively connected to either said skimmer drain or said pool bottom drain,

and skimmer means in said skimmer cavity, said skimmer means including

a pair of side walls within and adjacent the entrance to said cavity,

a screen cage including a screen bottom and unstanding sides, with said sides connected to the rear ends of said walls, said cage being of a length to extend over said skimmer drain opening, and

a weir assembly extending between said side walls and pivotally secured thereto adjacent the entrance to said skimmer cavity,

said weir assembly including

a pair of pivot arms, each adapted at one end for pivotal securement to one of said side walls,

a float gate of a length comparable to the width of said skimmer cavity and hingedly mounted to the free ends of said pivot arms in slight spaced relationship to the floor of said cavity when said arms are in their lowermost position,

said float gate having an apron extending to the other side of the hinge axis of said gate and also in slight spaced relationship to the floor of said cavity in the lowermost position of said pivot arms.

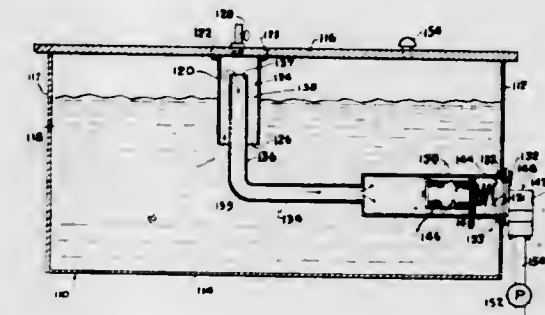
3,314,544

RESERVOIR CONSTRUCTION

Borge Rosaen, Ann Arbor, Mich., assignor to The Rosaen Filter Company, Hazel Park, Mich., a corporation of Michigan

Filed May 29, 1963, Ser. No. 284,794

4 Claims. (Cl. 210-172)



1. In a liquid supply system having a reservoir carrying a supply of liquid, and a pump for delivering liquid from said reservoir, said reservoir comprising:
- (a) a housing carrying said supply of liquid and comprising a floor portion, side walls, and a top cover plate;
- (b) a first tubular member secured to said top cover plate and extending axially downwardly into said housing;
- (c) said first tubular member having an inner peripheral wall and an inlet end, said inlet end being disposed below the level of liquid in said housing;
- (d) a second tubular member having a first horizontally extending portion secured to one of said side walls and a second vertically extending portion disposed within said reservoir and extending into said first tubular member through said inlet end thereof;
- (e) said second portion of said second tubular member having an outer peripheral wall spaced from said inner peripheral wall of said first tubular member and an inlet end disposed in said first tubular member above the level of liquid in said housing;
- (f) said first portion of said second tubular member having an outlet end adapted for connection to said pump; and
- (g) filtering means removeably secured to said housing and having a filter element extending axially into said second portion of said second tubular member.

3,314,545

CLEANING WATER SURFACES

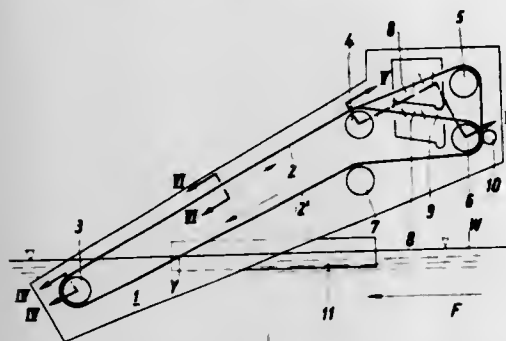
Friedbert Grabbe, Oelberg 21, Essen-Katernberg, Germany, and Karl Hintersdorf, Untere Fuhr 1, Essen, Germany

Filed Nov. 14, 1963, Ser. No. 323,685

Claims priority, application Germany, Nov. 20, 1962,

G 36,447

6 Claims. (Cl. 210—242)



1. Apparatus for removing oil and other similar floating impurities forming an upper layer of a flow of water, comprising an endless conveyor belt formed of a plurality of endless component bands located adjacent but spaced apart from one another and mounted on at least one lower roller and one upper roller spaced from one another, said belt being composed of material to which the oil sticks and having an upper run and a substantially straight lower run, said belt being adapted to be passed downwardly through the layer of oil and impurities into the water therebeneath so that the lower run extends into the water at an inclined angle to the surface thereof in the direction of water flow, motor means for driving the belt so that said lower run thereof travels in a direction corresponding generally to the direction of water flow whereby oil from the upper layer is entrainable by said lower run through the water therebeneath, around the lower roller immersed in the water and upwardly out of the water along said upper run, and a cleaner for removing the oil from said belt located adjacent said upper run thereof between the surface of the water and said upper roller, the bands being made of a plastic material and the cleaner being formed by comb-like scrapers which scrape oil from the bands adjacent the upper roller into an oil collecting tank.

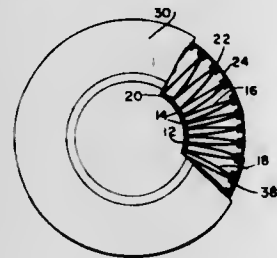
3,314,546

CARTRIDGE FILTER

Southwick W. Briggs, Chevy Chase, Md., and William A. Brazzol, Washington, D.C. (both % Stone Filter Co., Inc., 900 Franklin St. NE., Washington, D.C. 20017)

Filed June 2, 1964, Ser. No. 372,006

4 Claims. (Cl. 210—457)



1. A filter comprising a perforated center tube, a permeable paper filter medium having axial pleats defining inner and outer folds, said inner folds engaging said center tube, and a perforated cover member embracing said outer folds, said cover member providing spaced projections straddling and maintaining said outer folds in spaced relationship, said projections being punched from said cover member to form perforations therein.

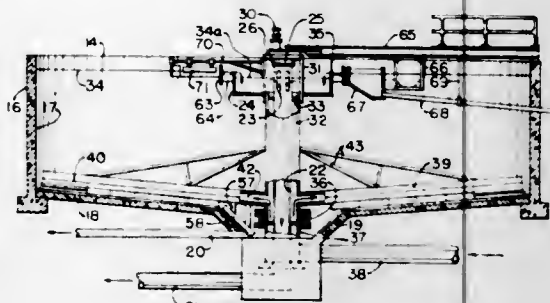
3,314,547

LIQUID CLARIFYING APPARATUS

Wayne A. Kivell, 10 De Sablo Road, San Mateo, Calif. 94402

Filed Nov. 16, 1964, Ser. No. 411,491

13 Claims. (Cl. 210—520)



1. Liquid clarifying apparatus comprising a liquid holding tank including a bottom wall, effluent discharge means including a central effluent overflow launder supported at the central upper portion of the tank for removing clarified liquid from the tank, flow distributing means disposed at the lower central portion of the tank and including distributing arm means of tubular construction, influent conduit means connected with said distributing arm means for feeding influent turbid liquid thereto, said distributing arm means including flow discharge means disposed at a position spaced a substantial distance radially outwardly of the central portion of the tank for feeding turbid liquid into the tank along the bottom wall portion thereof, at positions spaced outwardly of the central portion of the tank and near the periphery of the bottom wall of the tank, and scum removal means, said scum removal means including a scum retaining baffle disposed concentric to the effluent overflow launder and outwardly thereof and disposed so as to be normally positioned at an elevation to extend above and below the liquid surface as determined by the overflow launder, a scum receiving means disposed adjacent said scum retaining baffle, scum skimmer means including a blade means, means connected with said skimmer means for normally rotating the skimmer means during operation of the apparatus, said scum receiving means being stationary, and said scum skimmer means moving into operative relationship with respect to said scum receiving means for forcing scum adjacent said scum retaining baffle into operative relationship with respect to said scum receiving means.

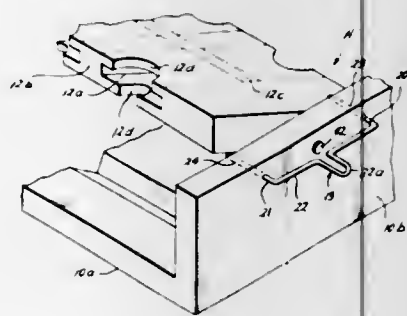
3,314,548

KEY CHAIN TAG HOLDER

Jefferson E. Stewart, 6610 Barney, Houston, Tex. 77018

Filed June 30, 1965, Ser. No. 468,223

4 Claims. (Cl. 211—13)



1. A key chain tag holder comprising in combination: (a) a bottom support having two sides, (b) a panel extending between said sides of said support,

(c) means for pivotally connecting said panel to said sides whereby said panel may be partially pivoted about its longitudinal axis, (d) recesses in each edge of said panel adapted to receive a key chain tag, (e) said recesses each having disposed in one surface an opening, a bearing member in each of said openings, and (f) said bearing member contacting said key chain tag upon placement in said slot to aid in retaining said key chain tag in said recess.

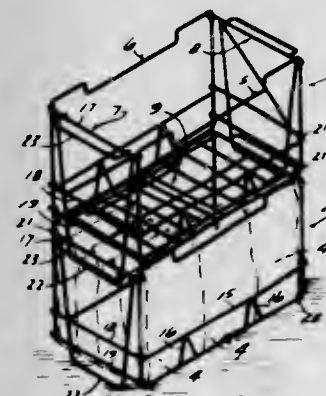
3,314,549

COLLAPSIBLE SHIPPING-DISPLAY UNIT

Paul Goldreich, 4445 N. Farwell Ave., Milwaukee, Wis. 53211, and Frank T. Fetherston, 6209 S. Highland Ave., Madison, Wis. 53705

Filed Aug. 24, 1964, Ser. No. 391,405

6 Claims. (Cl. 211—132)



1. A collapsible rack adapted to store, ship and display a plurality of individually packaged products, comprising

side walls means pivotally interconnected to permit collapsing thereof to a flat storage and return unit and extending to define an enclosure for the packaged products, at least one of the wall means having an access opening means and including an outer top edge member with the central top portion thereof disposed inwardly in the plane of the wall means and the lower portion of said wall means including a generally straight member, and a stop rod means spanning the wall means in spaced relation to the lower portion whereby a product is retained by the central top portion and the stop rod means and is removable therebetween,

a bottom wall means releasably secured to the lower end of the side wall means, and interlock means on the bottom and top edges of the wall means for interlocking the racks in stacked relation.

3,314,550

FURNACE CHARGER CRANE

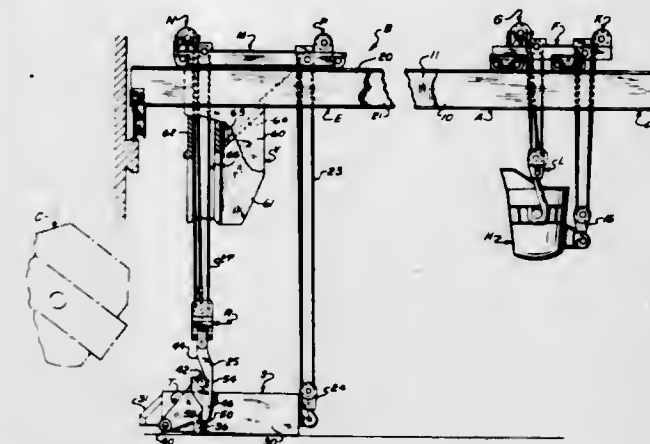
Ross B. McCready, Alliance, and Klaus W. Forster, Brecksville, Ohio, assignors to Kerma Corporation, Alliance, Ohio, a corporation of Ohio

Filed July 21, 1965, Ser. No. 473,755

11 Claims. (Cl. 212—130)

1. In a device for handling a box-like container having an opening in one end for dumping material from said open end, a bracket comprising side members, first support means on said side members adapted to pivotally support said container adjacent to said one end, second support means on said side members spaced from said last-named means in the direction away from said one

end of said container, hook-like grab means adapted to detachably engage said second support means, and third means on said hook-like grab means adapted to de-



tachably engage said side members and limit rotation thereof relative to said hook-like grab means in at least one direction as said container is pivoted.

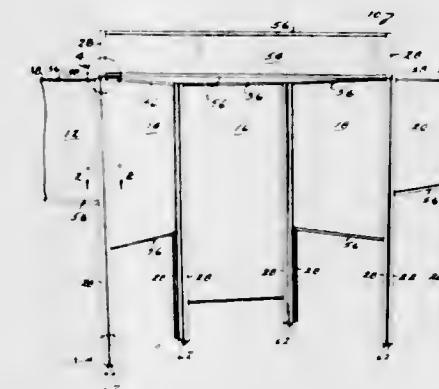
3,314,551

DISPLAY DEVICE

Charles E. Plastow, Alexandria, Va., assignor to Design and Production Incorporated, Alexandria, Va., a corporation of Virginia

Filed Mar. 11, 1965, Ser. No. 439,042

15 Claims. (Cl. 211—178)



1. A display comprising: a first panel of sheet material, a second panel of sheet material; first means defining a channel received on one lateral edge region of the first panel; second means defining a channel received on one lateral edge region of the second panel; the first and second channel defining means extending substantially below the lower extent of said first and second panels and comprising legs for the display; and a flexible web extending between the channel means to secure said channel means to one another and provide pivotability between said panels.

ERRATUM

For Class 212—130 see:
Patent No. 3,314,550

3,314,552

MASTER SLAVE MANIPULATOR WITH ARTICULATED ARMS

Jean Vertut, Paris, France, assignor to Commissariat à l'Energie Atomique, Paris, France

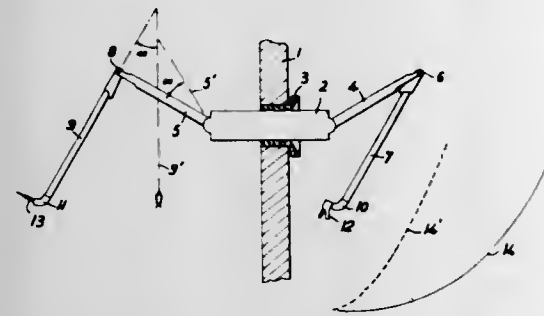
Filed Nov. 12, 1964, Ser. No. 410,470

Claims priority application France, Nov. 15, 1963, 953,982; Oct. 29, 1964, 993,170

19 Claims. (Cl. 214—1)

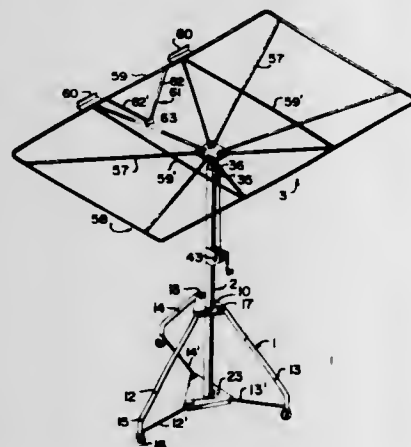
1. A direct action master-slave manipulator comprising a stationary wall-traversing member, shoulder pivots at the extremities of said wall member, a master polygonal assembly and a slave polygonal assembly articulated on

said pivots respectively, each of said assemblies comprising at least one arm and one fore-arm, means for coupling the master and slave arms to pivot about their respective shoulders through two angles in opposite directions, means for changing said two angles to a different constant angle, means for coupling the master and slave fore-arms to pivot about their respective elbows through



angles in the same direction, means for changing said last named angles to a different constant angle, master and slave members, means for coupling the master and slave members to pivot at constant angles about their respective wrists, means for changing said constant angles in an auxiliary manner and means for balancing the master and slave arms and fore-arms.

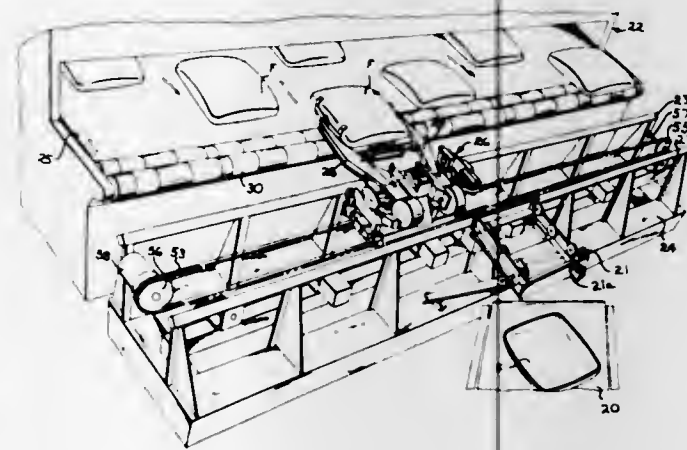
3,314,553
WALLBOARD DEVICE FOR WALLBOARDING CEILINGS
William A. Vircks, R.F.D. 1, Stetsonville, Wis. 54480
Filed Feb. 9, 1965, Ser. No. 431,384
8 Claims. (Cl. 214-1)



1. A device for handling wallboard or the like comprising a base, a telescoping column assembly, and a head, said base comprising legs adapted to hold said column assembly in a vertical position, a plurality of said legs being so mounted on said telescoping column assembly as to enable the same to be pivoted thereon, said base further comprising a locking means for holding said legs in an arcuately spaced relationship, said base further comprising two spaced apart plates, said plates being mounted on said column assembly, a first leg secured to the upper and lower plates and extending outwardly and downwardly therefrom, a strut member secured to said bottom plate and connected to the lower end of said first leg, two other legs being pivotally connected to the upper plate, two other strut members being pivotally connected to said lower plate, said other struts and other legs being rigidly secured together adjacent their other ends, the said locking means comprising a cover including a base portion and downwardly extending flange portions, openings being provided between the adjacent edges of the downwardly extending flanged portions, said cover being slidably mounted on said telescoping column assembly between

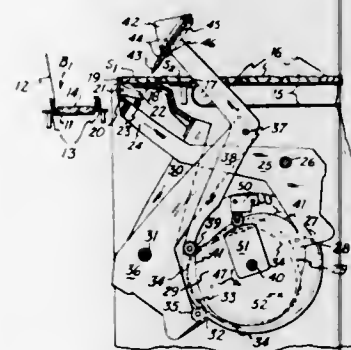
said plates and lowerable to a position in which the struts of said base are received between the edges of the flanges of the locking means.

3,314,554
ARTICLE HANDLING AND TRANSFERRING
Mario Cuniberti, Columbus, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Apr. 26, 1965, Ser. No. 450,981
25 Claims. (Cl. 214-1)



13. In an apparatus for handling and transferring articles, the combination comprising article engaging means, means for guiding said article engaging means from a pick up station to each of a plurality of delivery stations, means for actuating said article engaging means to cause said article engaging means to engage an article at said pick up station, means for actuating said article engaging means to cause said means to invert said article, means for moving said article engaging means to and from said pick up station and said delivery stations, and means responsive to the simultaneous presence of said article engaging means and said article at said pick up station to energize said actuating means for said article engaging means.

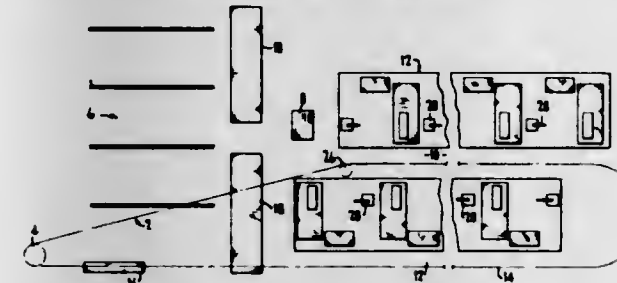
3,314,555
ARTICLE TRANSFER DEVICES
Thomas R. Baker, Los Altos, and Thomas B. Brickson, Palo Alto, Calif., assignors to Kliklok Corporation, New York, N.Y., a corporation of Delaware
Filed June 7, 1965, Ser. No. 461,716
11 Claims. (Cl. 214-1)



1. An article transfer device comprising, in combination, a pallet; a feeder for periodically moving an article onto the pallet; a pawl for grasping and retaining an article on the pallet; first transport means for reciprocating

ing said pallet between a pickup station adjacent said feeder and a delivery station remote from the feeder; second transport means timed with respect to said first transport means for reciprocating said pawl between said pickup station and said delivery station, said second transport means providing for a period of dwell at the delivery station sufficiently long for the first transport means to withdraw the pallet from under said pawl; and means for moving said pawl into article retaining position relatively to said pallet during transport of the latter from the pickup station to the delivery station.

3,314,556
CONVEYING SYSTEM
Guido Perrella, Montreal, Quebec, and Francois M. Picker, St. Bruno, Quebec, Canada (both % Dynacast Limited, 24 Mount Royal W., Montreal 14, Quebec, Canada)
Filed Apr. 14, 1965, Ser. No. 448,190
Claims priority, application Canada, Mar. 11, 1965, 925,354
15 Claims. (Cl. 214-11)

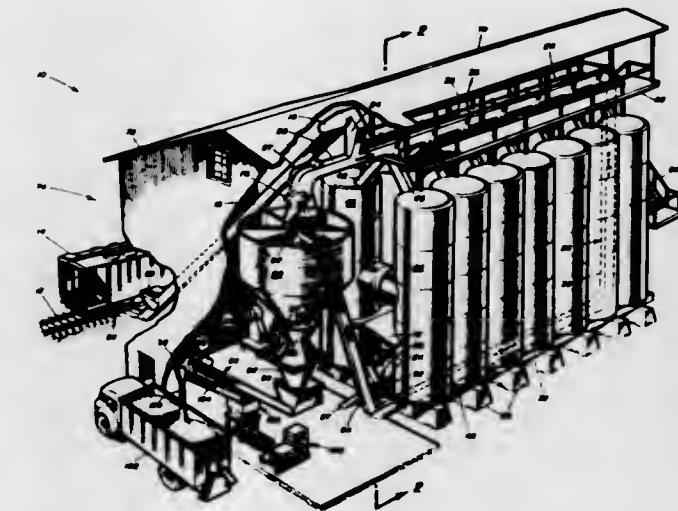


1. A conveying system adapted to transmit work to and from a plurality of work stations, said system comprising an endless transit line; multi-speed drive means adapted to circulate elements of said transit line from a work piece classification section along a delivery path defined by said plurality of work stations and subsequently therefrom along a return path to said classification section; a plurality of carriers on said transit line adapted to convey work pieces along said line between said classification section and said work stations; a dispatching centre at the head end of said delivery path including primary control means adapted, when actuated, to effect high speed operation of said drive means and transit line elements for rapid transmission of a work piece from said dispatching centre to a selected work station and to stop said transit line elements at said selected work station; secondary control means at each work station adapted, when actuated, to restart said drive means and said transit line elements at low speed and, when deactuated, to indicate to said dispatching centre the work load capacity of said work station; a run-out on said transit line adapted to remove and deliver work pieces from said carriers on said return path to said classification section; and means on said transit line for relaying to said dispatching centre the linear distance travelled by a carrier along said delivery path.

3,314,557
TANK TYPE BULK BLENDING PLANT
Walter J. Sackett, Sr., 3700 Echodale Ave., Baltimore, Md. 21206
Filed Apr. 16, 1965, Ser. No. 448,585
2 Claims. (Cl. 214-16)

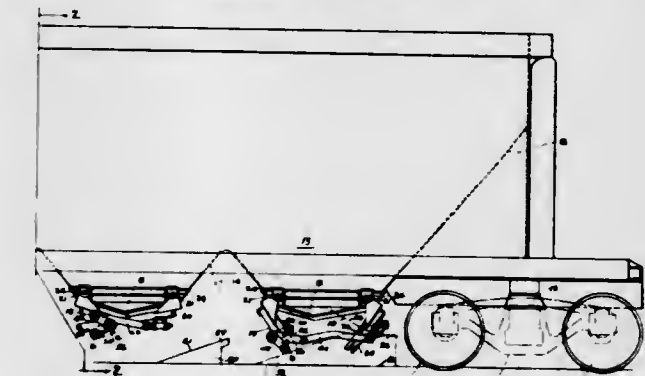
1. A system for handling materials, comprising, a plurality of storage means, elevated blending means, a first conveyer section which is horizontally positioned, means for selectively feeding materials from said first conveyer section to said storage means and alternately passing said materials along the length of said first conveyer section, a second conveyer section forming a vertical continuation of said first conveyer section for receiving and conveying

materials passed along the length of said first conveyer section, a third conveyer section forming a horizontal continuation of said second conveyer section for receiving materials therefrom and for receiving materials from said storage means, and a fourth conveyer section which is inclined from the vertical and forming a continuation of said third conveyer section for receiving and elevating mate-



rials therefrom, said fourth conveyer section having an opening near its top in the direction of inclination from the vertical for delivering the received materials to said elevated blending means, with said fourth conveyer section terminating into said first conveyer section to form a closed vertical loop of said first, second, third, and fourth conveyer sections.

3,314,558
SYSTEM FOR AUTOMATICALLY OPERATING DISCHARGE DOORS OF RAILWAY CARS
George B. Dorey, Westmount, Quebec, Canada, assignor to Continental Transport Appliances Limited, Montreal, Quebec, Canada, a corporation of Canada
Filed Feb. 17, 1965, Ser. No. 433,310
3 Claims. (Cl. 214-63)



1. In combination, a railway car having an opening for discharge of lading and oppositely swinging doors movable to closed position with their swinging ends in meeting relation for closing the opening and having means for operating the doors and holding them in closed position comprising:

- (a) a rotatable shaft extending transversely to the path of movement of the car carried by one of the doors,
- (b) radially extending arm means on the opposite ends of the shaft,
- (c) linkage connected at one end to the distal end of the radial arm means and connected at the other end with the opposite door,
- (d) said arm means and linkage being adapted to fold in over center toggle locked position to maintain the doors in closed position and unfold to an extended position to open the doors,

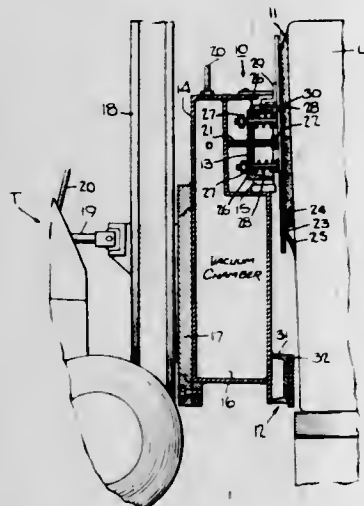
(e) means for automatically opening the doors by movement of the car including:

- (1) crank arm means carried by the shaft,
- (2) and wayside actuating ramp means disposed in alignment with the crank means for contacting therewith to rotate the shaft in a toggle releasing direction.

3,314,559

VACUUM ATTACHMENT

Earl A. Horton, Philadelphia, Pa., assignor to Eaton Yale & Towne Inc., a corporation of Ohio
Filed Apr. 30, 1964, Ser. No. 363,840
3 Claims. (Cl. 214-650)

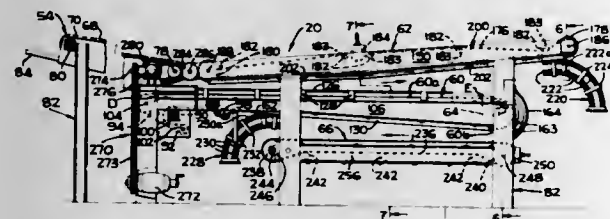


1. In a lift truck having uprights and a load carriage mounted for vertical movement on the uprights, a horizontal arm, means mounting said arm on said load carriage for horizontal rocking movement about a vertical axis at a medial part of said arm, a vacuum cup secured to each end of said arm in position to engage the vertical surface of a load, a friction pad secured against horizontal rocking movement on said carriage below said arm in a position to also engage a lower portion of the vertical surface of said load whereby when the vertical surface of the load is gripped by said vacuum cups and the load lifted by vertical movement on said uprights the weight of the load creates a moment causing the lower portion of the vertical surface of the load to be forced against said friction pad, and said arm by rocking enabling said vacuum cups to hold the load in a relation to the friction pad that will cause effective load supporting friction between the load and pad.

3,314,560

CAPSULE UNLOADER

Raymond J. Bell, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed July 19, 1965, Ser. No. 472,976
13 Claims. (Cl. 214-304)



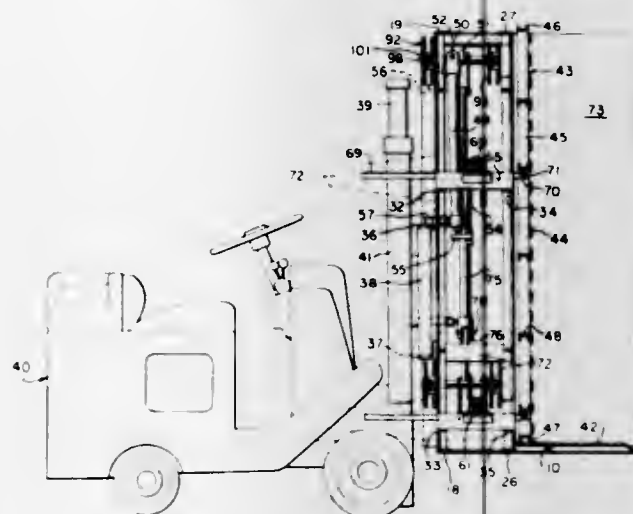
1. An apparatus for unloading an article from encapsulation within a two-piece capsule defined by a cartridge telescoped within a carrier comprising, means for continuously advancing the article along a predetermined path at a predetermined speed, means for moving said cartridge and said carrier transversely out of said path, means for continuously moving cartridge and said carrier at the

same speed as the article during removal of the article from encapsulation, and means for separately discharging said cartridge, said carrier and said article.

3,314,561

LOAD CARRIAGE FOR INDUSTRIAL LIFT TRUCK

Earl D. Chaney, 832 Windsor Road, Cumberland, Md. 21502
Filed June 5, 1964, Ser. No. 372,985
4 Claims. (Cl. 214-514)



1. A load carriage adapted for use with an industrial lift truck having means for vertically moving said load carriage, said load carriage including a base disposed in a substantially horizontal plane and having its front portion functioning as a support platform adapted to form the sole support of a load thereon, said base having an upright structure mounted on its rear portion, a pair of members disposed on opposite sides of said base, means connecting said members to said upright structure, said connecting means adapted to simultaneously move said members toward and away from each other and said base, said members engaging the load thereon for automatically centering the load and holding it in its centered position when said connecting means move said members toward each other, a frame disposed between said members and adjacent one side of said upright structure and said support platform portion of said base, a plurality of substantially horizontally disposed means attached to said frame at spaced points in spaced planes and supported by said upright structure to maintain said frame in a plane substantially perpendicular to said base, means cooperating with said horizontal disposed means to advance and retract said horizontal disposed means substantially parallel to said base to move said frame substantially parallel to said base to urge the load off said base when said members cease to engage the load, said cooperating means being supported by said upright structure and being disposed within said upright structure, and said upright structure having means on its side remote from said frame for attachment to the vertically moving means of the industrial lift truck.

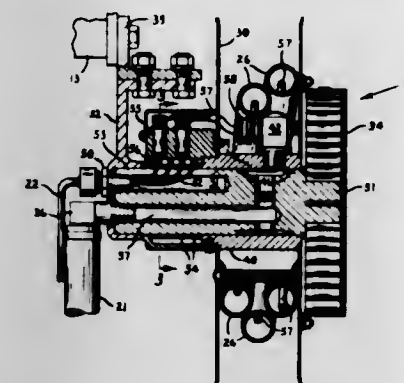
3,314,562

HOSE AND ELECTRICAL CABLE SYSTEM

Stanley E. Farmer, Portland, Oreg., assignor to Cascade Corporation, Portland, Oreg., a corporation of Oregon
Filed Sept. 14, 1964, Ser. No. 396,239
5 Claims. (Cl. 214-650)

1. In a hose and electrical conductor system, a hose reel unit having a rotatable reel, a hollow hose for carrying a fluid medium mounted on said reel with the hose being rotatable with said reel,

an electric cable within the hose extending along the interior of the hose with a passage left within the hose between the cable and hose,
a stationary hose connector on said unit having communication through said reel with said passage within said hose,

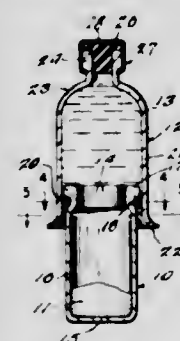


a fluid tight bushing on said reel which admits said cable into said hose,
a stationary cable connector on said unit electrically connected to said cable,
a member movable toward and away from said reel,
a swivel connector on said member for said hose and cable, and
a fluid tight bushing in said swivel connector which leads said cable out of said swivel connector.

3,314,563

PLURAL-COMPARTMENT CONTAINER

George A. Mounier, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Nov. 14, 1963, Ser. No. 323,799
4 Claims. (Cl. 215-6)



1. In a plural-compartment container for retaining segregated contents prior to intermixing, a first rigid vial having a closed bottom portion at one end and a neck defining an open mouth portion at the other end, a second rigid vial having a mouth portion at its upper end and a fully-open bottom portion at its lower end adapted to permit slidable telescoping movement of said first vial within said second vial in coaxially-aligned relation, sealing means closing the open mouth portion of said second vial, a sealing ring mounted on the neck of said first vial in slidable sealing contact with the interior surface of said second vial, and displaceable sealing means mounted in the mouth portion of said first vial adapted to displace upon telescoping movement of the said two vials.

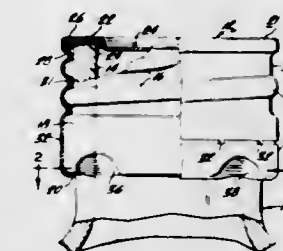
3,314,564

CONTAINER CLOSURE

Eli Frank Andersen, Devon, and Le Roy H. Rohde, Phoenixville, Pa., assignors to The West Company, Phoenixville, Pa., a corporation of Pennsylvania
Filed May 6, 1965, Ser. No. 453,738
16 Claims. (Cl. 215-7)

1. In combination, a container and a closure member adapted to be removably secured to the container, said container having an open ended neck portion with at

least one external spiral thread portion thereon and means defining an annular radial projection below the thread portion defining a downwardly facing shoulder generally transverse to the neck portion, said closure member comprising a cap portion of generally cup-like form consisting of a disc-like top overlying the open end of the container, a generally cylindrical side wall depending from the outer peripheral edge of the top having a spiral thread conforming to the shape of the spiral thread portion on the container neck, an annular retaining ring depending from the lower edge of the side wall and con-



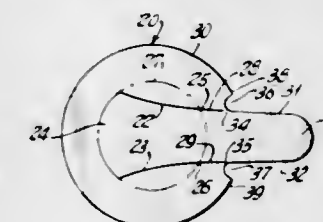
nected thereto by fracturable bridge means, the lower lip of said retaining ring engaging over said annular shoulder, said shoulder having an irregular configuration and said lip conforming to the shoulder configuration to provide cooperating retaining means on the lower lip of the retaining ring and shoulder providing a resistance to relative turning of said retaining ring and container, said lower lip of the retaining ring being deformed to a continuous circular configuration if said retaining ring is rotated relative to said container to provide a visual indication that the retaining ring has been turned.

3,314,565

CONTAINER CLOSURE AND COMBINATION

Herbert F. Wheaton, Summit, and Stanley J. Koll, Keansburg, N.J., assignors to American Flange & Manufacturing Co. Inc., New York, N.Y., a corporation of Delaware

Filed Feb. 11, 1964, Ser. No. 344,131
1 Claim. (Cl. 215-46)

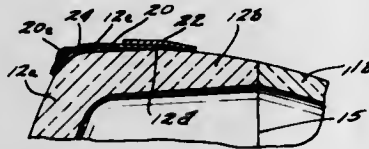


In closure cap construction, a flat substantially circular blank adapted to be formed into a cap having a disc-like top portion, a laterally depending skirt depending from and around said top portion, a pair of spaced weakened tearing lines in said top and skirt and a tearing ear extending outwardly away from the lower edge of said skirt formed as an integral extension of that portion of said cap skirt lying between said weakened lines, said blank comprising an annular peripheral cap skirt portion, an inner circular cap top portion, a flat tearing ear having exposed side edges extending radially outwardly from a peripheral edge portion of said blank, a pair of weakened lines extending at least part way across said top portion and continuing outwardly into said skirt portion, said weakened lines terminating radially inwardly of said blank periphery on either side of said ear, and a pair of radially inwardly extending notches formed in the periphery of said blank on either side of said ear, said blank periphery forming a circular line interrupted by said ear and notches, each of said notches having an inner side, an outer side and a concavely curved base connecting said inner and outer sides, the side edges of said ear forming tangent continuations of the curved base of said notches at the inner sides thereof, the outer sides of said

notches connected to said circular blank periphery by a smooth convex curve and the radius of said smooth convex curve is at least one-half as great as the radius of curvature of the base of said notch.

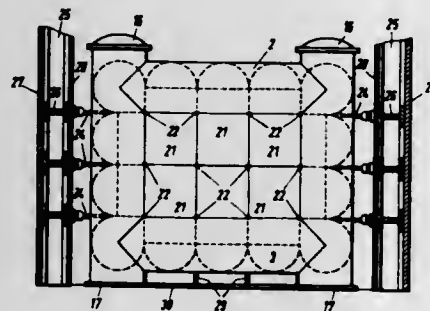
3,314,566 REINFORCED CATHODE-RAY TUBE AND FACE PLATE THEREFOR

Lester C. Minneman and Daryl E. Powell, Maumee, and Burton W. Spear, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
Filed Dec. 18, 1964, Ser. No. 422,063
27 Claims. (Cl. 220-2.1)



1. As an article of manufacture, a cathode-ray tube envelope comprising a substantially funnel-shaped hollow body member and a light-transmitting viewing member enclosing its larger end, said viewing member having an integral peripheral sidewall portion of substantially maximum cross-sectional dimensions of said envelope sealed to the larger end of said body member, at least one endless reinforcing band of thin-walled high-tensile strength material surrounding the peripheral sidewall portion of said viewing member and complementally contoured to conform snugly to its forwardmost non-viewing region, said reinforcing band being maintained in continuous tension to introduce compressive stresses into the peripheral sidewall portion therebeneath, a circumferential open annulus located intermediate said band and the exterior surfaces of said envelope sidewall portion therebeneath, and at least one access opening into said open annulus to facilitate the introduction of adhesive material therein subsequent to mounting said band.

3,314,567
STORAGE CONTAINER FOR LIQUID MATERIALS
Rudolf Becker, Munich-Solln, and Hans Proglar, Trostberg, Germany, assignors to Gesellschaft für Linde's Eismaschinen Aktiengesellschaft, Munich, Germany
Filed Feb. 12, 1964, Ser. No. 344,325
Claims priority, application Germany, Feb. 15, 1963, G 37,077
13 Claims. (Cl. 220-15)



1. A receptacle assembly for the storage and transportation of fluid media such as liquefied gases and the like, said assembly comprising:

a fluid-retaining vessel of generally prismatic configuration having at least two pairs of mutually opposed lateral walls with the walls of each pair extending generally transversely to the walls of the other pair,

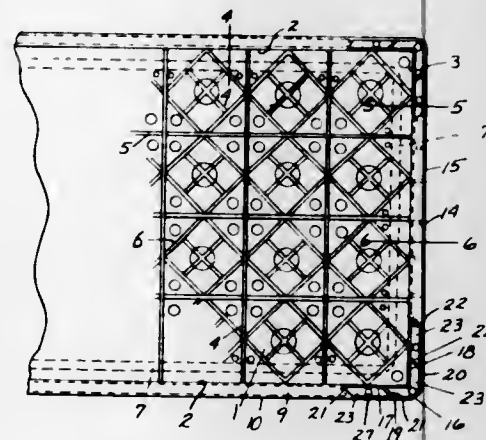
each of said walls being constituted of a plurality of vertically extending laterally continuous outwardly convex sections each having at least one vertical junction with an adjacent section corresponding to a common intersection of the mutually adjacent sections; support means externally of said vessel in engagement with the walls of a first of said pairs at the junctions of the convex sections for restricting outward lateral flexing of said walls of said first pair; and tension means within said vessel secured to and interconnecting the walls of the second of said pairs at the said junctions of the sections thereof for restricting outward lateral flexing of said walls of said second pair, said support means including:

two upright support walls confining said vessel between them and juxtaposed with said walls of said first pair; first support members lying in a vertical plane and each disposed between a respective one of said support walls and bearing upon the juxtaposed wall of said first pair of said vessel walls while engaging same to limit generally horizontal movement of said first pair of vessel walls relative to said support walls in planes parallel to said support walls in the regions thereof engaged by said members while permitting expansion and contraction of said walls of said first pair in vertical direction; and

a plurality of second support members disposed between each of said support walls and the juxtaposed wall of said first pair of said vessel walls, and being vertically and horizontally spaced from said first support members, said second support members engaging said walls of said first pair with freedom of horizontal and vertical expansion and contraction of said first pair of vessel walls in planes parallel to said support walls.

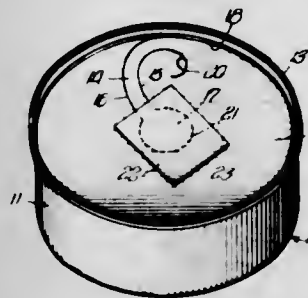
3,314,568 BOTTLE CASE

Harold S. Cloyd, Erie, Pa., assignor to Nosco Plastics, Incorporated, Erie, Pa., a corporation of Pennsylvania
Filed Nov. 2, 1964, Ser. No. 408,057
5 Claims. (Cl. 220-21)



1. A rectangular bottle case having spaced side walls and spaced end walls, the side and end walls being joined to form corners, external vertical walls spaced outside the side and end walls at said corners, said external walls being joined to each other to form corners outside the first corners, vertical ribs oriented in a direction generally parallel to the diagonals between the first corners and intersecting and bridging the space between the external walls and the side and end walls, and a horizontal rib intermediate the upper and lower ends of the vertical ribs and intersecting the external walls and the side and end walls, said external walls and the horizontal and vertical ribs being integral with the side and end walls.

3,314,569
CONTAINER CLOSURE
Oscar E. Selferth, and Glenn M. Austin, Madison, Wis., assignors to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois
Filed Jan. 27, 1965, Ser. No. 428,333
4 Claims. (Cl. 220-54)

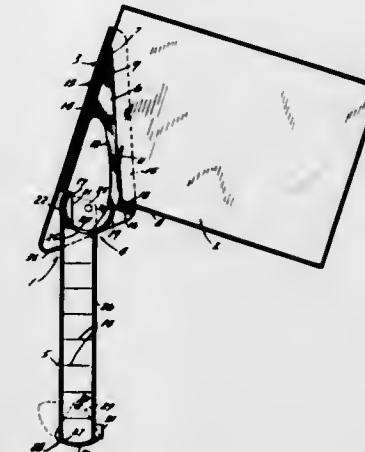


1. In a container, a tear strip arrangement for facilitating the ready opening of said container, said tear strip arrangement being incorporated in a panel of said container and comprising a tear strip portion defined by a pair of spaced, generally parallel score lines extending inwardly from a point near the periphery of the panel toward the center of the panel and terminating at an enlarged tab forming end portion which is bordered by a circular cutting line extending about said end portion with the material in the panel cut through on said line, one of said score lines merging at its outer end into a score line extending around and forming the perimeter of a portion of said panel which it is desired to remove so as to provide an opening into said container, and a combination seal forming and tab lifting member which is in the form of a strip of relatively thin flexible sheet material of sufficient size to cover said tab forming end portions with a central portion thereof adhesively secured to the tab forming end portion and said strip having its margins sealed to the panel material surrounding said tab forming end portion by a peelable adhesive which permits the strip to be pulled loose from the surrounding material while it remains connected to said tab forming end portion.

3,314,570
FLUID MATERIAL DISPENSING APPARATUS HAVING A CONTAINER PIERCING MEANS AND A MATERIAL MEASURING RECEPTACLE
Willard J. Murphy, 605 E. Harvey St., Ely, Minn. 55731
Original application Aug. 27, 1963, Ser. No. 305,577, now Patent No. 3,241,728, dated Mar. 22, 1966. Divided and this application June 14, 1965, Ser. No. 463,629
3 Claims. (Cl. 222-88)

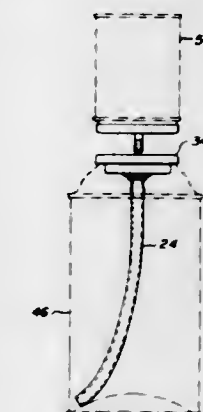
1. A dispensing apparatus for use with a container containing a material to be dispensed, comprising piercing means including a spear having a sharp tip to pierce the container and provide a discharge opening in a wall thereof, said piercing means including an end wall located at the base of the spear and having an outlet opening therein adapted to communicate with the discharge opening in the wall of the container, said end wall being adapted to be positioned in engagement with the end wall of the container bordering the discharge opening therein, a hood including a top wall disposed in spaced, generally parallel relation to the spear and located generally normal to the end wall and adapted to engage the top wall of the container, said hood also including a pair of side walls connected to the top wall and adapted to embrace the side walls of the container, a receptacle pivotally connected with respect to the piercing means and having an inlet opening therein disposed to communicate with the outlet opening in the end wall, valve means disposed between

the outlet opening in the end wall and inlet opening in the receptacle for controlling the flow of material from



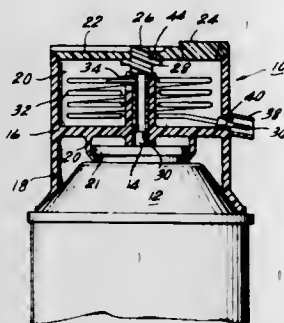
the container into said receptacle, and means for removing the material from the receptacle.

3,314,571
MOTHER-DAUGHTER AEROSOLS AND VALVE
BUTTON THEREFOR
James E. Greenebaum II, Highland Park, Ill. assignor to Seaquist Valve Company, a division of Pittsburgh Railways, Cary, Ill., a corporation of Pennsylvania
Filed Dec. 30, 1964, Ser. No. 422,150
5 Claims. (Cl. 222-135)



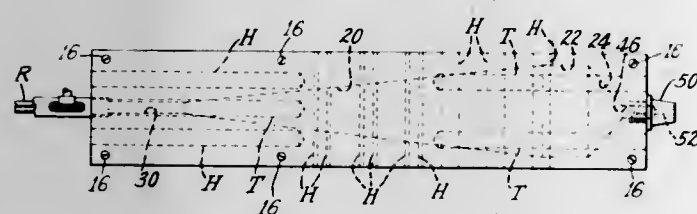
5. A mother-daughter aerosol container combination wherein there is an aerosol valve for the mother aerosol container which is excessively pressurized to enable said mother container to be used to repeatedly refill said daughter container, said valve having a valve stem extending therefrom, a valve button for actuating said valve comprising a body member, a dispensing orifice and a valve stem cavity in communication therewith in said body member, and an adapter within said valve stem cavity comprising a ring shaped plate, its inner cavity comprising a restrictor orifice for said valve stem cavity to prevent the excessive pressure within said mother container from having a deleterious effect on the spray pattern of said mother container when used to merely spray the contents therefrom, said valve button with said plate being removably affixed to said valve stem to permit said valve button with said plate to be removed to enable refilling of said daughter container so that said adapter does not interfere with the rapid filling of said daughter container, said daughter container having valve spray means which is adapted to engage said valve stem of said mother container for refilling said daughter container from said mother container.

3,314,572
DISPENSED LIQUID HEATING DEVICE
 Vincent F. Pungitore, 945 E. 214th St.,
 Bronx, N.Y. 10469
 Filed Dec. 31, 1964, Ser. No. 422,764
 3 Claims. (Cl. 222-136)



1. A device for heating and mixing with hot water shaving lather as it is selectively dispensed from a pressurized container by the selective depression of a spring-return container valve connected to a container spout, said device comprising, in combination, a hot water chamber having a cover releasable for admitting hot water into it, a valve stem connected to said container spout and depressable from the exterior of said chamber to actuate said container valve, said valve stem having a hollow portion communicating with said container spout, a length of relatively thin-walled tubing coiled in said chamber and connected to said hollow portion, said tubing exiting from said chamber in a lather spout, a hole in said chamber exiting into said lather spout so as to guide hot water from said chamber to mix with lather in said spout, an air vent in a wall of said chamber, said air vent normally being closed by said valve stem but being opened by depression of said valve stem, and means for securing said device onto said container.

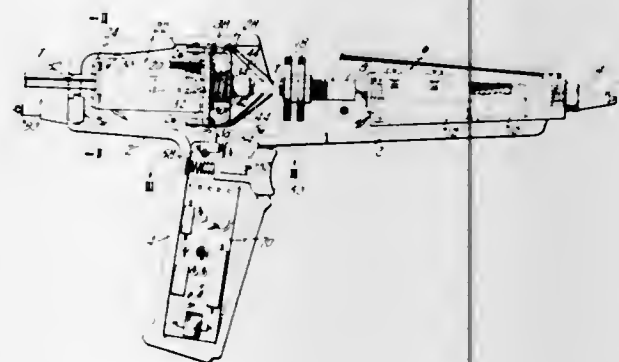
3,314,573
APPARATUS FOR HANDLING THERMOPLASTIC MATERIAL
 Albert E. Newton, Beverly, Mass., assignor to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
 Filed June 7, 1965, Ser. No. 461,649
 6 Claims. (Cl. 222-146)



1. Apparatus for melting and feeding thermoplastic material in rod form comprising a casing formed to provide a heating and melting chamber, an inlet passageway leading into one end of said chamber and an outlet passageway in communication with the other end of said chamber, said chamber being generally rectangular in cross section of a thickness not substantially greater than the rod material and of a width considerably greater than the rod material thereby to present a large surface area to the leading end of a rod of thermoplastic material as it is fed into the chamber, means for heating the casing and hence the walls of said chamber, and means for feeding a rod of thermoplastic material through the inlet passageway and into said chamber to cause the leading end of the rod progressively to be heated and rendered molten within the chamber and molten material to be extruded

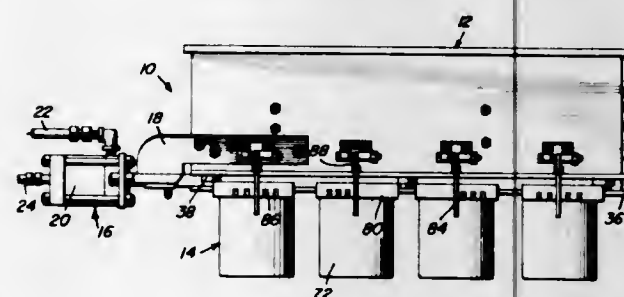
from the chamber and through the outlet passageway by the force exerted on the molten material in said chamber by the entering solid rod.

3,314,574
PLASTIC CEMENT HEATING, MELTING AND EXTRUDING TOOL
 William B. Longval, Danvers, Robert W. Bradley, Marblehead, and Harry Phillips, Hamilton, Mass., assignors to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
 Filed Aug. 11, 1965, Ser. No. 478,950
 11 Claims. (Cl. 222-146)



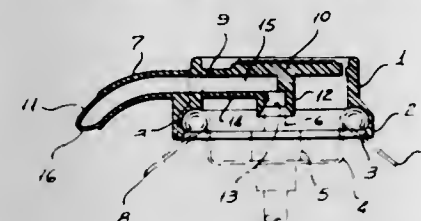
10. In a cement extruding tool having a barrel member for receiving meltable rod material at a first end and extruding the material in a molten state from a second end, and having barrel heating means, a feed means for urging said rod toward the first end of said barrel and thereafter through said barrel, said feed means comprising a solenoid having its annulus in axial alignment with said barrel, core means slidably disposed in said annulus, blade mounting means fixed to said core means, a coil spring disposed about said core means and between said solenoid and said blade mounting means, blades engageable with said rod and attached to said mounting means, and means for alternately energizing and de-energizing said solenoid.

3,314,575
SEED DISPENSING APPARATUS
 Herbert L. Graham, Corpus Christi, Tex., assignor to Clayton Specialties, Inc., a corporation of Texas
 Filed Feb. 23, 1965, Ser. No. 434,571
 11 Claims. (Cl. 222-330)



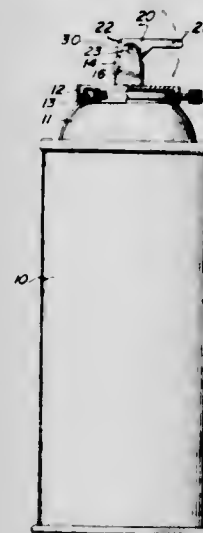
1. In a dispensing apparatus, a hopper containing particulate material, metering means movably mounted by the hopper intermittently dispensing predetermined quantities of said particulate material from fixedly spaced outlet locations along said hopper, at least one diverter slidably mounted by said hopper, and latch means operatively mounted by the hopper for locking engagement with said diverter in selected positions relative to said spaced outlet locations to receive and distribute the particulate material dispensed by the metering means, said diverter having means for distributing the particulate material in a predetermined pattern at a location corresponding to the selected position.

3,314,576
CAP FOR DISPENSING AEROSOLS
 John Richard Focht, Yonkers, and William Mildern, Hudson, N.Y., assignors to Precision Valve Corporation, Yonkers, N.Y., a corporation of New York
 Filed June 14, 1965, Ser. No. 463,508
 2 Claims. (Cl. 222-402.13)



1. An actuator for an aerosol container having a hollow valve stem extending from a top opening in the container, said actuator being an integral unitary member and comprising a body having a discharge port, a walled conduit communicating at one end with the discharge port and at its other end forming a socket for receiving the valve stem of an aerosol container, said conduit including an extension protruding outwardly from said discharge port and having a permanently closed end portion effecting closing and sealing of said discharge port, the thickness of said extension being substantially less than the wall thickness of said conduit to facilitate removal of said extension from said conduit whereby, severing of said extension from said conduit adjacent to said discharge port provides direct communication between said socket and the atmosphere.

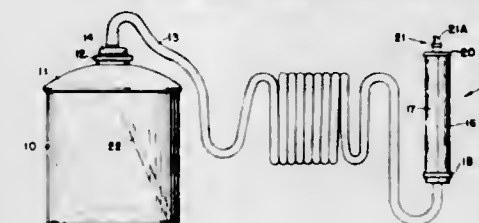
3,314,577
CAM LEVER AEROSOL SPRAY BUTTON
 Jay Doblin, Chicago, Ill., assignor to W. R. Frank Packaging Engineers, Inc., a corporation of Illinois
 Filed Aug. 6, 1965, Ser. No. 477,777
 4 Claims. (Cl. 222-402.14)



1. An aerosol actuator for actuating a valve button having a channel therein to allow the flow of fluid, said button being normally biased to a first position, which comprises: an actuating lever pivotally mounted adjacent said button, said lever comprising an actuating arm portion adapted to be actuated by an operator, a cam portion adapted to contact the top surface of said button to move the button to a second position against its bias, a first surface on one side of said cam portion disposed adjacent said top surface of said button when said button is in said first position, and a second surface distinct from said first surface adapted to contact said top surface of said button while said button is in said second position, said second surface being spaced a greater distance from the pivot point than said first surface, the ends of said second surface being disposed on opposite sides of an axial line

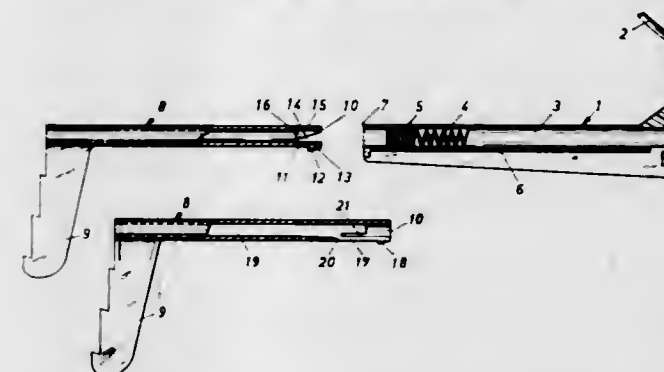
passing through the pivot point when the button is in said second position, whereby said second surface locks the button in said second position.

3,314,578
SPRAYING APPARATUS
 Joseph L. La Mura, 367 Passaic Ave.,
 West Caldwell, N.J. 07006
 Filed Oct. 14, 1965, Ser. No. 495,842
 3 Claims. (Cl. 222-402.25)



1. A spray assembly comprising: a tank for storing a mixture of a liquid and a gas under pressure, a fitting secured to one end of the tank for connection to an exit conduit, said fitting including a self-closing pressure-operated valve having a movable valve element for sealing contact against a valve seat; a helical flexible tube for conveying the liquid and gas mixture from the tank to an exit port; said tube being resiliently prestressed so as to form a closed helical coil when not forced to an expanded position; a screw valve fitting secured to one end of said helical tube for connection to the tank fitting, said valve fitting including a stylus for opening the pressure operated valve by displacing the movable valve element whenever the valve fitting is attached to the tank fitting; and an exit nozzle including a manually operated exit valve connected to the other end of the helical flexible tube for spraying the mixture into the atmosphere.

3,314,579
GARMENT-HANGER
 Stig Erland Samuelsson, Porsevagen 20,
 Falkenberg, Sweden
 Filed Feb. 16, 1965, Ser. No. 433,038
 Claims priority application Sweden, Mar. 3, 1964,
 2,582/64
 1 Claim. (Cl. 223-95)



In a garment hanger, a center portion having a tube channel and aligned elongated longitudinal slots formed in the undersurface of said center portion terminating at spaced distances from the ends thereof, two hollow cylindrical end portions each having an elongated longitudinal slot extending from an inner end thereof slidably housed in said tube channel and adapted to be moved horizontally relative to the hanger, means arranged on a free outer end of each of said end portions for engagement with the garment to be carried, a metal rail having a tapered end abutting against the internal cylindrical walls of each of said hollow cylindrical end portions, the other end of said metal rail having a slot formed therein defining a resilient tongue, said resilient tongue being received within the longitudinal slot of each hollow cylin-

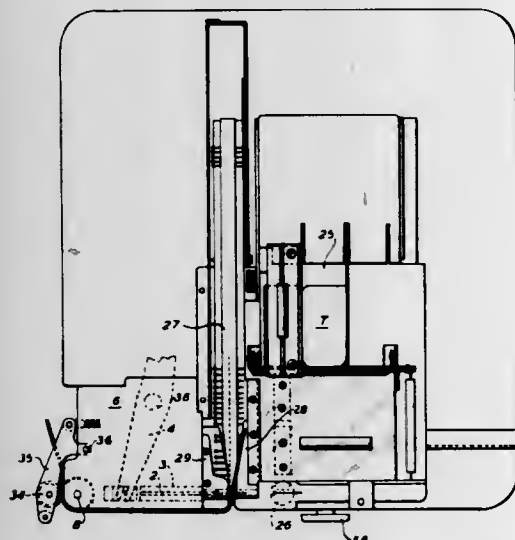
drical end portion, said resilient tongue including an abutment extending therebelow, said abutment engaging an inner end of the slot formed in said center portion when the end portions are moved into operative positions relative to said center portion, and two springs positioned in said tube channel with the free outer end of each spring engaging the inner end of a respective one of said hollow cylindrical end portions.

3,314,580

TAG ATTACHING PIN FEED

Charles A. Parker, East Orange, N.J., assignor to Kimball Systems, Inc., Farmingdale, N.Y., a corporation of New York

Filed Apr. 28, 1965, Ser. No. 451,511
16 Claims. (Cl. 227-136)



1. In a machine for feeding successive pins stored within a tape strip to a fixed stop point: the combination comprising feed means including a rotatable cylinder operable yieldably in a cyclic machine operation to advance said tape strip; means for rotating said cylinder including a spiral spring nested therein having yieldable frictional engagement therewith; a helical spring nested within said spiral spring and at one end connected to a terminal turn thereof; drive means in frictional engagement with an opposite end of the helical spring for rotating said helical spring during a machine operation to provide stored energy therein while cushioning starting rotation of said cylinder for yieldably advancing the tape in moving a pin to said fixed stop point.

3,314,581

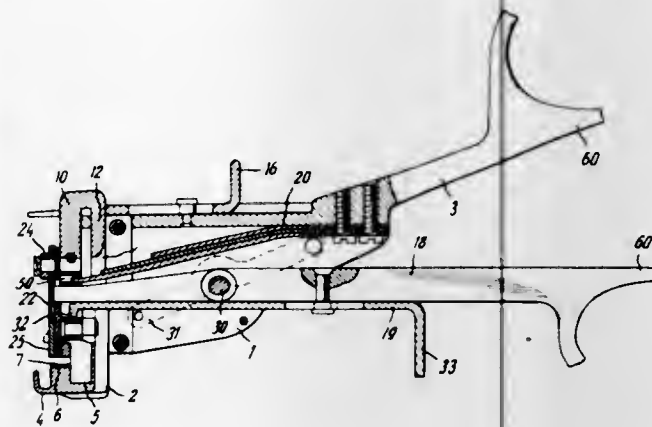
MULTI-STAPLE INSTRUMENT FOR PLACING A LONGITUDINAL VASCULAR SUTURE

Nickolai Nickolsjevich Kapitanov, Natalija Petrovna Petrova, and Nina Vasiljevna Jurasova, all of Moscow, U.S.S.R., assignors to Nauchno-Issledovatel'skiy Institut Experimental'noi Khirurgicheskoi Apparatury and Instrumentov

Filed May 14, 1964, Ser. No. 367,371
2 Claims. (Cl. 227-142)

1. A multi-staple instrument for suturing a vessel comprising a body including a supporting jaw and a handle, said supporting jaw including a die provided with depressions for bending the legs of staples and having at least one horizontal groove therein for receiving clamp means secured to the vessel to position the vessel in staple receiving position, a carriage mounted slidably on said body for movement towards and away from said jaw, a magazine for staples replaceably supported on said carriage, actuator means pivotally mounted on said handle

and engaging said carriage for displacing the same along said body, adjusting means slidably supported on said body and engageable with said carriage to limit sliding movement thereof to a selected distance from the supporting jaw, protector means slidably supported on the actuator means for movement between operative and inoperative positions, said protector means in the operative



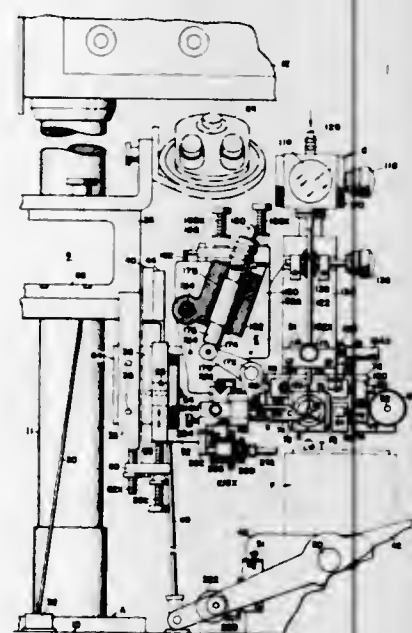
position engaging said carriage and the actuator means to prevent movement of the actuator means relative to said carriage and in said inoperative position being out of engagement with said carriage, and pusher means slidably mounted in said magazine and engaged with the actuator means for driving staples from the magazine upon pivotal movement of the actuator means after the protector means has been moved to inoperative position.

3,314,582

ULTRASONIC SCISSORS BONDING INSTRUMENT

Edmund D. Haigler, Hatboro, Pa., assignor to Kulicke and Soffa Manufacturing Company, Fort Washington, Pa., a corporation of Pennsylvania

Filed Feb. 21, 1964, Ser. No. 346,567
12 Claims. (Cl. 228-1)



1. A bonding instrument for securing leads to semi-conductive devices comprising a tool having a groove in a surface thereof which is adapted to be urged into juxtaposition with a semiconductive surface, means for dispensing wire along a line substantially normal to said tool surface adjacent to the groove thereof, cut-off means constituting a pair of shearing blades having an interfacial plane substantially normal to the axis of the dispensed

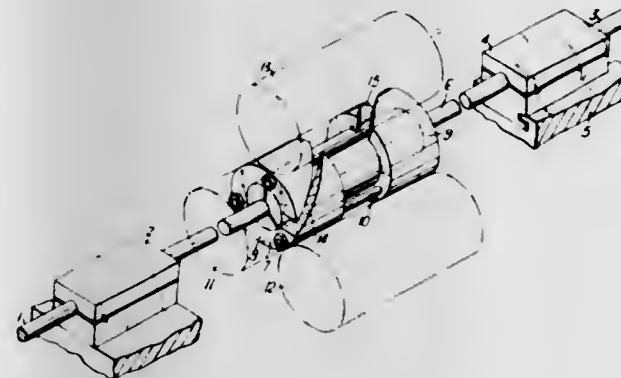
wire and having shearing edges oriented normal to the axis of the groove when in wire cutting disposition, means for relatively moving said tool relative to said cut-off means, means to actuate closure of said cutting means when the grooved surface of said tool is immediately adjacent the opposing face of the nearest blade for severing the wire and accurately laying the depending end thereof within said groove and means to space said cut-off means away from said tool immediately before re-opening of the blades so that the wire will not be wiped out of the groove during opening of said cut-off means.

3,314,583

FRICTION WELDING DEVICES FOR JOINING LENGTHS OF WIRE

Thomas Marmaduke Roberts, Abington Hall, Cambridge, England, assignor to British Welding Research Association, a body corporate of Great Britain

Filed Apr. 16, 1964, Ser. No. 360,299
Claims priority, application Great Britain, Apr. 22, 1963, 15,781/63
2 Claims. (Cl. 228-2)



1. An apparatus for welding an intermediate wire to two outer wires in which the intermediate wire is rotated about its axis in contact under low pressure with the ends of the two outer wires to be joined until sufficient heat for bonding has been generated between the contacting surfaces and in which the rotation is then stopped and the pressure increased to complete the friction bond comprising:

- (a) two outer clamps,
- (b) an intermediate clamp,
- (c) one of said outer clamps having clamping surfaces defining an opening for clamping one of said outer wires,
- (d) the other of said outer clamps having clamping surfaces defining an opening which is in axial alignment with the opening of said one outer clamp for clamping the other of said outer wires in axial alignment with said one outer wire,
- (e) at least one of said outer clamps being mounted for axial movement toward the other of said outer clamps to provide pressure contact between the ends of the wires to be bonded,
- (f) said intermediate clamp having clamping surfaces defining an opening which is in axial alignment with the openings of said outer clamps for clamping said intermediate wire between said two outer wires, said intermediate clamp further comprising:
 - (1) a collet to be placed around said intermediate wire
 - (2) a pair of slotted sleeves fitting over the collet and axially movable to permit the tightening of the collet on said intermediate wire, and
 - (3) means for axially moving said pair of slotted sleeves,

- (g) means cooperating with the exterior of said slotted sleeves for rotating the intermediate clamp and thus the intermediate wire.

3,314,584

RESILIENT PACKAGING SPACER

Eugene J. Knapp, Corning, and Joseph M. Pezely, Jr., Elmira, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed June 4, 1964, Ser. No. 372,501
7 Claims. (Cl. 229-14)



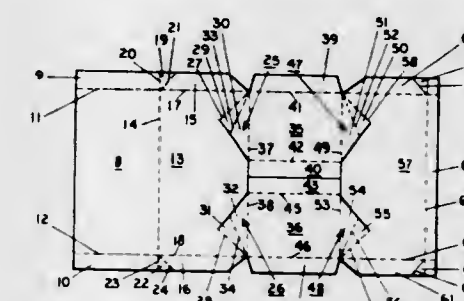
1. A resilient spacer adapted to be selectively applied to the exposed surfaces of an article to be packaged to cushion same during handling, comprising, an elongated planar sheet of resilient cushioning material having a generally zig-zag configuration formed by a plurality of adjacent parallelogram-shaped modules and including a centrally disposed longitudinal slit and parallel transverse slits perpendicular to the longitudinal slit extending partially through the thickness of the material along which the material may be abruptly bent to facilitate its application to the edges and corners of a package.

3,314,585

FOLDING CARTON

Homer W. Forrer, Jonesboro, Ga., assignor to The Mead Corporation, a corporation of Ohio

Filed Aug. 2, 1965, Ser. No. 476,414
8 Claims. (Cl. 229-16)



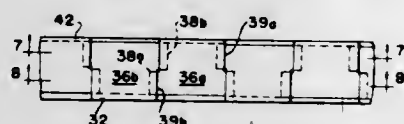
1. Carton end closure structure comprising a main panel, a pair of side walls foldably joined respectively to opposite side edges of said main panel, a pair of anchoring flaps foldably joined respectively to corresponding end edges of said side walls, a retaining flap foldably joined to the adjacent end edge of said main panel, a pair of gussets foldably interconnected with each end of said retaining flap and respectively connected foldably with the adjacent ends of said anchoring flaps, web structure foldably connected along diagonal fold lines with an edge of each of said side walls, and an end panel foldably joined respectively along its side edges to said web structure, said anchoring panels being disposed in flat face contacting relation with the inside surfaces of their associated side walls so as to hold said retaining flap in generally perpendicular relation to said main panel and said web structures being disposed respectively in flat face contacting relation with the inside surfaces of said gussets so as to capture said gussets between said web structures and said side walls respectively thereby to hold said end panel in secure perpendicular relation to said main panel.

3,314,586

CARTON FOR FLAT COILED TUBING

Harry E. Frank, Jr., Dearborn, Mich., assignor to Calumet & Hecla, Inc., Allen Park, Mich., a corporation of Michigan

Filed May 3, 1965, Ser. No. 452,511
7 Claims. (Cl. 229-23)



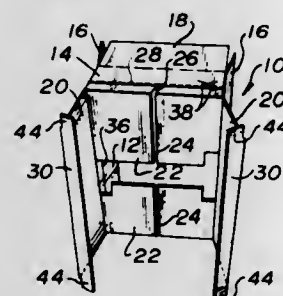
1. A generally cylindrical carton comprising a pair of flat blanks of sheet material having the edges thereof notched to form tabs shaped to be folded at right angles to the plane of the blanks and to have edges in close proximity, the tabs of each blank being folded in sequence so that consecutive tabs on each blank alternate to overlie and underlie tabs on the other blank, and means for securing said tabs together, the adjacent tabs on each blank being provided with fold lines at different distances from the center of the blank, alternate tabs having fold lines equally spaced from the center of the blank, the adjacent tabs on each blank being of different height, measured from the fold lines thereof toward the free edge thereof, alternate tabs being of the same height, the tabs located at the greater distance from the center of the blanks being of greater height, the tabs whose fold lines are closer to the center of the blanks being dimensioned such that the free edges thereof extend in assembly to the inner surface of the opposite blank.

3,314,587

SHIPPING CASE

James V. Johnson, Fremont, Mich., assignor to Gerber Products Company, Fremont, Mich.

Filed Oct. 14, 1965, Ser. No. 495,779
7 Claims. (Cl. 229-27)



1. In a shipping case having a bottom portion including side and end panels, outer and inner bottom flaps hingedly secured to respective side and end panels, and an upturned tuck-in flap on each outer bottom flap respectively along its inner longitudinal edge with said inner bottom flaps having aligned slots therein receiving the tuck-in flaps of said outer bottom flaps and said tuck-in flaps being in substantially spanning relationship to said end panels, the end margins of said tuck-in flaps forming tabs, said tabs being folded over in face-to-face relationship to respective end panels, and means securing said tabs to said end panels.

3,314,588

EGG CARTON

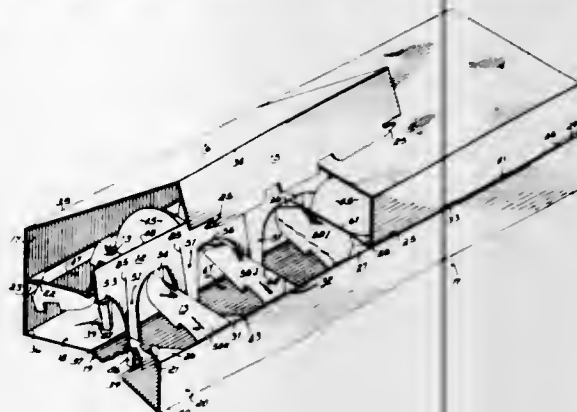
John Rodish, 1720 Highland Pike, Covington, Ky. 41011

Filed Oct. 21, 1965, Ser. No. 499,755

15 Claims. (Cl. 229-29)

1. A one piece egg carton including connected bottom, front and rear side panels, the bottom panel being inclined upwardly from the lower edges of the front and rear walls toward its longitudinal center line, said bottom having a plurality of spaced slots therein, a cover panel connected to the rear panel by a fold line, a vertically

disposed longitudinal partition panel folded upon itself and extending longitudinally medially of the carton between the front and rear walls, a pair of spaced transverse partition panels connected to the vertical partition panel by fold lines, said transverse partition panels extending on opposite sides of the vertical partition panel to the front and rear panels to provide spaced rows of egg receiving pockets, the front one of said transverse panels



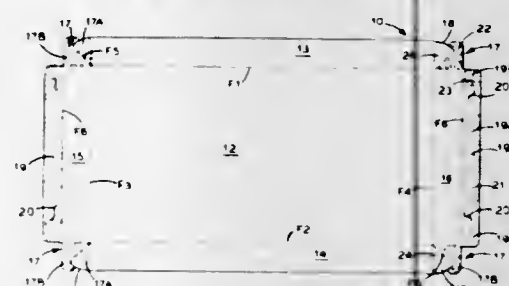
being connected to the front panel by a fold line and the rear one of said transverse partition panels being secured to the rear panel, and a plurality of vertical center posts integral with said vertical partition panel and cut from said transverse partition panels, the lower portions of said center posts extending through said bottom panel slots to secure said carton in erected condition and to provide vertical partitions between the lower portions of eggs placed in transversely opposed pockets.

3,314,589

FOLDING BOX CONSTRUCTION

Sidney Conescu, 188 Beach 147th St., Neponsit, N.Y. 11436

Filed Sept. 27, 1965, Ser. No. 490,263
8 Claims. (Cl. 229-31)



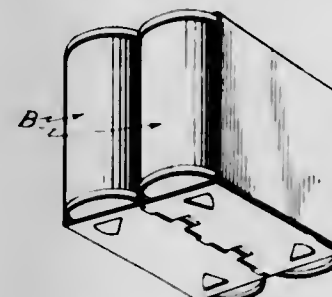
1. In a folding box having a base panel and hingedly connected side and end panels, said side and end panels having their adjacent end portions interconnected by a diagonally folding corner flap which is reversely folded in the set up position of the box to lie against one of said panels connected thereto, said last mentioned panel having a locking flap defined by a foldline extending along the edge of said one panel, said locking flap being reversely folded about said foldline to overlap said one panel, and means for adhesively securing the center portion of said locking flap to said one panel in a pre-folded collapsed position of said box, the improvement wherein said locking flap is provided with folding slits extending beyond the center portion thereof and disposed intermediate the width of said flaps, said flaps having outer edge portions which overlie said corner flap in the pre-folded position of the box, a layer of pressure sensitive adhesive on the surface of said outer edge portion of said locking flap contacting said corner flap in the pre-folded position of said box, and said corner flap having a diagonal portion thereof coated with a layer of pressure sensitive adhesive on the surface thereof adapted to contact with said base panel in the pre-folded collapsed position of said box so that in the set up position of

3,314,590

CAN CARRIERS

William M. Tolaas, St. Paul, Minn., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota

Filed June 30, 1964, Ser. No. 379,098
3 Claims. (Cl. 229-40)



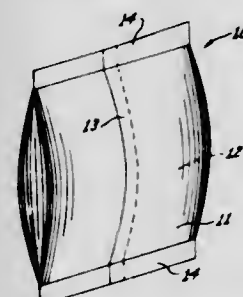
1. A can carrier for containing a group of cans arranged in two side by side rows, the carrier including: an elongated strip of paperboard cut and creased to provide a central top panel to overlie a group of cans, side wall panels hinged to opposite edges of the top panel adapted to extend along opposite sides of said group of cans, bottom panels adapted to overlie the lower ends of one of said row of cans, flanges hinged to the edges of said bottom panels and adapted to extend between the two side rows of cans in face contact, can retaining strips hinged to the edges of said flanges and adapted to be counterfolded to extend between said flanges and said cans to engage against chimes of said cans, locking tongues defined by cut lines in one of said flanges connected to one bottom panel along the line of fold connecting said one flange to said bottom panel, said tongues extending intermediate said line of fold connecting said one flange to said bottom panel and said line of fold connecting one can retaining strip to said one of said flanges, said top panel being substantially twice the width of each said bottom panel, the other of said bottom panels having apertures there-through adjacent the other of said flanges into which said locking tongues engage.

3,314,591

POUCH CONSTRUCTION

William E. Cheeley, Bon Air, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Feb. 16, 1966, Ser. No. 527,864
8 Claims. (Cl. 229-53)



1. A pouch construction formed from a strip of material means having two longitudinal edges thereof dis-

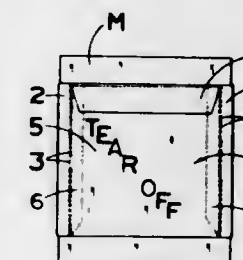
posed in overlapping relation, said strip of material means having a heat sealing layer on the inner side thereof, and a narrow strip of heat sealable material disposed between said overlapping edges and said edges being heat sealed together.

3,314,592

ADVERTISING COMBINATION

Philip A. Streich, 110 Elm St., Cohasset, Mass. 02025

Filed Mar. 22, 1966, Ser. No. 536,435
8 Claims. (Cl. 229-74)



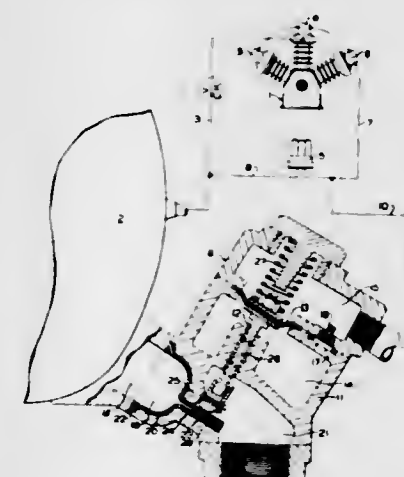
1. The combination with an article of merchandise of an advertising communication removably attached thereto, said advertising communication comprising a sheet of material containing an advertising message and having at least two adhesively coated attaching flaps securing the sheet to the merchandise, said flaps being connected to the sheet by weakened lines whereby the sheet may be detached from the merchandise by tearing along said weakened lines, said single sheet being folded upon itself to form an unsealed envelope having selected adhesively coated areas which may be moistened and sealed to provide an envelope suitable for mailing purposes after tearing the same from the merchandise.

3,314,593

AUTOMATICALLY CONTROLLED DRAIN VALVE

Robert J. Bridgum and William H. Glass, Pittsburgh, Pa., assignors to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania

Filed Dec. 30, 1964, Ser. No. 422,226
4 Claims. (Cl. 230-1)



1. For use in a compressed air system wherein a compressor supplying air under pressure to a reservoir is loaded and unloaded responsively to variations of pressure in the reservoir, an automatic drain valve apparatus comprising, in combination:

(a) a valve member consisting of:

(i) a cup-like portion open at one end to the reservoir for receiving and accumulating condensed moisture from the reservoir, and

- (ii) a flexible neck-like portion fixed to the other end of said cup-like portion and being inherently stressed to a closed condition in which said cup-like portion is cut off from atmosphere,
- (iii) said flexible neck-like portion being yieldingly dilatable by pressure in the reservoir to an open condition for opening said cup-like portion to atmosphere and causing the condensed moisture therein to be drained to atmosphere through said neck-like portion,

(b) resilient biasing means effective for exerting a first force on said neck-like portion effective for maintaining it in said closed condition against the pressure in the reservoir, and

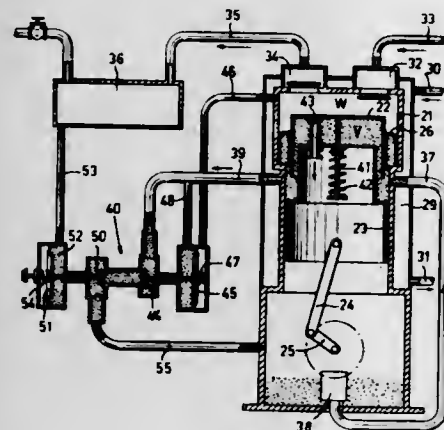
(c) fluid pressure responsive means effective when the compressor is loaded for exerting a second force in opposition to and for overcoming said first force for rendering the pressure in the reservoir effective for dilating said neck-like portion to its said open condition.

3,314,594

APPARATUS FOR COMPRESSING OR EXPANDING A MEDIUM, WHICH APPARATUS INCLUDES A CONTROL DEVICE FOR REGULATING THE AMOUNT OF DEAD SPACE

Johan Adriaan Rietdijk, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 30, 1964, Ser. No. 400,394
Claims priority, application Netherlands, Oct. 25, 1963, 299,785

7 Claims. (Cl. 230-21)

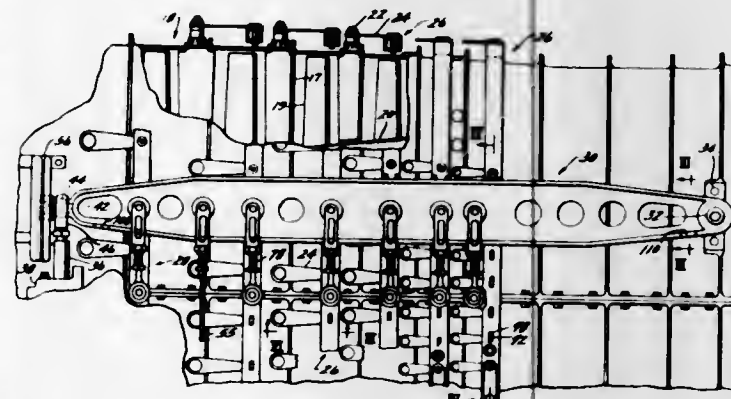


1. An apparatus for compressing or expanding a medium comprising at least one cylinder having a working space therein, a first piston-shaped member adapted to reciprocate in said cylinder whereby the volume of said working space is varied, a control device for said apparatus for regulating the relative volume variations of said working space by controlling the amount of dead space therein, a driving means, a second piston-shaped member coupled to said driving means, a rolling diaphragm, at least the seal between said first piston-shaped member and the adjacent wall of said cylinder being said rolling diaphragm, said rolling diaphragm being supported on at least one side by liquid, said control device being provided to maintain across said rolling diaphragm a pressure difference always in the same direction and substantially constant at least during each stroke, the space between said first and second piston-shaped members which contains a column of liquid being provided with an inlet and an outlet for said liquid by means of which the amount of liquid in said space may be varied, and said column of liquid being in completely unrestricted open communication with the liquid supporting said rolling diaphragm so that the pressure of said liquid supporting said rolling diaphragm and the pressure of the liquid column are equal.

3,314,595 ADJUSTMENT MECHANISM FOR AXIAL FLOW COMPRESSORS

Joseph C. Burge and Richard W. Follmer, Cincinnati, Ohio, assignors to General Electric Company, a corporation of New York

Filed June 9, 1965, Ser. No. 462,688
8 Claims. (Cl. 230-114)



1. For use in combination with an axial flow compressor of the type having a casing, a rotor therein and alternate circumferential rows of stator and rotor blades mounted respectively on the casing and rotor to form a plurality of compressor stages, the stator blades of at least the initial stages being pivotal about axes radial of the rotor axis,

stator adjustment mechanism comprising

a relatively thin lever secured to each stator and extending in a plane normal to the plane of that stator,

an actuator ring for each row of stators,

each actuator ring comprising a pair of arcuate segments of square tubular cross section and connectors, in part tubular, overlapping the segments, spaced outwardly therefrom and secured thereto to compositely form a ring,

at least a portion of the levers of each row extending into overlying relation with the ring segments for that row and in at least one row a portion of the levers extending between the segments and connectors and another portion extending into underlying relation with the connectors,

each of the levers having a pin projecting from the plane thereof,

said segments having openings in the outer walls thereof and aligned circumferential slots in their inner walls,

said connectors having holes in their inner walls and aligned circumferential slots in their outer walls,

inserts formed of polytetrafluoroethylene impregnated with glass fibers, said inserts being generally tubular in form and having a head at one end and being flattened at their opposite end with beads adjacent the terminus of the opposite end, said inserts being telescoped through the holes in said segments and connectors with their flattened ends being received by said slots and with the inserts retained on said segments and connectors by the heads and beads thereon,

the pins on said levers being pivotally received by the inserts to synchronize movement of all of the stators of each stage,

selected and arcuately spaced inserts projecting through said segments, having thrust buttons telescoped over their lower ends,

said compressor casing having formed thereon bearing pads engaged by said thrust buttons to accurately position the actuating rings relative to said compressor casing,

a control lever of I-shaped cross section pivotally mounted at one end on the compressor casing and guided at its opposite end for movement in a flat plane,

an actuator pivotally connected to said opposite end of the control lever for oscillating the control lever, adjustable links connecting the control lever and the actuator rings,

each adjustable link comprising a clevis connected to the control lever,

a tubular intermediate member rotatable in a hole in the bridge of said clevis and having a head resting on the bridge,

said intermediate member being threaded on its outer and inner surfaces, and

a rod end threaded into said tubular member at one end and connected to the actuating ring at its opposite end,

a check nut threaded onto the outer surface of said intermediate member to clamp the intermediate member relative to the clevis,

the lower end of said intermediate member being flattened so that a wrench may be applied thereto and with the check nut loosened, the intermediate member rotated to adjust the extent to which the rod end is threaded therein, thereby adjusting the effective length of the link,

the connection of each adjustable link to the control lever comprising

a ball journaled in the vertical web of the control lever and a pin passing through the arms of the clevis and the ball,

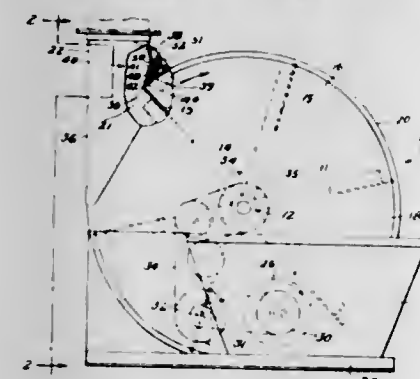
said clevis having inwardly extending bosses to position the adjusting link relative to the ball,

the flange of said control lever being notched on opposite sides of its web and adjacent one end thereof to facilitate assembly of the clevises thereon.

3,314,596

FORAGE BLOWER

Jerome L. Burinsky, Birdsboro, and Bruce D. Schwalm, Leola, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Oct. 19, 1965, Ser. No. 497,920
5 Claims. (Cl. 230-127)



1. In a forage blower, a fan supported for rotation on a horizontal axis, a housing in which said fan rotates, said housing having a front wall and a rear wall on opposite sides of the fan and interconnected by an arcuate wall having a portion at least generally concentric to said axis, a spout mounted on said housing and extending tangentially and vertically relative thereto, said arcuate wall having an upper lateral discharge opening communicating with said spout, means for rotating said fan in such direction that forage introduced into the bottom of said housing through said front wall is swept upwardly and discharged into said spout through said opening, said spout having a vertically extending side which forms an acute angle corner with said housing arcuate wall in a location at an upper end of said discharge opening, said fan having

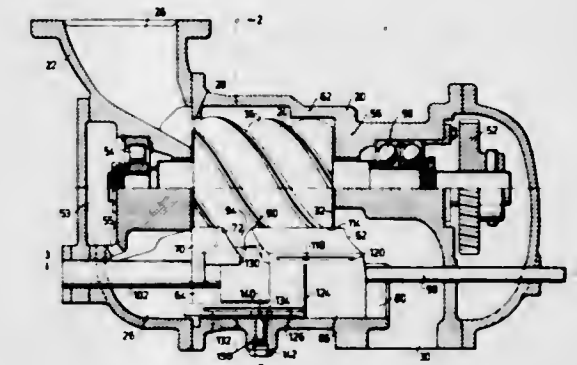
blades which successively pass said opening and close to said corner, a knife mounted on said housing and extending across said corner to prevent forage from catching thereon, said knife being Z-shaped and having a vertically extending middle section, a bottom section projecting in a direction opposite to the rotation of said fan, and a top section projecting in the direction of fan rotation, said knife bottom section having a cutting edge and said edge having a portion at least extending diagonal to said fan axis.

3,314,597

SCREW COMPRESSOR

Lauritz Benedictus Schibbye, Saltsjö-Duvnas, Sweden, assignor to Svenska Rotor Maskiner Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed Mar. 16, 1965, Ser. No. 440,212
Claims priority, application Sweden, Mar. 20, 1964, 3,444/64

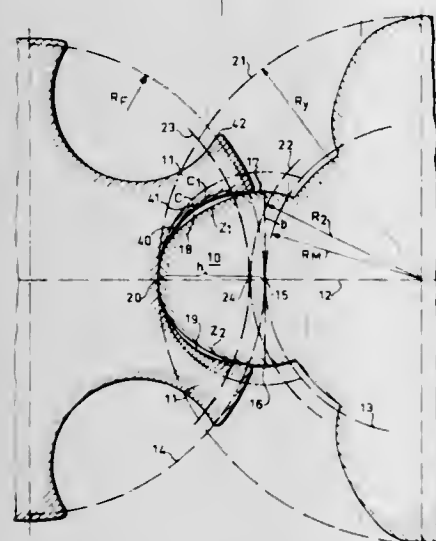
41 Claims. (Cl. 230-138)



1. In screw compressor apparatus of the character described having a casing with a working space disposed therein in the shape of two intersecting cylindrical bores with parallel axes, a high pressure end wall at one end thereof, a low pressure end wall at the other end thereof, intermeshing male and female rotors disposed in said working space in sealing engagement with said casing and the end walls thereof and having helical lands and intervening grooves with a wrap angle of less than 360°, said male rotor having the major portion of its lands and grooves outside the pitch circle thereof and with its flanks substantially convex, and said female rotor having the major portion of its lands and grooves inside the pitch circle thereof and with its flanks substantially concave, a low pressure port adjacent said low pressure end wall, an axial high pressure port at the end of said working space opposite from said low pressure port and with said ports being located substantially on opposite sides of a plane through the axes of said bores, low pressure channels in said casing in flow communication with said low pressure port and high pressure channels in said casing in flow communication with said high pressure port, the combination which comprises an axially extending recess disposed in said casing and extending from said high pressure end wall to a fixed end edge of said recess and being in flow communication with said high pressure channels, said recess and the wall of said working space intersecting along two straight edges parallel with the axes of said bores and on the same side of said plane through the axes of said bores, with at least one of said straight edges being located in the casing wall portion of the bore surrounding said female rotor, a valve axially movably disposed in said recess and in sealing engagement therewith, said valve having a profile on the surface thereof facing said working space corresponding thereto, and with a low pressure control edge parallel with and facing the end edge of the said recess, and with a high pressure control edge facing the high pressure channels, the portion of said recess defined by said straight edges, by the end edge of said recess, and

by said low pressure control edge forming a bleed port providing flow communication from said working space to the low pressure end of said casing with the portion of the recess defined by the said straight edges, the high pressure end wall and the high pressure control edge forming a radial high pressure port, said valve being adjustable between a first position in which the bleed port is closed, and a second position in which at least a portion of said high pressure control edge extends outside the high pressure end wall into said high pressure channel, and an axial high pressure port disposed in said high pressure end wall, said axial high pressure port being limited by two outer edge portions, each extending generally radially from the wall of one bore to the bottom circle of the grooves of the corresponding rotor, and by an intermediate edge portion, at least the major section of each of said outer edge portions being brought into register with the trailing flank of the trailing land of a rotor groove in communication with the high pressure channel after the trailing edge of the corresponding land tip has been in register with the axially outermost point of the high pressure control edge of said valve when the valve is in such a position that said axially outermost point is located in the plane of the high pressure end wall of said working space.

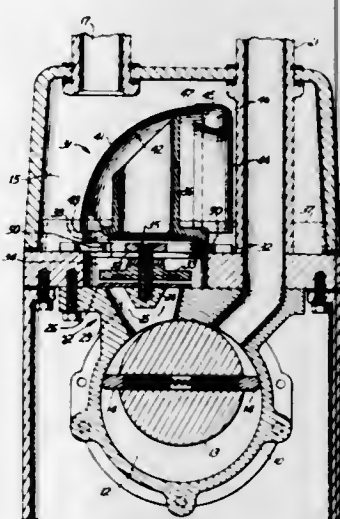
3,314,598
SCREW ROTOR MACHINE
Alf Lysholm, Karlaplan 11, Stockholm, Sweden
Filed May 3, 1966, Ser. No. 547,383
Claims priority, application Sweden, May 10, 1965,
6,077/65
4 Claims. (Cl. 230—143)



1. A screw rotor machine for compressible fluids comprising a male rotor having substantially symmetrical lobes and cooperating with a female rotor, the male rotor having at least four lobes and the female rotor having at least six lobes, characterized in that the profile of the male lobes has a ratio b/h less than one, where b is the length of the tangent to the pitch circle of the male rotor between the symmetry axis (x -axis) of the respective lobe and either of the profile flanks and h is the profile height of the lobes on the respective symmetry axis from the pitch circle of the male rotor, and in that the profiles of cooperating rotors are formed by selecting at least one outwardly convex curve joining the top circle of the male rotor on each side of the x -axis of the respective lobe and satisfying the function $y_M = f(x_M)$ wherein x_M is the ordinate respecting the symmetry axis (x -axis) of a lobe of said male rotor in a two-dimensional rectangular coordinate system wherein the x -axis extends radially along a radius of said male rotor and where y_M is the abscissa respecting the y -axis of said two-dimensional

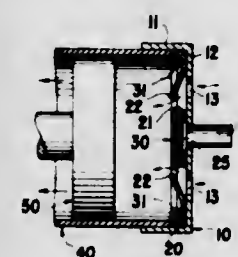
rectangular coordinate system of the male rotor having an origin at the geometric center of the male rotor, and in that said curve upon rotation of the rotors has successively generated the groove profile of the female rotor to form a curve satisfying the function $y_F = f(x_F)$ throughout all but two short opposite terminal regions thereof where said groove profile curve of each respective female rotor groove connects to the outer periphery of two adjoining female rotor lobes, x_F being the ordinate respecting the symmetry axis (x -axis) of said respective female rotor groove in a two-dimensional rectangular coordinate system wherein the x -axis extends radially along a radius of said female rotor and y_M being the abscissa respecting the y -axis of said two-dimensional rectangular coordinate system of the female rotor having an origin at the geometric center of the female rotor, each terminal region connection of the respective female rotor groove profile curve to the outer periphery or circumference of the female rotor being by means of a selected outwardly convex curve satisfying the function $y_F = g(x_F)$ each respective leading one of which curved terminal region connection has in turn generated the rest portion of the respective male lobe flank.

3,314,599
VACUUM PUMP APPARATUS
Willy Rollinger, Porz-Westhoven, and Helmut Bode, Bergisch-Gladbach, Germany, assignors to Leybold Holding AG, Zug, Switzerland, a Swiss company
Filed June 22, 1965, Ser. No. 466,520
Claims priority application Germany, June 25, 1964,
L 48,122
10 Claims. (Cl. 230—153)



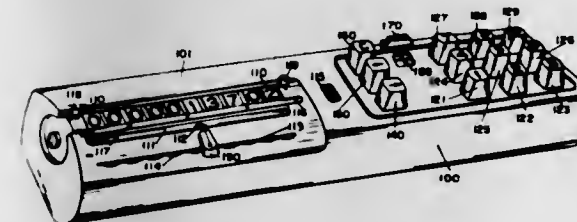
1. A gas pump apparatus comprising:
a pumping chamber and an exhaust channel opening from said chamber; an exhaust valve controlling the flow of gas through said exhaust channel; means for containing a pool of sealing liquid overlying said exhaust valve, whereby gas flowing through said exhaust valve passes through the sealing liquid; a hoodlike liquid separating member positioned adjacent to said exhaust channel to intercept and deflect the gas flowing through said exhaust valve; said hoodlike member defining a bottom opening disposed to lie beneath the surface of the sealing liquid, and a side opening formed by an edge lying in a plane transverse to said bottom opening; and said side opening edge having a re-entrant portion defining a liquid collection channel having an elongated opening adapted to receive a film of sealing fluid intercepted by and migrating along said hoodlike separating member.

3,314,600
VALVE APPARATUS
Harold F. Hadley, Toledo, Ohio, assignor of one-half to
Frank M. Cobourn, Toledo, Ohio
Filed Nov. 21, 1963, Ser. No. 325,306
3 Claims. (Cl. 230—172)



1. Pump apparatus having combination intake and check valve means comprising a cylinder having a head formed at one end thereof; a piston disposed in said cylinder; said head having inlet and exhaust port means formed therein; a flat valve member disposed against said head and having inlet and exhaust apertures formed therein; said valve member having flexible inlet flapper means in said inlet aperture means registering with and disposed to cover said inlet port means formed in said head; and a flat plate member arranged against the side of said valve member opposite said head; said plate member having inlet aperture and exhaust aperture means formed therein; said inlet aperture means of said plate member registering with and allowing passage through of said inlet flapper means; said valve member having flexible exhaust flapper means in said exhaust aperture means registering with and disposed to cover said exhaust port means formed in said plate member; said exhaust flapper means being formed to have a thickness less than that of said flat valve member allowing limited travel of said flapper means within said exhaust aperture means before abutting against said head; said exhaust port means of said head communicating with said exhaust aperture means formed in said valve member.

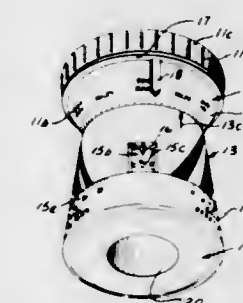
3,314,601
CALCULATING MACHINE
Lear Voo, 35—20 Leverich St.,
Jackson Heights, N.Y. 11372
Filed Jan. 11, 1965, Ser. No. 424,675
22 Claims. (Cl. 235—60)



1. A calculating machine comprising in combination:
a register having a plurality of ordinal arranged numeral wheels mounted on a rotatably-mounted hollow shaft, each of said wheels having a peripheral flange with a plurality of indicia of a sequence of digits including zero inscribed thereon; a plurality of couplers mounted on a rotatably-mounted and axially-movable actuating axle and being operatively connected to said shaft, each of said couplers being selectively movable into engagement with one of said wheels operatively associated therewith, said

axle being disposed within said hollow shaft coaxially therewith and having a plurality of spaced-apart shoulders formed thereon for selectively engaging and moving one of said couplers into engagement with its associated said wheel thereby coupling said wheel with said shaft for rotation therewith upon an axial movement of said axle to a predetermined position; and at said predetermined position of said axle, another of its said shoulders being moved into driving engagement with a second one of said couplers to rotate said shaft upon rotation of said axle; said coupler in engagement with its associated said wheel being moved out of engagement therewith by one of said shoulders axially abutting said coupler engaged with its associated said wheel on the opposite side from said shoulder initially engaging said coupler upon subsequent returning of said axle to its normal position thereby uncoupling said wheel with said shaft; means for returning and axle to its normal position; a set of slidably-mounted reciprocally movable and selectively-operable keys, each of said keys having means to restore itself to its normal position and having thereon an indicium of one of a sequence of digits and being adapted to operate means for moving said axle axially to said predetermined position, means for rotating said axle one of a plurality of predetermined differing displacements corresponding to the digital indicium on an operated said key, and means for rotating said axle in a predetermined direction a predetermined increment to position itself for a subsequent actuation of the other of said couplers to couple a succeeding said wheel with said shaft.

3,314,602
GAS MILEAGE CALCULATOR
Theodor Finkelstein, 23140 Erwin St.,
Woodland Hills, Calif. 91364
Filed Aug. 23, 1965, Ser. No. 481,465
9 Claims. (Cl. 235—61)

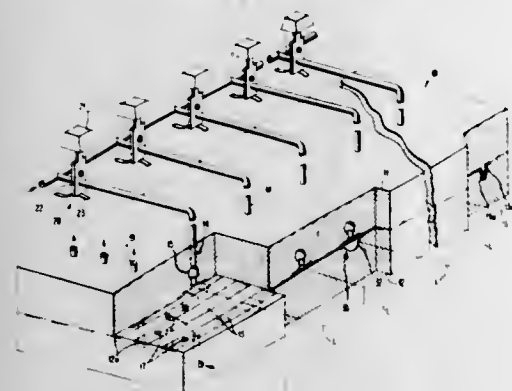


1. A device for calculating the fuel efficiency of a vehicle having a fuel tank, comprising
a first scale member having a linear scale marked thereon representing distance,
a second scale member having a logarithmic scale marked thereon representing the amount of fuel required to fill the vehicle fuel tank,
a conversion grid member having a series of substantially straight edge and varying width channels marked thereon for converting the readings on said first scale member from linear to logarithmic form, said channels being alternately of a dark and light color,
said first and second scale members being mounted independently rotatable relative to said conversion grid member,
one of said conversion grid member and said second scale member having a logarithmic scale marked thereon representing the fuel efficiency, and
an indexing pointer member movably mounted on said first scale member, said pointer member being mounted to frictionally hold to said first member and rotate with it when said first member is rotated.

3,314,603

FLUID ENCODER AND ACTUATOR

John E. Jones and James A. Machmer, Lexington, Ky., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Nov. 2, 1965, Ser. No. 506,027
7 Claims. (Cl. 235—201)



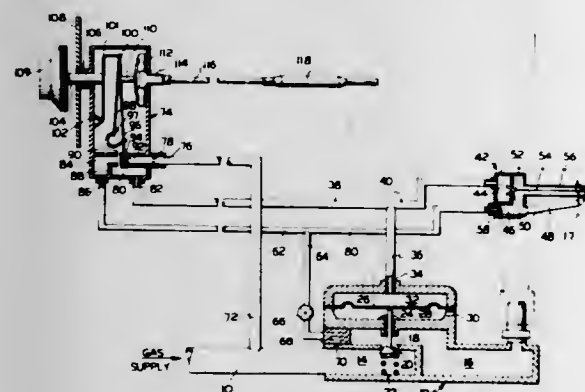
1. An encoder comprising: a plurality of elongated flexible tapes, means slidably supporting said tapes in a mutual longitudinally coextensive relationship, a plurality of data entry locations spaced along the length of said tapes, each of said tapes having selectively activatable actuators positioned along its length at preselected data entry locations for causing flexing thereof by a predetermined amount when active, data input means for activating all actuators at a single data entry location cooperatively together, and code output means operatively associated with each of said tapes for generating one of two possible output signals in response to flexure or nonflexure of its associated tape by said predetermined amount.

3,314,604

DIAPHRAGM VALVE TYPE OVEN CONTROL SYSTEM

Charles D. Branson, Greensburg, Pa., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Dec. 30, 1964, Ser. No. 422,136
8 Claims. (Cl. 236—80)



1. In a fuel flow control system, the combination comprising: burner apparatus including a main burner and a pilot burner in igniting proximity thereto, a casing having inlet means adapted to be connected to a fuel supply and outlet means connected to said main burner, diaphragm operated valve means controlling a main fuel flow between said inlet and outlet means, bypass flow means between said inlet means and said pilot burner to establish a standby flame thereat, bleed flow means for effecting operation of said valve means,

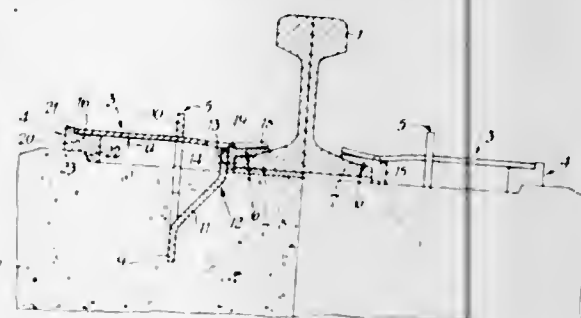
safety pilot means responsive to extinguishment of the flame at said pilot burner for venting said bleed flow means, thermostatically operated snap-acting control means controlling said bleed flow means for operating said valve means between on and off positions, and supplemental flow means between said bleed flow means and said bypass flow means, and being operative when said valve means is moved from its off position to its on position whereby fuel in said bleed flow means supplements fuel in said bypass flow means to establish an igniting flame at said pilot burner.

3,314,605

RAIL FASTENINGS

John Murray Waters, Chislehurst, Kent, England, assignor to The Tempered Spring Company Limited, Sheffield, England, a company of Great Britain and Northern Ireland

Filed Feb. 26, 1965, Ser. No. 435,516
Claims priority, application Great Britain, Mar. 5, 1964, 9,347/64
6 Claims. (Cl. 238—321)



1. A rail fastening arrangement for securing a footed rail to a cast concrete sleeper comprising a clip support positioned on each side of said rail, each of said clip supports comprising a divided leg portion cast in said sleeper, said divided leg portion having a reaction member extending substantially vertically above the surface of said sleeper and a leg member inclined from said reaction member in the direction of the rail and terminating in a cross bar extending above said sleeper and adapted to restrain transverse movement of said rail, a back support positioned on each side of said rail and outwardly of the respective clip support, and a clip positioned on each side of said rail, each of said clips comprising a spring plate bearing on the respective back support and rail foot and tensioned by said reaction member of said clip support.

3,314,606

IRRIGATION SYSTEM

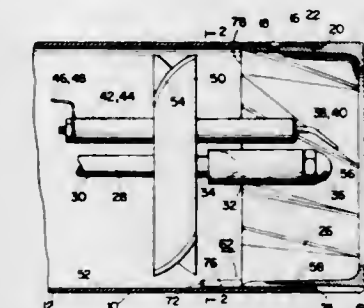
Frederick Teigeler, Fremont, Nebr. 68015, and Ross H. Rasmussen, Hooper, Nebr. 68031
Continuation of application Ser. No. 105,649, Apr. 26, 1961. This application Feb. 17, 1964, Ser. No. 346,377
3 Claims. (Cl. 239—1)

1. The method of operating an irrigation system having the following apparatus: in an irrigation system, a lateral, a pair of sub-laterals disposed on opposite sides of a same point on said lateral and disposed extending transversely to said lateral, means removably connecting said pair of sub-laterals to said lateral at said point, each of said sub-laterals comprising a plurality of sections, means removably connecting said sections of each sub-lateral together respectively, and sprinkler means removably attached to the outer end of each sub-lateral, the total sprinkling

3,314,607

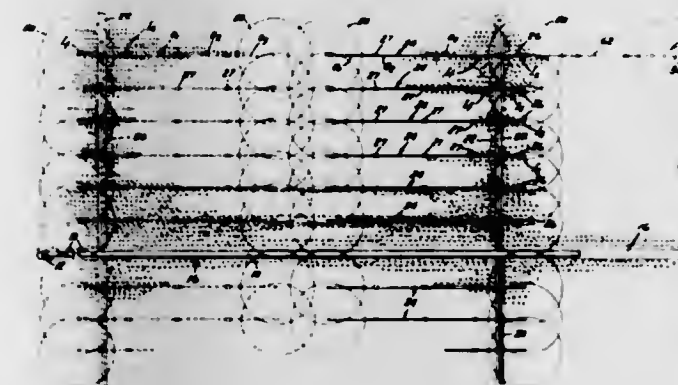
OIL DRIP SUMP AND VAPORIZER FOR OIL BURNERS

Charles V. Copeland, Fort Wayne, Ind., assignor to Wayne Home Equipment Co., Inc., Fort Wayne, Ind., a corporation of Indiana
Filed July 15, 1965, Ser. No. 472,193
4 Claims. (Cl. 239—121)



means being such that the major portion of all sprinkling done by the system is done from the outer ends of the sub-laterals, said system having substantially no sprinkling means operating from substantially the position of the lateral itself, the method comprising: taking endmost sub-lateral sections on one side of said lateral and arranged to receive water from said point on said lateral disconnecting them and moving them one by one in successive stages to the other side of said lateral and there connecting them to endmost sections on the said other side of said lateral into an arrangement for receiving water from that same said point on said lateral whereby it is possible to have irrigation efficiently flowing from both of said sprinkling means simultaneously by use of two sprinkling means per each said point on said lateral, and the method in its sprinkling aspects is as follows: the method of irrigating by circular area which comprises sprinkling at a first time interval in a first circular area spaced a given distance from and on one side of a straight reference line and also simultaneously sprinkling in a second circular area at a much greater distance from and on the opposite side of said reference line, then sprinkling in a second successive time interval in a third circular area disposed on said other side of said reference line and disposed at a shorter distance from said reference line than said second circular area and simultaneously sprinkling in a fourth circular

1. In a gun-type oil burner including a source of combustion air, a cylindrical blast tube adapted to extend into a combustion chamber and having its rear end communicating with said air source, an air cone secured to the front end of said blast tube, a source of oil under pressure, an oil line extending axially through said blast tube and having its rear end connected to said oil source, and a nozzle within said blast tube adjacent said front end thereof and connected to the front end of said oil line, said air cone having an oil drainage opening formed in the bottom thereof for draining oil into said combustion chamber which may drip from said nozzle following shut-down of said oil burner; the combination with said blast tube and air cone of an oil sump and vaporizer member formed of relatively thin high heat-conductive metal, said member having front and rear ends and opposite side edges, said member being arcuate between said side edges and conforming to the inner surface of said blast tube, said member being positioned in said blast tube engaging the inner surface of the bottom portion thereof with its front end adjacent the front end of said blast tube, said member extending rearwardly from said air cone toward said rear end of said blast tube, said member having a transverse wall formed at said rear end extending between said side edges thereby forming a dam for collecting and vaporizing said oil drip which may drain rearwardly in said blast tube.



area disposed on said one side of said reference line and spaced farther from said reference line than the first circular area, the distance between the second and third areas being equal to the distance between the first and fourth areas, and progressively sprinkling in at least one later successive time interval at two circular areas on said later interval with sprinkling done on said one side of said line being progressively farther from said line and that done on the other side of said line being progressively closer to said line by successive distances equal respectively to the distances said areas on the other side of said line are farther from said line, sprinkling being done at all times during said time intervals on at least one side of said reference line whereby sprinkling during said time intervals is continuously in operation, and whereby during each said time interval the position of the respective circular area on a given side of said reference line is a greater or lesser distance from said reference line than it was during the previous time interval, said reference line being along said lateral, the sprinkling being done substantially in circular areas respectively, which latter are, respectively, the circular areas above mentioned, during such movements said sections being moved endwise of themselves so that they can be moved lengthwise of rows of tall crop in the open spaces between the rows and need not be moved crosswise of themselves and crosswise of rows of tall crop.

3,314,608

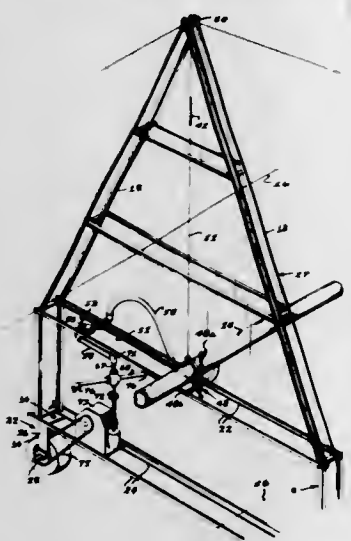
SUSPENSION SYSTEM ACTUATED SELF-PROPELLED FLUID DISCHARGE DEVICE

Charles G. Curtis, El Paso County, Colo. (Quarters 6602 1, Air Force Academy, Colo. 80840), and Paul C. Jennings, Los Angeles County, Calif.; said Jennings assignor of sixty percent to said Curtis

Filed Feb. 8, 1965, Ser. No. 430,857
21 Claims. (Cl. 239—177)

1. In self propelled overhead irrigation apparatus which includes a plurality of spaced movable support members arranged in a line, a water supply conduit carried by the supports and having means connected to one end of said conduit for pivotal connection to a water source, the improvement comprising: a pendulum member attached to each of said supports and connected at its free end to the supply conduit to permit free movement of the conduit with respect to said supports; and drive means operatively connected to each of at least two supports.
2. A sprinkling and fluid discharge device comprising: a distributor conduit having a plurality of spaced fluid discharge means; a plurality of movable supporting means; a plurality of flexible hanger means suspending said conduit at spaced intervals from a fixed point on

each of said supporting means whereby the conduit is free to move relative to the supporting means; drive means operatively attached to each of the support means for moving the same; and

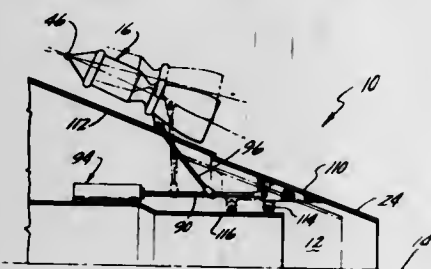


means responsive to the said movement of the conduit relative to the support means and coupled to the drive means for actuating said drive means.

3,314,609 VECTORABLE PLUG CLUSTER NOZZLE ROCKET

John J. Horgan, South Glastonbury, Conn., and David Migdal, Old Bethpage, N.Y., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Original application Sept. 7, 1962, Ser. No. 222,086, now Patent No. 3,279,183, dated Oct. 18, 1966. Divided and this application Dec. 28, 1965, Ser. No. 516,926 7 Claims. (Cl. 239-265.25)



1. A plug cluster nozzle rocket including a central plug positioned concentrically about an axis and having a forward-end and an after-end and being of circular cross section and shaped to converge toward said axis from its forward to its after-end to present an exhaust gas expansion surface, a plurality of rocket engines each discharging exhaust gases through a nozzle and located circumferentially about said forward-end of said central plug and positioned to discharge their exhaust gases along said expansion surface of said plug, and means to produce rocket vectoring forces including means to cause at least a portion of said central plug to move with respect to said axis to thereby vary the force of exhaust gas acting against said expansion surface.

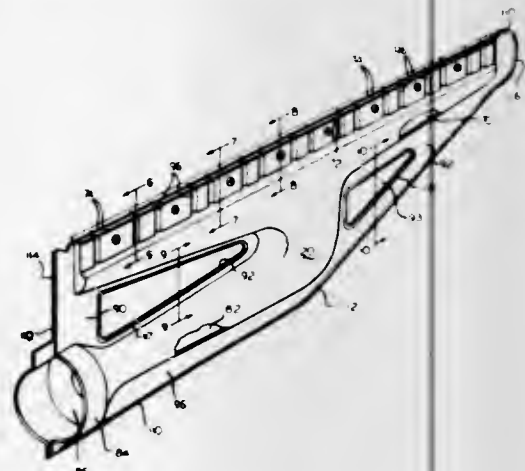
3,314,610 SHEET METAL BURNER AND RACK ASSEMBLY FOR GAS FIRED HOT AIR FURNACES

George W. Reznor, Mercer, Pa., assignor to International Telephone and Telegraph Corporation, a corporation of Maryland

Filed Mar. 3, 1964, Ser. No. 348,931
9 Claims. (Cl. 239-416.5)

1. A sheet metal gas burner for producing an elongated substantially continuous horizontally elongated flame jet adapted to be positioned directly beneath the lower open

end of a vertically disposed open-ended and similarly elongated heat exchange tube for heating the tube internally, said burner comprising in combination: two horizontally elongated counterpart sheet metal half-sections of similar peripheral configuration disposed in face-to-face relationship along a common meeting plane, said half sections being formed with mating bulges in the medial regions thereof which, in combination with each other, establish a horizontally elongated internal distribution chamber, said half-sections each being provided with linear straight horizontally extending upper edges which lie in a common horizontal plane, the upper edge regions of said half-sections being offset laterally outwardly from the meeting plane of said half-sections in opposite directions, a flat sheet metal divider strip disposed between said laterally offset upper edge regions, means for securing said burner half sections together comprising a major portion of the peripheral edge of one of said burner half-sections overhanging and being beaded around the adjacent portion of the peripheral edge of the other burner half-section in interlocking relationship, one of said laterally offset portions being formed with a series of clamping tongues which project through said divider strip and the other laterally offset portion and serve to clamp the two laterally offset portions and divider strip rigidly together, said offset upper edge regions being further formed with a series of inwardly struck protuberances which bear inwardly against the divider strip and serve to center the



latter between the offset upper edge regions in spaced relationship with respect thereto, thus establishing a longitudinally extending row of closely spaced tubular burner nozzles which communicate at their lower ends with said distribution chamber and terminate in open burner ports along the upper edges of the half-sections, and which ports and nozzles are divided by said divider strip, said mating bulges further establishing an initial gas and air mixing chamber in communication with said distribution chamber, said gas and air mixing chamber terminating in a manifold orifice adapted for register with a gas supply distribution nipple.

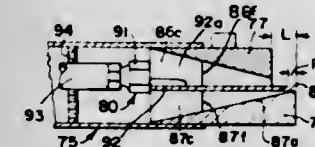
6. A burner rack assembly adapted for insertion into a furnace casing and, when so inserted, to underlie a series of heat-exchange tubes for supplying heat internally to the latter, said assembly comprising an open rectangular rack frame including vertical front, back and side panels connected together at adjacent ends, said front panel being formed with a horizontal row of spaced openings therethrough, said openings surrounding rearwardly extending cylindrical pilot bosses, said back panel being formed with a series of spaced vertically disposed slots in longitudinally opposed relationship with respect to said openings, a series of elongated gas burners extending between and supported on said front and back panels, each burner comprising a hollow tubular body defining an upper longitudinally extending distribution chamber substantially spanning the distance between said front and back panels, a lower longitudinally extending gas

and air mixing chamber underlying the front portion of said distribution chamber, and a vertical passage establishing communication between the rear end of said mixing chamber and the medial region of said distribution chamber, the forward end of said mixing chamber being formed with a cylindrical flange defining a manifold orifice for the introduction of gas and induced air into the mixing chamber, said cylindrical flange being telescopically received over one of said pilot bosses in supported relationship, the rear end of said burner body being formed with a thin fin-like edge region projecting into one of said slots in the back panel in supported relationship, said hollow tubular body further defining a series of closely and longitudinally spaced tubular burner nozzles which communicate at their lower ends with said distribution chamber and which terminate at their upper ends in upwardly opening burner ports, said burner ports lying in a common horizontal plane and the series of nozzles and their associated ports substantially bridging the distance between said front and back panels, a horizontally disposed tray-like secondary air baffle common to all of the burners and spanning the distance between said front and back panels, said baffle being formed with a series of longitudinally extending slots therein through which the tubular burner nozzles project upwardly, and from the side edges of which the nozzles are spaced, said baffle being disposed slightly below the level of said burner ports, and a gas supply manifold positioned exteriorly of said front panel and fixedly supported on said rack frame, said manifold including a series of supply nipples projecting into said manifold orifices through said pilot bosses.

3,314,611 SPRAY NOZZLE

James S. McCartney, St. Paul, and Richard V. De Leo, Hopkins, Minn., assignors, by mesne assignments, to Rosemount Engineering Company, a corporation of Minnesota

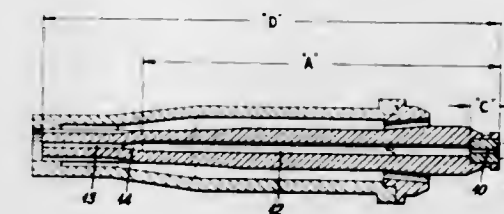
Original application Sept. 13, 1962, Ser. No. 223,428, now Patent No. 3,237,870, dated Mar. 1, 1966. Divided and this application Feb. 25, 1966, Ser. No. 529,990 6 Claims. (Cl. 239-424)



1. A spray nozzle comprising a longitudinally extending nozzle body having a main chamber and a first longitudinally extending passage placing the nozzle body main chamber in fluid communication with the atmosphere, and a first discharge tube sub-assembly including a discharge tube mounting member having a main chamber and extendable into the nozzle body main chamber and an elongated tube having a discharge end joined to said mounting member to open into the mounting member main chamber, extended into said first passage and being elongated in the direction of elongation of said first passage, said discharge tube and mounting member providing a first fluid passageway, and said sub-assembly and nozzle body cooperatively providing a second fluid passageway that discharges to the atmosphere through said first passage for transporting the fluid flowing through said first passageway, said nozzle body having a second passage that opens to the nozzle body main chamber and is located adjacent to first passage, said second passage extending in the same direction the first passage and opening to the atmosphere forwardly of the first passage.

3,314,612 CONSTANT PRESSURE SERIES OF OXY-FUEL CUTTING NOZZLES

Clifford C. Anthes, Union, Edward Melnick, Summit, and John Villorosi, Lincoln Park, N.J., assignors to Union Carbide Corporation, a corporation of New York
Filed Oct. 21, 1964, Ser. No. 407,270
2 Claims. (Cl. 239-589)

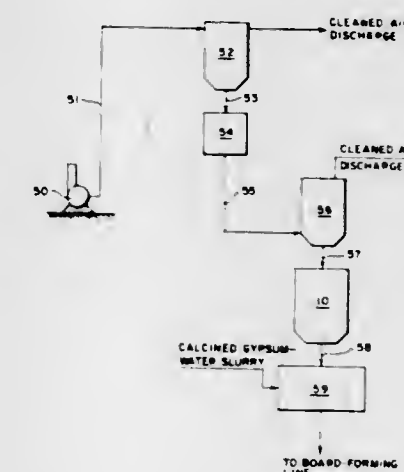


2. A blowpipe nozzle comprising a cylindrical non-diverging discharge passage, an intermediate passage having a converging portion leading into said discharge passage, and a metering orifice of smaller diameter than said intermediate passage connecting the nozzle inlet with said intermediate passage, said metering orifice being sized to deliver a flow of between 45,000 to 52,000 ft.³/hr. per square inch of discharge passage cross section to said intermediate passage, at a given supply pressure.

3,314,613 METHOD OF GRINDING AND INTRODUCING A SET-CONTROL AGENT INTO A GYPSUM SLURRY

Robert W. Gall, Long Beach, Calif., assignor to Kaiser Gypsum Company, Inc., Oakland, Calif., a corporation of Washington

Filed Feb. 17, 1964, Ser. No. 345,364
5 Claims. (Cl. 241-19)

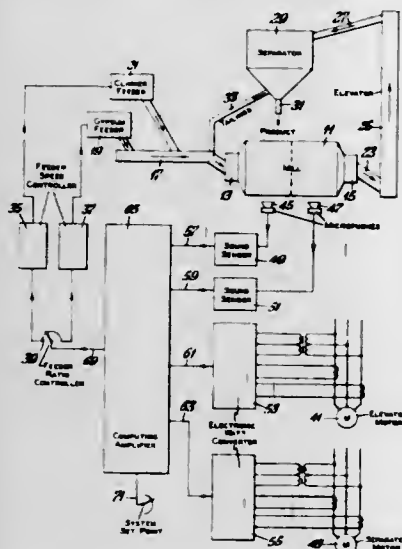


1. In a method of introducing a set-control agent into calcined gypsum-water slurry in a process wherein calcined gypsum-water slurry is cast into shape and the shape then hardened and dried, the steps comprising:

- a comminuting preformed paper-covered gypsum core board to form comminuted particles thereof,
- suspending said particles in a gas,
- conveying said suspension to a first separator zone,
- there separating said particles from said gas and recovering said particles,
- finely grinding said recovered particles to form finely divided set-control agent for calcined gypsum-water slurry,
- conveying said finely divided agent to a holding and feeding zone, and
- agitating in said zone to maintain said finely divided set-control agent in freely mobile state.

3,314,614

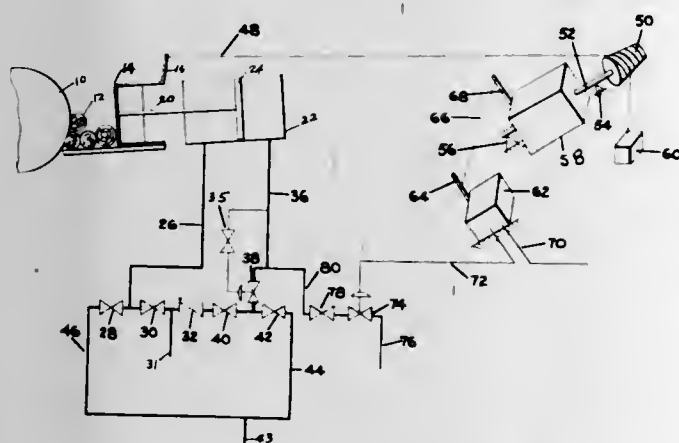
ANALOG COMPUTER GRINDING CONTROL
Stewart W. Daniel and Jorgen O. Bernt, Peterborough, Ontario, Canada, assignors to Milltronics Limited, Peterborough, Ontario, Canada, a company of Canada
Filed Apr. 15, 1964, Ser. No. 360,022
3 Claims. (Cl. 241—30)



1. A method for grinding mill control which method comprises monitoring at least one sound variable incident to the grinding process, which sound variable is representative of a particular condition of material in process; developing a first signal representative of the instantaneous value of the sound variable monitored; monitoring at least one power consumption variable, which power consumption variable is representative of a condition of the material in process; developing a second signal representative of the instantaneous value of the power variable monitored; combining said first signal and said second signal in a computer; developing in said computer a control signal proportional to and representative of the combined first and second signals and applying said control signal to effect changes in a process parameter which bears on the values of the signals monitored.

3,314,615

PULPWOOD GRINDER CONTROL
John L. Hill, Fort Frances, Ontario, Canada, assignor to Boise Cascade Corporation, Boise, Idaho, a corporation of Delaware.
Filed Apr. 21, 1964, Ser. No. 361,344
3 Claims. (Cl. 241—34)

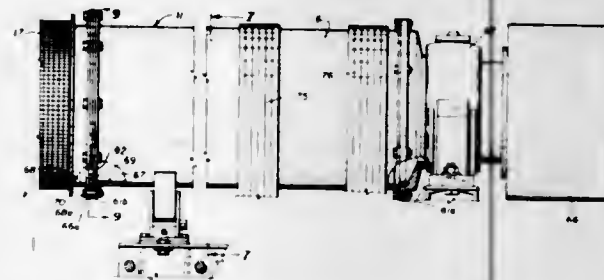


1. In a wood grinding apparatus including a rotating grinding stone and a pocket for receiving the wood to be ground, the invention which comprises a pressure foot for pressing the wood into contact with the grinding stone; piston and cylinder motor means for actuating said pressure foot;

a low pressure fluid source;
a high pressure fluid source;
alternately operable first and second means for connecting said low pressure and high pressure fluid sources, respectively, with said motor means to actuate said pressure foot in the wood pressing direction, said second means including a control valve;
controller means for operating said control valve to establish a predetermined rate of movement of said pressure foot in the wood pressing direction;
and controller operating means responsive to a deviation in the rate of movement of said pressure foot from said predetermined value for operating said controller means and said control valve to return the rate of movement of said pressure foot to said predetermined value.

3,314,616

INTEGRAL ORE MILLING ASSEMBLY AND METHOD OF CONCENTRATION
Arthur C. Daman, Denver, Colo., assignor to Denver Equipment Company, Denver, Colo., a corporation of Colorado
Filed Nov. 8, 1963, Ser. No. 312,422
3 Claims. (Cl. 241—70)

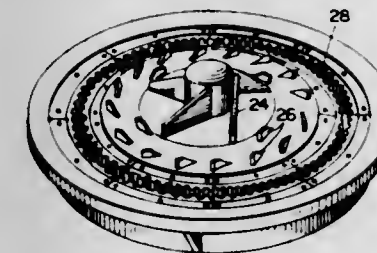


1. A mill assembly for wet grinding an ore pulp comprising a base having a trunnion support means at one end of the mill and a pair of spaced roller support means at its opposite end, said mill including interconnected end sections and an intermediate section formed as an elongated cylindrical shell flanged at both the intake and discharge ends, one said end section comprising a head member at the intake end of the shell having a flanged trunnion portion abutting a flanged end of the shell and forming a feed inlet to the shell and the other said end section having a peripheral screen portion at the discharge end of the shell over which the mill discharge passes and having a flanged end of a diameter substantially the same as the shell and abutting a flanged end of the shell, said shell supported for rotation by said roller means adjacent the screen member, and said head member supported for rotation by its trunnion portion for rotation of the shell about a substantially horizontal axis, said pair of roller means adjustable in a horizontal plane below the shell toward and away from the center of the shell by a common threaded member, said shell having a flexible liner bonded to its inner surface, an apertured partition member at the discharge end of the shell having a central opening of greater diameter than grinding media introduced therethrough and a plurality of openings of smaller diameter than the grinding media disposed in a circumferential pattern to pass ground ore through the discharge end of the shell and retain the grinding media in the shell, an end portion of the shell liner and said partition member being clampingly secured between the abutting flanges of the shell and the discharge end section, fastening means for detachably interconnecting said abutting flanged portions so as to permit removal of the shell and associated liner for replacement or repair thereof, drive means for rotating the mill including a motor and gear reducer, the gear reducer having a double end shaft output, at least one belt extending from each shaft of the gear reducer around

the shell adjacent the trunnion end of the mill, and a support for the motor and gear reducer having one end pivotally attached to the base to pivot under the weight of the motor and gear reducer to adjust the elevation of the shafts to vary the tension in the belts.

3,314,617

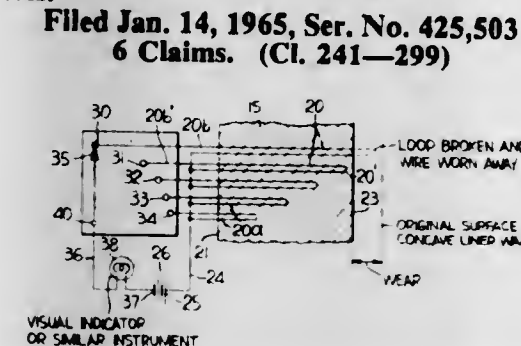
PULPER DEFIBERING MEANS
Richard J. Sargood, Hoosick Falls, N.Y., assignor to The Noble & Wood Machine Co., Hoosick Falls, N.Y., a corporation of New York
Filed Jan. 29, 1964, Ser. No. 340,864
2 Claims. (Cl. 241—260)



2. In a pulper of the type having a tank with a bottom wall stator, vertical stator walls forming a central circular opening in said bottom wall stator, a rotor mounted for rotation within said central opening, blades mounted on said rotor for pulping the stock, the periphery of said rotor and said vertical stator walls defining between them an annular outlet orifice through which the pulped stock is withdrawn, the improvement therein comprising; a plurality of cooperating opposed defibering teeth segments having substantially vertical ribs formed therein and walls forming horizontal mounting holes; a plurality of segment holders on which said teeth segments are detachably mounted, said segment holders mounted on the periphery of said rotor and the inner circumference of said stator, said teeth segment ribs and mounting hole walls symmetrically formed and located with relation to a horizontal plane bisecting each said teeth segment whereby after extensive use has worn said teeth segment ribs, said teeth segments can be detached from said segment holders, revolved 180° about an axis normal to the segment teeth face, and reattached to said segment holders to provide for a subsequent period of teeth segment use.

3,314,618

CRUSHING CHAMBER WEAR INDICATOR
Daniel McDonald, Vaudreuil, Quebec, Canada, assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Jan. 14, 1965, Ser. No. 425,503
6 Claims. (Cl. 241—299)

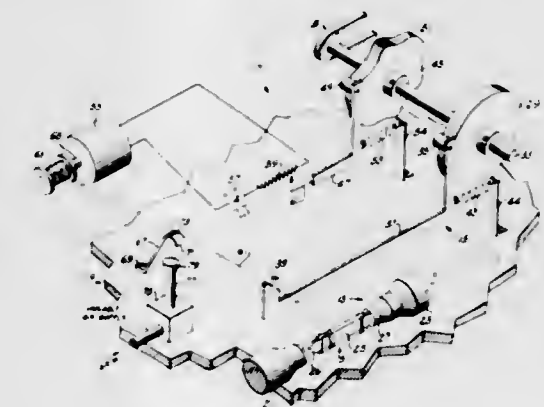


1. A liner for a comminution chamber comprising a wall having a wear surface and a back surface on a side of the wall opposite the wear surface, and a plurality of U-shaped loops of insulated electrically conductive wires partly within the wall, each of the loops having a pair of generally straight sections spaced apart and parallel with respect to each other and such sections of all other loops, each of the pairs being connected on one end to define the loop, each of the loop ends being within the wall and spaced different distances inwardly

of the wear surface with the ends of the straight sections opposite the loop ends projecting through and outwardly of the back surface to provide contacts outwardly of the back surface of the wall and provide a plurality of loop circuits into the wall until wearing away of material from said wear surface breaks the loop end of each wire as said wires become exposed in the worn surface.

3,314,619

TENSION DISTRIBUTING WINDING DEVICE
Donald R. Kerstetter, Emporium, Pa., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Original application July 23, 1962, Ser. No. 211,818. Divided and this application May 26, 1965, Ser. No. 458,960
3 Claims. (Cl. 242—9)



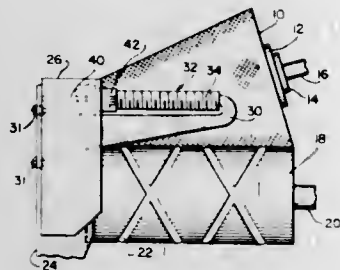
1. An apparatus for wrapping a frame electrode with a helix of wire having a longitudinal axis wherein each turn of said wire helix has a substantially uniform tensional force comprising a spool containing a supply of wire mounted to allow relatively free wire withdrawal at a substantially constant rate, means for supporting a pair of spaced side members, means for rotating said side members to withdraw the wire from said spool and wrap the wire about said side members, said rotating side members demanding wire from a transverse direction relative to said longitudinal axis at a varying cyclic rate, a wire guide mounted adjacent said rotating side members and intermediate said side members and said spool formed to guide the wire longitudinally along said side members during rotation thereof, and a low inertia device positioned intermediate said wire guide and said spool having means for deflecting said wire normal to said wire flow, said deflecting means comprising a support, a thin foil having one end affixed to said support with the opposite end being freely movable, said free end being formed to provide a curved portion having a groove on the convex side thereof for contacting said wire, a substantially constant pressure air supply means directing a flow of air onto the concave side of said curved portion of said foil to provide floating suspension and deflection thereof substantially immediately responsive and inversely proportional to the varying cyclic demand for said wire by said rotating side members.

3,314,620

YARN GUIDE
Thomas E. Pitts, Cranston, and Richard I. Walden, Warwick, R.I., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Sept. 28, 1964, Ser. No. 399,600
7 Claims. (Cl. 242—18)

1. In a machine for winding a strand onto a rotating package, including a movable traverse member for guiding the strand upon the package, wherein said package is brought from a rest condition up to speed while said traverse member is moving, and a rotatable tubular guide mounted on said machine in spaced relationship to the

path of movement of said traverse member, said guide being rotatable to advance the strand toward and over one end of the guide as the guide rotates, said guide being so located that it retains the strand spaced away from the traverse member until the strand passes over the end of the guide, the improvement which comprises, a stationary sleeve member, a seating member within said sleeve mem-

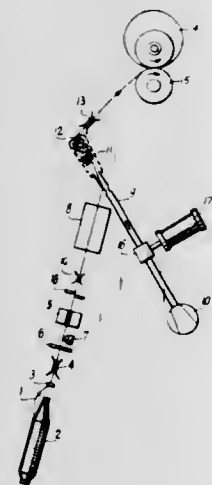


ber and secured to one end of said tubular guide for rotation therewith, said seating member having at least one recess in its periphery, a braking segment slidably retained in said recess and capable of contacting the interior surface of the sleeve member, whereby the rate of rotation of said tubular guide will be slowed by said braking segment frictionally engaging said sleeve member.

3,314,621 METHOD OF AND DEVICE FOR WINDING YARN WITHOUT INTERRUPTING THE WINDING PROCESS DURING REMOVAL OF YARN BREAK-AGE

Karel Bous, Jablonec Nad Nisou, Czechoslovakia, assignor to Elitex, Sdruzeni podniků textilního strojírenství, Liberec, Czechoslovakia

Filed July 31, 1964, Ser. No. 386,620
Claims priority, application Czechoslovakia, Aug. 14, 1963, 4,575/63
9 Claims. (Cl. 242—35.6)

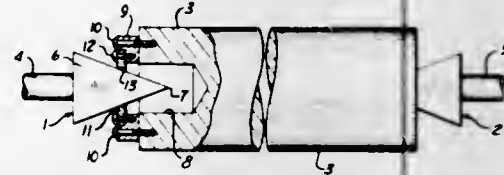


1. A method of winding yarn and knotting the same during breakage without interrupting the winding process comprising the steps of guiding the yarn along a predetermined path; winding up the yarn at one end of the path with a predetermined winding speed; moving the yarn upstream of said one end with a speed higher than said predetermined winding speed into a vessel until a predetermined yarn reserve is accumulated in said vessel upstream of said one end; and knotting said yarn in case of breakage between said yarn reserve and the other end of said yarn while continuing winding said yarn from said yarn reserve in said vessel.

3,314,622 MECHANISM FOR DRIVING AND CENTERING A MANDREL

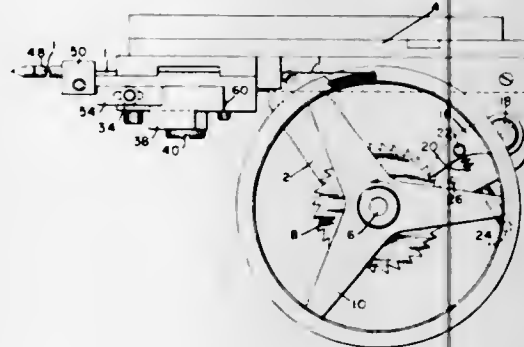
William George McClean, Milwaukee, Wis., assignor to McClean-Anderson, Inc., Milwaukee, Wis., a corporation of Wisconsin

Filed Jan. 21, 1965, Ser. No. 427,020
1 Claim. (Cl. 242—46.21)



In a filament winding apparatus for winding a resin coated strand to form a tubular article, a spindle having an outer end tapered toward a tip and said outer end having a plurality of relatively sharp longitudinal edges, a mandrel having a recess in the end thereof to receive the spindle with the outer periphery of the end of the spindle being spaced radially inward from the walls of the mandrel defining said recess to provide a chamber therebetween, and a ring disposed on the end of the mandrel and having a central opening disposed in alignment with said recess, said opening having a plurality of corners and said edges of the spindle disposed in engagement with said corners to provide a positive rotational connection between the spindle and the mandrel and to precisely center the mandrel with respect to the spindle.

3,314,623
TENSION DEVICE
James F. Blandino, Lynn, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Jan. 22, 1965, Ser. No. 427,242
2 Claims. (Cl. 242—54)

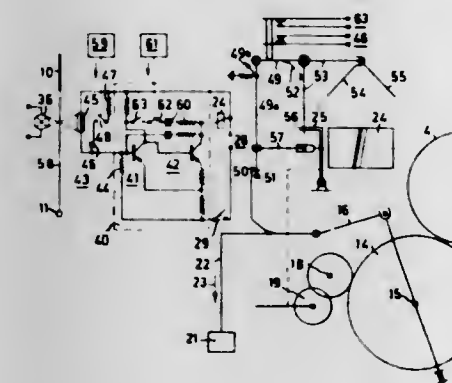


2. A tension device for taking up the slack in a spool of wire from which segments of wire are intermittently drawn, said tension device comprising:
a ratchet wheel rotatable in unison with said spool of wire;
a pivotally mounted pawl disposed in cooperative relationship with respect to said ratchet wheel;
a spring loading said pawl in a direction opposite to the normal direction of rotation of said ratchet wheel, said teeth and said pawl having coacting surfaces shaped in a manner to permit said pawl to override said teeth when said spool is being rotated in a normal direction during the time wire is being pulled therefrom, and when slack develops in the wire said pawl being urged by said spring to engage one of said teeth and rotate said spool in an opposite direction to take up the slack.

3,314,624 CONTROL FOR TAPE DRIVE OF AUTOMATIC THREADING RECORDER/REPRODUCER

Friedrich Louzil, Arne Appel, and Germann Podest, Vienna, Austria, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed June 21, 1963, Ser. No. 289,690
Claims priority application, Austria, July 4, 1962, A 5,369/62
4 Claims. (Cl. 242—55.12)



1. A tape recorder/reproducer comprising, driven shaft means including a capstan, take-up reel means, magnetic tape including leader means, an idler wheel, means for moving said idler wheel into operative engagement with both said driven shaft and said take-up reel means, a pressure roller for urging said tape into contact with said driven shaft, means for moving said pressure roller into engagement with said shaft, delay means, electromagnetic means, switch means coupling said delay means to said electromagnetic means, means mechanically coupling said pressure roller moving means to said electromagnetic means, said delay means delaying engagement of said pressure roller with said driven shaft by delaying the activation of said electromagnetic means until said take-up reel accumulates said leader on the magnetic tape, means for actuating said delay means when said reel accumulates said leader thereon, quick stop means interconnected with said delay means and said electromagnetic means, said quick stop means adapted to actuate the electromagnetic means and thereby remove said pressure roller from said driven shaft, and a severable locking linkage means, said severable locking linkage means mechanically interconnecting said electromagnetic means, said switch means, said quick stop means and said delay means, means normally holding said switch means in closed position, and means for moving said locking linkage means to open said switch means, said quick stop means being isolated from said electromagnetic means and said delay means being operative when said switch means is open, said electromagnetic means being actuated subsequent to the operation of the delay means, said actuation of the electromagnetic means severing said locking linkage whereby said holding means returns said switch means to the normally closed position.

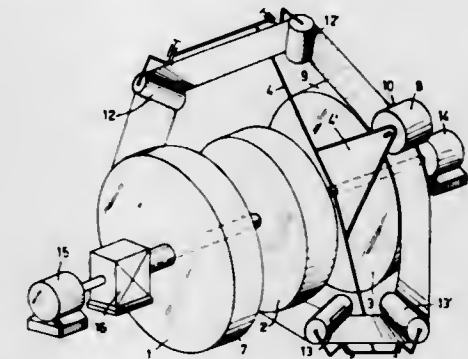
3,314,625 WINDING APPARATUS FOR DATA PROCESSING DEVICES

Herbert Mahn, Hamburg, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

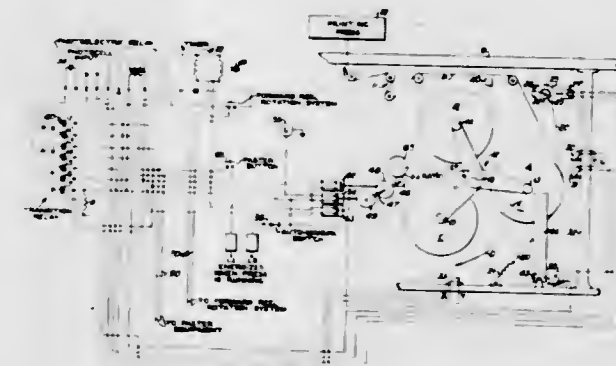
Filed Dec. 4, 1964, Ser. No. 416,972
Claims priority, application Germany, Jan. 11, 1964, P 33,348
6 Claims. (Cl. 242—55.12)

1. Winding apparatus for a data processing device comprising a tape supply means having an axis of rotation, a tape take-up means in spaced parallel relation with said supply means, said take-up means having an axis

of rotation, the axes of rotation of both said supply and take-up means being coaxial, a cylindrical tape processing means in spaced parallel relation with both said supply and take-up means, said processing means having an axis of rotation coaxial with said axes of rotation of said supply and take-up means, and tape transfer and winding means rotatable about an axis coincident with the axis of each of said supply, take-up and processing means for withdrawing tape from said supply means and wind-



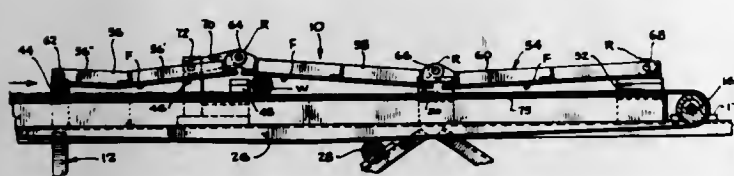
3,314,626
AUTOMATIC SHEET SPLICING APPARATUS
William B. Hemphill, Seattle, Wash., assignor of one-half to Hearst Publishing Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 12, 1964, Ser. No. 351,294
8 Claims. (Cl. 242—58.2)



1. Apparatus for automatically splicing a running web from an expiring roll to the web of a new roll, comprising a reel for rotatably supporting said rolls and adapted to move the new roll into engagement with the running web of the expiring roll, a first light means for sensing when the expiring roll has expired to a first given diameter, means for rotating said reel to advance said rolls so that the new roll is moved into engagement with the running web of the expiring roll, means controlled by said light sensing means and operable by the latter when the expiring roll has expired to the given diameter to actuate said reel rotating means, a second light means for sensing when the expiring roll in its advanced position has expired to a second reduced given diameter, means for rendering adhesive the exposed end portion of the new roll, means controlled by said second light sensing means and operable by the latter when the expiring roll has expired to the second reduced given diameter to actuate said adhesive means and thereby cause

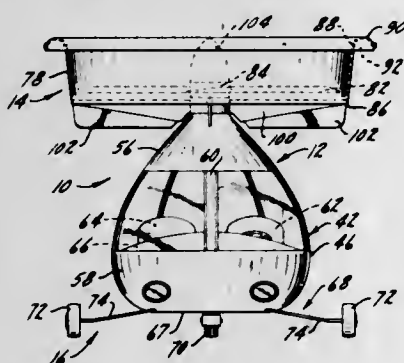
the webs to be spliced, and web severing means operable when the webs are spliced to sever the web of the expiring roll.

3,314,627
WEB WINDING APPARATUS
Justin J. Wetzler, 703 Sheridan Road,
Evanston, Ill. 60202
Filed Dec. 18, 1964, Ser. No. 419,486
4 Claims. (Cl. 242-67.1)



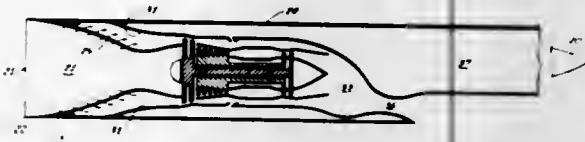
1. An improved winding apparatus for rolling successive lengths of webbing without winding interruption between lengths, said apparatus comprising:
support means;
a continuous belt mounted for movement on said support means;
drive means mounted on said support and operatively connected to said belt to effect movement thereof;
and a segmented plate mounted above the belt for cooperative action therewith, said plate having a plurality of independently vertically moveable elements, which includes an introductory element, a succeeding element and movable linkage means between said elements to permit vertical movement and pivotal movement between the linked ends of said elements, a tapered opening defined between said introductory element and the belt to receive a leading end of a web and to initiate a rolling action, and said introductory element being vertically movable as said roll grows in size as a result of the roll moving along the belt in the direction of belt movement at a rate of movement less than the rate of belt movement, whereby said introductory element resumes its original position after the growing roll is moved to a position between the succeeding element and the belt, whereupon the introductory element is adapted to receive a successive web end prior to completion of rolling of the preceding web length.

3,314,628
DUCTED ROTOR AIRCRAFT
Thomas E. Myers, Rte. 1, Box 560,
St. Charles, Ill. 60174
Filed Nov. 18, 1964, Ser. No. 412,203
11 Claims. (Cl. 244-17.17)



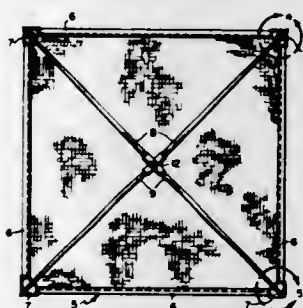
5. In an aircraft, an air frame suspended from and rigidly connected to a rotor unit, the rotor unit including a circular duct surrounding a rotatably mounted power driven rotor having a plurality of radially disposed blades joined rigidly to a central hub, at least most of the blades having an adjustable lift control on the trailing portion thereof.

3,314,629
SHOCKLESS SUPERSONIC AIRCRAFT
Scott C. Rethorst, 1661 Lombardy Road,
Pasadena, Calif. 91104
Filed Dec. 7, 1964, Ser. No. 416,281
23 Claims. (Cl. 244-35)



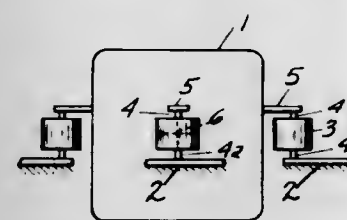
1. An aircraft to operate at supersonic speeds, said aircraft comprising a wing and a fuselage, said fuselage having a nose and tail and an exterior substantially parallel to the free stream of air flow beginning at said nose and maintaining a substantially uniform cross section and being further provided with a faired closure at its tail, said fuselage having an aperture at its nose bounded by said exterior surfaces, said wing having leading and trailing edges and having upper and lower surfaces, said wing having an aperture along its leading edge bounded by said upper and lower surfaces, said upper wing surface being convex as to provide upper surface suction lift, said lower surface being substantially parallel to the free stream air flow adjacent said leading edge, there being a jet opening at said lower surface upstream from said trailing edge, said lower surface being concave downstream from said opening to the trailing edge closure, said fuselage and said wing respectively having duct means of contracting cross sections, there being energizing means in said fuselage and wings to pull in the air entering said apertures and to maintain an irrotational velocity profile in said duct means to minimize shock dissipation, there being additional means to exhaust said air after being energized by said energizing means along said concave surface of said wing to provide lower surface pressure lift.

3,314,630
FISHING KITE
Edgar R. Lewis, Sr., 6690 SW. 98th St.,
Miami, Fla. 33156
Filed Feb. 15, 1966, Ser. No. 527,440
4 Claims. (Cl. 244-153)



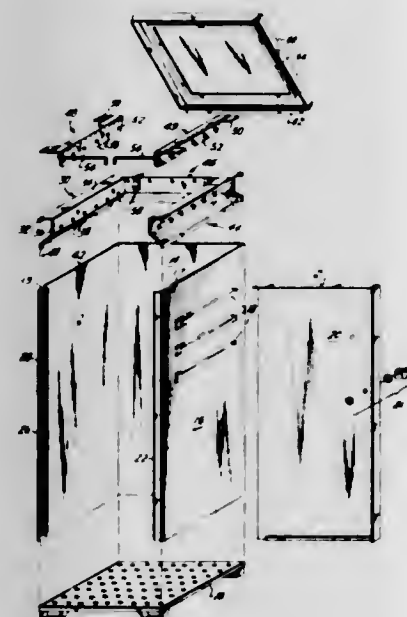
1. A fishing kite of the character described including a generally square section of fabric, the fabric upon four sides having a hem, the kite being collapsible and held in an extended floatable condition by a pair of crossed tubular rods, the rods at their central section being pivotally connected together so that the kite may be collapsed, means upon each end of the rods that have hooking engagement with corner tabs for each corner of the kite, the rods being pivotally connected together at their central portion by a cotter pin that passes through apertures and with the cotter pin upon one end being provided with an opened eye and bridle means connected to adjacent corners of the kite for subsequent connection to a fishing line.

3,314,631
RESILIENT MOUNTING SYSTEM
Albert Simon Whitehill, Erie, Pa., assignor to Lord Corporation, a corporation of Pennsylvania
Filed Feb. 19, 1965, Ser. No. 433,888
5 Claims. (Cl. 248-18)



1. In a resilient mounting system, equipped having load carrying elements distributed around and spaced radially outward from the center of gravity of the equipment, a supporting structure, a plurality of mountings each arranged between said supporting structure and one of said load carrying elements, said mountings each comprising a first hub connected to said supporting structure, a second hub coaxial with the first hub connected to one of said load carrying elements, each hub having at least three angularly spaced radially projecting arms substantially in the same plane, the arms of the first hub being interleaved and nested between the arms of the second hub, an elastomeric element fixed to each arm and having upper and lower ends above and below and outer surfaces radially outward of each arm, said elastomeric elements also being interleaved and nested together and spaced from each other, and a housing surrounding and connected in load transmitting relation to said elastomeric elements and spaced from said arms and hubs, the total mass of said housings being a substantial fraction of the mass of the equipment.

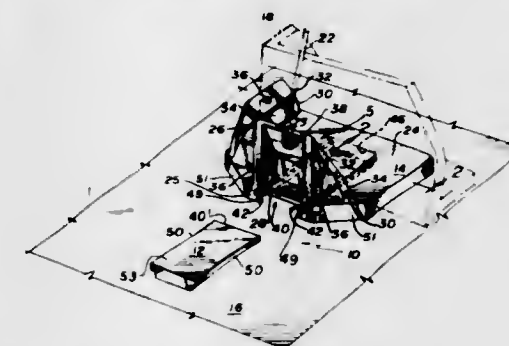
3,314,632
BAG HOLDER
Fred H. Freuler, West New York, N.J., assignor to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware
Filed June 25, 1965, Ser. No. 466,917
6 Claims. (Cl. 248-101)



1. A bag holder comprising:
(a) a back collar member,
(b) side collar members attached to opposite ends of the back collar member,
(c) piercing assemblies pivotably attached to each side collar member,
(d) each side collar member having apertures,

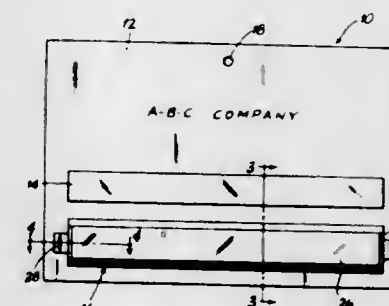
(e) said piercing assemblies having piercing means which enter said apertures when the piercing assemblies are placed in closed position.

3,314,633
ARTICLE-TO-SURFACE LOCKING DEVICE
Albert K. Romberg, Coronado, Calif., assignor to Kaiser Industries Corporation, Oakland, Calif., a corporation of Nevada
Filed May 19, 1965, Ser. No. 456,994
6 Claims. (Cl. 248-119)



1. A device for anchoring an article to a supporting surface to prevent relative movement therebetween, comprising the combination of a supporting surface, a lug affixed to the supporting surface and a shoe slidably disposed on said lug, said shoe having a recess within which the lug is matingly received, a wall surface for said recess acting as a stop member for limiting the extent of movement of the shoe in one direction relative to said lug, and further wall means on said shoe engageable with the article to be anchored and cooperating with the recess under the influence of the article for locking the shoe to the lug.

3,314,634
MAGNETIC STAMP KIT
David A. Carter, 1526 Eastham Drive,
Creve Coeur, Mo. 63141
Filed May 28, 1965, Ser. No. 459,829
5 Claims. (Cl. 248-206)

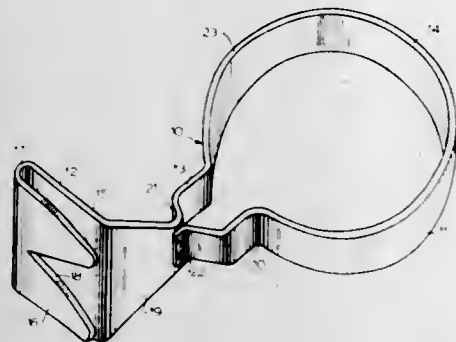


1. In combination, a magnetic stamp kit comprising a base, a support mounted thereon including magnetically attractive material for receiving and releasably retaining rubber stamps and the like when the latter include magnetic material, and permanently magnetic material removably mounted on the base for attachment to rubber stamps and the like.

3,314,635
COMBINATION CUP AND BOTTLE HOLDER
Willie R. Frye, 605 E. Beech St., Goldsboro, N.C. 27530
Filed May 13, 1965, Ser. No. 455,521
6 Claims. (Cl. 248-311)

1. A holder for supporting beverage containers in automobiles comprising a U-shaped clasp for grasping an area of an automobile door panel, said clasp having a leaf spring rigidly attached thereto and extending outwardly therefrom and having an integral flange extend-

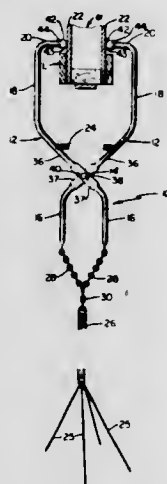
ing in a direction away from said clasp, said flange being provided with a rigidly mounted shaft, and a loop band member pivotally mounted on said shaft and having an indentation for receiving said leaf spring, said band



member having a first section bent to support a beverage bottle by its neck and a second section forming an extension of said first section and bent to support a tapered cup by its side.

3,314,636 RELEASABLE SUSPENSION DEVICE FOR SWING SEAT

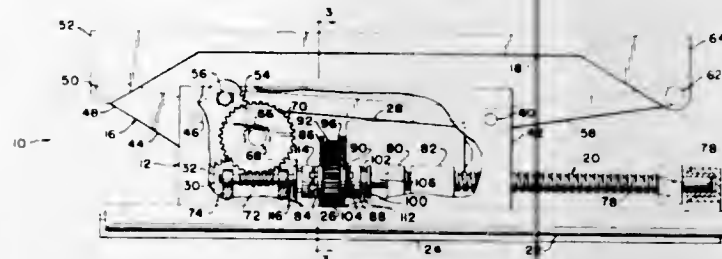
Maurice Gordon McHugh, Hanover, Ill.
(25 E. Thorndale Ave., Roselle, Ill. 60172)
Filed May 26, 1965, Ser. No. 458,947
2 Claims. (Cl. 248—340)



1. A suspension device for releasably suspending an infant seat and the like from opposite sides of a wall above an overhead door frame comprising, a pair of pivotally interconnected suspension arm members each having upper and lower, vertically extending arm portions and an intermediate angular portion joining the upper and lower arm portions of each suspension arm member, said angular portions being pivotally interconnected relatively near said lower arm portions and away from said upper arm portions, whereby the moment of downward force applied across said lower arm portion is reduced when applied across said upper arm portions in accordance with the increased length of said upper arm portion with respect to said lower arm portions, said upper arm portions each terminating in an upper clamping end portion arranged for inward extension toward the other clamping end portion, flexible connecting means for suspension of the infant seat in downwardly depending relation from the lower terminal ends of said lower arm portions, and a tension spring between said upper arm portions being biased to normally urge said upper clamping end portions into clamping engagement with opposite sides of the wall above the overhead frame.

3,314,637 SEAT ADJUSTER MECHANICAL STRUCTURE

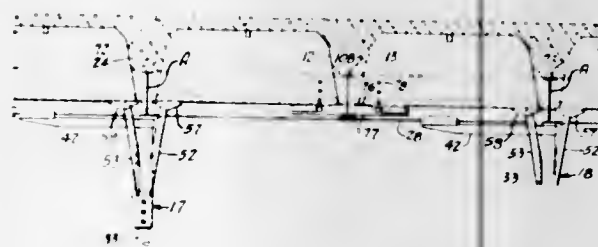
Chester S. Fudala, Detroit, Mich., assignor to Ferro Manufacturing Corporation, a corporation of Michigan
Filed Feb. 15, 1965, Ser. No. 432,660
7 Claims. (Cl. 248—419)



1. Seat adjuster mechanical structure including a seat supporting member having opposite ends, means connected to the opposite ends of the seat supporting member for moving the seat supporting member up and down on being driven in opposite directions, a track extending between the opposite ends of the seat supporting member, a slide positioned on said track for moving the seat supporting member horizontally on being driven along said track, motor means positioned centrally of said slide, carried thereby and including a pinion extending transversely thereof, first drive means extending parallel to the slide from one side of the pinion to one end of the slide and selectively engageable with the motor means for driving the slide relative to the track on engagement with the motor means, and second drive means extending parallel to the slide from the other side of the pinion toward the other end of the slide mounted on the slide and selectively engageable with the motor means for driving the means for moving the seat supporting member up and down on engagement with the motor.

3,314,638 ADJUSTABLE CONCRETE FLOOR CONSTRUCTION APPARATUS

Hugh Shannon Morrison, 7458 Kingston Ave., Chicago, Ill. 60649
Filed Sept. 26, 1963, Ser. No. 311,756
14 Claims. (Cl. 249—29)

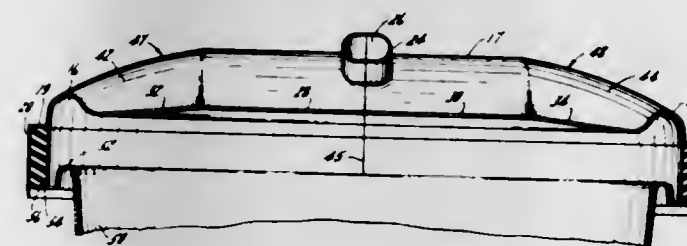


1. In an apparatus for forming a waffle-type concrete type floor slab,
a plurality of generally rectangular mold sections adapted to have concrete poured thereon to form a flat concrete floor thereover with spaced integral depending concrete joists formed between said mold sections,
soffit plates between said mold sections for defining the lower surfaces of the joists,
a plurality of shore heads each arranged for supporting a plurality of adjacent mold section corners,
a first series of beams supported on said shore heads, a second series of beams supported on said shore heads in transverse relation to said first series of beams, a third series of beams disposed parallel to and intermediate said first series of beams and supported

from points on said second series of beams intermediate said shore heads,
means in each of said shore heads for adjusting the vertical position of said adjacent mold section corners relative to said beams supported thereby, and
means on said points of said second series of beams for supporting the corners of adjacent mold sections at adjustable elevations.

3,314,639 MOLD FOR ROTATABLE CASTING

Louis H. Barnett, Fort Worth, Tex., assignor, by mesne assignments, to Loma Industries, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Aug. 19, 1964, Ser. No. 390,761
11 Claims. (Cl. 249—58)



1. A mold to form containers with removable lids by rotational casting and the like, which includes, in combination, a container mold to form an open mouth container, a lid mold adapted to be placed on the container mold, the lid mold movable to open the container mold, the lid mold having a handle mold with opposed ends joined to the lid mold and communicating with the interior of the container mold, and said mold separable substantially along the end to end axis of the handle mold so that the lid mold may be moved and separated to remove the molded lid with integral handle.

3,314,640 SHOE SOLE MOLDS

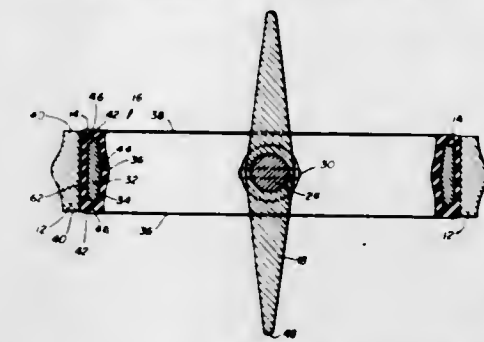
Thomas W. Snow, Melrose, Mass., assignor to United Shoe Machinery Corporation, Flemington, N.J., and Boston, Mass., a corporation of New Jersey
Filed Feb. 18, 1965, Ser. No. 433,589
7 Claims. (Cl. 249—83)



5. A mold assembly for use in a machine for molding soles in situ onto shoe bottoms wherein the mold assembly comprises a bottom mold member having the peripheral contour of a shoe sole and a pair of side mold members which part on a plane common to a longitudinal median line of the bottom mold member, each side mold member having attached thereto a bite plate which lies in contiguous relation to a lasted shoe supported in the mold charging station when the mold cavity is closed, said bite plate being characterized by an inner margin presenting an inclined surface to the shoe and being characterized further by the fact that the bite plate is a resilient structure permitting yielding of the inner margin and consequent pressure of the bite plate against the shoe.

3,314,641 BUTTERFLY VALVE

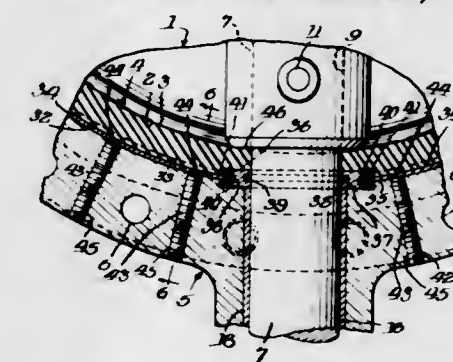
Joseph C. Overbaugh, Houston, Tex., assignor to The Hale Company, Tulsa, Okla., a corporation of Ohio
Filed Apr. 23, 1964, Ser. No. 362,105
6 Claims. (Cl. 251—148)



1. A butterfly valve for fitting between spaced apart flanges each having a flange face, said valve comprising:
a body member having paralleled flange engaging ends and an axial bore therethrough perpendicular the ends;
a tubular rigid reinforcing member defined in part by exteriorly converging tapered ends;
a tubular resilient liner fully encompassing said reinforcing member, said liner member being positioned in said body member axial bore, the exterior circumferential surface thereof engaging the interior circumferential surface of said body member axial bore, said tubular liner providing an axial fluid passageway therethrough, said liner being of a length substantially equal to the length of said axial bore in said body and including a circumferential integral arcuate increased length flange engaging portion at each and aligned with and spaced from said tapered ends of said reinforcing member whereby as the ends of said resilient member are engaged by the flange faces the flange engaging portions thereof are deformed against the said tapered ends of the reinforcing member causing increased radial outward sealing contact pressure of the resilient liner against the interior circumferential surface of the axial bore of said body member;
a disc member pivotally supported in said fluid passageway in said resilient liner, said disc in part defined by a peripheral liner engaging seating surface, said disc seating surface sealably engaging said resilient liner when the disc is in closed position; and
means of pivoting said disc between open and closed position.

3,314,642 BUTTERFLY VALVE WITH ADJUSTABLE SEATING MEANS

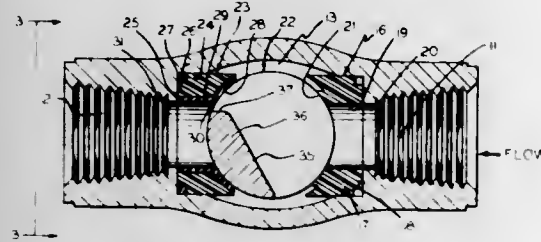
Robert A. Kautz and Frank C. Kurzawa, Chicago, and Hubert L. Williams, Hinsdale, Ill., assignors to Crane Co., Chicago, Ill., a corporation of Illinois
Filed Mar. 9, 1964, Ser. No. 350,255
10 Claims. (Cl. 251—307)



1. A flexible resilient seat ring with segmented liners therewithin for engagement peripherally with a closure member, a casing for carrying said seat ring and said

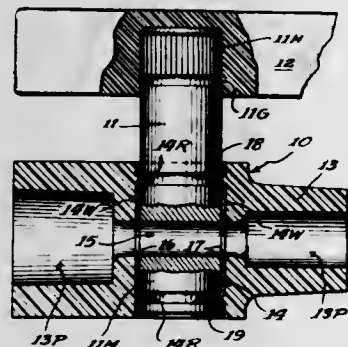
closure member, shaft means for actuating said closure member, spaced apart collars on said shaft means above and below said closure member cooperating with segmented liners, means provided by said casing for moving arcuate portions of said seat ring selectively inwardly radially to effect a peripheral fluid sealing contact with said closure member, said collars being movable by said liners to effect fluid sealing around said shaft means adjacent said collars upon actuation of said casing movable means.

3,314,643
THROTTLING VALVE
Norman H. Sachnik, Houston, Tex., assignor to
Texteam Corporation
Filed Nov. 27, 1963, Ser. No. 326,557
1 Claim. (Cl. 251-309)



A throttling valve comprising, a valve body having coaxially aligned inlet and outlet ports and a control chamber therebetween, a guide seat within said chamber at the outlet end of said inlet port, a throttling seat within said chamber at the inlet end of the outlet port, said seats being of phenolic material and having circular openings therethrough in coaxial alignment with said ports, the surface of said throttling seat subjected to fluid impingement by flow of fluid through the valve being of rubber, and a cylindrical plug rotatably mounted within said chamber in engagement with and between said seats to control fluid flow through said valve, said plug having a transaxially extending cut-out portion aligned with said seat openings and opening through more than 180° of the periphery thereof, said cut-out portion defining upper and lower substantially parallel faces coaligning with the uppermost and lowermost diametrically opposed points of the seat openings, said faces being interconnected at their innermost edges by a concave face and defining a flow control portion, and a face angularly related to said concave face at the throttling edge of the cut-out portion coacting with said throttling seat opening to define a near-circular throttling orifice when the plug is in throttling position.

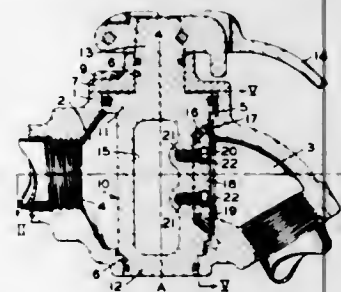
3,314,644
ROTARY FLOW CONTROL VALVE AND METHOD OF MANUFACTURE
James G. Dwyer and John P. Locke, Michigan City, Ind., assignors to F. W. Dwyer Mfg. Co., a corporation of Illinois
Filed Apr. 21, 1964, Ser. No. 361,458
7 Claims. (Cl. 251-309)



1. A rotary flow control valve comprising a preformed stem that is structurally rigid in the presence of injection mold pressures said stem having a handle end with

a handle thereon and a right circular cylindrical main stem portion provided with oppositely axially directed annular faces adjacent its periphery and provided with a through passage having inlet and outlet ports, said stem portion having a highly smooth exterior surface finish and having annular port edges rounded sufficiently to prevent galling, a sleeve of a lubric plastic material capable of limited cold flow in the presence of injection mold pressures and stable in the presence of 350° F. ambient temperature snugly enveloping said cylindrical portion, said sleeve being relatively rotatable interlocking relation with said cylindrical portion and having a transverse wall opening located for registry with each said port and having at least one additional transverse wall opening, and a valve body of molded plastic material impacted about said sleeve and filling said additional wall opening thereby to provide against relative movement between said valve body and sleeve and comprising a solid mass except for a separate cored flow passage corresponding to and communicating directly with each transverse port and a cored passageway conforming to the outer surface of said sleeve.

3,314,645
ANGLE COCK
Fred Temple, Pittsburgh, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Oct. 23, 1963, Ser. No. 318,228
1 Claim. (Cl. 251-317)

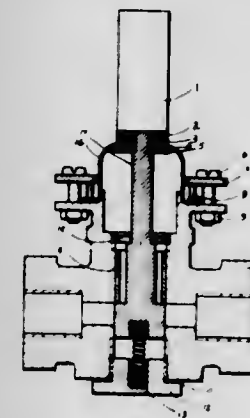


An angle cock comprising:

- a casing having a chamber,
- said casing having upper and lower aligned bores communicating with said chamber,
- a valve body having upper and lower end portions journaled in said upper and lower bores respectively, and for rotation about a common axis,
- means operatively connected to one of said end portions for rotating said valve body in said chamber,
- a replaceable cover member secured to said casing adjacent said upper bore for retaining said valve body in said chamber,
- said valve body having a shallow recess with conical walls flared outwardly toward the outer surface of the valve body,
- a shallow cup-shaped gasket having conical walls conforming to the said recess and a base portion which rests on the bottom of the recess, the depth of the gasket being greater than the depth of the recess so that the outer rim of the conical walls of the gasket projects beyond the outer face of the valve body, said gasket having a central opening therein,
- a retaining disc having a conical periphery and being of shallower depth than the depth of the gasket and extending through the opening in the gasket and secured in metal-to-metal contact to the bottom of the recess, and having a shoulder clamping the base portion of the gasket to the bottom of the recess and at the same time the conical periphery firmly presses the walls of the gasket to the walls of the recess,

- said casing having a pair of spaced passageways communicating with said chamber,
- said valve body having a through bore adapted to interconnect the said passageways,
- said chamber having a valve seat on the wall portion thereof adjacent to and surrounding one of said passageways, and being substantially larger than the valve body to prevent contact of the valve body therewith,
- said valve body having a first rotary position in which the said through bore is aligned with said passageways and in which the valve body and outer rim of the gasket are completely out of contact with the walls of the chamber, and having a second rotary position in which only the outer rim of the gasket seats on the valve seat to close off communication through said passageways.

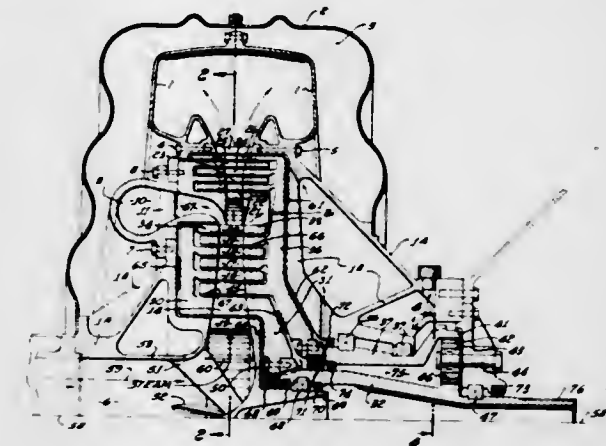
3,314,646
AUTOMATIC GAS REGULATING VALVE
Anderson Austin, 561 W. 147th St., Apt. 35,
New York, N.Y. 10031
Filed Feb. 17, 1964, Ser. No. 345,401
3 Claims. (Cl. 251-321)



1. A regulator adapted to automatically control gas flow comprising a body portion having a hollow chamber with inlet and outlet orifices at the end of said chamber, a vertical chamber dissecting said hollow chamber, a valve stem of progressively decreasing diameter in steps within said vertical chamber, shoulders on said valve stem defining said decreasing steps, a diaphragm seal secured over said vertical chamber, an implement rest affixed to the upper portion of said valve stem, means adapted to adjust the position of said valve stem in said vertical chamber including a sleeve within said vertical chamber, the lower edge of said sleeve juxtaposed to the upper edge of said hollow chamber adapted to contact one of said shoulders, an adjustable ring within said vertical chamber above said sleeve adapted to contact another of said shoulders and spring means adapted to exert upward pressure on said valve stem, said valve stem being actuatable upon the exertion of a downward force upon said implement rest.

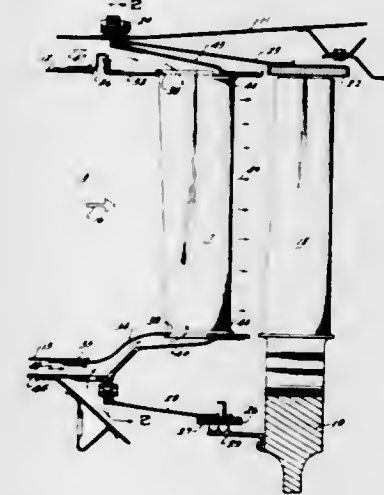
3,314,647
HIGH ENERGY CONVERSION TURBINES
Vladimir H. Pavlecka, 1176 Monument St.,
Pacific Palisades, Calif. 90272
Filed Dec. 16, 1964, Ser. No. 420,485
42 Claims. (Cl. 253-16.5)

1. A turbine having a plurality of rotatable stages including the first and the last rotatable stages, all of said stages having a large and decreasing total angle of turning, θ , from the first stage to the last stage and having converging acceleration flow channels and all interstage gaps of substantially constant width, said large total angle of turning and the degree of convergence being propor-



fluid at the exit from any one given rotatable stage X, and U_x is the mean peripheral velocity of said given stage.

3,314,648
STATOR VANE ASSEMBLY
Werner Ernst Howald, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Dec. 19, 1961, Ser. No. 160,668
1 Claim. (Cl. 253-39.1)



1. A stator vane assembly for a turbomachine comprising; a pair of concentric inner and outer flow guiding members defining an annular primary gas flow passage therebetween; inner and outer casing members surrounding their respective flow-guiding members in spaced relationship thereto to provide secondary cooling fluid passageways; a plurality of stator vanes having internal cooling fluid passages in flow communication with openings in the radially spaced vane ends, said vanes extending transversely of said primary flow passage and being attached at said ends to said flow guiding members adjacent the trailing edges of said vanes whereby said ends extend at least partially through openings in said flow guiding members adjacent the leading edges of said vanes; an outer stator vane support comprising a first one-piece thin-walled generally conical member having one edge thereof affixed to said outer casing member, the other edge of said conical member being spaced radially and axially from said one edge and being affixed to said outer flow guiding member adjacent said trailing edges; an inner stator vane support comprising a second one-piece thin-walled generally conical member having

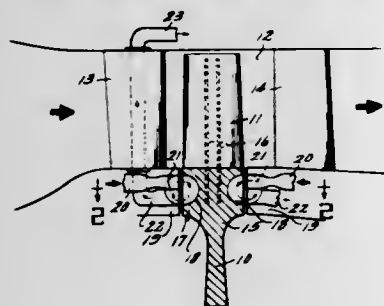
one edge thereof affixed to said inner casing member, the other edge of said conical member being spaced radially and axially from said one edge and being affixed to said inner flow guiding member adjacent said trailing edges;
said flow guiding and said conical members being of substantially equal thickness to minimize differential thermal expansion in said assembly;
and means to supply cooling fluid to said secondary flow passageways for circulation through said stator vanes to cool said vanes and said conical support members.

3,314,649

TURBOMACHINE COOLING SYSTEM

John R. Erwin and Archie H. Perugi, Cincinnati, Ohio, assignors to General Electric Company, a corporation of New York

Filed Apr. 15, 1963, Ser. No. 273,003
10 Claims. (Cl. 253—39.15)



1. A turbomachine cooling system comprising, a single rotor disk having airfoil blades peripherally disposed thereon, duct means for passing a hot fluid over said blades, a shank portion on each airfoil blade disposed out of the path of and separated from said hot fluid, turbine blade means in each shank portion, a casing surrounding and disposed adjacent said shank portion, means in said casing directing a second fluid through said turbine blade means, said means including return flow structure in said casing for said second fluid, said return flow structure redirecting said second fluid toward said turbine blade means to recycle the second fluid through said turbine blade means at least once.

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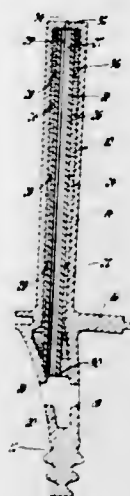
COOLED BLADE

Hamilton L. McCormick, deceased, late of Carmel, Ind., by Signe M. McCormick, executrix, Carmel, Ind., assignor to General Motors Corporation, a corporation of Delaware

Filed July 20, 1965, Ser. No. 473,531
10 Claims. (Cl. 253—39.15)

1. In a blade used in turbomachinery and subjected to hot gases, the combination comprising: a blade root having a cavity, said cavity having inlet and outlet means, an airfoil sheath extending from said root and terminating in a tip, a cylinder disposed in said airfoil sheath extending from said outlet means to said tip to form a closed chamber between said cylinder and substantially the entire inner periphery of said sheath, second outlet means in said airfoil in communication with the inside of said cylinder whereby a path is provided from said inlet means to said second outlet means through said cavity and said cylinder for the flow of a first heat exchange medium, and

a second heat exchange medium in said chamber whereby heat is transferred from said airfoil to said



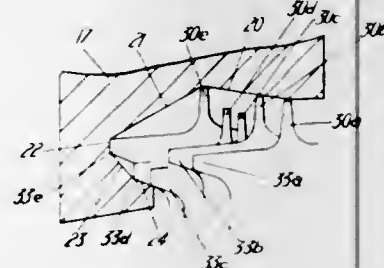
second heat exchange medium to said cylinder to said first heat exchange medium flowing therethrough to cool said blade.

3,314,651

SEALING DEVICE

Richard D. Beale, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a company of Great Britain

Filed Mar. 18, 1965, Ser. No. 440,714
Claims priority, application Great Britain, Apr. 9, 1964, 14,801/64
3 Claims. (Cl. 253—77)



1. An axial flow rotor, fixed structure within which the rotor is rotatably mounted, said fixed structure being provided with a plurality of surfaces which are inclined at acute angles to the axis of the rotor, a plurality of radially extending blades on the rotor, at least one radially extending sealing rib and at least one axially extending sealing rib on the radially outer end of each blade, each said sealing rib being adapted to make a seal with at least one of said surfaces of said fixed structure, at least one of said sealing ribs on each blade being at all times in sealing contact with a respective surface of the fixed structure even when relative radial and axial movement has occurred between the blades and the fixed structure.

3,314,652

VIBRATION DAMPED TURBO MACHINERY

John D. Geberth, Jr., Garfield, and Ronald Tambor, Maplewood, N.J., assignors to Curtiss-Wright Corporation, a corporation of Delaware

Filed Feb. 4, 1966, Ser. No. 525,208
7 Claims. (Cl. 253—77)

1. In a vibration damped turbo machine, the combination comprising a rotor member for rotation about a longitudinal axis, said rotor member having a rotor disk and a plurality of blades extending substantially radially therefrom for coaction with a fluid moving generally in the axial direction of said rotor; each of said blades having a radially outer end and a generally radial axis; circumferentially disposed non-rigid linkage means interconnecting at least

some of said blade ends comprising a plurality of circumferentially disposed links, each of said links extending between two immediately adjacent blade ends, each end of each of said links being non-rigidly attached to one of said two immediately adjacent blade ends; the circumferential centerline of said linkage means being disposed upstream

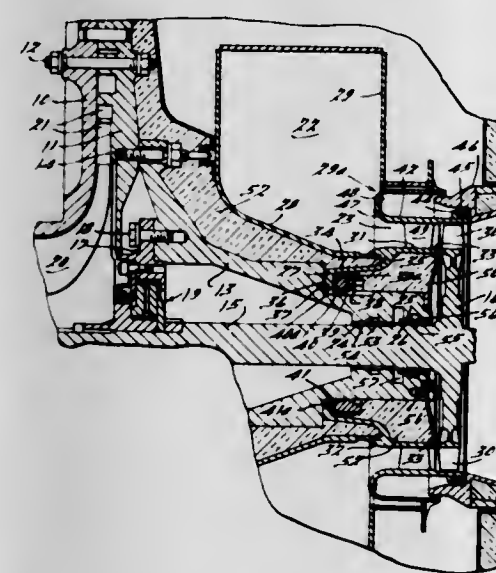


of said blade axes with respect to said moving fluid; said linkage means being responsive to centrifugal force on rotation of said rotor member, each of said link ends being thereby impelled radially outwardly to exert frictional restraint on its respective blade end to control vibration thereof.

3,314,653

UNITARY NOZZLES AND SHROUD SECTIONS
Albert H. Bell III, Birmingham, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

Filed Apr. 10, 1964, Ser. No. 358,723
14 Claims. (Cl. 253—78)



1. In a gas turbine engine, a bladed rotor, a rotor shaft secured coaxially to said rotor, bearing means having said shaft journaled therein adjacent said rotor, a bearing support for said bearing means and having annular pilot means arranged coaxially with said rotor adjacent said bearing means and shaft, a one-piece assembly for directing motive gases to the blades of said rotor including inner and outer annular shrouds defining an annular gas passage coaxial with said rotor, a plurality of flow directing nozzles spaced circumferentially within said passage and having radially inner and outer ends integral with said inner and outer shrouds respectively to support the same, and axially extending supporting means arranged annularly around the axis of said rotor at a location radially inwardly of said inner shroud for supporting said shrouds and nozzles in predetermined alignment with respect to said blades, said supporting means being integral at one axial end with said inner shroud and having an

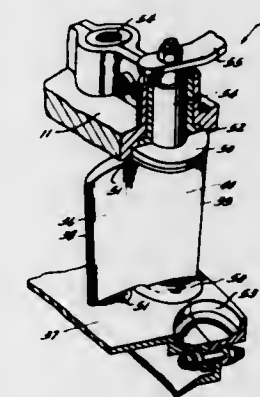
integral annular pilot means at its other axial end seated against the first named pilot means in heat conducting and in predetermined spatial relationship therewith, means securing both pilot means together in said relationship, means cooperable with said inner shroud for shielding said bearing support and supporting means from said hot motive gases to maintain said bearing support comparatively cool with respect to said motive gases, the axial length of said supporting means being determined to effect an axial temperature gradient therein sufficient to maintain the second named pilot means at approximately the temperature of said first named pilot means and to distribute the thermal stresses in said supporting means to enable thermal distortion of said inner and outer shroud and nozzles with said blades without disrupting said predetermined spatial relationship and alignment.

3,314,654

VARIABLE AREA TURBINE NOZZLE FOR AXIAL FLOW GAS TURBINE ENGINES

Georges Spencer Thenault, Salem, and Robert Hirschkron, Marblehead, Mass., assignors to General Electric Company, a corporation of New York

Filed July 30, 1965, Ser. No. 476,137
2 Claims. (Cl. 253—78)

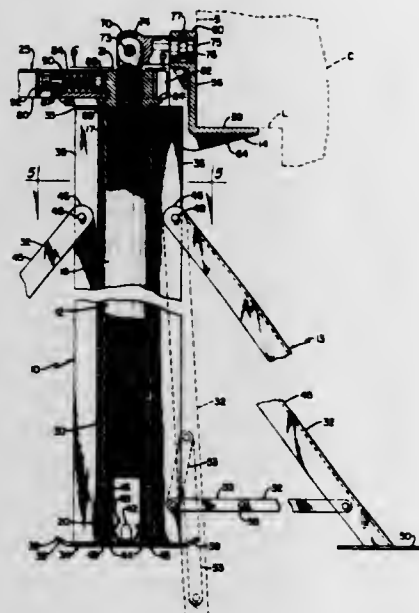


1. In an axial flow gas turbine, a variable area turbine nozzle comprising:

wall means defining an annular fluid flow passageway through which high temperature motive fluid is supplied to said turbine, a plurality of circumferentially spaced radially extending vanes traversing said passageway with the ends of the vanes in proximity to said wall means, each of said vanes having a concave side wall and a convex side wall connecting axially spaced leading and trailing edge portions to form an airfoil shaped cross section, the circumferential spacing between adjacent ones of said vanes being substantially less than the chord length of said vanes, a plurality of circular platforms having radially extending centers of revolution, each end of each of said vanes having one of said circular platforms secured thereto adjacent and limited to the trailing edge portion of the associated vane, portions of the ends of said vanes extending across diametral portions of said circular platforms, a plurality of circular recesses in said wall means, each of said recesses receiving a respective one of said circular platforms for location therein, and actuating means connected to each of said vanes for pivoting said vanes about the centers of revolution of said circular platforms to vary the flow areas between adjacent ones of said vanes, whereby effective shrouding is provided for preventing leakage between the concave and convex sides of the vanes in the high pressure gradient region adjacent the trailing edge portions.

3,314,655 LIFT JACK ASSEMBLY FOR CAMPERS AND THE LIKE

Richard S. Steele, 1605 W. 6th Ave.,
Broomfield, Colo. 80020
Filed Dec. 28, 1964, Ser. No. 421,416
7 Claims. (Cl. 254-92)



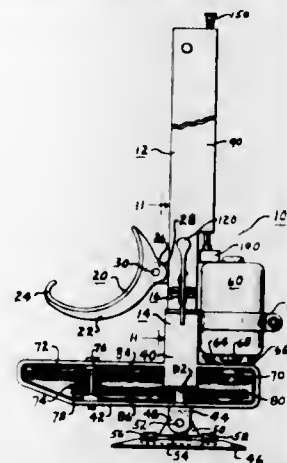
1. A lift unit comprising a plurality of telescoping lift screw members being concentrically arranged for inwardly and outwardly extending axial movement in relation to one another including a stationary base supporting lift member, a rotatable load engaging lift member movable into lift supporting relation with a load to be lifted, and a rotatable lift member provided with actuating means at opposite ends thereof registering with each of said respective base supporting and load engaging lift members, said load engaging lift member being rotatable independently of said base supporting lift member and said rotatable lift member, and said rotatable lift member being rotatable to displace said load engaging lift member inwardly and outwardly with respect to said base supporting lift member and said rotatable lift member while simultaneously displacing itself inwardly and outwardly in the same direction as said load engaging lift member with respect to said base supporting lift member, said load-engaging lift member having a load bearing bracket end portion connected in swivelled relation to the upper end of said load-engaging lift member, said bracket end portion including a supporting end surface disposed in spaced relation beneath the upper end of said load-engaging lift member, and a mobile base frame having a tubular column and a plurality of angular, downwardly depending collapsible legs, said tubular column and said legs terminating in a horizontally aligned, ground-supported base portion to support said telescoping lift members in upstanding relation for upward and downward movement of said load-engaging lift member and said rotatable lift member with respect to said base supporting lift member.

3,314,656 VEHICLE JACK

Clifford L. Haines, P.O. Box 3, Bristol, Ind. 46507
Filed Apr. 23, 1965, Ser. No. 450,429
9 Claims. (Cl. 254-103)

6. A vehicle jack comprising a base having a vertical shaft, a reversible motor mounted on said base and having a shaft, a speed reduction drive mechanism mounted on said base and being operatively connected to said shafts, a housing having a lower end for seating on said base, means for slidably and releasably holding

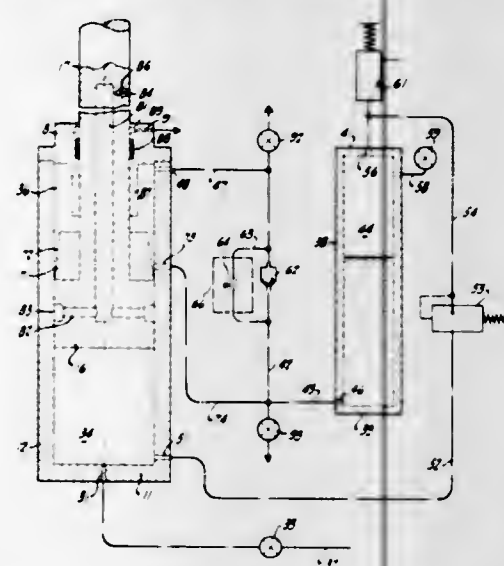
said housing in vertical position on said base, an elongated screw journaled in said housing, a means connect-



ing said screw in driving relation with said first mentioned shaft, a nut on said screw, and a vehicle engaging fixture connected to said nut.

3,314,657 HYDROPNEUMATIC CABLE TENSIONER

John W. Prud'homme, Kensington, Calif., and Thomas J. Reynolds, Sedro Woolley, Wash., assignors to The Rucker Company, a corporation
Filed Aug. 23, 1965, Ser. No. 481,794
4 Claims. (Cl. 254-189)



1. A hydropneumatic cable tensioner comprising a base, a cylinder closed at one end and mounted on said base, a first cable sheave mounted on said base adjacent said one end of said cylinder, a piston reciprocable in said cylinder, a piston rod connected to said piston and extending from the other end of said cylinder, a head substantially closing said other end of said cylinder and passing said piston rod, a second cable sheave mounted on the extended end of said piston rod, a cable reaved around said first cable sheave and said second cable sheave and when tensioned adapted to urge said piston rod into said cylinder, means for supplying said one end of said cylinder with air under pressure tending to move said piston rod out of said cylinder at a dangerous speed if unrestrained, a substantially closed reservoir adapted to hold oil, means forming a first port in said other end of said cylinder in a position out of the traverse path of said piston, means for connecting said first port and said reservoir, a check valve in said connecting means checking flow toward said reservoir, means in said connecting means for variably limiting flow therein around said check valve to rates at which said piston rod is thereby restrained to move out of said cylinder at safe speeds, means forming a characterized surface on said piston, means forming a second

port in said other end of said cylinder in a position in the traverse path of said piston, means for connecting said second port and said reservoir and interconnecting means are provided for supplying said reservoir with air under pressure from said one end of said cylinder.

3,314,658 HIGHWAY BARRIER

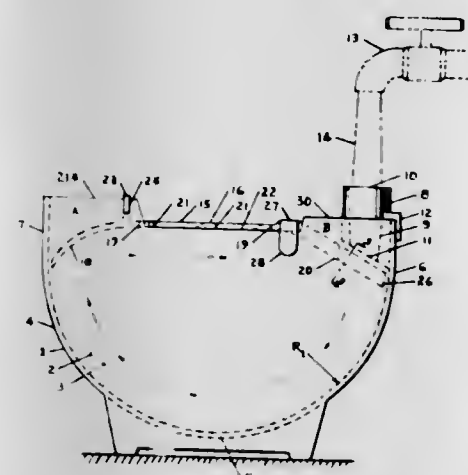
Norris E. Shoemaker, Williamsville, N.Y., assignor to Cornell Aeronautical Laboratory, Inc., Buffalo, N.Y., a corporation of New York
Filed Aug. 20, 1964, Ser. No. 390,989
4 Claims. (Cl. 256-13.1)



1. A highway barrier, comprising an elongated continuous tubular guard rail having side wall portions spaced closer together than upper and lower wall portions and substantially vertical and flat outer surfaces to provide a laterally deflectable box-like beam, a plurality of readily bendable upright posts of lighter structure than said guard rail arranged at intervals along said rail and supporting the same in an elevated position such that a clearance between ground level and the lower wall portion of said rail is greater than the vertical extent of said rail itself, means freely supporting said rail on said posts free of attachment therebetween, and means at opposite ends of said rail to prevent longitudinal displacement thereof, said rail when impacted by a vehicle being laterally deflectable without substantial change in height above ground level and said posts being individually readily bendable at ground level and freeable from connection with said rail to as not to snag the vehicle.

3,314,659 FRUIT AND VEGETABLE WASHING DEVICE WITH VERTICAL CIRCULATIVE FLOW

Charles W. Ranson, 7906 Agnew Ave.,
Los Angeles, Calif. 90045
Continuation of application Ser. No. 424,513, Jan. 11, 1965. This application Apr. 4, 1966, Ser. No. 545,194
7 Claims. (Cl. 259-4)

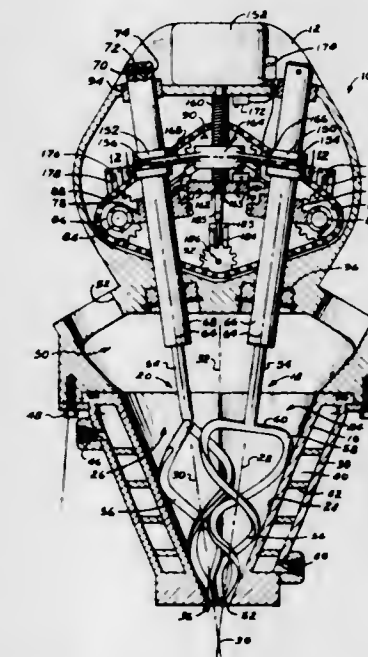


1. A washing device including two side walls extending longitudinally and vertically and spaced apart, a lateral wall extending between said side walls to provide a bottom

wall and two opposite end walls and connecting with said side walls in unitary relation to provide a container, and the inner surface of said bottom wall and the inner surfaces of said end walls substantially faired to provide substantially curved inner surfaces at the regions of juncture, and said walls terminating upwardly to substantially provide an upper opening for overflow liquid and said container adapted for vertical circulative flow, and said end wall at the normal upflow end of said container and adjacent segments of said side walls extending to a higher elevation locally than said upper opening for overflow liquid, and a transverse substantially vertical wall-like portion extending between said higher side wall segments and spaced from said end wall normally to provide a vertical enclosure to contain a liquid column in normal operation at a higher level than said upper opening for overflow liquid.

3,314,660 MIXER

William Arbiter, Springfield, Va., assignor to Atlantic Research Corporation, Fairfax, Va., a corporation of Virginia
Filed June 11, 1965, Ser. No. 463,293
35 Claims. (Cl. 259-102)



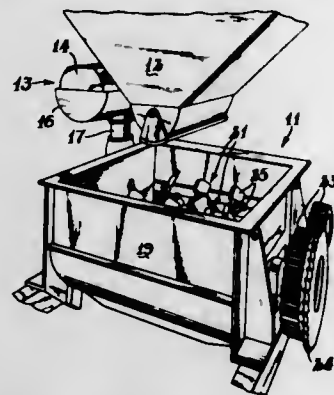
34. In combination, a substantially vertically oriented generally cone-shaped receptacle and a mixing blade rotatably mounted within said receptacle, said blade comprising a shaft and a plurality of downwardly convergent helical blade elements which generate a substantially conical surface during rotation thereof, the apex of which is disposed adjacent to the apex of said receptacle, one end of each of said elements being rigidly attached to said shaft and the other end of each of said elements joining at least one other of said other ends, each of said elements having a width, a thickness, and a length, the cross sectional area established by said width and said thickness of each of said elements decreasing along the length of said element toward said apex.

3,314,661 APPARATUS FOR MIXING

Henry Albert Franklin, 250 S. Lincoln St.,
Carpentersville, Ill. 60110
Filed Dec. 23, 1964, Ser. No. 420,537
6 Claims. (Cl. 259-165)

1. A mixer apparatus comprising, a container, means to deliver aggregate to said container, a pair of shafts arranged in said container, a plurality of radial paddles mounted on each shaft, said shafts and paddles having

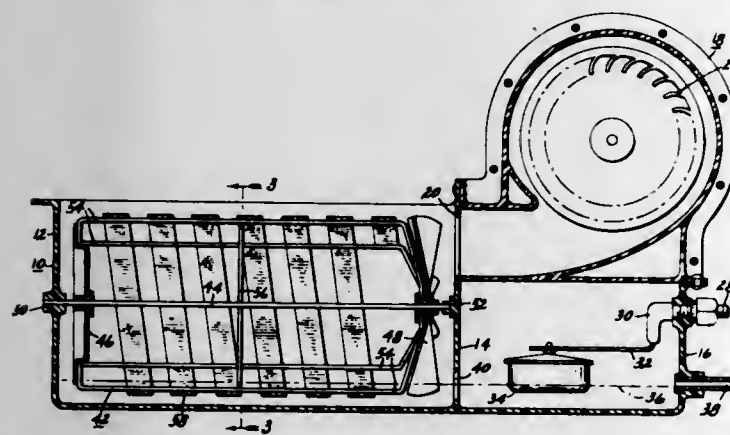
communicating passageways therein, a fluid line connected to the passageways in each shaft, a pump in said line, a spray nozzle on the trailing side of each paddle



in communication with the passageway therein, and means to supply liquid asphalt to said pump for delivery into said passageways and discharge through said nozzles.

3,314,662 HUMIDIFIER

Raymond G. Ticknor, Rochester, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 12, 1964, Ser. No. 389,133
2 Claims. (Cl. 261—30)



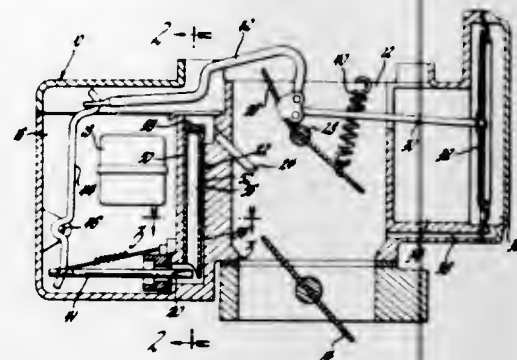
1. A power operated humidifier comprising, a water reservoir, means operable to supply water to said reservoir and maintain a predetermined liquid level therein, a motor driven blower attached to said reservoir for supplying heated air thereto, and an evaporative drum rotatably journaled in said reservoir having an air impeller adjacent one end against which the air discharged by said blower impinges so as to rotate said evaporative drum, said evaporative drum comprising a plurality of circumferentially spaced stays operatively connected to a pair of hubs at opposite ends of said drum, a centrally mounted hoop attached to said stays and a helically wound strip of foam tape adhesively bonded to said stays with adjacent convolutions being axially spaced apart whereby rotation of said evaporative drum will cause said foam tape to pass through the water in said reservoir and be evaporated therefrom by air flow from the interior of the drum through said foam tape.

3,314,663 CARBURETOR

Stanley H. Mick, St. Clair Shores, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 27, 1965, Ser. No. 516,510
5 Claims. (Cl. 261—41)

1. An internal combustion engine carburetor including a mixture conduit, a fuel bowl, and a main well having an inlet from said fuel bowl and a discharge nozzle ex-

tending into said mixture conduit, said main well further including means forming high and low flow capacity portions and valve means associated with said high flow capacity portion and controlling fuel flow through said high flow capacity portion in response to engine demand,

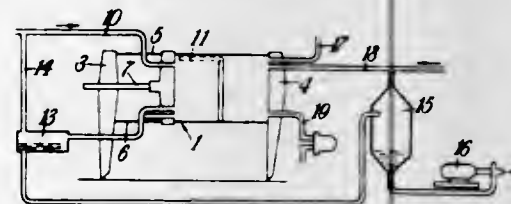


said low flow capacity portion comprising a capillary passage adapted to maintain liquid fuel in a fuel foam suspension when engine demand suddenly drops to thereby continuously discharge liquid fuel from said nozzle and prevent engine stalling.

3,314,664 STEAM HEATING OF LIQUIDS

George A. Dummett, Crawley, Sussex, England, assignor to The A.P.V. Company Limited, Crawley, Sussex, England

Filed Jan. 17, 1964, Ser. No. 388,377
Claims priority, application Great Britain, Jan. 22, 1963, 2,742/63
4 Claims. (Cl. 261—159)



1. Apparatus for heat treating liquids, comprising a heating apparatus in the form of a frame, a plurality of spaced, substantially vertical, corrugated trickling plates mounted in said frame and positioned to form trickling channels therebetween, gasket means between said plates to seal the trickling channels, upper header means interconnecting the top of said channels for introducing liquid thereto, lower header means interconnecting the lower ends of the channels for discharging liquid therefrom, means for introducing steam into said channels via at least one of said header means so as to diffuse through said channels and condense in liquid trickling downwardly in said channels to raise its temperature, and means including a flash vessel connected to said lower header means for flashing off at least part of the steam condensed with liquid.

3,314,665 CARBURETOR FOR RECOVERY AND UTILIZATION OF FUEL TANK VAPORS

David E. Tutch, Lynd, Minn., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware

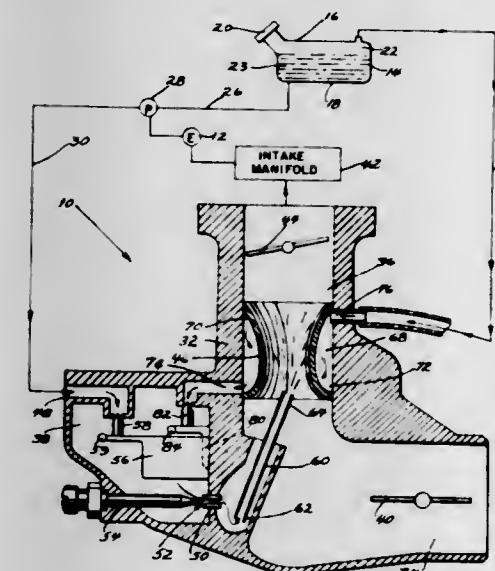
Filed Sept. 28, 1965, Ser. No. 490,887
5 Claims. (Cl. 261—160)

1. A carburetor for an internal combustion engine fuel and air induction system, said system including a fuel tank to contain fuel and an intake manifold to distribute fuel-air mixtures from said carburetor to said engine, said carburetor comprising:

(a) a body having an air intake passage and an air-

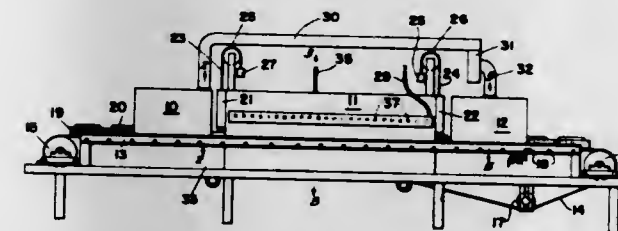
fuel outlet passage communicatively connected thereto, said outlet passage being communicatively connected to said engine intake manifold,

- (b) a venturi portion positioned within said air-fuel outlet passage,
- (c) a carburetor fuel reservoir connected communicatively to said fuel tank to maintain fuel received from said fuel tank at a substantially constant level therein,
- (d) a fuel delivery nozzle secured within said carburetor, said nozzle having an inlet end and a discharge end, said inlet end being communicatively connected to said fuel reservoir, said discharge end being positioned within said venturi portion,



- (e) said venturi being spaced from said body to provide a condensation passageway between said body and said venturi,
- (f) means communicatively connecting said fuel tank at a location above a level of fuel therein with said condensation passageway at an upper portion thereof,
- (g) means communicatively connecting said condensation passageway at a lower portion thereof with said fuel reservoir,
- (h) valve means within said fuel reservoir to stop a flow of fuel from said fuel tank thereto when the level of fuel within said fuel reservoir has reached a first predetermined level.

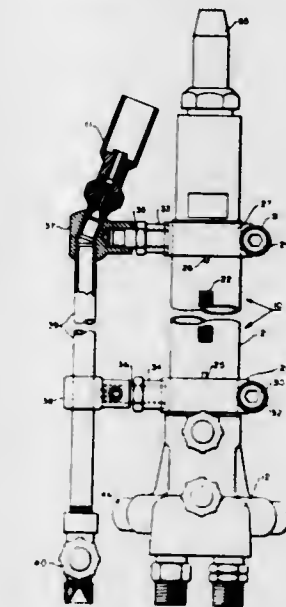
3,314,666
FAST FIRE TUNNEL KILN
Vincent H. Gajardo, Fairless Hills, Pa., assignor, by mesne assignments, to Cyprus Mines Corporation, Trenton, N.J., a corporation of New York
Filed Nov. 10, 1964, Ser. No. 410,065
6 Claims. (Cl. 263—28)



2. A batt for supporting ware in kilns, furnaces and the like comprising a refractory material in the shape of a plate having on its ware-supporting surface parallel grooves, the surfaces of said grooves being covered with a layer of a white heat-reflective refractory material.

3,314,667 MACHINE TORCHES

George L. Hammon, Oakland, Calif., assignor to Hammon Precision Equipment Company, Oakland, Calif., a corporation of California
Original application Nov. 19, 1963, Ser. No. 324,811, now Patent No. 3,258,242, dated June 28, 1966. Divided and this application Jan. 15, 1965, Ser. No. 425,899
1 Claim. (Cl. 266—23)



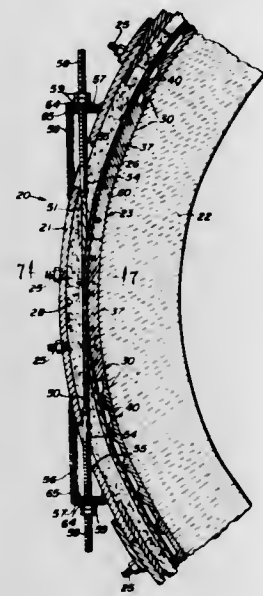
A machine torch having a main body portion, a sleeve rotatively mounted on said body portion and having a gear rack fixed thereon, means for detachably fixing said sleeve in any one of a plurality of selected rotated positions on said body portion, a pair of brackets rotatably mounted on said sleeve, means for fixing the brackets in any one of a plurality of rotated positions on said sleeve, each bracket carrying a threaded boss, a screw being threaded into said boss and having a lock nut thereon to fix the screw in any adjusted position relative to the boss, and means for attaching a pilot flame torch to the screws whereby the pilot flame torch may be adjusted to different rotated positions and in different spaced positions relative to the machine torch.

3,314,668 BLAST FURNACE STACK WITH COOLING STAVES

Irwin Rosenak, Munster, Ind., assignor to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Filed July 7, 1964, Ser. No. 380,866
13 Claims. (Cl. 266—32)

- 1. In a blast furnace:
 - a metallic furnace outer shell;
 - a refractory lining spaced inwardly of said shell;
 - a vertically disposed metallic cooling stave having an outer surface spaced inwardly from said shell and an inner surface in close contacting relation to the outer surface of said refractory lining;
 - means mounting said stave for radial movement, relative to the shell, in response to a radially directed pressure exerted against said stave;
 - means, including conduit means, for circulating a cooling fluid through said cooling stave;
 - means between said cooling stave and said furnace shell for accommodating expansion of the refractory lining and movement of the cooling stave in an outward direction toward the furnace shell and for absorbing the outwardly directed pressure resulting from said expansion without transferring said outwardly directed pressure to the furnace shell;
 - prestressed binding means located inside the shell and extending in close contacting relation to the outer surface of said stave, from one side edge to the other

side edge of said stave, and exerting an inwardly directed pressure against the stave;
said binding means including a portion thereof in heat-conducting relation with the stave, from one side edge to the other side edge of the stave;



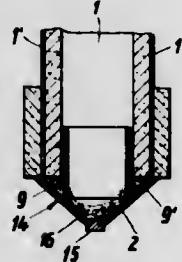
said binding means having an elastic limit exceeding the stress to which the binding means is subjected at the maximum outward expansion of the refractory lining and cooling stave under normal operating conditions of said furnace.

3,314,669

VACUUM CHAMBERS FOR DEGASIFYING METAL MELTS

Helmut Knüppel, Dortmund-Lottringhausen, and Karl Brotzmann, Hohenweg, Germany, assignors to Dortmund-Hörder Hüttenunion Aktiengesellschaft, Dortmund, Germany

Filed Oct. 30, 1962, Ser. No. 234,021
Claims priority, application Germany, Dec. 6, 1961, D 37,609
6 Claims. (Cl. 266—34)

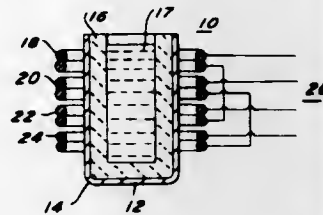


1. In an apparatus for gasifying molten metals and including a vacuum chamber having a downwardly extending open-end inlet and outlet pipe connected to the bottom of said chamber and adapted to dip with its open end into a container holding a melt of a metal to be degassed under a slag layer, said pipe having a refractory jacket and a generally conical downwardly tapering metal cap attached to the end face of said pipe and a packing between said jacket and said cap sealing said jacket and said cap against the entry of slag into said pipe, the improvement which comprises an upright tube fixed at its lower end to the inner face of said cap and extending co-axially from said cap upwardly within said pipe to a distance such that the distance between its upper end and the apex of said cap is greater than the thickness of the layer of slag upon said metal in said container, said tube, said cap and said end face defining the space containing said packing.

3,314,670 MOLTEN METAL STIRRING APPARATUS

Theodore R. Kennedy, Burlington, N.J., assignor to Inductotherm Corporation, Rancocas, N.J., a corporation of New Jersey

Filed Nov. 15, 1963, Ser. No. 324,048
12 Claims. (Cl. 266—34)



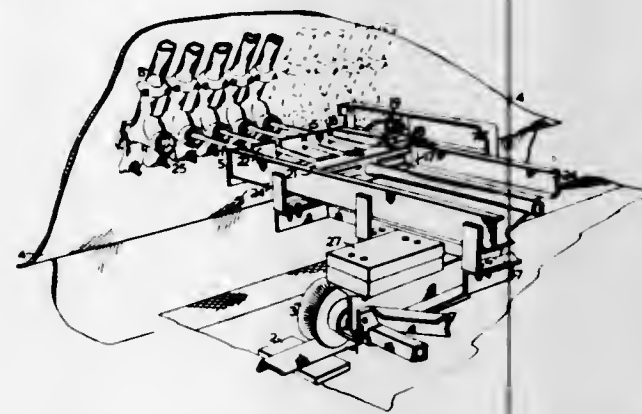
1. Molten metal stirring apparatus comprising a ladle for receiving molten metal to be stirred, a plurality of phase coils wound around said ladle along the vertical axis thereof, said coils being axially aligned and spaced one from another, a low frequency polyphase supply system supplying electrical power to said coils, said coils progressively varying in electrical phase angle, said coils being connected to include one magnetically reversed coil for each coil directly connected to the polyphase supply system.

3,314,671

APPARATUS FOR PUNCHING THE TUYERES OF CONVERTERS

Kauko Henry Heino, Peter Leslie Fowler, and Albert Pelletier, Murdochville, Quebec, Canada, assignors to Gaspe Copper Mines, Limited, Toronto, Ontario, Canada

Filed Nov. 12, 1963, Ser. No. 322,764
Claims priority, application Canada, Sept. 10, 1963, 884,183
6 Claims. (Cl. 266—42)



1. Apparatus adapted for punching the tuyeres of a converter comprising a frame mounted independent from and movable relative to said converter; a punching mechanism supported by said frame and including at least one punch rod freely mounted in said punching mechanism such that an upward urging of the rod will lift the rod free of said punching mechanism, and means for pushing said punch rod into and withdrawing same from a selected tuyere; means for guiding said rod during movement; and means for controlling the inward and return stroke of said punching mechanism.

3,314,672

RESILIENT SUPPORT FOR SEATS, ESPECIALLY FOR MOTOR VEHICLES

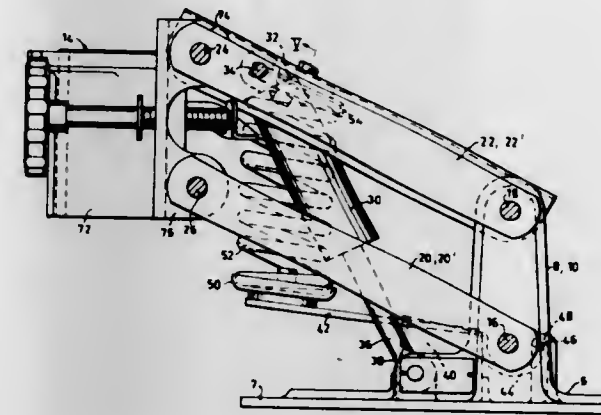
Bror Göte Persson, AB Be-Ge Karosserifabrik, Box 8, Oskarshamn, Sweden

Filed May 10, 1965, Ser. No. 454,564
13 Claims. (Cl. 267—1)

1. Resilient support means for a seat, especially for motor vehicles, comprising a parallelogram link system between said seat and a base member, coil spring means

elastically supporting said parallelogram link system and leaf spring means elastically supporting said coil spring means, and separate spring means operative at least at

sockets into engagement with the upper end of the legs, a vertical set screw in the bracket below the horizontal pipe and horizontally spaced along the length of said horizontal

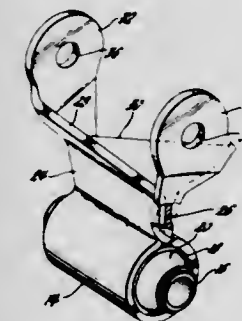


one point of said link system and further biasing said link system against movement of said support downwardly.

3,314,673

SPRING SHACKLE AND METHOD OF MANUFACTURE THEREOF

Paul L. Graney, Grosse Pointe, and Gilbert L. Hansen, New Baltimore, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 3, 1965, Ser. No. 436,843
5 Claims. (Cl. 267—54)



1. A one-piece sheet metal spring shackle comprising, a single sheet metal strip bent about a transverse axis at the longitudinal median portion thereof to form a lower cylindrical portion, an intermediate flat portion and an upper portion including parallel laterally spaced apertured ears aligned in planes perpendicular to the axis of said cylindrical portion, said ear being formed respectively on opposite ends of said strip.

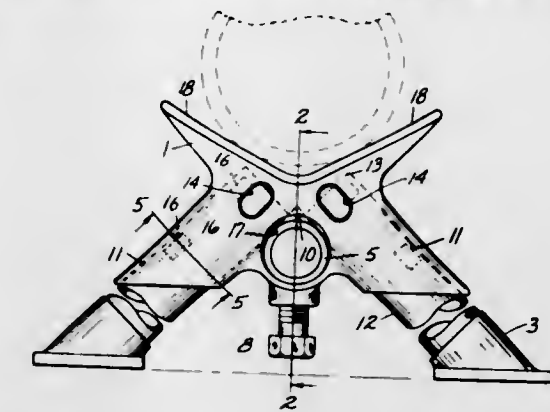
3,314,674

PIPE STAND

Thomas G. Brown, Erie, Pa., assignor to Reed Manufacturing Company, Erie, Pa., a corporation of Pennsylvania

Filed Jan. 29, 1965, Ser. No. 428,925
1 Claim. (Cl. 269—296)

A pipe stand bracket having upwardly and outwardly diverging surfaces forming a pipe supporting cradle, a pair of downwardly and outwardly diverging sockets on the under side of the bracket receiving the upper ends of legs, shoulders at the upper ends of said sockets for seating the upper ends of the legs, a horizontal socket in the bracket between and below the diverging sockets for receiving a horizontal pipe, said horizontal socket intersecting the diverging sockets and providing openings through which the horizontal pipe projects into the diverging



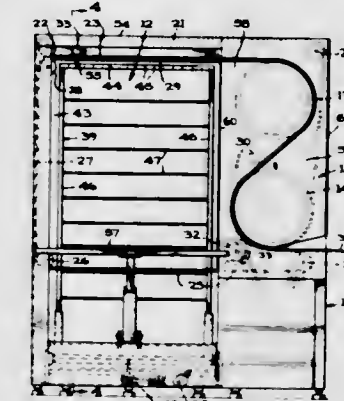
zontal socket from said pair of sockets for forcing the horizontal pipe upward against the upper ends of the legs.

3,314,675

APPARATUS FOR CONVEYING, STRAIGHTENING AND STACKING FLEXIBLE SHEET MATERIAL ARTICLES

William J. Rothfuss, David E. Robinson, and Ronald W. Emus, Greenville, S.C., assignors to Southern Machinery Company, Greer, S.C., a corporation of South Carolina

Filed Mar. 31, 1966, Ser. No. 539,157
7 Claims. (Cl. 271—1)



1. An apparatus for conveying and stacking cloth articles and the like comprising a continuously moving conveyor means adapted to grip the cloth articles in succession and carry them in succession to a stacking station, said conveyor means including a pair of opposed contacting endless conveyor belts having a generally sinusoidal article elevating portion and a substantially horizontal conveying portion, said horizontal portion extending across said stacking station, a sensing device at the stacking station in the path of movement of each cloth article and engaged by each article, power means set into operation by the sensing device upon contact of the latter with each article, and a pivoted transfer frame at the stacking station connected with and operated by the power means and engaging one side of each article and pulling each article from the conveyor means and carrying each article away from the conveyor means and depositing it by gravity on a stack support.

3,314,676

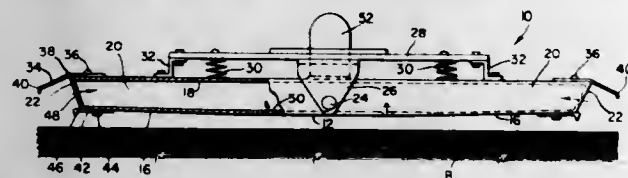
PICK-UP HEAD FOR PRE-CUT FABRIC BLANKS

Frank H. Fromm, Jr., 4215 State Road, Drexel Hill, Pa. 19026

Filed May 23, 1966, Ser. No. 552,251
13 Claims. (Cl. 271—26)

1. In a pick-up head of the character described, the combination comprising means providing a blank engaging undersurface area bounded by peripherally extend-

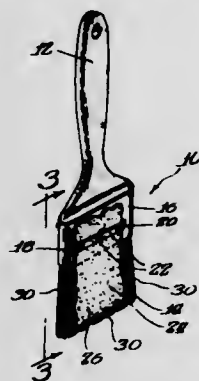
ing generally upright side wall areas, the effective size of the pick-up head being such that marginal areas of said blanks extend outwardly from thereunder, means providing air intake passages in said side wall areas, means extending outwardly from said side wall areas above said passages and over the marginal areas of the topmost blank to control the path of air approaching said passages, and



means facing downwardly for engaging the topmost blank and sharply depressing the same along the lines of said side wall areas whereby to cause separation of the marginal areas of the topmost blank from the marginal areas of the underlying blank to facilitate turning of the marginal areas of the topmost blank upwardly by air approaching said passages.

3,314,677

NOVELTY AND AMUSEMENT BRUSH MEMBER
Carl Ayala, Chicago, Ill., assignor to H. Fishlove & Co., Chicago, Ill., a corporation of Illinois
Filed Oct. 23, 1964, Ser. No. 405,956
6 Claims. (Cl. 272-8)



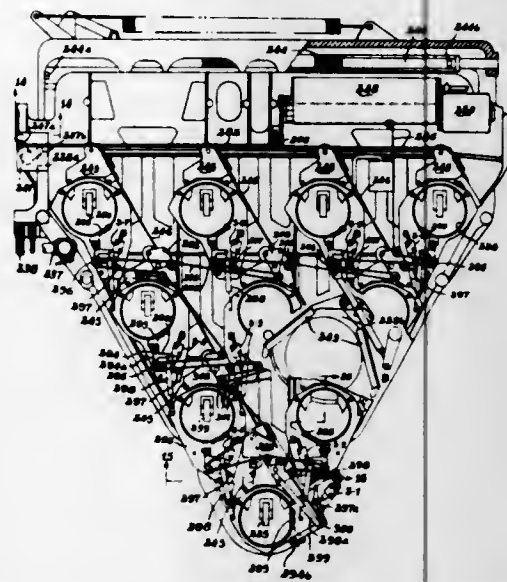
1. A novelty and amusement device comprising, a brush member, securing means on one side of said brush member, a strip releasably held by said securing means against said side of the brush with the strip hidden from the view of an observer, adherent means on the side of said strip spaced from said brush, said strip adapted to be applied and adhered to a surface by moving said brush across said surface, said strip when applied to said surface giving the impression that the surface has been defaced by a paint.

3,314,678

MECHANISM FOR SETTING BOWLING PINS AT SELECTED POSITIONS
Robert M. Conklin, Muskegon, Albert M. Rockwood, North Muskegon, Robert Torresen and Anthony J. Gretzky, Muskegon, and Milton E. Brown, deceased, late of Grand Haven, by Burville E. Brown, administrator, Grand Haven, Mich., assignors to Brunswick Corporation, a corporation of Delaware
Filed July 9, 1963, Ser. No. 293,909
11 Claims. (Cl. 273-43)

1. A bowling pin handling apparatus comprising a pin setting deck structure movable toward and away from a pin supporting surface on a bowling alley, means on the deck structure for receiving and holding bowling pins at positions in a predetermined pattern thereon preparatory to release of the pins to drop therebeneath for setup on said pin supporting surface and for releasing the pins; means for operating said receiving and holding means normally to release and drop each of the pins held thereby, selection means for selecting less than all the pins for

setup, separate clamp means at each pin position on said deck structure movable to pin holding position for separately holding each pin on the deck structure during pin release by said pin releasing means, a common drive



means for moving all of said clamps to pin holding position on activation of the clamps, and means responsive to said selection means for selectively activating the clamps at non-selected pin positions to set only the unheld pins upon release of pins by said releasing means.

3,314,679

GOLF DRIVING RANGE
Norman A. Kohn, 740 E. 15th St., Eugene, Oreg. 97401
Filed Mar. 27, 1964, Ser. No. 355,362
9 Claims. (Cl. 273-182)



1. A golf ball driving range comprising a receptacle to receive a liquid, said receptacle having a continuous side wall and a bottom, a tubular member carried by said bottom, said tubular member having a longitudinally extending opening throughout substantially the axial length thereof, said opening being disposed adjacent the top of said tubular member, said opening having a transverse dimension greater than the diameter of a golf ball, said bottom of said pool sloping downwardly toward said opening to gravity feed said golf ball to and through said opening and into said tubular member, and hydraulic pressure means connected with said tubular member to exert a force on said golf ball to urge it for movement in one axial direction of said tubular member towards an end thereof.

3,314,680

DYNAMIC SELF-CONTAINED MINIMUM ENVELOPE FACE-TYPE SEAL
Normand L. Lagasse, Bridgeport, and Jerald L. Park, Stratford, Conn., assignors to Avco Corporation, Stratford, Conn., a corporation of Delaware
Filed Nov. 12, 1964, Ser. No. 410,601
5 Claims. (Cl. 277-41)

1. In a self-contained dynamic seal, the combination comprising:
an annular housing having an end wall and a circular shaft receiving aperture in said end wall;

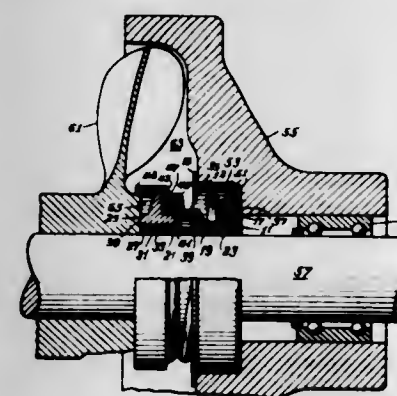
a first annular end face seal bonded to said end wall interior of said housing and concentric with said aperture;
an annular seal ring concentrically positioned within said housing, said seal ring having first and second annular end faces and a circular shaft receiving aperture;
an angularly fixed, axially movable annular thrust ring plate concentrically positioned within said housing; a second annular end face seal bonded to said thrust ring;



compression means contained within said housing for axially urging said thrust ring and said second annular face seal against said second annular end face and for urging said first end face against said first annular end face seal to provide a seal between said first annular end face seal and said first end face of said seal ring;
an annular groove in said ring around the periphery of said circular aperture; and
an O-ring seal in said groove, said O-ring seal being compressible between said circular shaft and said ring to provide a seal therebetween when said dynamic seal is installed on said shaft.

3,314,681

SEAL WITH DEFLECTOR MEANS
John Talamonti, Chicago Heights, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed June 22, 1964, Ser. No. 376,949
2 Claims. (Cl. 277-42)



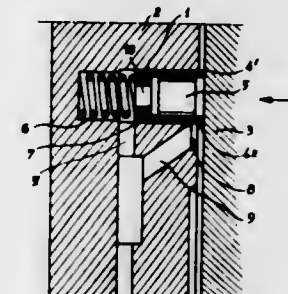
1. A seal comprising a retainer having a rear wall and a forwardly extending inner nose portion; a sealing washer mounted on said forwardly extending inner nose portion adapted to shift axially with respect to said retainer; said sealing washer having a radially disposed sealing face on the forward end thereof; an elastomeric sleeve including a rear flange in engagement with said rear wall and a front flange in engagement with said sealing washer; a tubular shroud formed integral with said front flange of said elastomeric sleeve extending forwardly over said sealing washer in a zone to provide a deflector means for said radially disposed sealing face; and resilient means

interposed between said rear wall and said sealing washer whereby said sealing washer is normally urged away from said rear wall.

3,314,682

LATERAL SEALING RINGS FOR ROTARY ENGINES

Lucien Péras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed May 18, 1964, Ser. No. 368,054
Claims priority, application France, May 30, 1963, 936,610, Patent 1,366,863
1 Claim. (Cl. 277-76)

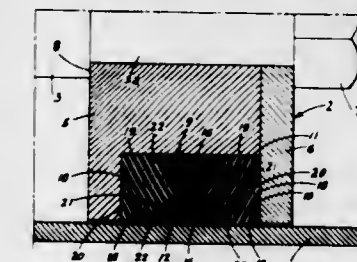


Lateral sealing rings for rotary engines comprising a circular groove formed in one of the two registering faces belonging one to the rotor and the other to the stator of said engine, first and second concentric endless scraper strips disposed in said groove, an expansion spring positioned between said strips to bias them in a radial direction towards a spaced relationship against respective adjacent side walls of said groove, further spring means disposed in the bottom of said groove perpendicular to said registering faces to bias said strips towards the opposite face, and first and second conduit means connecting the radially inward surface of said first and second strips respectively to an engine oil sump whereby oil retained by said strips will be returned to said sump.

3,314,683

SEALING RING UNIT

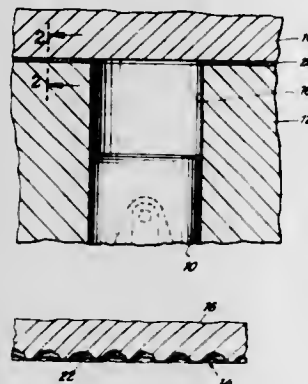
Dagobert O. Schmidt, 825 S. Orange Ave., and Albert E. Miller, 413 E. Locust St., both of Lodi, Calif. 95240
Filed May 20, 1966, Ser. No. 551,800
1 Claim. (Cl. 277-188)



A sealing ring unit for engagement between a member having a cylindrical surface and another member associated with the first member in concentric relation thereto, the members being disposed for relative longitudinal movement, said other member having a circumferential recess open to said cylindrical surface, and said recess being of rectangular form in section with the bottom wall of the recess parallel to said cylindrical surface; the sealing ring unit comprising an endless sealing ring of flexible and resilient material engaged under radial compression in and extending about the recess, the sealing ring at its radially inner and outer faces closely engaging the bottom wall of the recess and said cylindrical surface, respectively, the recess being materially wider than the sealing ring, said sealing ring being formed on each side with a relatively wide and deep annular V-shaped groove terminating at its side edges short of said faces of the ring, and support rings of a non-deformable material mounted in the recess between the sealing ring and the op-

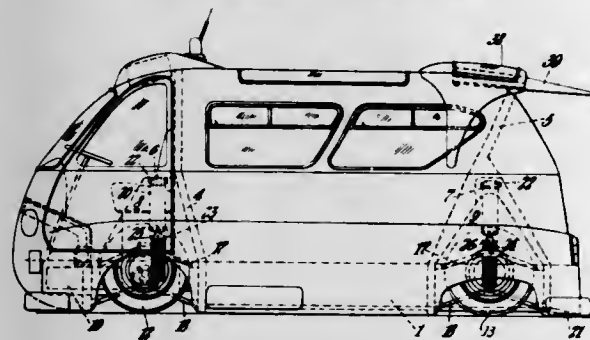
posite sides of the recess and in contact with both said bottom wall of the recess and said cylindrical surface; said support rings following the contour of and closely engaging opposite surfaces of the sealing ring grooves throughout their extent and beyond said grooves extending without deviation to the radially inner and outer faces of said support rings in clearance relation to the sealing ring whereby to leave V-shaped spaces therebetween in the recess, the radially inner and outer faces of the sealing ring each having a shallow transverse concavity between the corners of such ring, and said faces being spread transversely and the corners of the sealing ring extending into the initially larger V-shaped spaces in the recess when the sealing ring is engaged between said bottom wall of the recess and said cylindrical surface, the related side edges of the sealing ring outwardly of the grooves then diverging toward said faces of the sealing ring.

3,314,684
SEALING SURFACES AND METHODS OF PREPARING SAME
Robert G. Millhiser, Detroit, Mich., assignor to Ajem Laboratories, Inc., Livonia, Mich.
Filed Aug. 31, 1964, Ser. No. 393,045
5 Claims. (Cl. 277-236)



1. In an apparatus the combination comprising two closely fitted, metal, sealing surfaces, pressed tightly together, at least one of which surfaces has a substantially uniform, grit impacted surface having a multiplicity of independent pits with relatively sharp ridges therebetween which bite into the opposing surface forming a stationary seal between said surfaces having a series of gas-tight barriers.

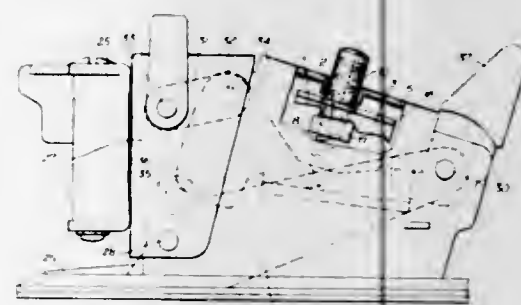
3,314,685
LOW-LOADING ROAD VEHICLE
Peter William Bothwell, 7 Red House Lane, Westbury-on-Trym, Bristol, England
Filed Jan. 20, 1964, Ser. No. 338,981
5 Claims. (Cl. 280-6)



1. A road vehicle comprising a unitary rigid load supporting frame, two road-engaging wheels providing the sole support for the rear of said frame and two other road-engaging wheels providing the sole support for the front of said frame, separate means for individually mounting each wheel on said frame, each mounting means including a unit comprising co-axially disposed

resilient means and power operated extensible and retractable means, means connecting one end of each unit to the associated wheel, means connecting the opposite end of each unit to said frame, one of said last two mentioned means including hinge means, the travel of said extensible and retractable means being such that when retracted, both the front and rear of said frame are in engagement with the road to facilitate loading of said vehicle and when extended both the front and rear of said frame are raised above the road in running position, said frame comprising a hollow boom disposed along one side of said vehicle, a second hollow boom disposed along the opposite side of said vehicle, and a stressed floor connecting said booms to provide a unitary structure, each of said hinge means comprising a pair of wishbones for hingedly attaching each wheel to the adjacent boom, and each extensible and retractable means comprising a hydraulic cylinder.

3,314,686
SPRING LOCKING ESPECIALLY FOR SKI BINDINGS
Thomas G. Smolka and Johann Zelinka, Schwechat, Austria, assignors to Wiener Metallwarenfabrik Smolka & Co., a firm
Filed Mar. 16, 1964, Ser. No. 351,930
Claims priority, application Austria, Apr. 30, 1963, A 3,521/63
4 Claims. (Cl. 280-11.35)

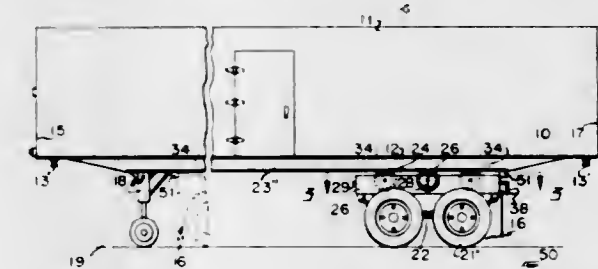


1. A spring locking, especially for ski bindings, comprising
a housing,
a hollow bolt having an extension and axially, but non-rotatably movable in said housing,
a slide plate having a plurality of areal catches and slidably mounted in said housing,
said extension of said hollow bolt selectively engaging one of said areal catches depending upon the sliding position of said slide plate,
a spring means disposed in and engaging with one end said hollow bolt and tending to urge said bolt and, thereby, said extension toward said one of said areal catches, and
a locking means engaging the other end of said spring means, in order to provide different tensions of said spring means against said locking means.

3,314,687
ADJUSTABLE SKI BINDING
Robin F. Tiesler, Carversville and Wismer Roads, Carversville, Pa. 18913
Filed Oct. 15, 1965, Ser. No. 496,433
8 Claims. (Cl. 280-11.35)

1. A binding for securing a skier's boot to a ski, comprising:
a guide track adapted to be mounted on a ski, said guide track comprising a channel member having guide portions spaced from the upper surface of the ski;

3,314,689
END SHIFTABLE TRAILER WHEEL ASSEMBLY
Terrence W. Hogan, 14-1721 Moodie St., Fort William, Ontario, Canada
Filed Mar. 4, 1965, Ser. No. 437,016
1 Claim. (Cl. 280-81)



a lock plate and a heel plate each slidably mounted on said track guide portions, said lock and heel plates each having guide portions complementary to the track guide portions for retaining said plates on the track;
an elongated side plate mounted on said track in the space between said track guide portions;
a plurality of apertures spaced along said side plate, said apertures extending lengthwise of the ski at least one aperture on said track located in axial alignment with some of the apertures on said slide plate;



a vertically projecting locking pin carried by said lock plate, said pin being engageable with selected apertures in said slide plate and said track to secure said lock plate and slide in selected positions along said track;
a second vertically projecting pin on said heel plate; and
means mounting said second pin for axial movement into selected ones of said slide plate apertures to secure said heel plate to said track.

3,314,688
MOBILE VEHICLE FOR FOOD STORAGE
Howard W. Guegold, R.D. 4, Chew Road, Mansfield, Ohio 44903
Filed Nov. 26, 1965, Ser. No. 510,006
3 Claims. (Cl. 280-47.37)



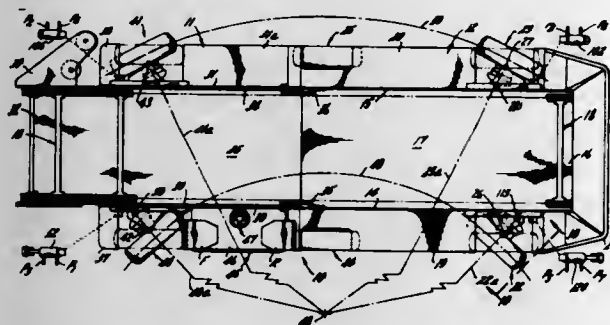
1. A mobile vehicle for food storage comprising a hollow rectangular box having an open horizontal top, oppositely disposed vertical side and end walls, said side and end walls being interconnected and a horizontal rectangular bottom sheet secured to the bottom horizontal edges of said walls, lid means removably sealing the open top of said box, wheel means secured to the bottom of said sheet, and handle means pivotally mounted on said box, said handle means having a first position at which said box can be pushed on said wheels and having a second position at which said wheel means are locked and cannot turn, said wheel means including a first pair of front wheels interconnected by a horizontal axle secured to said sheet adjacent one of said end walls and a second pair of rear wheels interconnected by another horizontal axle secured to said sheet adjacent the other of said end walls, and wherein said handle means including first and second rubber grips, each grip, when said handle means is in the second position, being wedged between a corresponding side wall and a corresponding front wheel.

In a trailer adapted to be towed selectively from opposite ends in opposite directions, the combination of an elongated chassis provided at the underside thereof with inner and outer pairs of transversely spaced parallel rails extending substantially the full length of the chassis, said rails being channel-shaped and having lower horizontal flanges, a wheel truck assembly disposed under said chassis and including a substantially rectangular frame, a pair of end cross shafts and an intermediate cross shaft mounted in said frame, pairs of flanged inner rollers provided on said end and intermediate cross shafts and rollingly engaging lower surfaces of said flanges of the inner rails, a pair of flanged outer rollers provided on said intermediate cross shaft in laterally outwardly spaced relation from the inner rollers and rollingly engaging lower surfaces of said flanges of the outer rails, said inner and outer rollers permitting said chassis to be moved over said wheel truck assembly from one end of the chassis to the other while the wheel truck assembly remains relatively stationary, means provided on said wheel truck assembly frame and engageable with the inner rails for releasably locking the wheel truck assembly selectively at the opposite ends of said chassis to prevent longitudinal movement of the chassis relative to the wheel truck assembly, a pair of keeper flanges projecting laterally outwardly from opposite sides of said frame and overlying upper surfaces of said flanges of the inner rails whereby to prevent the chassis from lifting off said rollers of the wheel truck assembly, and an air brake hose connection for said wheel truck assembly, said connection comprising a pair of cables disposed in parallel to said inner rails, a plurality of rings freely slidable on said cables, and a flexible hose connected at one end thereof to the wheel truck assembly and at its other end to an air supply on the chassis, the intermediate portion of said flexible hose being secured in zigzag formation to said rings whereby the hose may be extended and contracted longitudinally of the chassis during relative movement of the wheel truck assembly from one end of the chassis to the other.

3,314,690
STEERING MECHANISM FOR HAULAGE VEHICLES
William G. Bunchak, Chicago Ridge, Ill., assignor, by mesne assignments, to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 19, 1963, Ser. No. 324,770
22 Claims. (Cl. 280-91)

1. A steerable mine haulage vehicle, said mine haulage vehicle including, in combination,
body structure forming a carrying chamber for material to be transported,
a first steerable wheel assembly on one end of the body structure and a second steerable wheel assembly located on the other end of the body structure op-

posite the first wheel assembly each said wheel assembly including a wheel on each side of the vehicle and means for imparting an amplitude of swing to each of the steerable wheels sufficient to maintain each of said steerable wheels substantially perpendicular to a radial line passing through the common turning center of each of the steerable wheels, said means including



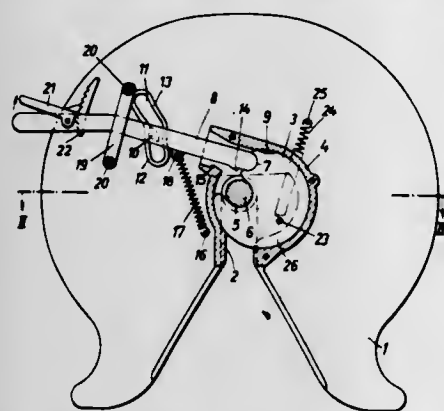
firstly, a steering linkage operatively connected to each of the steerable wheels and secondly, means for applying a turning force to the steering linkages, and thirdly, differential motion transmitting means including gears interposed between the means for applying a turning force and the steering linkages, said gears including means effective to turn the inside wheel of each wheel assembly through a greater amplitude of turn than the outside wheel of each wheel assembly irrespective of the direction of turn.

3,314,691

FIFTH WHEEL COUPLING

Theodor Georgi, Steingegg-Appenzell, Switzerland, assignor to Jost-Werke G.m.b.H., Frankfurt am Main, Germany

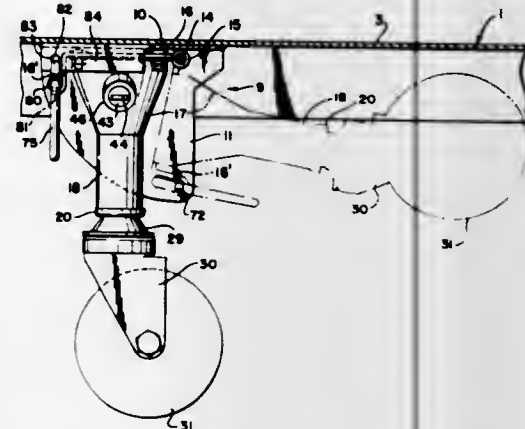
Filed Apr. 2, 1965, Ser. No. 445,092
15 Claims. (Cl. 280-434)



1. A semi-trailer coupling for motor vehicles for holding a king pin having a portion of reduced diameter while providing an automatic adjustment of the locking effect, comprising in combination: a coupling plate provided with a cylindrical box-like retainer and a slot for receiving such king pin, which slot terminates in a base in the region of said retainer, which base has a radius of curvature substantially equal to that of the king pin; a locking plate rotatably disposed in said retainer, and supported exclusively by the walls of said retainer, said locking plate being asymmetrically disposed in relation to said coupling plate slot and being formed with a locking recess and with a bearing recess of a size to mate with the reduced diameter portion of such king pin; and a locking element which is spring biased into a locking position in which it engages said locking recess for rotating said locking plate in a direction in which such king pin is engaged in said bearing recess and is tightly clamped between said slot base and said locking plate.

3,314,692
RETRACTABLE TRAILER TONGUE JACK

James A. Karns, 2605 Addyston Road,
Akron, Ohio 44313
Filed Dec. 24, 1964, Ser. No. 420,973
5 Claims. (Cl. 280-475)

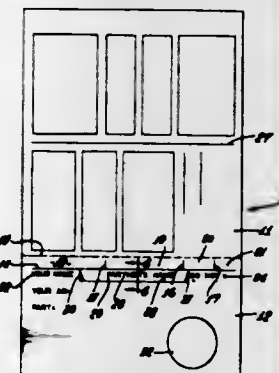


1. A tongue jack which includes cap means with a depending positioning plate with upper and lower positioning holes therein, a swivel pin the ends of which are held in the cap means, a sleeve rotatably mounted over the pin, a housing the upper part of which is attached to the sleeve, pin means slidable in said upper part of the housing for engagement in one of said holes in the positioning plate, the lower portion of the housing being generally cylindrical with a keyway extending axially from one side thereof, the housing comprising a sliding sleeve within and substantially concentric with said upper part of the housing with a hollow key extending substantially the length thereof and located within said keyway, a wheel and a fork holding the same with an outer shaft swivelly connected with the fork, an inner shaft with external threads meshed with internal threads on the outer shaft, a screw the threads of which mesh with internal threads on the inner shaft and means for rotating the screw, said screw and shafts being within the housing.

3,314,693

DUPLICATE BRIDGE SCORING AID

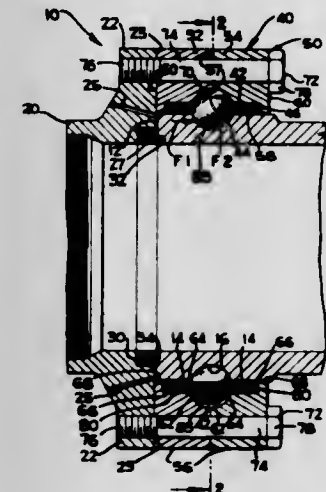
Frederick H. Flam, 4510 Callada Place,
Tarzana, Calif. 91356
Filed May 4, 1964, Ser. No. 364,567
9 Claims. (Cl. 283-49)



1. A duplicate bridge entrance form comprising two parts connected together by a perforate line, one part being a private score and the other part having spaces for entering the names of the entrants along a line closely paralleling the perforate line, said other part having die cut slot means forming a tab or flap below said spaces, the dimension of the tab or flap corresponding to the transverse dimension of said space, said tab or flap being designed to interfit the slot means of like other parts for detachable series suspension in staggered relationship to expose said spaces in contiguous array.

3,314,694
SWIVEL JOINT

Armand L. Faccou, Santa Ana, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Continuation of application Ser. No. 298,088, July 29, 1963. This application Sept. 20, 1965, Ser. No. 492,984
5 Claims. (Cl. 285-94)



1. A swivel joint comprising a first conduit having an annular generally radial end face and a cylindrical outer surface joining said end face and constituting an inner bearing, said outer surface providing an annular inner raceway; a second conduit coaxial with said first conduit and having a generally radial end face confronting said end face of the first conduit and projecting radially outward from said end face; a retaining ring surrounding said outer surface, being rotatable therearound, and having a plurality of circumferentially spaced holes; the spacing between any two adjacent holes of any group of at least four successive holes being different than the spacing between any other two adjacent holes in the group whereby no two adjacent holes in the group will simultaneously occupy the positions of the two adjacent holes of the group when said retaining ring is rotated; anti-friction members individually received in said holes and rollably engaging said inner raceway; an outer bearing including annular spacing and thrust portions encircling said outer surface of the first conduit with said spacing portion being positioned between said end flange and said thrust portion, said portions being identical to each other and having outer surfaces, first and second generally radial surfaces projecting in from their outer surfaces, said first radial surfaces being in engagement with each other, said second radial surface of the spacing portion engaging said end flange of the second conduit, and said portions also having annular inner surfaces joining their respective first and second surfaces, each of said inner surfaces of said bearing portions including an annular concave outer raceway segment joining its respective first radial surface, said raceway segments constituting an outer raceway confronting and rollably receiving said anti-friction members therein, said end flange, said spacing portion and said thrust portion having openings in registration with each other; and means extending through said openings releasably connecting said spacing and thrust portions to said end flange, said end flange, said outer bearing and said means being exposed on the outside of said swivel joint.

3,314,695

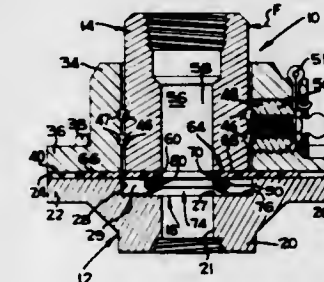
FLUID JOINT AND SEAL ASSEMBLY THEREFOR

Lands H. Perry, Newport Beach, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Oct. 23, 1963, Ser. No. 318,310
6 Claims. (Cl. 285-95)

1. In a swivel joint including coaxial first and second tubular members providing a common fluid passage there-

through, said members having spaced radial annular planar end faces in at least partially confronting relation to each other, the end face on said second member including an outer segment and an inner segment spaced axially farther from said first member's end face than said outer segment, an annular seal of non-elastomeric material lying against said first end face and said outer segment of said second end face, means for urging said seal into sealing relation with said outer segment, and means for mounting said first member for rotation of said end face against said seal and for limited shifting of the axis of said first member into angular relation to the axis of said second member whereby said end face is moved out of a radial plane, a seal energizer comprising a rigid annular retainer positioned between said seal and



the inner segment of said second end face in surrounding relation to said fluid passage, said retainer including a frusto-conical camming wall convergently extending from said inner segment toward said seal and a tubular wall extending from said camming wall toward said seal around said fluid passage, and a garter spring circumscribing said tubular wall and being in tangential engagement with said camming wall and said seal and being diametrically tensioned by such engagement whereby it resiliently applies substantially uniform force circumferentially on said seal which force urges said seal against said first end face during said rotation and shifting of said first member with respect to said second member, the maximum diameter of the tubular wall being greater than the inside diameter of the spring in its diametrically relaxed condition.

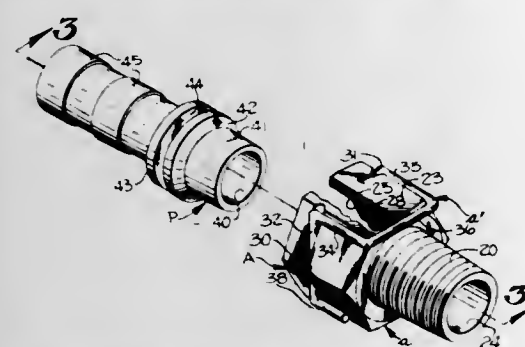
3,314,696

QUICK CONNECT COUPLING

George R. Ferguson and Harmon L. Shaw, Charlotte, N.C., assignors to Perfecting Service Company, Charlotte, N.C., a corporation of North Carolina
Filed Feb. 11, 1964, Ser. No. 344,111
3 Claims. (Cl. 285-174)

1. A coupling adapted for quick connection comprising
 - (a) a tubular receptacle including
 - (1) a socket having means at one end for connecting one end of a fluid conducting pipe thereto and having an axial bore extending there-through, a pair of slots extending inwardly from opposite sides thereof and into said axial bore, said socket having cam surfaces provided thereon, and
 - (2) a locking element carried by said socket, said locking element including
 - (A) a pair of spaced apart and similar opposed legs having medial portions normally positioned within the slots and on opposite sides of the axial bore in said socket, said medial portions being substantially straight and parallel in their normal position,
 - (B) a resilient bridging portion connecting said legs together at one end and disposed externally of said socket, said bridging portion resiliently maintaining the medial portions of said opposed legs inwardly toward each other within the axial bore in said socket, and

- (C) said opposed legs having free end portions disposed externally of said socket and diametrically opposite said externally disposed bridging portion, each of said end portions having a section which extends substantially at right angles to the medial portions and substantially parallel to the longitudinal axis of the socket,
- (b) a tubular plug adapted to axially enter said receptacle and become releasably interlocked therewith against axial movement, said plug including
- (1) means at one end of said plug for connecting one end of a fluid conducting pipe thereto,
 - (2) said plug having a free end adapted to enter the axial bore in said socket,
 - (3) a circumferentially extending conical cam surface tapering outwardly and rearwardly away from the free end of said plug, said conical cam surface being engageable with the medial portions of said opposed legs of said locking element to spread said legs apart upon axial movement of said plug into said socket, and



- (4) said plug having an external circumferential groove positioned rearwardly of said conical cam surface, the medial portions of said opposed legs of said locking element being engageable with said circumferential external groove in said plug to interlock the same against axial movement when said plug is moved a predetermined distance into said socket, the externally disposed free end portions of said opposed legs being engageable with said cam surfaces of said socket to spread apart the medial portions of said legs and move the same out of the circumferential groove in said plug to release the same for axial movement out of said socket when said locking element is moved transversely of said socket, and
- (c) resilient fluid sealing means between said plug and said socket.

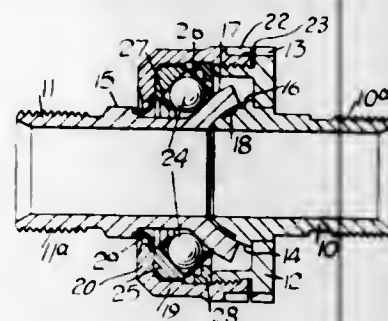
3,314,697

PIPE COUPLING HAVING CONCENTRIC SPHERICAL SURFACES

Frank George Freeman, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
 Filed Apr. 27, 1964, Ser. No. 362,607
 Claims priority, application Great Britain, May 1, 1963, 17,107/63; June 18, 1963, 24,176/63
 1 Claim. (Cl. 285-263)

A pipe coupling capable of permitting relative angular movement between a pair of pipes to be joined thereby, and comprising first and second members adapted for respective connection to the pipes to be joined, a retaining ring mounted on the second member and engageable with the first member, said first member terminating in a part spherical convex surface, said second member terminating in a flange having one concave part spherical face engageable with said spherical terminus of said first member and complementary thereto, the other surface of said flange being a part spherical surface concentric with said one concave part spherical surface, said retaining ring

being provided with a race having a concave surface, and a set of caged balls engaging said other surface of said flange and said concave surface of said race, and means for limiting the travel of said caged balls about the common center of said spherical surfaces, the surface of

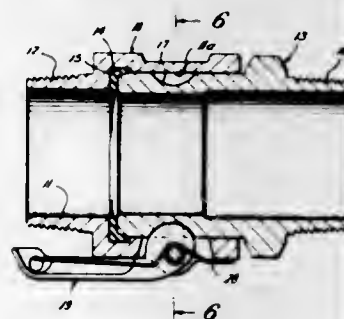


said race lying in a sphere concentric with said one and said other surface of said flange, whereby said retaining ring presses said complementary part spherical surfaces of said first and second members together under all conditions of relative angular movement.

3,314,698

COUPLING

Robert L. Owens, Houston, Tex., assignor to White Manufacturing Co., Houston, Tex., a corporation of Texas
 Filed Aug. 20, 1964, Ser. No. 390,869
 5 Claims. (Cl. 285-312)



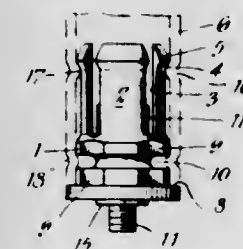
1. A pipe coupling assembly comprising:
 - a tubular coupler;
 - a male member insertable into the coupler;
 - an annular concave recess in the outer periphery of the male member;
 - means for sealing between the coupler and male member;
 - at least one pair of ears extending radially outwardly from the outer walls of said coupler;
 - a first slot between said ears extending axially of the coupler and completely through the wall of the coupler between said ears;
 - a second slot in said coupler transverse to and intersecting said first slot, said second slot opening into the bore through the coupler and extending to said ears whereby an opening transverse of the axis of said coupler is formed, one wall of said opening being defined by radially inward surfaces of said ears;
 - a cam arm including a cam surface on one end thereof for entry into said recess and hinge pins rigid with and extending from opposite sides of the arm, said pins being of less length than the distance between the end walls forming said second slot, but of greater length than the distance between the walls of said first slot;
 - the end of said arm remote from the cam surface adapted to be inserted into the bore of the coupler and passed through said first slot until said hinge pins engage said radially inner surface of said ears through said second slot;
 - and means on said arm engageable with said coupler for retaining said arm between said ears.

3,314,699

CONNECTOR PIECES FOR TUBULAR ELEMENTS, TUBULAR STRUCTURES INCORPORATING SUCH CONNECTOR PIECES AND METHODS OF MAKING SUCH STRUCTURES

George O. Taylor, Guildford, England, assignor to The British Aluminium Company Limited, London, England, a British company

Filed July 16, 1964, Ser. No. 383,028
 Claims priority, application Great Britain, July 19, 1963, 28,696/63
 2 Claims. (Cl. 287-54)

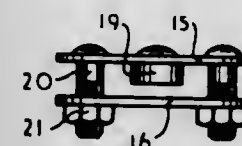


1. A connector piece assembly for a tubular element comprising a tube portion having a substantially closed rear end and an open front end, a plurality of slots extending from said front end to define a plurality of tongues the thickness of which is reduced from their roots to within a short distance of said front end to form an external shoulder on each tongue and to give each tongue a thickness in relation to the hardness of the material of the tube portion to provide a degree of resilience, each external shoulder being engageable with an internal shoulder of said tubular element to resist separation of the connector piece and the tubular element and the tongues being bevelled externally at their leading ends to facilitate insertion into the tubular element, an external annular groove formed adjacent to said rear end to accommodate locking means, an abutment extending rearwardly from said rear end and a threaded member extending through said rear end and said abutment and rearwardly of said abutment, and said connector piece including a supporting connector member having a plurality of threaded bores and having said threaded member engaged in one of said bores and complementary projection and recess formations formed on said connector piece and supporting member adjacent said threaded bores.

3,314,700

CONNECTOR

Alfred A. Burrell, 10323 106th St., Edmonton, Alberta, Canada
 Filed Feb. 14, 1964, Ser. No. 345,030
 2 Claims. (Cl. 287-189.36)

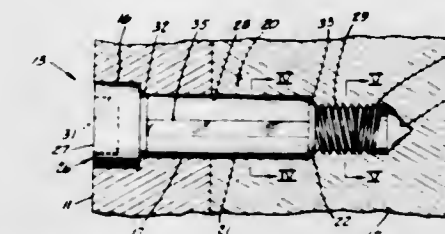


1. A connector for coupling in exact original relation two split apart parts of an element, which element had a hole on its split line before separation and an aperture on each side thereof, comprising a pair of companion plates each having a pair of spaced apertures, the apertures in each plate registering with the pair of apertures one on each side of the hole in the element, a stud projecting from one of said plates intermediate of its pair of spaced apertures, said stud being of the same diameter as the hole in the element prior to the splitting thereof and no longer than the thickness of the element, and fastening means extending through the registering apertures whereby said stud assures the repositioning of the separated parts of said element in exact restoration both longitudinally and transversely of the split line.

3,314,701

DOWEL SCREW ASSEMBLY

Alan C. Durham, 218 E. Chicago, Allen, Mich. 49227
 Filed Apr. 29, 1965, Ser. No. 451,927
 6 Claims. (Cl. 287-189.36)

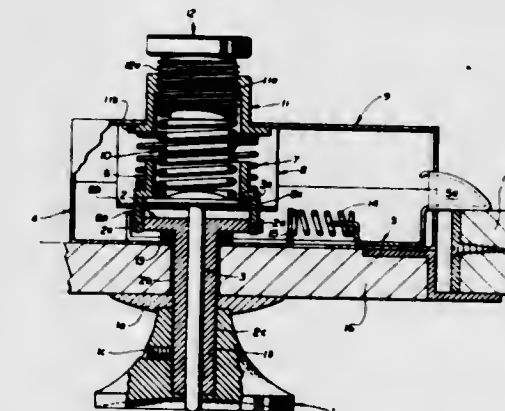


1. A die structure assembly accurately positioning a first and second member together, comprising,
 - (a) a dowel screw assembly securing and positioning said first and second members together,
 - (b) a dowel screw as part of said dowel screw assembly,
 - (c) said dowel screw having an elongated dowel body portion with an enlarged securing head connected at one end and a first holding means connected at the other end defined by an externally threaded portion of less diameter than said body portion, said securing head having means thereon for receiving a turning tool,
 - (d) said dowel body portion having substantially a circular cross section and having an axially directed flat surface of relatively narrow width extending throughout the length thereof to permit air in said locating holes to escape to the atmosphere,
 - (e) said first and second members with concentric dowel locating holes having substantially circular cross sections,
 - (f) said dowel body portion locating said first member with respect to said second members by tightly fitting in and contacting said dowel locating holes,
 - (g) a second holding means in the locating hole of said second member defined by a threaded hole to receive the threaded portion of said dowel screw, said threaded hole being substantially concentric with said locating hole and which may have a closed inner end, and
 - (h) said first and second holding means acting together causing said securing head to act on said first member holding it in contact with said second member.

3,314,702

ADJUSTABLE SAFETY LATCH

William A. Ames, 834 Pear Ave., Sunnyvale, Calif. 94087
 Filed Mar. 3, 1965, Ser. No. 436,884
 5 Claims. (Cl. 292-169)



1. A door latch operating mechanism comprising:
 - a rotatable knob fixedly positioned upon a rotating shaft having a concentric axial hole therethrough;
 - a cam fixedly positioned on said shaft;

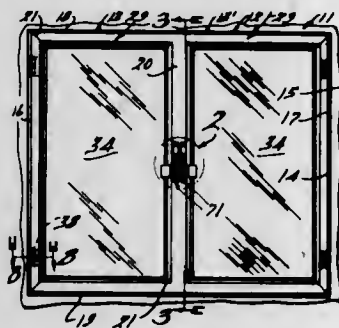
positive locking pins engaging said cam;
a first relatively strong spring for urging said locking pins to an engaged position with said cam;
a second relatively weak spring for urging said locking pins to an engaged position with said cam;
an adjusting screw engaging said first spring and disposed to adjust the tension thereon to a predetermined value;
said adjusting screw being further disposed to remove all tension on said first spring thereby transferring it to said second spring;
a reciprocating plunger concentrically mounted through said hole in said shaft and positioned to disengage said locking pins from said cam;
a cam follower positioned in reciprocating relation to said cam;
a latch positioned on said cam follower;
a spring disposed to urge said follower against said cam.

3,314,703

PANIC RELEASE UNIT FOR WINDOWS AND DOORS

Henry C. Fitzpatrick, Plainwell, Mich., assignor to Valley Metal Products Company, Plainwell, Mich., a corporation of Michigan

Filed Mar. 1, 1965, Ser. No. 435,867
10 Claims. (Cl. 292-21)



1. In a latching and release mechanism for a room closure, a fixed member forming part of an opening for room, a movable closure member interfitting with said fixed member, a keeper projecting from said movable member, a hook pivoted to said fixed member, resilient means urging said hook toward a latching position, the keeper and hook having coacting surfaces whereby closing movement of said movable member will cam said hook away from its latching position, a push handle pivoted to said fixed member, said push handle being substantially L-shaped with its central portion being pivoted, one leg of said push handle comprising a hand-engageable portion facing the interior of said room, the other leg of said handle extending away from the room, a lift rod, a lateral projection on said lift rod, the lift rod extending between said second leg on the handle and said hook, whereby pressure exerted on the first leg of said handle will cause said second leg to engage said projection and thereby move said lift rod toward said hook, and a pin-and-slot connection between said hook and said lift rod, the relative positions of the pin and slot of said connection being such that when said hook is in its latching position, movement of said lift rod by said push handle will cause said hook to move to an unlatching position.

3,314,704

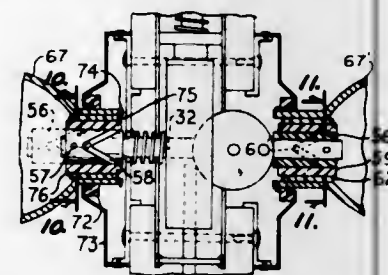
DOOR LATCH ASSEMBLY

John L. Jensen, Estherville, Iowa 51334

Filed June 17, 1964, Ser. No. 375,744
4 Claims. (Cl. 292-170)

1. In a latch bolt assembly for a door having an edge portion and opposite sides,
a first bore extending inwardly into said door from said edge and transversely to said edge,

a second bore extending through said opposite sides of said door transversely to said first bore and in communication therewith,
an elongated latch bolt means slidably mounted in said first bore and including a cam receiving surface thereon,
a shaft longitudinally reciprocatably slidably mounted in said second bore,
a cam means secured to said shaft,



said cam means being adapted upon longitudinal displacement of said shaft in one direction to engage said cam receiving surface to longitudinally move said latch bolt means,
said shaft having a sleeve means embracing each of its ends, a door knob embracing each of said sleeve means,
means to prevent rotation of said shaft,
and means between each of said sleeve means and each of said door knobs to longitudinally displace said shaft upon rotation of one of said door knobs.

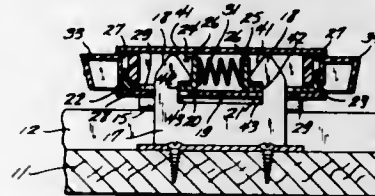
3,314,705

LOCKING DEVICE

Loren W. Lichtenberger, 21 1/2 S. Federal,

Mason City, Iowa 50401

Filed Aug. 17, 1964, Ser. No. 389,890
1 Claim. (Cl. 292-175)

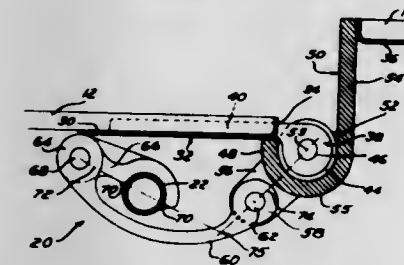


A locking device comprising in combination:
housing means including an elongated, hollow body having a pair of longitudinally spaced, aligned openings formed therein and having further a projection formed directly at one end thereof and deformable from a position extended inwardly of said body to a position not extended inwardly thereof;
a pair of catch members slidably mounted within said body, each catch member having an aperture formed therein intermediate the ends thereof and alignable with one of said openings, and one end of each catch member having a U-shape and extended transverse to the longitudinal direction of movement of said catch members;
a pair of buttons, each for moving by manual force thereagainst one of said catch members inwardly of said body, each button having a narrow portion formed transversely therein which portion fits into a U-shaped end, forming thereby a button and catch member interlocked as a pair against relative longitudinal movement;
resilient means mounted within said body between said catch members, and biasing said catch members outwardly of said body and toward a position wherein each catch member abuts against one of said projections, said projections being extended inwardly of said body, with said respective openings and apertures non-aligned; and

hasp means including a pair of keepers insertable through said openings for latching engagement with said catch members.

3,314,706

DOOR LOCKING AND SEALING ARRANGEMENT
Harold J. Carlson, Lakeside, Mich., and Roland J. Olander, La Grange, Ill., assignors to W. H. Miner, Inc., Chicago, Ill., a corporation of Delaware
Filed Sept. 3, 1964, Ser. No. 394,282
9 Claims. (Cl. 292-196)



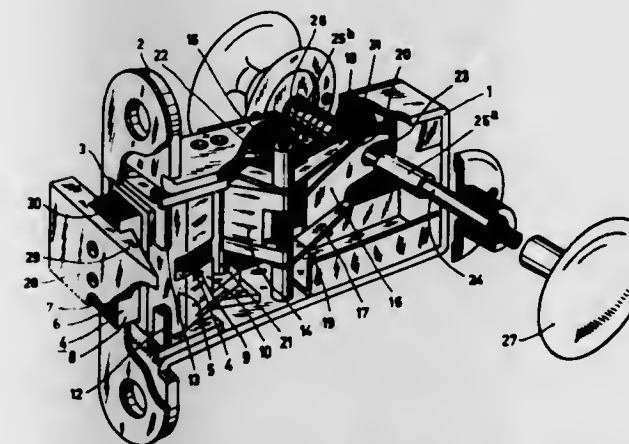
7. In a lock and seal assembly for use on a freight car having a plurality of movable doors arranged to form one side of said car with one door adapted to have one edge aligned adjacent to the edge of another door and offset from said other door when said doors are closed to form said side, the improvement comprising a lock bar rotatably carried by said one door, a lock and seal member carried for rotation about a vertical axis by said one door and having an elongated arm extending substantially the full height of said doors, said axis being offset outwardly from said one door and lying generally between said adjacent edges of said doors, and means pivotally connected between said lock bar and said lock and seal member for transmitting the rotation of said bar in one direction into rotation of said elongated arm on said lock and seal member into locking and sealing engagement with the said adjacent offset edges of said doors.

3,314,707

MAGNETIC DOOR LATCH

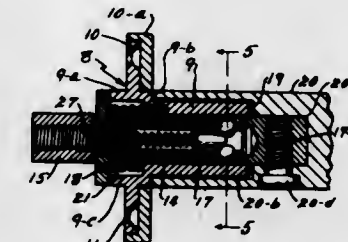
Wilhelmus Hendrickus van Donselaar, Emmasingel, Eindhoven, Netherlands, assignor to North American Phillips Company, Inc., New York, N.Y., a corporation of Delaware

Filed July 14, 1965, Ser. No. 471,853
Claims priority, application Netherlands, July 29, 1964, 6,408,628
5 Claims. (Cl. 292-251.5)



1. A latch for a door comprising in combination with a housing, a bolt of permanent magnet material, guide means supporting said bolt for free relative sliding movement, means pivotally supporting said guide means for rotation about an axis substantially normal to the sliding axis of said bolt, door knob means and means operatively connected with said door knob means for holding said

3,314,708
LEVER HANDLE CLUTCH
Nicholas A. Welch, West Hartford, Conn., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut
Filed Sept. 18, 1964, Ser. No. 397,394
8 Claims. (Cl. 292-336.5)

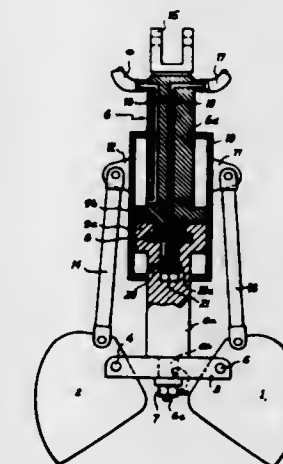


8. In combination with a door lock having a rotatable rollback operatively connected to a latch and a rotatable handle manually operable from a first starting position to a second latch actuating position, a stationary bearing member, a sleeve rotatable in said bearing member and to which said handle is affixed, a spindle rotatable in said sleeve having its inner end non-rotatably connected to said rollback, at least one first clutching aperture in said sleeve, a corresponding clutching aperture in said spindle movable into axial alignment with said first clutching aperture, a clutch ball movable through said spindle aperture into clutching engagement with the edge of said first clutching aperture, a wedge-shaped force element in said spindle movable against said ball, a spring means in said spindle for biasing said force element, and an adjusting screw movable in said spindle against said spring for adjusting the compression of said spring.

3,314,709

HYDRAULICALLY OPERATED MECHANICAL GRAB

Gabriel L. Guinot, Le Plessis-Belleville, France, assignor to Societe Anonyme Pochlain, Le Plessis-Belleville, France, a French society
Filed Mar. 24, 1965, Ser. No. 442,328
Claims priority, application France, Mar. 25, 1964, 968,586
6 Claims. (Cl. 294-70)



1. An hydraulically operated mechanical grab comprising an hydraulic cylinder, a piston slidable in said

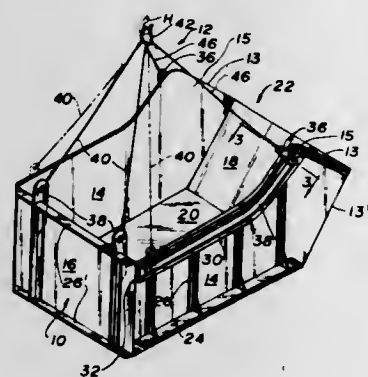
cylinder, a piston rod connected with said piston, the lower part of said rod projecting through the lower end of said cylinder, at least two grab members each rotatable with and mounted on the free end of said lower part of said piston rod in such manner as to pivot about an axis which is transverse to the longitudinal axis of said lower rod part and each grab member pivotally connected with said cylinder, the upper part of said rod projecting through the upper end of said cylinder for connection with the jib of crane wherein said lower part of said piston rod is connected with said upper part of piston rod by connecting means mounted for relative free rotation of said parts of piston rod around their common axis, said connecting means being located within said cylinder.

3,314,710

DUMPING APPARATUS

Charles J. Edeburn, San Bernardino, Calif., assignor to Kaiser Steel Corporation, Oakland, Calif., a corporation of Nevada

Filed Nov. 15, 1965, Ser. No. 507,933
6 Claims. (Cl. 294-73)



1. A material handling device of the type described for transporting and dumping materials and provided with a bottom, ends and sides, track means affixed to each of said sides in generally parallel relation to each other, each of said track means comprising a level portion and a raised portion connected to said level portion at an angle thereto, sling means connected to said material handling device and comprising a plurality of flexible cables and links connecting said cables to said device, certain of said links being movably mounted in said track means and others of said links being fixedly attached to said device, the upper ends of said cables being connectable to a common hoisting apparatus and the overall length of the cables affixed to said movable links and said movable links being shorter than the overall length of the cables affixed to said fixed links and said fixed links whereby upon relaxation of the tautness on said last mentioned cables the movable links and the cable attached thereto will be moved to an offbalanced position and effect a tilting of the device.

3,314,711

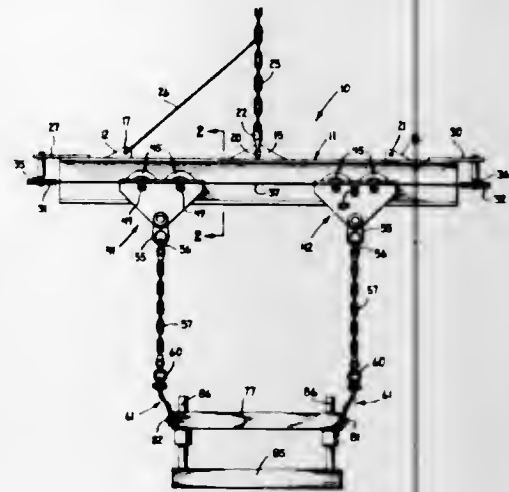
LIFTING AND HANDLING APPARATUS

Clifford H. Dietz, Donald H. Pike, William R. Cox, Jr., and Walter W. Elliott, all of Indianapolis, Ind., assignors to Engineered Models Corporation, Indianapolis, Ind., a corporation of Indiana

Filed June 4, 1965, Ser. No. 461,406
15 Claims. (Cl. 294-78)

1. Lifting and handling apparatus comprising a support element, means for lifting said support element at the central portion thereof, a pair of carriages mounted on said support element for movement toward and away from one another, a pair of flexible lines each secured to

a respective one of said carriages and supporting an object to be lifted, and control means restricting movement



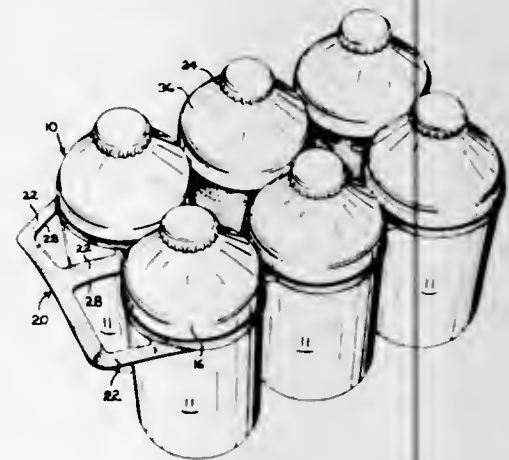
of said carriages to equidistant movement away from and toward the central portion of said support element.

3,314,712

CONTAINER CARRIER

John Hohl, Bern, Switzerland, and Thomas L. Scribner, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio

Filed Jan. 27, 1965, Ser. No. 428,486
2 Claims. (Cl. 294-87.2)



1. A package comprising a plurality of bottles and a carrier formed of a single thickness sheet of stretchable plastic material engaging said bottles, each of said bottles including a generally cylindrical wall portion terminating at its upper end in an enlarged annular shoulder, said bottles being arranged in juxtaposed rows, said sheet having portions thereof defining a plurality of constrictive apertures disposed in juxtaposed rows, each of said apertures receiving a single bottle, each of said sheet portions which define said constrictive apertures snugly engaging said cylindrical wall portion adjacent said enlarged annular shoulder, and handle means formed integrally with said sheet comprising an E-shaped member in the same plane as said sheet having a base and at least three legs joining said base to said sheet and cooperating therewith to define a pair of openings to permit the placing of fingers therein.

3,314,713

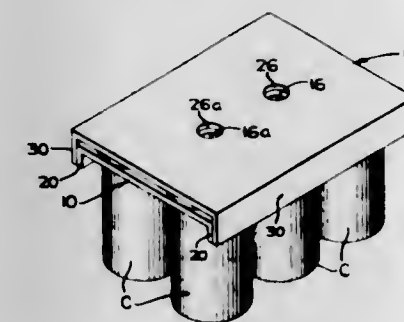
PACKAGING DEVICE

Howard S. Noel, Los Gatos, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed June 7, 1965, Ser. No. 461,771
3 Claims. (Cl. 294-87.28)

1. A packaging device for supporting containers having a closure end of a diameter larger than the body of the

container, comprising a stiff carrier sheet having at least two rows of longitudinally aligned container receiving apertures, said carrier sheet also being provided with at least two finger receiving apertures spaced between said rows and equidistant from the ends of said rows, said carrier sheet also being provided with opposed side flanges bent normal to the plane of said carrier sheet, a cover



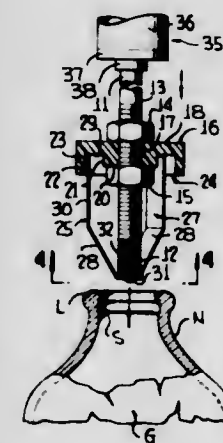
sheet overlying said carrier sheet and having at least two finger receiving apertures aligned with the finger receiving apertures of said carrier sheet, said cover sheet being provided with opposed side flanges bent normal to the plane of said cover sheet and confronting said ends of said carrier sheet, and means for fastening said cover sheet and carrier sheet side flanges so that said cover sheet provides additional support for said carrier sheet.

3,314,714

ARTICLE HOLDER

John G. Brubaker, Park Forest, Ill., assignor, by mesne assignments, to Brockway Glass Company, Inc., Brockway, Pa., a corporation of New York

Filed July 31, 1964, Ser. No. 386,615
11 Claims. (Cl. 294-93)



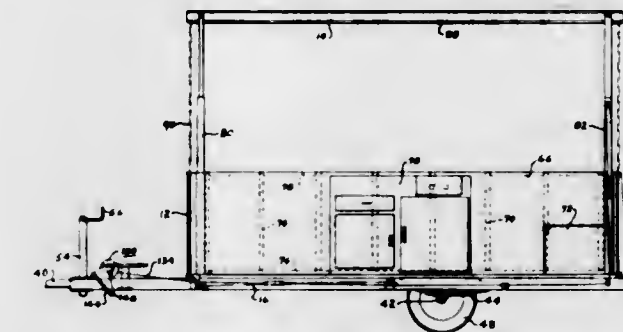
1. An article support particularly adapted for gripping open mouthed containers comprising an elongated body member, said elongated body member having first and second end portions, a plurality of gripping fingers, means securing the gripping fingers at the first end portion of the body member, said gripping fingers having terminal portions spaced from said body member adjacent said second end portions, a cover secured to said elongated body member at said second end portion, said cover including an outer peripheral portion directed toward said first end portion, and each of said finger terminal portions being at all times received between said peripheral portion and the second end portion of said body whereby outward movement of said finger terminal portions is limited by abutment thereof with said outer peripheral portion of said cover.

3,314,715

TRAVEL TRAILER

Lloyd J. Bontrager, Goshen, Ind., assignor to Star Tank and Boat Company, Goshen, Ind., a corporation of Indiana

Filed Feb. 18, 1965, Ser. No. 433,733
6 Claims. (Cl. 296-23)



1. A travel trailer comprising a frame with a forwardly extending portion, an undercarriage supporting said frame, a rectangularly shaped body on said frame, a rectangular top movable from a lowered position on said body to a raised position spaced above said body, foldable means between said body and top for closing the space between the body and top when the top is in raised position, a mechanism for lifting and lowering the top including a main operating cable, a telescopic post at each corner of said body, each post consisting of lower, intermediate and upper sections, pulley means at the upper end of said lower and intermediate sections, a cable connected to the lower end of said upper section and extending over the pulley means on said intermediate section to an anchor point at the lower end of said lower section, a cable connected to the lower end of said intermediate section and extending over the pulley means on said lower section to a point beneath said body, means connecting each of said last mentioned cables to said main cable, said lower section being mounted rigidly on said body and said upper section being connected to the underside of said top, a reel mounted on said frame near the front thereof for winding said main cable, and a means for preventing rotation of said reel for holding said posts in their extended position said connecting means being positioned on said main cable at a point beyond the section of said main cable wound on said reel.

3,314,716

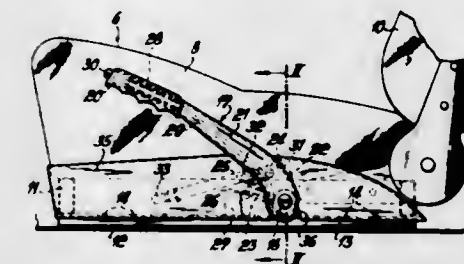
DRIVER'S SEAT AND BRAKE ACTUATING MECHANISM

Karl Sommerer, Stuttgart-Zuffenhausen, Germany, assignor to Firma Dr. Ing. h.c. F. Porsche KG., Stuttgart-Zuffenhausen, Germany

Filed May 7, 1965, Ser. No. 453,971

Claims priority, application Germany, May 13, 1964, P 34,266

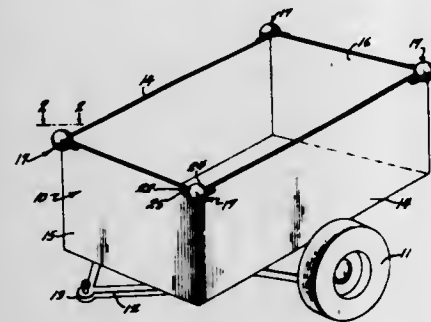
10 Claims. (Cl. 296-65)



9. A motor vehicle, comprising: a vehicle frame including a floor board; a driver's seat having a lower seat cushion and a backrest; means mounting said driver's seat on said floor board for horizontal adjustment forwardly and rearwardly relative to said frame and floor board; manually actuatable brake means for retarding movement of the vehicle; said brake means including a hand

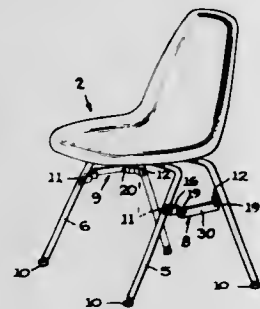
actuator mounted on said driver's seat for joint adjustment movement with said driver's seat relative to said frame.

3,314,717
BEARING ATTACHMENT DEVICE
John P. Wild, Park River, N. Dak. 58270
Filed Mar. 5, 1965, Ser. No. 437,358
3 Claims. (Cl. 296—100)



1. A bearing attachment device for use with open top vehicles such as trailer bodies which are closed by flexible covers, said device comprising, a substantially spherically shaped bearing member formed of a yieldable, resilient material, said bearing member having a quarter-spherical positioning recess therein defined by three radial planes disposed at substantially right angles to each other and intersecting each other at approximately the center of the spherical member, said recess presenting three substantially flat surfaces, said bearing member being positionable upon the upper corner of the vehicle trailer body whereby the exterior wall surfaces of the corner of the trailer body are engaged by two of said recessed flat surfaces and the adjacent upper edge of the corner of the trailer body is engaged by the other of said recessed surfaces, attachment means on said bearing member connectible to the trailer body whereby said bearing member presents a smoothly curved, yieldable, resilient surface at the corner of the vehicle trailer body and projects thereabove to be engaged by the flexible cover which is applied to and closes the top of the trailer body and thereby minimizes wear of the flexible cover at the corner areas.

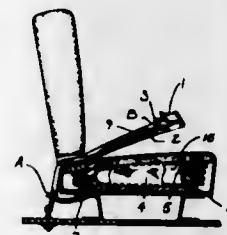
3,314,718
NESTING AND INTERLOCKING CHAIRS
Eugene L. Crandall, Elkhart, Ind., assignor to Creative Engineering, Inc., Elkhart, Ind., a corporation of Indiana
Filed Nov. 2, 1965, Ser. No. 506,089
2 Claims. (Cl. 297—239)



1. A chair construction which comprises a seat, a base member attached to the seat, identical front and rear leg constructions comprising a pair of legs rigidly connected at the top by said base member, the front and rear leg members being rigidly secured at a point intermediate their length by bracing means enabling the inte-

gral stacking of a plurality of said chairs and side-by-side interlocking of a plurality of said chairs, said bracing means comprising a continuous band of a rigid material bent to form five planar portions all of which lie in substantially vertical planes, said brace having an initial portion lying in a vertical plane formed by the pairs of front and rear legs, a second portion lying in a plane substantially perpendicular to said first mentioned vertical plane and forming a first angular intersection with a third portion lying in a plane parallel with and spaced outwardly from said first mentioned vertical plane, said angular intersection being adapted to receive the legs of the chair immediately below when in stacked relation; a fourth portion lying in a plane substantially perpendicular to said first mentioned vertical plane and forming a second angular intersection with a fifth portion lying in a plane parallel with and spaced outwardly from said first mentioned vertical plane, said second angular intersection having a slot therein adapted to receive the reverse slotted brace of a second chair when in side-by-side arrangement.

3,314,719
ERECTING SEAT BELT
Edsel W. Johnson, 6260 S. Lake Drive, Apt. 308, Cudahy, Wis. 53110
Filed Aug. 2, 1965, Ser. No. 476,519
8 Claims. (Cl. 297—345)

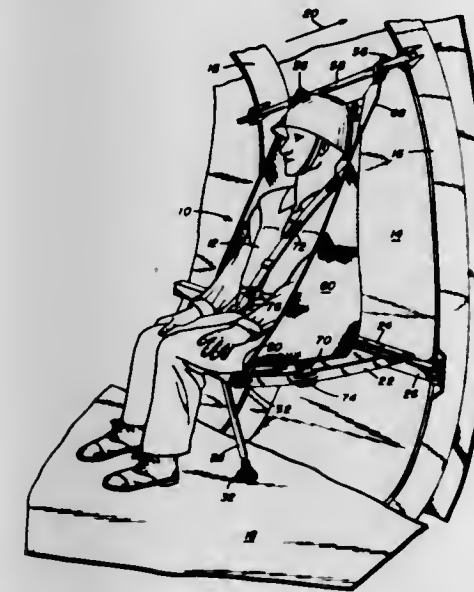


1. A seat belt apparatus for use in a vehicle having a seat, the apparatus comprising: a pair of inflatable straps, each of said straps attached at one end portion thereof to the vehicle and having the other end portion disposed in a normal position resting on the seat, said straps being normally deflated and limp; and fluid means fluidly connected to said straps and operable to inflate said straps, wherein upon inflation said other end portions are semi-rigid.

3,314,720
SAFETY TROOP SEAT
Ralph Millington, West Chester, and David F. Thompson, Media, Pa., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Feb. 11, 1965, Ser. No. 432,031
5 Claims. (Cl. 297—389)

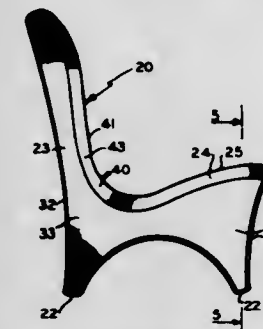
1. In combination with an aircraft, a shock absorbing safety troop seat comprising: a seat pan pivotally secured to the side wall of the aircraft by a continuous hinge extending the entire length of the rearward edge of said seat pan; a non-resilient shock absorbing strut, one end of which is pivotally secured to the underside forward edge of said pan and the other end of which is pivotally and detachably secured to the aircraft floor; said strut being of the metal yielding type thereby rigidly securing said seat pan under normal loads but yielding when the load exceeds a predetermined amount; a pair of supporting straps secured at their respective upper ends to a pair of non-resilient shock absorbers, said shock absorbers being secured to the side wall

of the aircraft at a point above said seat pan hinge, the opposite ends of said straps passing through slots near the forward edge of said seat pan so as to form an oblique angle therewith and being adjustably secured together at the underside thereof; fabric restraining means suspended between said support straps in an upright generally U-shaped configuration, the depth of said fabric decreasing from the lower end adjacent the seat pan to the upper end thereof; and



a lap and shoulder strap, said lap strap being secured around the underside of said seat pan and said shoulder strap being secured at one end to said lap strap and at the other end to said upper end of one of said support straps; whereby an occupant seated in said safety troop seat is protected from vertical downward deceleration loads by said shock absorbers, said shock absorbing strut and said hinged seat pan and from longitudinal fore and aft and lateral left and right deceleration loads by said shock absorbers, said fabric and said lap and shoulder belts.

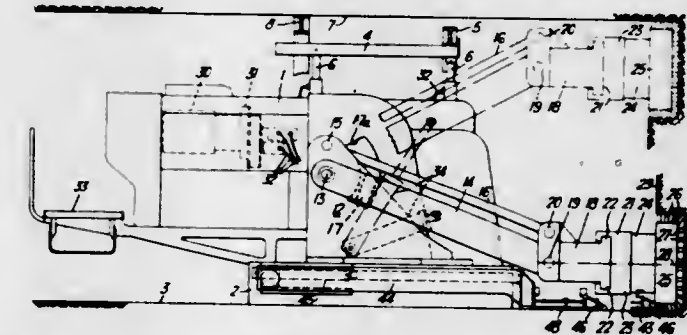
3,314,721
CHAIR CONSTRUCTION
Leland C. Smith, 101 Thayer St., Syracuse, N.Y. 13205
Filed Jan. 25, 1966, Ser. No. 522,882
6 Claims. (Cl. 297—445)



1. A chair structure comprising a molded support portion and a molded cushion portion secured together; the support portion being completely self-supporting and having a comparatively thin molded outer shell layer of rigid solid plastic material providing the outer finish to the structure, and having a comparatively thick inner layer of rigid foamed plastic material to give strength to the support portion, the outer and inner layers being bonded together by foam-molding the latter within the former; the cushion portion comprising at least in part a layer of flexible foamed plastic for providing cushioning to the cushion portion; the support portion including at least

leg portions, a seat portion, and a chair back portion; the cushion portion extending at least over the seat portion and over the inner surface of the back portion, and being bonded to the seat portion and the back portion, the seat contacting and back contacting surfaces of the cushion portion being foam molded to conform exactly in outline and contour with the mating surfaces of the seat and back portions of the support portion.

3,314,722
MINING MACHINE WITH ROTARY CUTTER HORIZONTALLY SLIDABLE ON VERTICALLY ADJUSTABLE GUIDE
Frederick Webster, Chapeltown, Sheffield, England, assignor to Greenside Machine Company Limited
Filed Jan. 4, 1965, Ser. No. 423,046
Claims priority, application Great Britain, Jan. 3, 1964, 300/64
5 Claims. (Cl. 299—31)



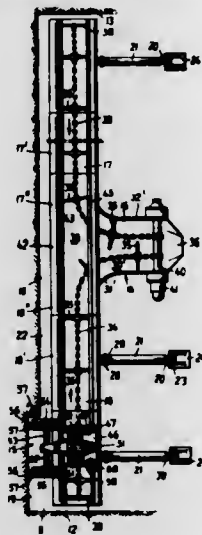
1. A mining machine for working against an earth face comprising a frame, an arm assembly transversely pivoted at its rear end to opposite sides of the frame and extending forwardly with respect to the frame, said assembly being formed by two separate arms connected by a transverse brace thereby forming a stiff H-shaped structure, means for raising and lowering said assembly, a transverse elongated guide bar transversely pivoted at spaced points to the forward end of said assembly, a carrier slidably mounted for lengthwise movement along said bar, means for moving said carrier in either direction along said bar, a cutting head mounted on said carrier for rotation about a forwardly directed axis, means for rotating the cutting head, two separate links parallel to the respective arms of said arm assembly, said links connecting said guide bar to said frame to maintain said cutting head axis horizontal in all adjusted positions, and means on said frame for bodily advancing said guide bar horizontally in the forward direction of the machine whereby said cutting head may be moved straight into said earth face to mine the material in the same by movement of said carrier along said bar and raising and lowering of said arm assembly.

3,314,723
SIDEWALL MINER WITH VERTICALLY SWINGABLE ROTARY CUTTER AND T-SHAPED CONVEYOR
Werner Mennekes, Wethmar, near Lunen, Westphalia, Germany, assignor to Gewerkschaft Eisenhütte Westfalia, Wethmar, near Lunen, Germany, a corporation of Germany
Filed July 10, 1964, Ser. No. 381,934
18 Claims. (Cl. 299—43)

1. Rotary cutting means adapted to be conducted back and forth longitudinally along a mine face in extractive engagement therewith for the removal of mineral from the mine face, which comprises a longitudinally movable sled, a motor mounted on the sled, and a cutting wheel operatively connected to said motor for rotation about an axis substantially parallel to the path of longitudinal movement of said sled, said wheel having cutting tools thereon peripherally extending radially outwardly and

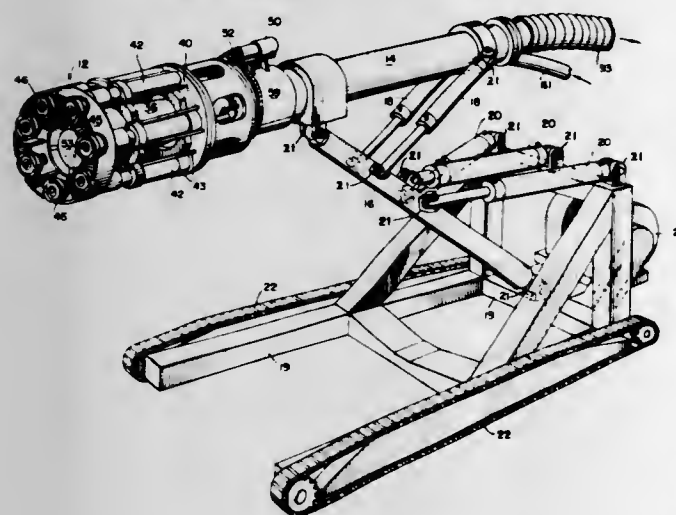
laterally outwardly at an angle to the radial direction, the outward peripheral path of said cutting tools extending beyond said sled for extractive engagement of the cutting tools transversely and longitudinally with a mine face adjacent the longitudinal path of movement of said sled.

5. Mining conveyor adapted to extend longitudinally along a mine face to convey away from the mine site mineral extracted from the mine face, which comprises a T-shaped conveyor including a pair of longitudinal wing portions adapted to extend along a mine face and a transverse stem portion connected to said wing portions inter-



mediate the outer ends of said wing portions, endless traction cable means, having forward and return sections, extending longitudinally along said wing portions between the outer ends thereof and the adjacent end of said stem portion and continuing uninterruptedly transversely along the stem portion to the remote end of said stem portion, and spaced apart scraper elements secured to said cable means for conveying mineral loaded onto the wing portions continuously and uninterruptedly to the remote end of said stem portion during conveying movement of said cable means in a direction toward said remote end.

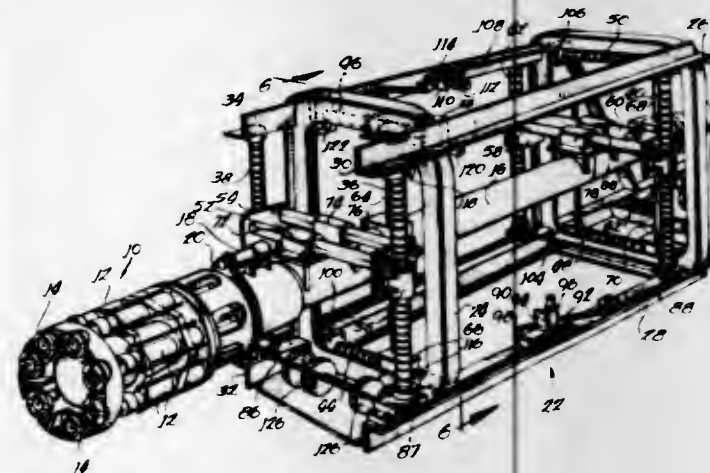
3,314,724
TUNNELING MACHINE AND IMPACT-TOOL CUTTING HEAD THEREFOR
William Tinlin, 21 Hickory St., Chicago Heights, Ill. 60411
Filed Apr. 17, 1964, Ser. No. 360,585
10 Claims. (Cl. 299-62)



4. A work head for a tunneling machine comprising, a rotatably mounted tube-like stem having an enlarged hollow forward portion, said forward portion having a substantially circular open front end and opening rearwardly into said stem, a plurality of impact hammers each having a cutting tool releasably retained therein arranged around the exterior of said enlarged portion substantially parallel

with the axis thereof, said cutting tools projecting beyond the open end of said forward portion and extending radially with respect to the center thereof beyond the maximum radial dimension of said impact hammers, the centers of said cutting tools defining a circle concentric with said open front end, means for releasably securing each of said impact hammers to said enlarged forward portion, frame means carrying and surrounding said stem immediately behind said enlarged forward portion for rotatably supporting said stem and enlarged forward portion, means for rotating said stem in said frame means, a shroud secured to said forward portion for surrounding said cutting tools and directing flow of air across the faces of said tools when said work head is in operating position and a suction is applied to said stem, and a circular plate mounted concentrically within the open end of said enlarged forward portion, said plate being of a size to reduce the open area of said forward portion to substantially that of the cross-section of said stem.

3,314,725
TUNNELING MACHINE HAVING HORIZONTALLY AND VERTICALLY RECIPROCATED ROTATABLE HEAD
William Tinlin, 21 Hickory St., Chicago Heights, Ill. 60411
Filed Aug. 27, 1964, Ser. No. 392,484
6 Claims. (Cl. 299-62)



1. A tunneling machine comprising frame means movable along its longitudinal axis, said frame means including laterally spaced frame members, longitudinally oriented carrier means slung between said frame members parallel with said longitudinal axis for lateral movement in vertical and horizontal directions normal to said axis, a work head carried by said carrier means and extending longitudinally beyond the forward end of said frame means, and means operatively associated with said frame means and said carrier means for holding said carrier means parallel with said axis and effecting continuous movement of said carrier means in alternate vertical and horizontal directions such that said work head traverses the entire axially projected area of said frame means.

3,314,726
WHEEL BALANCE CORRECTION DEVICE
Edward H. Rehnberg, Pasadena, Calif., and John C. Wilborn, 4559 C. Windsor Mall, Oklahoma City, Okla. 73127; said Rehnberg assignor to said Wilborn
Continuation of application Ser. No. 827,525, July 16, 1959. This application Sept. 10, 1964, Ser. No. 406,654
2 Claims. (Cl. 301-5)

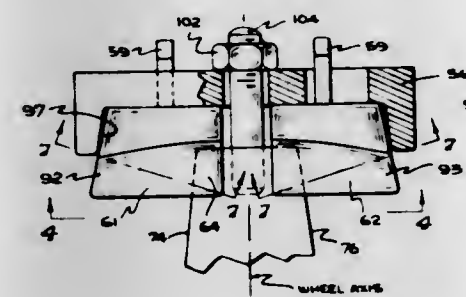
1. A wheel and wheel balancer assembly comprising an automobile wheel having an axis of rotation, said wheel having right and left hand sides spaced along said axis, said wheel having a rim having a central portion, said rim having right and left side flanges having inner ends

attached to each side of said central portion and extending away from said axis, said flanges having outermost terminal edges of which are outturned transversely to the remainder of the respective flange, said outermost edges having arcuate annular surfaces on sides thereof adjacent said axis, right and left circular endless tubes nested in the spaces adjacent to said arcuate annular sur-



faces and centered on said axis and each disposed at a right angle to said axis, means engaging said tubes and attaching said tubes to said rim, a circular center tube parallel to said right and left tube and secured to the outer surface of the central portion of said rim, and spherical weights in said tubes, said weights each having a diameter less than the inside diameter of the respective tube.

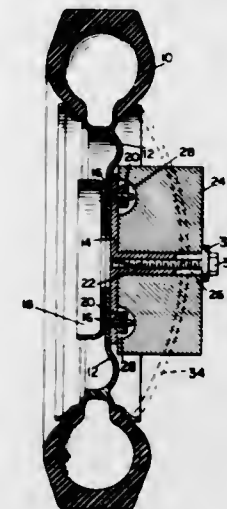
3,314,727
RIM AND WHEEL ASSEMBLY INCLUDING AN IMPROVED WEDGE CLAMPING DEVICE THEREFOR
James Murphy, Philadelphia, Pa., assignor to Murphy Enterprises, Inc., a corporation of Pennsylvania
Filed Sept. 18, 1964, Ser. No. 397,508
20 Claims. (Cl. 301-12)



20. In combination, a wheel having a plurality of radially extending spokes defining arcuate felly surfaces and a removable rim having an annular tapered flange mounted on said spokes, each spoke having an outer face and side surfaces, and a wedge partially interposed between said flange and one of said spokes, said wedge having an outer surface relative to the center of the wheel which is tapered in two transverse directions to form uniformly tapering thinner and thicker portions, and said thicker portion overhanging said spoke on one side.

3,314,728
WHEEL WEIGHTS FOR VEHICLES
Lewis D. Cross, 25 Nelson St., North Grafton, Mass. 01536
Filed Feb. 8, 1965, Ser. No. 430,824
1 Claim. (Cl. 301-41)

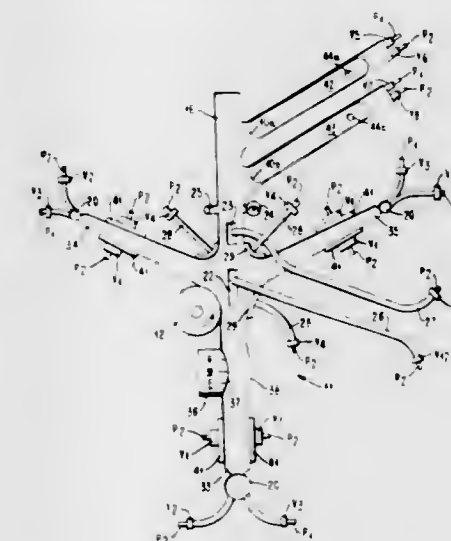
A wheel weight for wheeled vehicles having wheels and tires wherein the wheels are secured to the vehicle by means of lugs and lug nuts, said wheel weight construction comprising a flat disc having apertures receiving said



lugs, the lug nuts being then applied to the lugs for securing the disc in fixed relation with respect to said wheel, a threaded stud extending centrally outwardly axially of said disc, and a one piece solid weight of generally cylin-

drical form, said weight having an axial passage there-through receiving said stud, and means for securing said weight to said stud comprising a threaded bolt, the stud being hollow and threaded.

3,314,729
PNEUMATIC BELT DEVICE UTILIZING BACK-PULSING OR FORWARD-PULSING
Heard K. Baumeister, Rhinebeck, and Anthony W. Orlando, Highland, N.Y., and William B. Phillips, West Lafayette, Ind., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Apr. 27, 1964, Ser. No. 362,666
15 Claims. (Cl. 302-2)

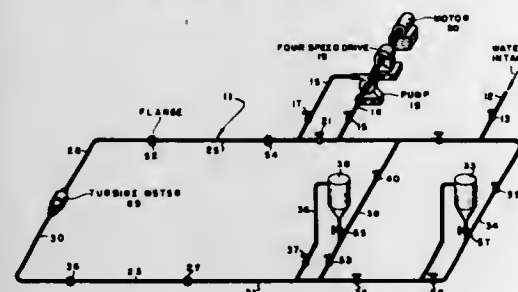


1. Means for maintaining the extension of an endless belt being transported, comprising a header for transporting said entire belt under pneumatic actuation, means for providing a differential pressure between leading and trailing ends of the endless belt to move it along said header in the direction of the lower pressure side of said differential pressure, and pressure control means for lowering the differential pressure on the endless belt to insure an extended form of said endless belt.

3,314,730 TRANSPORTATION OF SOLIDS BY PIPELINE

Donald G. Anderson and Raymond H. Pfrehm, both of Houston, Tex., assignors to Esso Research and Engineering Company

Filed Mar. 31, 1966, Ser. No. 539,024
9 Claims. (Cl. 302-14)



1. A method for pumping phosphate which comprises: forming a stable suspension of granular phosphate, finely divided kaolinitic material, and water having a solids content within the range from about 49% to about 60% by weight and containing from about 40% to about 51% by weight of water; said solids containing from about 10% to about 15% by weight of said kaolinitic material and from about 85% to about 90% by weight of said granular phosphate; pumping said suspension through a pipeline; and recovering said solids from said suspension pumped through said pipeline.

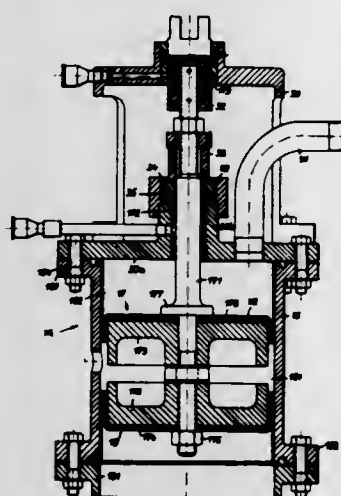
7. A stable suspension suitable for pumping through a pipe which comprises:

granular phosphate, finely divided kaolinitic material and water, said suspension having a solids content within the range from about 49% to about 60% by weight and containing from about 40% to about 50% by weight of water; said solids containing from about 10% to about 15% by weight of kaolinitic material and from about 85% to about 90% by weight of said granular phosphate.

3,314,731 METHOD AND APPARATUS FOR INCREASING THE ENTRAINMENT OF PULVEROUS MATERIAL IN A CARRIER GAS UTILIZING PRESSURE SHOCKS

Hermann Josef Kopineck, Dortmund-Kirchhorde, Herbert Muszkiewicz, Dortmund, and Claus Schlotter, Dortmund-Scharnhorst, Germany, assignors to Polysius G.m.b.H., Neubeckum, Germany

Filed June 21, 1965, Ser. No. 465,559
Claims priority, application Germany, June 20, 1964, H 53,034
3 Claims. (Cl. 302-26)



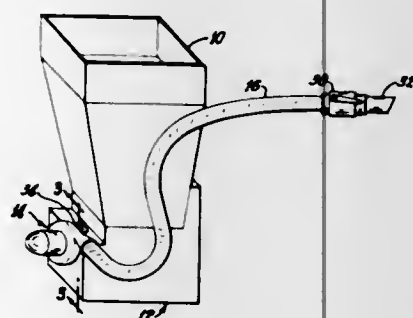
1. An apparatus for conveying fine granular and pulverous solid materials, which includes: a closed container

adapted to receive fine granular and pulverous solid materials, first conduit means leading into said container for delivering a carrier gas therein, second conduit means communicating with the interior of said container for withdrawing fluidized material consisting of carrier gas and solid material entrained therein from said container, and pressure shock creating means mounted on said container and exposed to the interior thereof and operable for periodically creating sudden shock-like increases in pressure in the gas in said container.

3,314,732 APPARATUS FOR BLOWING INSULATION

James R. Hagan, Toledo, Ohio, assignor to Electra Manufacturing Corp., Toledo, Ohio, a corporation of Ohio

Filed Nov. 27, 1964, Ser. No. 414,261
3 Claims. (Cl. 302-37)



1. Means for moving fibrous insulation from a source of supply to a space to be insulated, said means comprising a housing having a flat sidewall of circular shape with a central opening, an integral peripheral wall around said sidewall and of generally cylindrical shape except for an outlet opening at one portion thereof, wall means forming a flared exit passage communicating with said outlet opening and flaring both horizontally and vertically therefrom, said exit passage terminating in a circular opening, a cover plate attached to said peripheral wall and disposed parallel to said sidewall, a motor mounted on said cover plate and having a drive shaft extending through said cover plate and aligned with said central opening, an impeller affixed to said drive shaft and comprising a base having a flat surface, a circular periphery, and a surface opposite to said flat surface which flares to a peak aligned with said central opening, a plurality of blades integral with said base and extending generally radially, the inner ends of said blades terminating radially outwardly from said peak and the outer ends of said blades terminating at the periphery of said base, outer end portions of said blades curving rearwardly in a direction opposite to the direction of rotation of said impeller with the radius of curvature decreasing substantially uniformly from the inner to the outer ends of said blades, the outer longitudinal edges of said blades being a distance from said base at their outer ends at least equal to the distance from the base at their inner ends, and a hose communicating with said outlet opening.

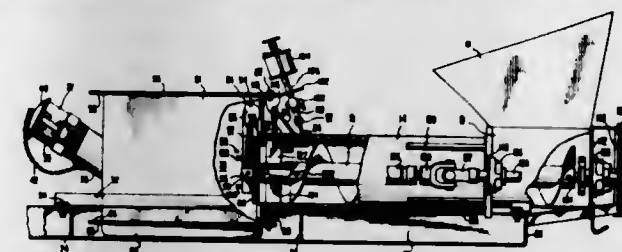
3,314,733 PNEUMATIC CONVEYING APPARATUS

James A. Page, Baton Rouge, La., assignor to Delta Southern Co., Houston, Tex., a corporation of Texas

Filed Dec. 30, 1964, Ser. No. 422,326
21 Claims. (Cl. 302-50)

1. A pulverulent material conveying device comprising a discharge box having a pair of pressurized gas inlets and a discharged outlet, a gas permeable deck in said box separating said box into a pressure chamber and a plenum chamber, one of said inlets communicating with each of said chambers, said discharge outlet communicating with

said pressure chamber, means for maintaining a positive pressure differential across said deck, feed screw means,

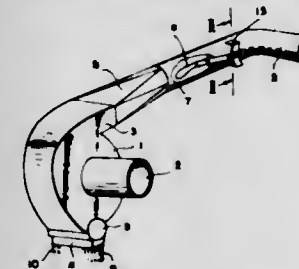


and a check valve coupling said feed screw means to the interior of said pressure chamber.

3,314,734 PNEUMATIC CONVEYORS

James G. Lewis, Wrington, Somerset, England, assignor to The Imperial Tobacco Company (of Great Britain and Ireland), Limited, Bristol, England, a company of England

Filed Sept. 17, 1965, Ser. No. 488,173
9 Claims. (Cl. 302-64)

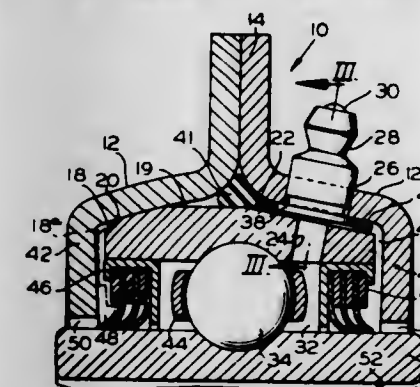


1. An air directing vane for counteracting eddy currents created by a bend in a conduit of a fluid conveyer comprising, a blade mounted in the conduit, said blade extending longitudinally of the said conduit and twisted laterally about its own axis, and a bar means attached to the blade and extending through a hole in the wall of the conduit for attaching the blade to the exterior surface of the conduit.

3,314,735 LUBRICATED BEARING AND HOUSING MOUNTED FITTING THEREFOR

Frank A. Kocian, Evergreen Park, Ill., assignor to International Harvester Company, a corporation of Delaware

Continuation of application Ser. No. 391,097, Aug. 21, 1964. This application Jan. 6, 1966, Ser. No. 519,050
10 Claims. (Cl. 308-187)



1. In a self aligning, cartridge bearing having a cartridge housing presenting an apertured, circumferentially extending, generally axial body, a bearing in the housing arranged with the bearing outer race and the confronting housing body having a frusto-spherical interface of contact, and a hollow lubricant fitting in the aperture in said body, the improvement of:

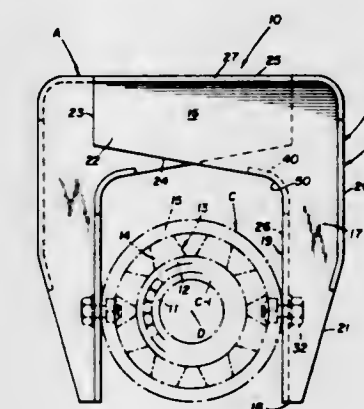
said fitting being fixed in said body aperture, and having flange means carried by the fitting;

the interface of frusto-spherical contact being relatively relieved between the outer race and the confronting housing body in a coextensive portion with the flange means; said flange means being trapped between the housing body and the outer race and interengaged with the walls of the body aperture to insure against removal of the fixed fitting in either direction axially.

3,314,736 DRIVELINE BEARING SUPPORT

Raymond E. Stokely, Rockford, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed Nov. 30, 1964, Ser. No. 414,614
4 Claims. (Cl. 308-27)



1. A bearing assembly having a mounting bracket, a bearing and a rigid fixture, said bearing having a central axis and a cylindrical side wall concentrically arranged about said axis having an axial width defined by terminal portions lying in spaced planes perpendicular to said bearing axis, said bracket comprising a body of rigid material having at least three generally flat flanges, a first L-shaped flange disposed adjacent and parallel to one of said bearing terminal portions having each leg of said L-shaped flange greater in dimension than the greatest dimension of said bearing, a second flange disposed tangential to said bearing side wall and generally parallel to said axis, said second flange having one edge integrally common with an edge of one leg of said first flange, a third flange having one edge integrally common with an edge of another leg of said first flange and being disposed perpendicular to the plane of each of said first and second flanges, and means on said third flange effective to permit fastening thereof to said rigid fixture and means on said second flange effective to provide adjustable fastening thereof to said bearing side wall, said third flange carries a tongue extending in a plane spaced from and parallel to the plane of said second flange, said tongue having edges integral with both said first and third flanges.

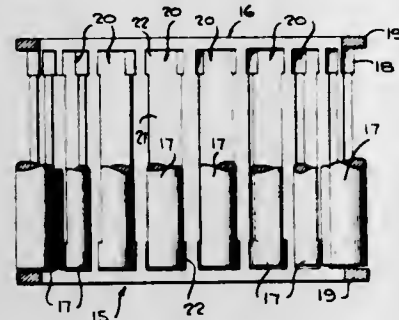
3,314,737 RETAINER

Sven Robert Ahlman, Litchfield, Conn., assignor to The Torrington Company, Torrington, Conn., a corporation of Maine

Filed Dec. 19, 1962, Ser. No. 245,736
3 Claims. (Cl. 308-217)

1. A cylindrical retainer for rollers of the needle and roller bearing type, said retainer having a plurality of roller receiving windows defined by elongated sides and ends, each of said sides including a central wall and outer walls sloping relative to the general plane of the retainer in the vicinity of the particular window side, said central wall and said outer walls lying in different planes disposed in crossing relation with the line of intersection of said planes being disposed within the thickness of

the retainer wherein said window sides define opposed V-arranged roller contact surfaces for holding rollers within said windows, all of said planes being disposed



in offset relation to the axis of said retainer and parallel to a radial plane passing through a line disposed centrally of the respective window and an adjacent window.

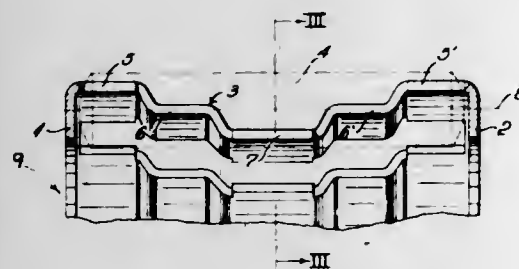
3,314,738

CAGE FOR ROLLER BEARING

Georg Schaeffler, Herzogenaurach, near Nurnberg, Germany, assignor to Industriewerk Schaeffler O.H.G., Herzogenaurach, near Nurnberg, Germany, a corporation of Germany

Filed May 22, 1963, Ser. No. 282,426
Claims priority, application Germany, May 24, 1962, J 10,561

3 Claims. (Cl. 308—217)

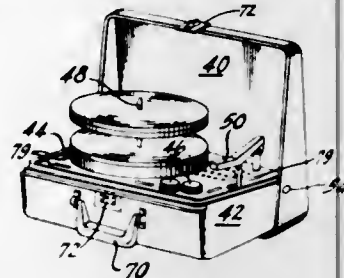


1. A cage for supporting a plurality of substantially cylindrical bearing elements, comprising a pair of coaxial rings and a plurality of equispaced webs interconnecting said rings, said webs forming slots between them for receiving said bearing elements with their cylinder axes defining a common median surface upon rotation of said bodies about the axes of said rings, said webs and rings being formed unitarily from thin sheet metal, said webs being of stepped configuration and including first strip portions parallel to said median surface and disposed on one side thereof, second strip portions parallel to said median surface and disposed on the opposite side thereof, and third strip portions in said median surface, each of said strip portions having a length in the axial direction of adjoining bearing elements substantially greater than the thickness of said strip portions, each of said slots being bounded by mutually parallel lateral edges of said strip portions of adjoining webs including at least one pair of edges of said first strip portions spaced apart by less than the diameter of said bearing elements for engaging the surface of one such element from said one side, at least one pair of edges of said second strip portions spaced apart by less than said diameter for engaging the surface of said one element from said opposite side, and at least one pair of edges of said third strip portions in said median surface spaced apart by a distance slightly greater than said diameter for guiding said one element within the slot.

3,314,739

CARRYING CASE

Hans Mendelson, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware
Filed Feb. 20, 1964, Ser. No. 146,331
7 Claims. (Cl. 312—8)



4. A carrying case for a portable record player comprising:

first and second members providing respectively the front and rear portions of said case;

said first member being pivotally mounted in said second member for movement from a closed position to an open position wherein said first member extends generally horizontally and said second member is generally vertically disposed;

the front and rear bottom edges of said first and second members being rounded so that the rounded portion of said first member moves into substantially concentric relation within the rounded portion of said second member when said first member is moved to said open position;

a foot formed as an integral part of said first member, said foot forming a support means for said case when said case is in the open position;

said foot formed with a plurality of holes on the surface facing down when said case is in the closed position, said foot providing an efficient means for ventilating said case; and

said first and second members formed with a plurality of openings in said first and second member rounded edges so that the plurality of openings become aligned when said first member is rotated into the open position providing a second means for ventilating said case in the open position.

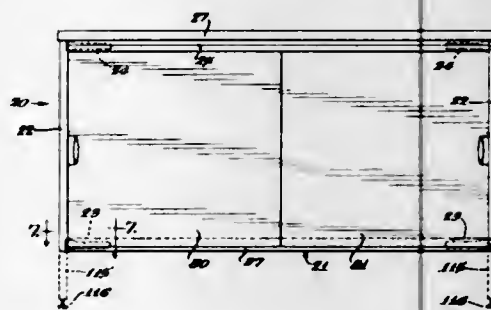
3,314,740

FURNITURE UNIT AND ASSEMBLY

Richard J. Lappin and Robert G. Mohr, Kalamazoo, Mich., assignors to Brunswick Corporation, a corporation of Delaware

Original application Aug. 16, 1963, Ser. No. 302,548.
Divided and this application Apr. 11, 1966, Ser. No. 541,613

5 Claims. (Cl. 312—111)



1. A furniture unit assembly comprising a furniture unit including: an upright; upper and lower brackets secured to said upright and having a pair of generally horizontally disposed members and a first of said members providing abutment means, and a second of said members having a free end portion, and said upper bracket having a third member extending from said first member and between said pair of members; a furniture top extending

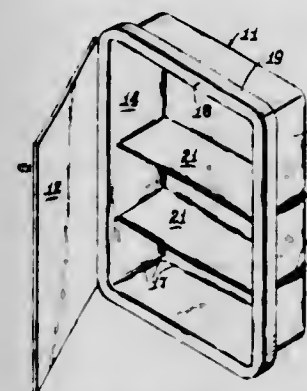
across said upper bracket and connected with said upper bracket third member; a bottom having a corner defined by a facial edge portion and an end portion, the facial edge portion having a tubular portion telescopically receiving the lower bracket second member, the end edge portion abutting the lower bracket abutment means and being firmly secured to the lower bracket first member, an upper facial member having a tubular portion telescopically receiving the upper bracket second member; an upright end panel mounted on the end edge portion and abutting the upper bracket abutment means; and means firmly securing said panel to the upper bracket first member.

3,314,741

MEDICINE CABINET BODY

Philip Litner, Chicago, Ill., assignor to Curtis-Electro Lighting, Incorporated, Chicago, Ill., a corporation of Illinois

Filed Oct. 13, 1965, Ser. No. 495,628
1 Claim. (Cl. 312—242)



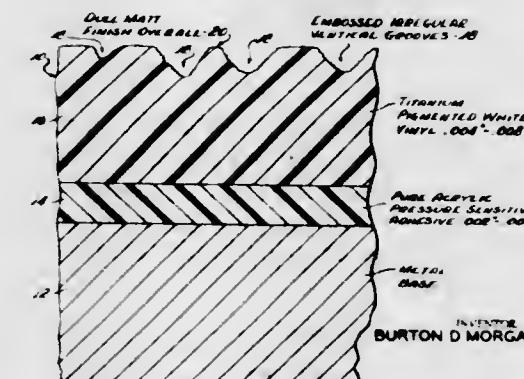
A cabinet comprising a body formed from a single sheet of material having a rear vertical wall, a pair of side walls, a top wall and a bottom wall formed integrally therewith and peripherally around said rear wall and extending forwardly therefrom and approximately perpendicular thereto to provide a receptacle having an opening throughout the front plane thereof, the forward edges of said marginal walls having a face flange projecting outwardly from said edges in a plane substantially parallel to said rear wall and extending peripherally around

said opening, a side flange formed integrally with the outer edge of said face flange and projecting rearwardly therefrom in a direction approximately perpendicular to said rear wall and extending peripherally around said face flange, at least one shelf in said body formed integrally with said rear wall and extending forwardly therefrom, said shelf being comprised of two thicknesses of said sheet material defining spaced apart upper and lower walls, said shelf walls extending forwardly from said rear wall and terminating at their forward ends in a common integral front wall, and a plastic foam material filling the space between the two walls of said shelf and bonded thereto to strengthen said shelf and body, said plastic foam material terminating in substantial planar alignment with said rear wall and side walls.

3,314,742

SCREEN FOR MOVIES AND THE LIKE

Burton D. Morgan, Hudson, Ohio, assignor to Morgan Adhesives Company, Stow, Ohio, a corporation of Ohio
Filed Nov. 6, 1964, Ser. No. 409,467
4 Claims. (Cl. 350—117)



4. A screen for the projection of pictures by light thereagainst including a base, a pressure sensitive adhesive layer on the base, and a white pigmented vinyl sheet secured to the layer, said sheet having a random pattern of non-continuous minute grooves and ridges embossed thereon extending vertically to diffuse light horizontally, and a dull mat finish over the entire exposed surface of the vinyl sheet.

CHEMICAL

3,314,743

PROCESSES FOR TREATMENT OF PREFORMED ARTICLES OF OLEFIN POLYMERS AND RESULTING PRODUCTS

Domenick Donald Gagliardi, 185 Howland Road, East Greenwich, R.I. 02818

No Drawing. Filed Nov. 7, 1963, Ser. No. 322,025
13 Claims. (Cl. 8—31)

1. A process of coloring fabric made of polypropylene fibers which normally are not dyeable with water-soluble dyes which comprises:

(A) padding onto the fabric an aqueous solution consisting essentially of about 5% α -sulfolauric acid to give a pick-up of between about 20 to 100% of the solution,

(B) drying the fabric to leave thereon as a uniform surface layer the residue of sulfolauric acid,

(C) heating the dried fabric at about 120° C. for about 15 minutes,

(D) immersing the resulting fabric at about 95° C. for about 1 hour in an aqueous 2% solution of tris aziridinyl phosphine oxide,

(E) rinsing and drying the fabric, and

(F) dyeing the fabric with an anionic acid wool dye.

3,314,744

CROSSLINKAGE OF CELLULOSE FIBERS WITH PHOSPHATE ESTERS OF DI-ETHANOL SULFONES

Harian B. Freyermuth, Easton, Pa., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 3, 1961, Ser. No. 131,041
5 Claims. (Cl. 8—120)

1. A process for improving the properties of cellulose textile fibrous material without altering the fiber structure thereof comprising reacting said material under alkaline conditions with the phosphate ester of 2,2'-sulfonyl-diethanol.

3,314,745

PROCESS FOR PREVENTING FECAL ODORS IN CHEMICAL TOILETS

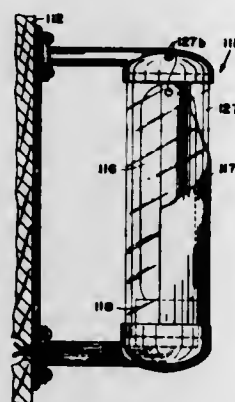
Nathan J. Krottinger, La Mirada, and Isadore Nusbaum, San Diego, Calif., assignors to Zewel Corporation, La Mirada, Calif., a corporation of California

No Drawing. Filed Feb. 25, 1963, Ser. No. 260,858
3 Claims. (Cl. 21—55)

1. The process for preventing fecal odors in sanitary, self-contained chemical toilets consisting essentially of adding to the liquid in said toilet prior to any addition

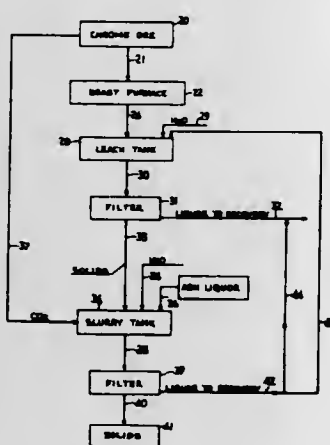
thereto of fecal matter or urine, an amount of a water-soluble zinc salt and water to give a concentration of zinc as zinc ions in the range from .01 to 1.0 pound per gallon of aqueous liquid.

3,314,746
SANITARY DOOR KNOB AND THE LIKE
Rutherford Y. Millar, Winding River Vineyard, 1496
Greenwood Ave., Calistoga, Calif. 94515
Filed May 27, 1964, Ser. No. 370,558
3 Claims. (Cl. 21-102)



1. In the art of sanitation, the combination comprising: an ultraviolet light generating means, a hollow door knob formed of material capable of passing ultraviolet light therethrough and housing said generating means to enable irradiation of the exterior knob surfaces from interiorly of said knob.

3,314,747
RECOVERY OF CHROMATE FROM CHROME MUD WASTES
William W. Carlin, Portland, Tex., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 11, 1963, Ser. No. 287,055
5 Claims. (Cl. 23-56)



1. In a method of producing hexavalent chromium by roasting a chrome ore containing vanadium and aluminum impurities in a furnace with sodium carbonate in admixture with lime, in an amount sufficient for retaining the said impurities water-insoluble, to thereby produce hexavalent chromium and leaching the product of said chrome roast in a first leaching step with water to produce a filtrate and undissolved solids, the improvement comprising separating the filtrate and undissolved solids in a first step, contacting the undissolved solids with gaseous carbon dioxide, said solids being in aqueous slurry, providing in said aqueous slurry, in conjunction with said carbon dioxide treatment, a member se-

lected from the group consisting of sodium carbonate, sodium hydroxide and sodium bicarbonate in an amount at least approximate that stoichiometrically equivalent to the hexavalent chromium present in the slurry, adjusting the pH of the resulting slurry to 7.5 to about 10 by the aforesaid carbon dioxide and added member to thereby prevent vanadium and aluminum from entering the solution, separating solids from the resulting liquor, and recovering chromium values from said liquor.

3,314,748
PRODUCTION OF DENSE SODA ASH
Carlton J. Howard, Salina, Peter Sopchak, Clay, and Eugene B. Port, Solvay, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed Mar. 12, 1964, Ser. No. 351,330
5 Claims. (Cl. 23-63)

1. A process for conversion of light soda ash to high quality solid sodium carbonate crystals which comprises admixing light soda ash in a crystallizing zone with an aqueous slurry containing (a) a mother liquor having dissolved therein 3-17% of sodium chloride and sufficient sodium carbonate to be saturated therewith and (b) 30 to 65% of solid sodium carbonate monohydrate crystals based on the entire weight of the slurry, maintaining the aqueous slurry during mixing with the light ash at a temperature below the transition temperature for conversion of sodium carbonate monohydrate to anhydrous sodium carbonate, said temperature being within the range of 20° C. below the transition temperature up to the transition temperature, maintaining the solid sodium carbonate monohydrate dispersed throughout the slurry to give at least 30% monohydrate in any given part of the slurry volume, feeding light soda ash to the crystallizing zone at a rate of 50 to 300 pounds per hour per cubic foot of slurry volume in the crystallizing zone, discharging the slurry from the crystallizing zone and classifying the crystals in the discharged slurry into a second slurry containing small crystals and a third slurry containing coarse crystals, returning small crystals to the crystallizing zone in an amount equivalent to 3-25% of the total weight of crystals discharged from the crystallizing zone, separating crystalline sodium carbonate monohydrate from mother liquor in the third slurry containing the coarse crystals, and returning mother liquor to the crystallizing zone.

3,314,749
PROCESS FOR PRODUCING FLUORIDE FROM AN ALUMINUM ALCOHOLATE
Kenichi Fukui, Sakyo-ku, Kyoto, and Hisao Kitano, Abeno-ku, Osaka, Japan, assignors to Mitsui & Co., Ltd., Tokyo, Japan
No Drawing. Filed Sept. 4, 1963, Ser. No. 306,629
Claims priority, application Japan, Oct. 27, 1962, 37/47,934; Nov. 17, 1962, 37/41,607
10 Claims. (Cl. 23-88)

1. A process for producing aluminum fluoride from an aluminum alcoholate which comprises introducing continuously into a mixer an aluminum alcoholate containing at least one alkoxy group having 4 to 20 carbon atoms and an aqueous solution containing from 10% to 70% by weight of hydrogen fluoride, milling the said aluminum alcoholate in the mixer to fine particles having a diameter below 500μ, and mixing the aluminum alcoholate particles and the said aqueous solution containing hydrogen fluoride at a temperature in the range of 50° C. to 120° C., thereby causing the aluminum alcoholate and hydrofluoric acid to react, and thereafter transferring the reaction mixture to a reaction completing zone and allowing the reaction to proceed to completion over a period of at least three hours and separating the aluminum fluoride produced.

3,314,750
TRIMETAPHOSPHATE PROCESSES
Chung Yu Shen, St. Louis, Mo., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Filed Apr. 20, 1962, Ser. No. 188,938
12 Claims. (Cl. 23-106)

1. A process for manufacturing a sodium product consisting essentially of from about 50% to about 100% by weight of sodium trimetaphosphate and from 0% to about 50% by weight of water soluble chain sodium polyphosphates and essentially free of insoluble metaphosphates, which process comprises heating a mixture comprising a sodium salt of a volatile acid having anions selected from the group consisting of halogen, nitrate, nitrite carbonate, oxalate, and formate and a water-soluble material selected from the group consisting of ammonium orthophosphate salts and mixed sodium ammonium orthophosphate salts to a molten state and at a temperature above about 300° C. and below about 625° C. and continuing said heating until the reaction mass becomes solid, said mixture having an over-all Na/P ratio between about 0.75 and about 1.15.

3,314,751
METHOD FOR PRODUCING HEXAMMONIUM TETRAPOLYPHOSPHATE
Edward J. Griffith, Manchester, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Apr. 29, 1963, Ser. No. 276,153
5 Claims. (Cl. 23-107)

1. A method for producing hexammonium tetrapolyphosphate which comprises reacting a tetrapolyphosphate selected from the class consisting of lead tetrapolyphosphate and tin tetrapolyphosphate with an ammonium sulfide in the presence of water and separating the resulting sulfide precipitate from the solution containing hexammonium tetrapolyphosphate.

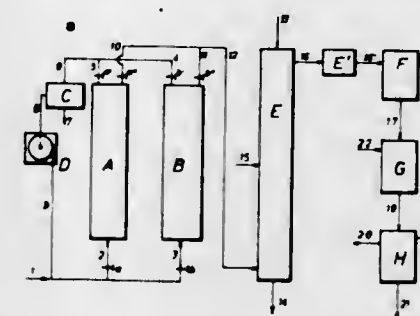
3,314,752
SYNTHETIC ZEOLITE
George T. Kerr, Delaware Township, Camden County, N.J., assignor to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Aug. 30, 1961, Ser. No. 134,841
20 Claims. (Cl. 23-113)

1. A crystalline synthetic material having the composition:
 $0.1 \text{ to } 0.3\text{R}:0.7 \text{ to } 1.0\text{X}_2\text{O}:1\text{Al}_2\text{O}_3:2.5 \text{ to } 4.0\text{SiO}_2\cdot\text{YH}_2\text{O}$
where R is selected from the group consisting of a methyl ammonium oxide, hydrogen oxide and mixtures thereof with one another; X is selected from the group consisting of sodium and potassium and Y is any value from about 3.5 to about 5.5, said material being capable of selectively sorbing straight chain hydrocarbons of more than three carbon atoms from admixture of the same with non-straight chain hydrocarbons when X is sodium and capable of selectively sorbing water from admixture of the same with straight chain molecules having more than three carbon atoms in the chain when X is potassium.

3,314,753
PROCESS FOR THE DECOMPOSITION OF PHOSGENE
Hans Richert, Leverkusen-Schlebusch, and Eberhard Zingiehl, Cologne-Flitard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
Filed Oct. 21, 1964, Ser. No. 405,524
Claims priority, application Germany, Oct. 25, 1963, F 41,095
3 Claims. (Cl. 23-154)

1. A process for the decomposition of phosgene in a mixture of waste gases with recovery of hydrochloric

acid which comprises the steps of (1) contacting said mixture of waste gases containing phosgene, inert organic solvent, hydrogen chloride and inert gases with activated carbon to substantially selectively remove said inert organic solvent, (2) removing hydrogen chloride as a concentrated hydrochloric acid from the resulting mixture by adiabatic absorption with a substance selected from the group consisting of water and dilute hydrochloric acid, (3) contacting the remaining mixture containing



phosgene from which solvent and hydrogen chloride have been removed under steps (1) and (2), with activated carbon at temperatures above the dew point of the mixture in the presence of water vapor and at a molar ratio of water to phosgene of 5:1 to 20:1 to form a mixture of hydrochloric acid, carbon dioxide and inert gas substantially free of phosgene and (4) cooling the resulting mixture to separate the hydrochloric acid from the carbon dioxide and inert gases.

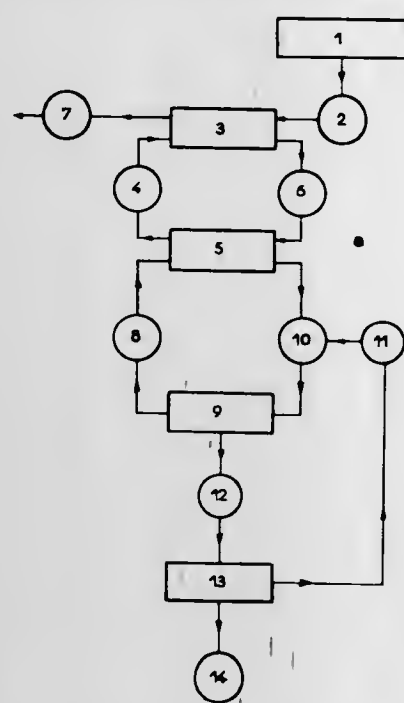
3,314,754
PRODUCTION OF ISOCYANIC ACID BY PYROLYSIS OF ALKYL CARBAMATES
John J. Godfrey, Silver Spring, Md., assignor to W. R. Grace & Co., a corporation of Connecticut
No Drawing. Filed Nov. 29, 1963, Ser. No. 327,123
3 Claims. (Cl. 23-151)

1. A method for producing isocyanic acid which comprises pyrolyzing a lower alkyl carbamate in the vapor phase at a temperature from about 350° to about 450° C., cooling the pyrolysate resulting from said pyrolysis to below about 0° C., and recovering isocyanic acid from said pyrolysate by fractional distillation at temperatures below about 0° C.

3,314,755
CONTINUOUS PROCESS FOR EXTRACTING ANHYDROUS HYDROGEN FLUORIDE FROM AQUEOUS HYDROFLUORIC ACID
Jacques Claus, Saint-Gratien, Seine-et-Oise, France, assignor to Produits Chimiques Pechiney-Saint-Gobain, Neuilly (Seine), France
Filed Dec. 11, 1963, Ser. No. 329,697
Claims priority, application France, Dec. 17, 1962, 918,778
12 Claims. (Cl. 23-153)

1. In the method of recovering hydrogen fluoride from aqueous solutions containing the hydrogen fluoride in low concentration by the process which includes the steps of adding solid alkali metal fluoride to an aqueous solution containing hydrogen fluoride in substantial concentration, cooling the alkali metal fluoride-aqueous solution of hydrogen fluoride to precipitate the corresponding alkali metal bifluoride, separating the alkali metal bifluoride, and calcining the separated alkali metal bifluoride to release hydrogen fluoride as a gas and alkali metal fluoride as a solid, the improvement in providing a more concentrated solution of hydrogen fluoride to which the alkali metal fluoride is added comprising the steps of contacting the aqueous solution containing the hydrogen fluoride in low concentration in a first extraction step with an organic amine that is immiscible with water to extract hydrogen fluoride from the aqueous hydrogen fluoride solution, con-

tacting the amine containing the extracted hydrogen fluoride in a second extraction step with an aqueous solution of alkali metal fluoride to extract hydrogen fluoride from



the amine, and adding the alkali metal fluoride to the aqueous solution of alkali metal fluoride containing the extracted hydrogen fluoride.

3,314,756

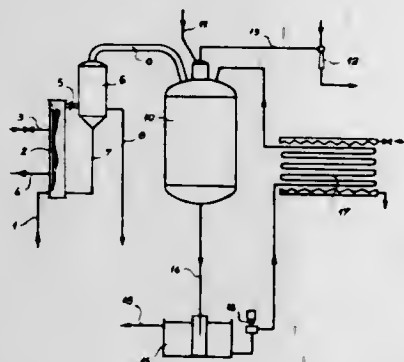
METHODS OF PREPARING HIGH-CONCENTRATION PHOSPHORIC ACID

René Myon, Lille, Nord, France, assignor to Appareils et Evaporateurs Kestner, Lille, Nord, France, a French corporation

Filed Mar. 4, 1963, Ser. No. 262,419

Claims priority, application France, Jan. 7, 1963, 920,673, Patent 1,352,925

3 Claims. (Cl. 23-165)



1. A process for producing concentrated phosphoric acid comprising the steps of introducing phosphoric acid containing about 50 weight percent P_2O_5 into an evaporation zone maintained under a vacuum of about 5-10 mm. Hg, heating the phosphoric acid within the evaporation zone by indirect heat exchange with a hot fluid medium to form a mixture of steam and concentrated phosphoric acid, separating the steam from said concentrated phosphoric acid, passing the concentrated phosphoric acid from the system, introducing the separated steam into a liquid-gas contact zone maintained under a vacuum of about 5-10 mm. Hg, introducing both concentrated sulphuric acid and dilute sulphuric acid into said contact zone to absorb the steam by direct contact to dilute and heat the sulphuric acid within said contact zone, separating the sulphuric acid diluted within said contact zone into two streams, cooling a first stream of the separated sulphuric acid in a zone remote from said evaporation zone, recycling the

cooled first stream to form the dilute sulphuric acid introduced into said contact zone, and removing said second stream of separated sulphuric acid from the system.

3,314,757

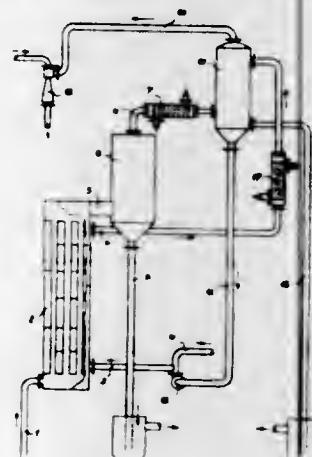
METHODS OF CONCENTRATING PHOSPHORIC ACID

René Myon, Lille, Nord, France, assignor to Appareils et Evaporateurs Kestner, Lille, Nord, France, a French corporation

Filed Mar. 4, 1963, Ser. No. 262,420

Claims priority, application France, Jan. 8, 1963, 920,805, Patent 1,352,951

4 Claims. (Cl. 23-165)



1. A process for producing concentrated phosphoric acid containing about 50 weight percent P_2O_5 , comprising the steps of digesting crude phosphate rock with sulphuric acid of about 70 weight percent H_2SO_4 to obtain dilute phosphoric acid containing about 30 weight percent P_2O_5 , vaporizing steam from said dilute phosphoric acid by indirect heat exchange with hot sulphuric acid in an evaporation zone which is maintained under vacuum to form a mixture of steam and concentrated phosphoric acid containing about 50 weight percent P_2O_5 , separating said steam from said concentrated phosphoric acid, withdrawing said concentrated phosphoric acid as a product of the process, introducing the separated steam into a liquid-gas contact zone under vacuum, introducing into said contact zone sulphuric acid from said evaporation zone, absorbing the steam into said sulphuric acid in said contact zone to dilute said sulphuric acid to a concentration of about 70 weight percent H_2SO_4 , thereby heating the sulphuric acid, separating the sulphuric acid of about 70 weight percent H_2SO_4 into two streams, recycling one of said streams to the digesting step, mixing the other of said streams with fresh concentrated sulphuric acid, and passing the resulting sulphuric acid to said evaporation zone to concentrate additional phosphoric acid.

3,314,758

PRODUCTION OF VITREOUS SILICA IN A ROTARY KILN

Robert K. Scott, Pittsburgh, Donald O. McCreight, Bethel Park, Edward Einstein, Homestead, and Clyde L. Thompson, Pittsburgh, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 26, 1964, Ser. No. 392,320

10 Claims. (Cl. 23-182)

1. A method for continuously producing a vitreous silica aggregate containing no more than about 15% cristobalite, comprising continuously feeding a crystalline silica raw material occurring naturally in massive form having an average crystallite diameter of about 10 microns and less and containing negligible intercrystalline material to a rotary kiln, maintaining the hot zone temperature in the kiln above the equilibrium melting point

of quartz but below the equilibrium melting point of silica, allowing the material to tumble downwardly through the kiln so as to allow the application of intense heat to all surfaces of the material, holding the material in said hot zone for a period not exceeding about one and one-half hours but sufficient to decompose the crystalline structure and provide a predominantly amorphous state in said material, moving the material from the hot zone and, then rapidly cooling it and recovering a vitreous silica aggregate containing no more than about 15% cristobalite.

3,314,759

MAGNESIA FIBER PRODUCT AND A METHOD FOR MANUFACTURING THE SAME

Nobuo Kawai and Kei Nomura, Tokyo, Japan, assignors to Agency of Industrial Science and Technology, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Sept. 18, 1964, Ser. No. 397,634

Claims priority, application Japan, Sept. 21, 1963, 38/49,651

7 Claims. (Cl. 23-201)

1. A method of manufacturing magnesia fibers comprising the steps of

mixing a raw material selected from the group consisting of metallic magnesium, calcined magnesium hydroxide, purified magnesia and mixtures thereof with carbon as a reducing agent,

heating said mixture at a temperature of at least 1,500° C. in the presence of an atmosphere containing a small amount of oxygen and components selected from the group consisting of carbon dioxide, water vapor, nitrogen, and inert gas, thereby generating a vapor containing magnesium, and

said heating further conducted in the presence of a fiber-growing-board comprising a material selected from the group consisting of magnesia and graphite, and containing a small amount of a material selected from the group consisting of iron, metallic material of silicon and oxidized material thereof thereby crystallizing the generated vapor into magnesia fibers on said fiber-growing-board.

7. A magnesia fiber product as produced by the steps of mixing a raw material selected from the group consisting of metallic magnesium, calcined magnesium hydroxide, purified magnesia and mixtures thereof with carbon as a reducing agent,

heating said mixture at a temperature of at least 1,500° C. in the presence of an atmosphere containing a small amount of oxygen and components selected from the group consisting of carbon dioxide, water vapor, nitrogen, and inert gas, thereby generating a vapor containing magnesium, and

said heating further conducted in the presence of a fiber-growing-board comprising a material selected from the group consisting of magnesia and graphite, and containing a small amount of a material selected from the group consisting of iron, metallic material of silicon and oxidized material thereof thereby crystallizing the generated vapor into magnesia fibers on said fiber-growing-board.

3,314,760

METHANE CONVERSION PROCESS

Louis E. Trapasso, Maple Heights, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed Sept. 27, 1962, Ser. No. 226,722

The portion of the term of the patent subsequent to Mar. 16, 1982, has been disclaimed

8 Claims. (Cl. 23-204)

1. The method of preparing methyl chloride and carbon monoxide which comprises contacting in a reaction zone at a temperature of from about 300° to 700° C. a

gaseous mixture of methane, hydrogen chloride, and oxygen in a molar ratio of methane to hydrogen chloride from about 1:0.2 to about 1:5 and methane to oxygen from about 1:0.1 to 1:1 with a catalyst comprising a phosphate salt of iron.

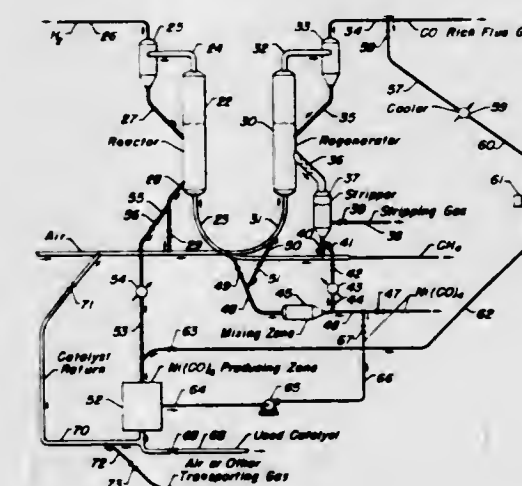
3,314,761

HYDROGEN PRODUCING SYSTEM

Daniel E. McCartney, Mount Prospect, and Henry A. Hauser, Arlington Heights, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed July 5, 1963, Ser. No. 293,068

6 Claims. (Cl. 23-212)



1. In a continuous catalytic conversion process system wherein a hydrocarbon charge stream is decomposed in a reaction zone in the presence of subdivided catalyst particles which are formed of a refractory oxide base having a deposit of an active metal component selected from the group consisting of nickel, iron, cobalt and molybdenum to provide a hydrogen rich product stream, resulting carbon containing catalyst particles are withdrawn from the reaction zone and passed into a separate regenerating zone wherein carbon is gasified and removed at least in part from said particles, and resulting heated catalyst particles are returned to the reaction zone for contact with the charge stream, the improved method of operation for maintaining a high catalyst activity and a high hydrogen yield, which comprises, introducing a metal carbonyl compound, the metal component of which corresponds to the active metal component of the refractory catalyst particles, into admixture with at least a part of the catalyst particles passing from one of said zones to the other and while at a temperature above about 400° F. to decompose such carbonyl compound thereon and form a fresh deposition of the active metal component on such particles for use in the system.

3,314,762

BROMINE PURIFICATION PROCESS

Lynn H. Hahn, Alma, Mich., assignor to Michigan Chemical Corporation, St. Louis, Mich., a corporation of Michigan

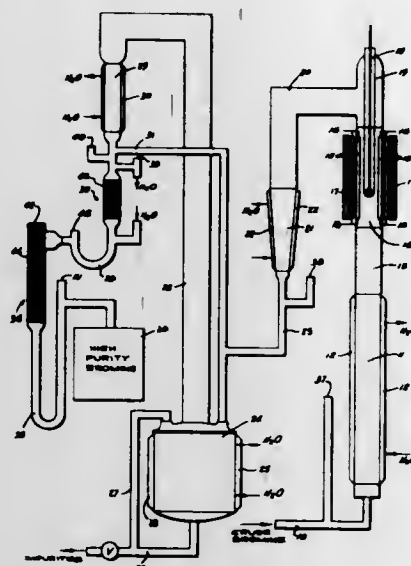
Filed Aug. 3, 1964, Ser. No. 386,877

5 Claims. (Cl. 23-218)

1. The process for the preparation of high purity bromine which consists essentially of:

(a) heating bromine containing small amounts of chlorine and hydrocarbon materials with vapor pressures similar to bromine at a temperature between about 700° F. to 1000° F. to produce high boiling impurities and hydrogen chloride in the bromine, sufficient chlorine being provided in the bromine to react with

substantially all of the hydrogen bromide generated by the heating of the hydrocarbon materials with bromine; and



(b) separating the bromine from the hydrogen chloride and high boiling impurities to produce high purity bromine.

3,314,763 PROCESS FOR OBTAINING NON-LUMPING SULPHUR

Georges Molinet, Pau, and Georges Durand, Mourenx-Ville-Nouvelle, France, assignors to Societe Nationale des Petroles d'Aquitaine, Paris, France
No Drawing. Filed Oct. 22, 1964, Ser. No. 405,833
Claims priority, application France, Oct. 28, 1963, 951,968

5 Claims. (Cl. 23-224)

4. A process for preventing sulphur powder from forming lumps which consist in adding to molten sulphur maintained at a temperature between 125° and 150° C. An anti-lumping agent in an amount within the range from 0.1 to 0.3% by weight which consists of a mixture of tall oil fatty acids and resinic acids and thoroughly mixing the agent with the sulphur.

3,314,764 PICRATE PROCESS FOR DETERMINING QUATERNARY AMMONIUM CONTENT OF MICROBIAL POLYSACCHARIDES

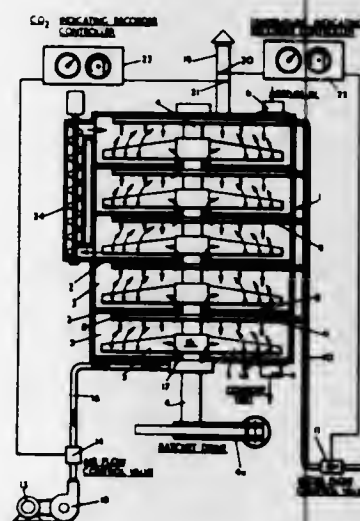
James H. Sloneker, Morton, Ill., assignor to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed July 9, 1964, Ser. No. 381,594
2 Claims. (Cl. 23-230)

1. A photometric process for determining the quaternary ammonium cation content of a microbial polysaccharide produced by a microorganism selected from the group consisting of *Xanthomonas campestris* NRRL B-1459 and *Cryptococcus laurentii* NRRL Y-1401 after said polysaccharide has been precipitated from its medium of origin by being complexed with the cation of a quaternary ammonium compound selected from the group consisting of cetyltrimethylammonium chloride, trimethylarachidyl behenylammonium chloride, dodecyltrimethylammonium chloride, and cetyldimethylbenzylammonium chloride, said process comprising the steps of dissolving not more than about 80 mg. (dry basis) of the quaternary ammonium-containing microbial polysaccharide in 1.5 ml. of water, acidifying with 1 ml. of 3M monosodium phosphate solution, autoclaving the mixture for about 20 minutes at 120° C. to hydrolyze the polysaccharide and lower the viscosity of the solution, adding 1 ml. of 3M sodium hydroxide to provide a buffered pH of 4.3, adding 0.1 ml. of half-saturated picric acid solu-

tion to form the quaternary ammonium picrate salt, selectively extracting said picrate salt with three 1.5 ml. portions of chloroform, adding chloroform to bring the pooled chloroform extracts up to a predetermined volume, reading the absorbence of the resulting solution in a spectrophotometer set at a wavelength of 365 mμ, and comparing the obtained reading with that of a standard curve.

3,314,765 BACTERIOLOGICAL DIGESTERS FOR CONVERSION OF ORGANIC WASTE

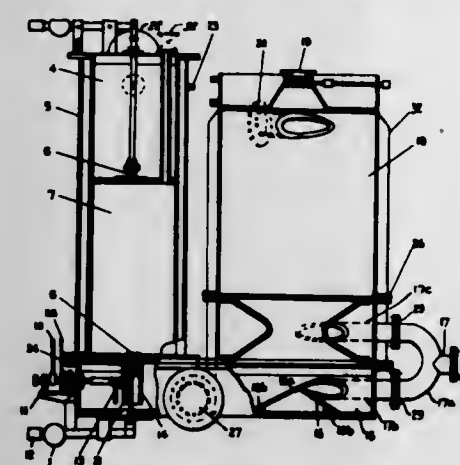
James W. Abson, Cheadle Heath, Stockport, and David Broadhurst, Cheadle Hulme, England, assignors to Simon Handling Engineers Limited, Stockport, England, a British company
Filed Feb. 7, 1964, Ser. No. 343,303
Claims priority, application Great Britain, Feb. 12, 1963, 5,584/63
6 Claims. (Cl. 23-259.1)



1. A bacteriological digester for the conversion of organic material comprising a relatively tall hollow cylinder having an inlet at its top to receive organic material to be treated and an outlet at its bottom to discharge the treated organic material, a plurality of horizontal plates within the cylinder to subdivide it into a plurality of superimposed drum-shaped compartments each plate being formed with at least one transfer port to permit downward flow of organic material, co-axial rotating shaft means passing through all the compartments from top to bottom of the cylinder, arm elements in each compartment and secured to the shaft means to sweep over the horizontal plates, means for delivering moisture into the upper part of each compartment and including a flow control valve, means for feeding air to the bottom of the cylinder and including a flow control valve, delivery means in each compartment in communication with the air-feeding means to distribute the air throughout the cylinder, port means at the cylinder top for permitting egress of gas from the cylinder, a first detector means at the gas port means for detecting changes in the composition of the exhausting gas, first actuating means operatively connecting the first detector means and the flow control valve of the air-feeding means to operate the valve in accordance with changes in the proportion of carbon dioxide present in the exhausting gas at the extremes of a predetermined value tolerance range to vary the quantity of air fed to the cylinder compartments, a second detector means at the gas port means for detecting changes in the temperature of the exhausting gas, and second actuating means operatively connecting the second detector means and the flow control valve of the moisture to operate the valve in accordance with the temperature of the exhausting gas at the extremes of a predetermined value tolerance range to vary the quantity of moisture delivered to the cylinder compartments.

3,314,766 SULFUR BURNER

Jyoti P. Mukherji, Poona, India, assignor to Walchandnagar Industries Limited, Poona, Maharashtra, India, a corporation of India
Filed Dec. 6, 1963, Ser. No. 328,717
7 Claims. (Cl. 23-278)



1. A sulphur burner comprising a combustion chamber having a substantially vertical cylindrical side wall and an upwardly extending conical base whereby an annulus is formed therebetween, said annulus increasing in size from the bottom to the top of said conical base, means for controlling the surface level of a pool of molten sulphur contained in said combustion chamber whereby the surface area of said molten sulphur surrounding said conical base may be controlled thereby controlling the rate of vaporization and combustion of said sulphur, a gas chamber above said combustion chamber wherein combustion of sulphur takes place over said pool of molten sulphur contained in said combustion chamber, said combustion and gas chambers being joined through a cylindrical member of restricted cross section, means for supplying primary and secondary air to said sulphur burner, said primary air being supplied tangentially adjacent to the surface of said molten sulphur and said secondary air being supplied tangentially at said restriction, and a gas outlet pipe located tangentially at the top of said gas chamber whereby the gases follow a spiral path through said burner during combustion.

3,314,767 ELECTRO-FLUID REACTOR FOR HIGH TEMPERATURE GASIFICATION PROCESS

Jerome Bernstein, Berkeley Heights, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed June 3, 1963, Ser. No. 285,057
2 Claims. (Cl. 23-284)

1. An improved electrofluid apparatus for the production of hydrogen and high quality coke comprising in combination:

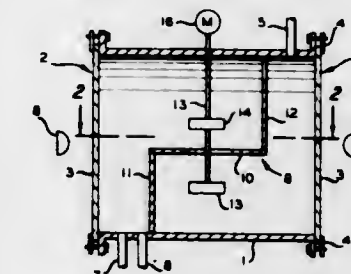
- (A) an elongated cylindrical vessel having a top, a bottom and a side enclosing wall, said vessel having an upper region of uniform cross-section, an intermediate region having a continuously diminishing cross-section and a lower region having a uniform cross-section equivalent to the smallest section of said intermediate region and which section is substantially smaller than the cross-section of said upper region;
- (B) solids inlet means located in said upper region of said vessel;
- (C) fluidizing gas inlet means located in said lower region of said vessel;
- (D) a plurality of electrodes entering into said reactor vessel through said side wall in said lower region of said vessel at points which lie above said gas inlet means;

(E) hydrocarbon feed inlet means located in said side wall in said intermediate region of said vessel at points substantially spaced above said electrodes;

(F) gas outlet means located in the upper region of said vessel; and
(G) solids outlet means located in the lower region of said vessel.

3,314,768 PHOTOCHEMICAL REACTOR

Glenn O. Ebrey, Copan, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 19, 1965, Ser. No. 449,144
2 Claims. (Cl. 23-285)

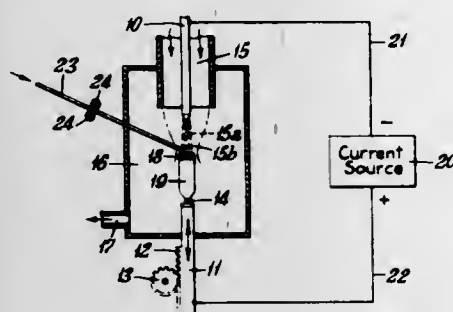


1. Reactor apparatus comprising a hollow container having opposite ends closed by transparent plates, a baffle means in said container comprising an apertured member, a first plate extending substantially at a right angle to and from one end of said apertured member, a second plate extending substantially at a right angle to and from the opposite end of said apertured member, said second plate extending at a direction opposite to said first plate, said first plate being sealed to one side of said container and said second plate being sealed to the opposite side of said container in a manner such that the transmittal of a fluid from one transparent plate end of said container to the other transparent plate end can be effected substantially only by passage through the aperture in said apertured member, a shaft rotatably carried by said container and extending through said aperture in said apertured member, at least two paddle means mounted on said shaft, said paddle means being disposed on either side of said apertured member, means to rotate said shaft, and conduit means openly connected to opposite sides of said container adjacent the area at which said baffle legs are sealed to said container and between said baffle legs and said transparent plates.

3,314,769 ARC PROCESS AND APPARATUS FOR GROWING CRYSTALS

Robert G. Rudness and William C. McGill, Indianapolis, Ind., assignors to Union Carbide Corporation, a corporation of New York

Filed May 8, 1963, Ser. No. 278,956
13 Claims. (Cl. 23—301)



1. A process for growing an electrically conductive crystalline boule from solid feed constituents which comprises establishing a freely burning unconstricted electric arc between a first electrode and a second electrode provided with a boule-growing surface; passing a gas stream through a nozzle surrounding said first electrode and having an exit annulus through which said gas stream passes in intimate contact with said first electrode to contain the free arc and protect such first electrode from contamination by molten boule material; maintaining any projection of the electrode beyond said exit annulus insufficient to cause power build up on the electrode but any set back of said electrode insufficient to cause double arcing and within the ranges set forth in the table below:

Annulus Width In Inches	Maximum Projection of Electrode L ₁ in Electrode Diameters	Maximum Set Back of Electrode L ₂ in Electrode Diameters
3/64	3/4	3/8
1/32	1	3/4
3/16	1 1/4	3/2
3/32	1 1/2	3/4
1/8	1 3/4	1

passing the resulting free arc-containing gas stream to a boule-growing zone and thereby heating said boule-growing surface positioned within such zone which is shielded from atmospheric contamination by such gas; introducing solid feed constituents in said boule-growing zone; fusing such solid feed constituents on said boule-growing surface by heat from said free electric arc and the gas stream; and accumulating such fused constituents thereon as a crystalline boule of increasing size.

3,314,770 PROCESS FOR THE PREPARATION OF CHLORODIFLUOROAMINE

William Warren Knipe and Charles Joseph Mackley, Philadelphia, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

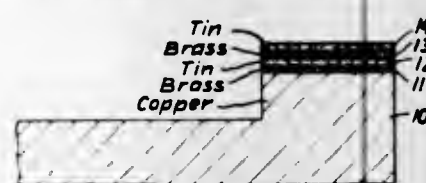
No Drawing. Filed June 14, 1963, Ser. No. 287,757
7 Claims. (Cl. 23—356)

1. A process for the preparation of chlorodifluoroamine which comprises reacting chlorine trifluoride with a suspension of a solid ammonium fluoride in a low molecular weight, fluorocarbon oil having no significant vapor pressure at approximately 75° C. which is selected from the group consisting of polychlorotrifluoroethylenes, telomers from chlorotrifluoroethylene and difluorobromochloromethane, and telomers from perfluoroolefins and perfluoroalkyl iodides, said chlorine trifluoride being introduced into said oil suspension as a gas admixed with an inert gas diluent, and said reaction being made to occur at a temperature between about 50° and 75° C.

3,314,771 CONTACT OF COPPER WITH BRASS AND TIN LAYERS

Herbert Hoffmann, Hamburg-Blankenese, and Wolfgang Wegner, Neumunster, Germany, assignors to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany

Filed Mar. 11, 1964, Ser. No. 351,037
Claims priority, application Germany, Sept. 11, 1963,
L 45,823, L 45,824
4 Claims. (Cl. 29—183.4)



1. A contact element comprising a body made of copper, a first brass layer on and bonded to said body, a first tin coating on and bonded to said first brass layer, a second brass layer on and bonded to said first tin coating, and a second tin coating on and bonded to said second brass layer.

3,314,772 CORROSION RETARDING FLUORINE TREATMENT OF GLASS SURFACES

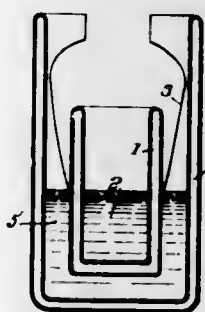
James P. Poole, Brockport, and Herbert C. Snyder and Robert J. Ryder, Brockway, Pa., assignors to Brockway Glass Company, Inc., Brockway, Pa.

No Drawing. Filed Apr. 26, 1966, Ser. No. 545,250
3 Claims. (Cl. 65—30)

1. The method of increasing the chemical durability of soda-lime glass containing extractable alkali, said glass having unbridging oxygen ions and hydroxyl ions at a surface thereof, said method comprising exposing such surface to the action of a fluorine containing substance capable of supplying fluoride ions to said surface, the fluorine concentration, the temperature at said surface, and the time of exposure being jointly sufficient to produce a substantial exchange of fluoride ions for oxygen and hydroxyl ions at such surface without a discernible etching thereof.

3,314,773
LOW TEMPERATURE SYSTEM
Serge Deiness, Versailles, France, assignor to North American Phillips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 30, 1965, Ser. No. 510,490
Claims priority, application France, Dec. 11, 1964,
998,366
6 Claims. (Cl. 62—45)

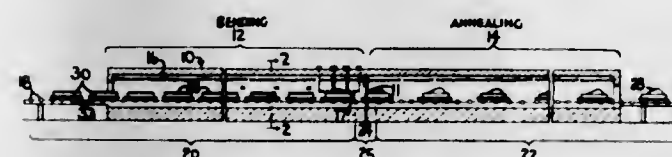


1. A device for maintaining an object at a low temperature comprising at least one double-walled, thermally insulated container in which the space between said walls is at sub-atmospheric pressure, an inner container spaced from said double-walled container, a cooling medium in each of said containers, and a sheath-like element connected to the outer wall of said inner container at a predetermined distance from the top edge thereof, said sheath-like element projecting above said top edge of said inner container.

3,314,774 METHOD OF BENDING AND ANNEALING GLASS SHEETS

Paul D. Shaffer, New Kensington, and Richard W. Gaskey, Greensburg, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 17, 1966, Ser. No. 535,104
4 Claims. (Cl. 65—104)



4. In the art of bending and annealing glass sheets comprising supporting a plurality of glass laden molds in a tunnel-like bending furnace and conveying said glass laden molds through an annealing lehr disposed in end-to-end relation to said furnace along a continuous conveyor extending through said annealing lehr to transport a succession of said molds therethrough, heating each of a succession of glass sheets which are supported on said molds in said bending furnace to a temperature above the annealing range of glass and sufficient to raise the temperature of the glass to its deformation point so that it sags into conformity with an upper shaping surface of said glass laden mold, controlling the temperature within a portion of said annealing lehr to provide successively cooler temperatures along a portion of said annealing lehr that extend through the annealing range of glass, and supporting said molds at a relatively close spacing in said bending furnace such that each mold serves as a heat source that affects the temperature of a glass sheet supported on an adjacent mold, and then separating and conveying the molds through the annealing lehr at a greater separation between successive molds than existed in the bending furnace.

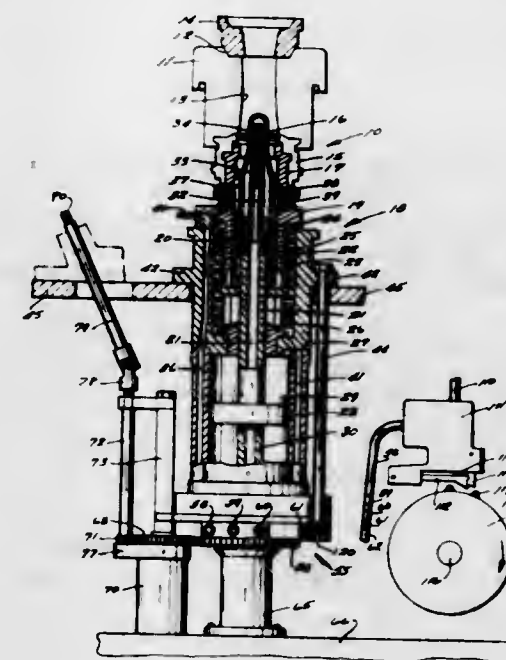
3,314,775 CYLINDER MOUNTING ON I.S. TYPE GLASS-WARE FORMING MACHINE

Leo C. De Smetter, Toledo, Ohio, and Eustace H. Mumford, Ottawa Lake, Mich., assignors to Owens-Illinois, Inc., a corporation of Ohio

Filed July 23, 1963, Ser. No. 296,986
6 Claims. (Cl. 65—167)

1. In combination, a glass forming machine base, a blank mold plunger unit comprising a cylinder, a piston and piston rod in said cylinder, a glass contacting plunger mounted for movement axially at one end of said cylinder and connected to said piston and piston rod, a cylinder end member connected on said cylinder opposite said plunger and closing said cylinder end, plural fluid passages in said cylinder end member which define axial openings on the outer surface of said cylinder end member and include operating fluid passages for furnishing fluid to said cylinder and exhausting fluid from said cylinder in effecting axial movement of the piston in said cylinder, and at least one fluid passage in the cylinder for furnishing fluid under pressure to the plunger unit, a foot member mounted on said machine base, a machine timing valve for regulating timed application of fluid under pressure, plural fluid ports in said foot member and correspondingly aligned with said fluid passages of said cylinder end member, conduit means connecting the fluid ports of said foot member individually to the timing valve, axially outwardly projecting individual plug means connected on the foot member providing detachable fluid couplings insertable into each of said fluid passages of the foot member to detachably connect the passages of

the cylinder end member to the machine timing valve, and means detachably connecting said cylinder to said foot member for holding the cylinder in an operating position.

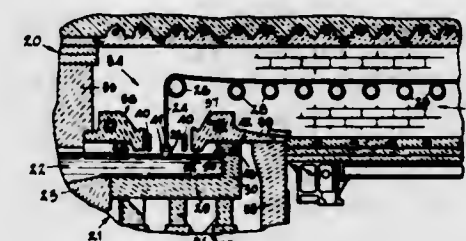


position on said foot member, the machine timing valve providing timed application of operating pressurized fluid to effect timed operation of the blank mold plunger unit.

3,314,776 APPARATUS FOR CONTINUOUS PRODUCTION OF GLASS SHEETS

James E. Mambourg, Shreveport, La., and William E. McCown, Toledo, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio

Filed Mar. 18, 1963, Ser. No. 265,727
10 Claims. (Cl. 65—203)



1. Apparatus for the continuous production of window glass comprising, in combination, a draw pot having a rear wall and opposite side walls, melting, refining and cooling chambers in end-to-end communicating relationship for continuously supplying molten glass to said draw pot, a substantially enclosed drawing chamber above and in communication with said draw pot, a pot chamber beneath and around said draw pot, means for introducing hot gases of combustion into said pot chamber, a lip-tile extending across the rear of said draw pot above said rear wall and molten glass, a radiant heating tube extending across the draw pot between said lip-tile and said rear wall and substantially sealing off the space therebetween to prevent entry of gases of combustion from said pot chamber into the space between said lip-tile and said molten glass and into said drawing chamber, the ends of said radiant tube extending outside of said enclosed drawing chamber, gas fired burners inserted in the ends of said radiant tube for supplying heat to the

surface of the molten glass to maintain a uniform temperature in said molten glass across said draw pot and prevent the formation of devitrified material in said rear area while excluding gases of combustion from said drawing chamber, and means for drawing a sheet upwardly from the molten glass in the draw pot through said drawing chamber.

3,314,777

METHOD FOR REDUCING LODGING IN SMALL GRAINS

Robert H. Beatty, Philadelphia, Pa., assignor to Amchem Products, Inc., Ambler, Pa., a corporation of Delaware
No Drawing. Filed Apr. 30, 1964, Ser. No. 364,017
9 Claims. (Cl. 71-2.7)

1. A process for reducing lodging in small grains which comprises applying the N-hydroxy-N-formyl glycinate anion to growing grains in an amount sufficient to reduce lodging of said grains.

3,314,778

METHOD OF PREPARING SLOW RELEASE FERTILIZERS CONTAINING A UREA-PARAFFIN WAX ADDUCT

Robert H. Campbell, Brookhaven, and Wesley R. Cherry, Prospect Park, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
No Drawing. Filed July 14, 1964, Ser. No. 382,671
7 Claims. (Cl. 71-28)

1. Method which comprises forming solid discrete slow release fertilizer particles comprising a dispersion of solid urea in a solid paraffin wax having a melting point in the range of 110°-140° F., the ratio of said solid urea to said solid paraffin wax being less than 3.16:1, aging said particles until a substantial portion of the urea therein has reacted with the low melt point paraffin wax therein to form a urea-paraffin wax adduct, whereby discrete particles comprising a dispersion of said urea-paraffin wax adduct in wax are obtained, and holding these latter particles at a temperature in excess of 100° F. until the water resistance of said latter particles has increased significantly.

3,314,779

STABILIZATION OF AMMONIUM CARBAMATE FOR FERTILIZER USE

Archie V. Slack, Sheffield, Ala., assignor to Tennessee Valley Authority, a corporation of the United States
No Drawing. Filed May 5, 1964, Ser. No. 365,214
6 Claims. (Cl. 71-30)

1. A process for the production of a nitrogen-containing fertilizer material which comprises the steps of reacting anhydrous ammonia with carbon dioxide; collecting the resulting light crystalline ammonium carbamate material; compacting and pelletizing said resulting ammonium carbamate material; classifying by size said pelletized material and separating out therefrom those pellets desired of a predetermined size; spray coating said sized ammonium carbamate pellets with a petroleum based oil of medium viscosity; and storing said spray-coated ammonium carbamate pellets in containers, the walls of which are substantially impervious to ammonia vapor.

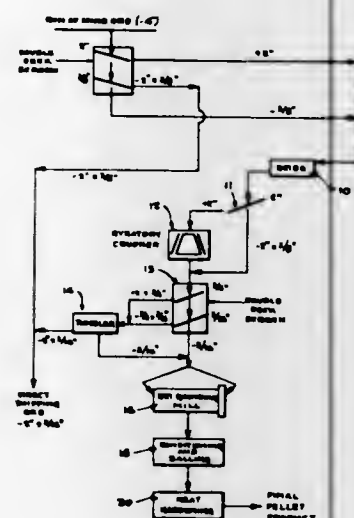
3,314,780

PROCESS OF PELLETIZING ORE

Michael O. Holowaty, Gary, and Arthur M. Schwarz, Munster, Ind., assignors to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Filed July 7, 1964, Ser. No. 380,888
10 Claims. (Cl. 75-3)

1. A process of producing heat-hardened ore pellets which comprises; forming an ore pelletizing mix consisting essentially of ground ore having a particle size dis-

tribution within the range of a minimum of about 50% by weight and a maximum of about 70% by weight minus 100-mesh ore particles with a maximum of about 50% by weight of the said mix being minus 325-mesh ore particles and a maximum of about 10% by weight being plus 10-mesh ore particles, adjusting the surface moisture content of said pelletizing mix to between about 9% and 14% by weight water and forming uniformly

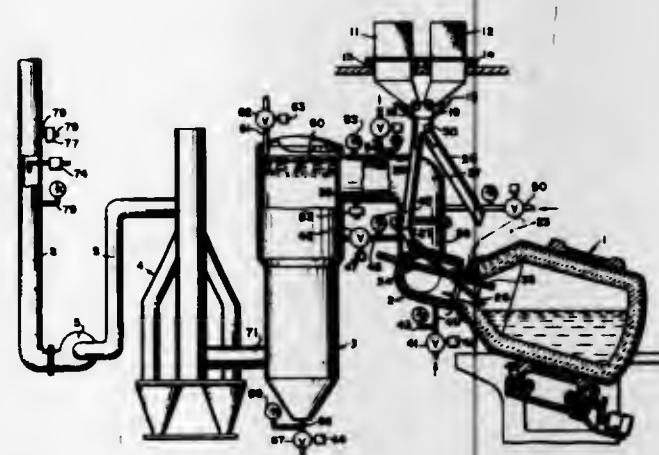


sized green ore pellets having a diameter between about 5/8 inch and about 3/4 inch, drying the said pellets to remove at least a part of the water content thereof, preheating the said pellets with a gas having a temperature between about 1500 and 2000° F. to condition said pellets for firing, and thereafter firing said pellets by contacting with a gas having a temperature in excess of about 2300° F. to heat harden said pellets.

3,314,781

METHOD FOR THE CONTROL OF BLAST REFINING OF CARBON-CONTAINING METAL MELTS

Folke Karl Evald Johansson and John Arne Smedstam, Borlange, and Jan Ludvig Bertilsson Uggla, Nykroppa, Sweden, assignors to Stora Kopparbergs Bergslags Aktiebolag, Falun, Sweden
Filed Dec. 7, 1965, Ser. No. 512,830
Claims priority, application Sweden, Mar. 20, 1962, 3,129/62; July 13, 1962, 7,884/62, 7,885/62
12 Claims. (Cl. 75-52)



1. In a method of refining a melt of ferrous metal containing carbon in a furnace to produce a melt having a predetermined temperature at a predetermined carbon content comprising the steps of determining the initial

temperature, amount and carbon content of the melt, continuously contacting the melt with a stream of gas containing free oxygen to produce carbon monoxide, convert at least a portion of the carbon monoxide to carbon dioxide by combustion and generate heat sufficient to exceed the desired predetermined temperature of the final melt, measuring the average degree of combustion of carbon removed from the melt by determining the relative amounts of carbon monoxide and carbon dioxide produced in the furnace, utilizing the average degree of combustion for determining the amount of heat developed and absorbed by the melt to raise its temperature, continuing to supply oxygen for a period of time required to produce the desired carbon content of said melt by combustion of carbon, introducing a coolant into the melt during the refining operation in amounts sufficient to absorb excess heat and approach the required temperature simultaneously with the approach of the desired carbon content in the melt, stopping said refining operation by stopping the supply of oxygen when the melt has the predetermined temperature and carbon content and then pouring the melt.

3,314,782

REFINING AGENT FOR STEEL-WORKS

Eric Arnaud, Lausanne, Switzerland, assignor to Anstalt für technische Entwicklung und Verwertung
No Drawing. Filed Feb. 5, 1964, Ser. No. 342,794
Claims priority, application Switzerland, Dec. 12, 1963, 15,255/63

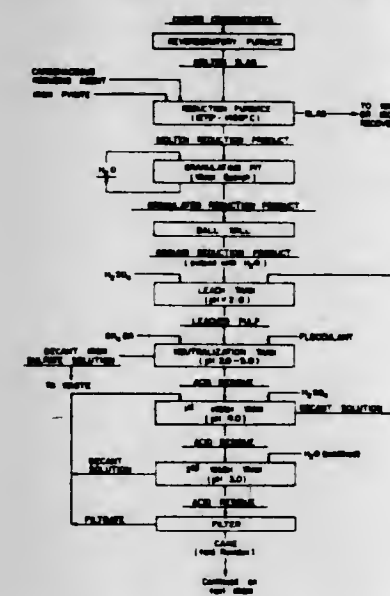
2 Claims. (Cl. 75-57)

1. A refining agent for deoxidizing steel consisting of, from 5 to 95% by weight of a deoxidizing agent selected from the group consisting of aluminum, magnesium, calcium, and silicon, from 0.2 to 35% by weight of cryolite, from 0.5 to 90% by weight of fluorspar, and from 0.5 to 90% by weight of calcium hydroxide, the total of all components amounting to 100%.

3,314,783

PROCESS FOR THE RECOVERY OF MOLYBDENUM VALUES FROM FERRUGINOUS, MOLYBDENUM-BEARING SLAGS

Stuart R. Zimmerley and Russell R. Beck, Salt Lake City, Utah, assignors to Kennecott Copper Corporation, New York, N.Y., a corporation of New York
Filed May 6, 1963, Ser. No. 278,096
26 Claims. (Cl. 75-108)



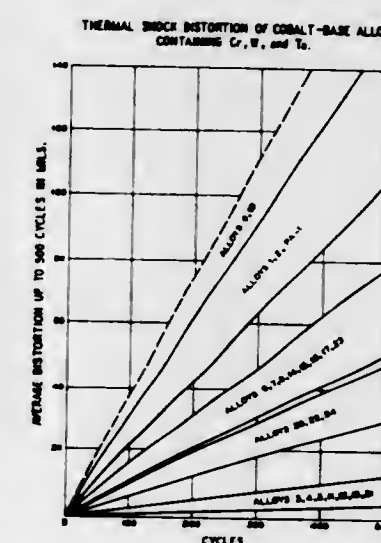
12. A process for removing molybdenum values from ferruginous, molybdenum-bearing slags, comprising: subjecting such a slag to a reduction smelting operation involving heating the material and a reducing agent

to a smelting temperature, the quantity of reducing agent, the temperature, and the time of said smelting operation being established to effect reduction of the molybdenum preferentially to the iron and to form a residual slag and a metallic reduction product, the latter containing most of the molybdenum present in the original slag but little of the iron; and separating said slag and said reduction product.

3,314,784

COBALT-BASE ALLOY RESISTANT TO THERMAL SHOCK

Robert D. McQuillan, William M. Thomas, and Elmer L. Frey, Kokomo, Ind., assignors to Union Carbide Corporation, a corporation of New York
Filed Nov. 21, 1963, Ser. No. 325,338
11 Claims. (Cl. 75-171)



1. A thermal-shock resistant cobalt base alloy consisting essentially of 20 to 35 percent chromium, 5 to 20 percent tungsten, 3 to 5.5 percent tantalum, 0.7 to 1.3 percent carbon, a maximum of 0.08 percent titanium, a maximum of 0.01 percent zirconium, less than 1% columbium, balance cobalt and incidental impurities, the total chromium plus tungsten content of said alloy being greater than about 35 percent and not exceeding about 47.5 percent; the tungsten content being greater than about two times the tantalum content, the total chromium and tungsten content being between 8 and 12 times the tantalum content, and the tantalum being present in an amount less than the tungsten content and less than the chromium content.

3,314,785

ALLOY

Leonard F. Yntema, Wadsworth, and Arthur B. Michael, Lake Forest, Ill., assignors to Fansteel Metallurgical Corporation
No Drawing. Filed Feb. 5, 1957, Ser. No. 638,210
7 Claims. (Cl. 75-174)

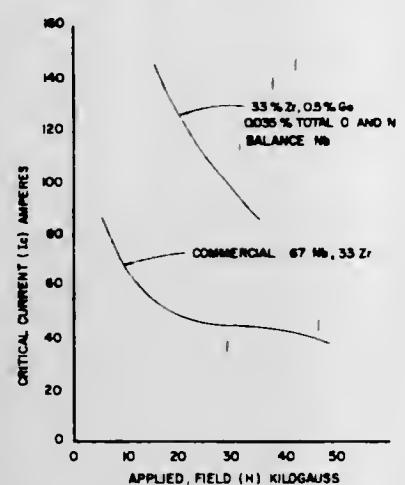
7. A columbium base alloy consisting essentially of by weight about 9-11% molybdenum, about 3-7% titanium, about 10% tungsten, about 0.5-2% aluminum and the balance substantially all columbium.

3,314,786

ELECTRICAL MATERIALS AND DEVICES
George D. Kneip, Jr., Houston, Tex., assignor to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed Aug. 14, 1964, Ser. No. 389,682
2 Claims. (Cl. 75-174)

1. A superconducting alloy wire comprising, by weight, from about 25 to about 33% zirconium, from about 0.1 to

about 1.0% gallium, oxygen and nitrogen being present, the sum total of oxygen and nitrogen ranging between



about 0.01 and about 0.1%, and the balance niobium, said alloys having at 4.2° K., a critical current in excess of 2×10^5 amps/cm.² in an applied field of 20 kilogauss.

3,314,787

METHOD FOR PRODUCING AN Mg ADDITION AGENT

Charles Bruce Goodrich, Charles Ernest Manilla, Cecil Lyle Ramsey, and Richard Herman Hanewald, all of Huntington, W. Va., assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Mar. 29, 1966, Ser. No. 538,197. Divided and this application Sept. 8, 1966, Ser. No. 577,806

5 Claims. (Cl. 75-200)

1. The process for producing a briquetted nickel-magnesium addition material which comprises blending fine carbonyl nickel powder with about 4% to about 20% by weight of magnesium powder having a particle size of at least about 40 microns, and up to about 25% of iron powder having a particle size not exceeding 150 microns, cold pressing the mixed powders to green briquettes, sintering said green briquettes by heating for about one to about three hours at a temperature not exceeding about 1200° F. but sufficiently high to form a molten phase therein in an essentially nitrogen-free protective atmosphere and cooling the sintered briquettes at a rate exceeding about 2° F. per minute to provide sintered briquettes having a porosity of about 20% to about 50%.

3,314,788

ELECTROPHOTOGRAPHIC PROCESS AND ELEMENT COMPRISING N,N,N',N'-TETRASUBSTITUTED-P-PHENYLENEDIAMINES

John Alan Mattor, Hollis, Maine, assignor to S. D. Warren Company, Boston, Mass., a corporation of Massachusetts

Filed Apr. 14, 1966, Ser. No. 542,620

6 Claims. (Cl. 96-1.5)

1. An electrophotographic plate comprising a photoconductive insulating layer on a relatively more conductive support, the photoconductive layer containing a N,N,N',N'-tetra-substituted-p-phenylenediamine containing at least one benzyl group each in the N, and N' position with the remaining two substituent groups being selected from the group consisting of benzyl radicals and alkyl radicals.

3,314,789 QUATERNARY AMMONIUM SALTS IN SILVER HALIDE PROCESSING SOLUTIONS

Richard L. White and Donald M. Burness, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed July 24, 1964, Ser. No. 385,035

28 Claims. (Cl. 96-29)

1. In a diffusion transfer system wherein a silver halide emulsion layer containing a latent photographic image is contacted in superposed relation with a water-permeable hydrophilic organic colloid processing element separable from said emulsion layer and having dispersed therein a silver precipitating agent, said processing element containing an amount of processing solution sufficient to develop said exposed silver halide to metallic silver and to dissolve substantially all undeveloped silver halide from said exposed emulsion layer, the improvement comprising using a processing solution containing at least one (a) silver halide developing agent and (b) silver halide fixing agent with (c) a quaternary ammonium salt represented by the general formula:



where Y is selected from the class consisting of an alkyl thio group of 6-30 carbon atoms, a secondary amino group containing a linear chain of 10-30 carbon atoms and a tertiary amino group containing a linear chain of 10-30 carbon atoms, R represents lower alkyl groups of 1-4 carbon atoms and X is a suitable anion.

3,314,790

DESENSITIZER FOR EXPOSED SILVER HALIDE EMULSIONS

Herbert B. Cowden, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 23, 1963, Ser. No. 310,897

23 Claims. (Cl. 96-62)

1. An aqueous solution for desensitizing an exposed silver halide emulsion containing a silver halide developer and a desensitizing amount of a 2,2'-azopyridine having a solubility in water of at least 0.10 gram per liter.

3,314,791

PHOTOGRAPHIC FILM ASSEMBLAGE FOR USE IN DIFFUSION TRANSFER

Ezio D. Cotta, Dorchester, and Váto K. Eloranta, Needham, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Sept. 20, 1963, Ser. No. 310,381

18 Claims. (Cl. 96-76)

13. A photographic film assemblage comprising, in combination:

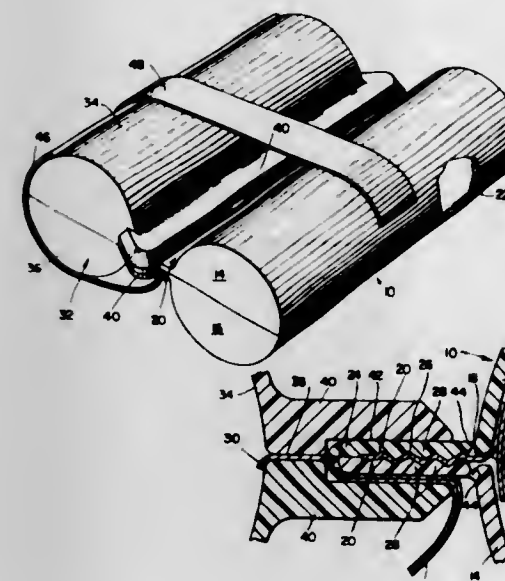
a photosensitive image-recording sheet; a second sheet impregnated with a liquid and adapted to be superposed with successive exposed areas of said image-recording sheet;

a first container comprising a body closed at its ends and having a slot through which said second sheet is movable, and a pair of lips comprising integral portions of said body extending outwardly therefrom on opposite sides of said slot and secured to one another at their edge portions to seal said slot, said second sheet being coiled within said body with an end portion of said second sheet extending through said slot and disposed between said lips;

said lips being weakened at the juncture thereof with said body so as to break at said juncture when flexed and thereby permit withdrawal of said second sheet through said slot;

said end portion of said second sheet being gripped between said lips whereby said lips provide means

for withdrawing said second sheet through said slot; and



a second container enclosing an image-recording sheet and including an opening through which said image-recording sheet is movable; said image-recording sheet being coupled with said lips.

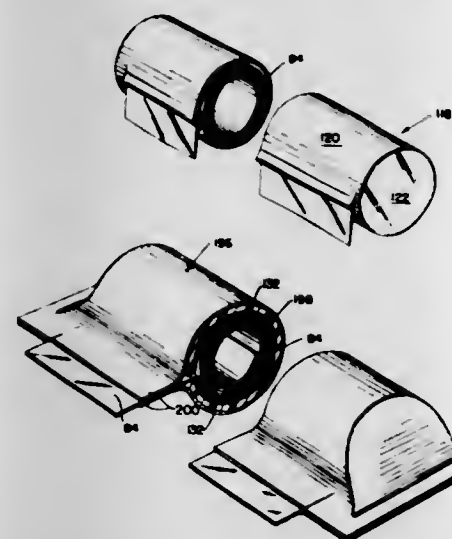
3,314,792

PHOTOGRAPHIC FILM ASSEMBLAGE INCLUDING PROCESSING LIQUID

Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Original application July 31, 1963, Ser. No. 298,968. Divided and this application Oct. 21, 1965, Ser. No. 499,703

25 Claims. (Cl. 96-76)



21. An externally dry photographic film assemblage for treating successive exposed areas of a photosensitive image-recording sheet with an aqueous alkaline liquid having a high pH to produce a succession of photographic transfer prints, said assemblage comprising, in combination:

an image-recording sheet including a photosensitive heavy metal salt capable of forming a latent image upon photoexposure and a developing agent in substantially dry form capable of reducing exposed portions of said heavy metal salt;

a substantially gas and water impermeable container having a narrow opening therein through which a sheet is movable;

an elongated image-receiving sheet coiled within said container with an end portion of said image-receiving sheet extending from said container through said opening;

said image-receiving sheet comprising a support and an image-receiving layer carried on said support and impregnated with an aqueous alkaline liquid having a high pH, said liquid being distributed within said image-receiving layer in sufficient quantity to render said developing agent reactive when said image-receiving layer is pressed in face-to-face contact with said image-recording sheet;

said end portion of said image-receiving layer being coupled outside of said container with the leading end of said image-recording sheet with said image-receiving layer facing said image-recording sheet;

closure means comprising portions of said container for engaging said image-receiving sheet at said opening to substantially seal said opening against admission of carbon dioxide to said container, said closure means being movable to an open position to permit withdrawal movement of said image-receiving sheet from said container through said opening; and

a squeegee within said container adjacent said opening for engaging said image-receiving sheet within said container during withdrawal movement of said image-receiving sheet to remove said liquid from at least one surface thereof.

3,314,793

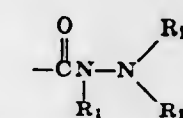
NON-DIFFUSING INHIBITORS OF FORMALDEHYDE HARDENING

Kenneth C. Kennard and Hyman L. Cohen, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 27, 1962, Ser. No. 247,524

8 Claims. (Cl. 96-83)

3. A photographic product, some portion of which contains formaldehyde or a formaldehyde former, having therein a gelatin layer containing a formaldehyde hardening inhibitor comprising a polymeric material having a hydrocarbon backbone and as a substituent group thereon:



R₁, R₂ and R₃ each being selected from the group consisting of hydrogen, alkyl, and hydroxyalkyl.

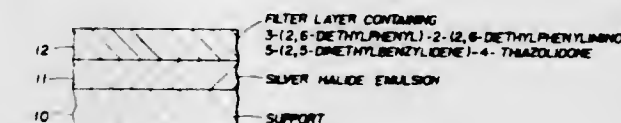
3,314,794

ULTRAVIOLET ABSORBERS

George W. Sawdey, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed May 13, 1964, Ser. No. 367,138

11 Claims. (Cl. 96-84)



1. A photographic element comprising a support, at least one photographic hydrophilic colloid silver halide emulsion layer and incorporated in one of the layers of said photographic element a 2-phenylimino-3-substituted-5-benzylidene-4-thiazolidone in which at least one of the radicals on the 2 and 3 positions of the 4-thiazolidone ring contains a 2,6-disubstituted phenyl group.

3,314,795

PHOTOCHROMIC CELLULOSIC PAPER, SYNTHETIC PAPER AND REGENERATED CELLULOSE

George Henry Dorion, New Canaan, and Kay Oesterle Loeffler, Norwalk, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Mar. 1, 1963, Ser. No. 262,254
13 Claims. (Cl. 96—90)

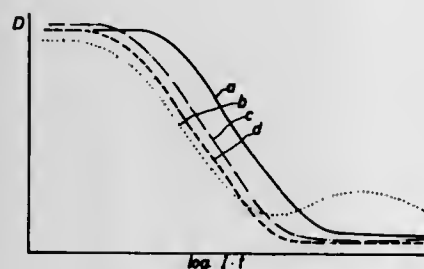
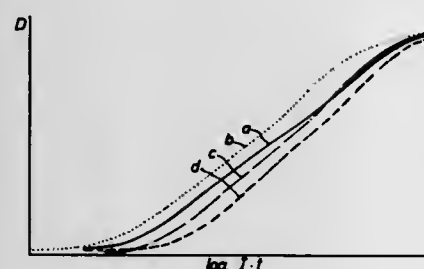
1. A water-laid web comprising water-fibrillated, randomly intermingled, interlocked, filaments of paper-making length of a material selected from the group consisting of a fibrous, cellulosic material and a fibrous, thermoplastic, acrylonitrile-containing, polymeric material, said web having uniformly distributed throughout the interstices thereof, at least 0.1%, by weight, based on the weight of the web, of a photochromic material which is a solid at room temperature and which functions photochromically as a solid.

3,314,796

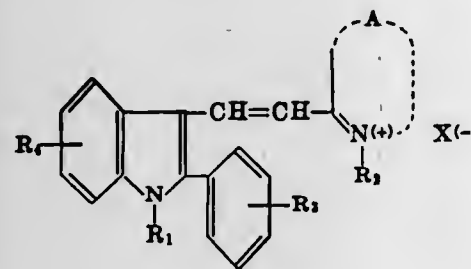
DIRECT POSITIVE EMULSIONS

Johannes Götz, Bergisch Neukirchen, and August Randolph and Oskar Rießer, Leverkusen, Germany, assignors to AGFA Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

Filed Mar. 13, 1963, Ser. No. 264,974
Claims priority, application Germany, Apr. 11, 1962, A 39,928
7 Claims. (Cl. 96—101)



1. A photographic element containing at least one supported direct positive silver halide emulsion layer, said emulsion layer containing a sensitizer of the following general formula:



wherein R₁ represents a lower alkyl radical having up to 3-carbon atoms; R₂ stands for a radical selected from the class consisting of lower alkyl, carboxyl substituted

lower alkyl and sulfo substituted lower alkyl, lower alkyl in each case having up to 5-carbon atoms; R₃ represents a radical selected from the group consisting of hydrogen, alkyl and alkoxy; R₄ represents a radical selected from the group consisting of hydrogen and halogen; A constitutes the atoms necessary to complete the heterocyclic nitrogen containing nucleus of the type used in the production of cyanine dyes; X is only present in the cases where R₂ is an alkyl radical which is not substituted by sulfo or carboxyl groups and stands for an anion.

3,314,797

CONVERTING LIGNOCELLULOSE MATERIALS INTO YEAST CONTAINING STOCK FEED

Robert W. Hess, Beaverton, Oreg., Alfred M. Thomsen, San Francisco, Calif., Frank Porter, Morristown, N.J., and John W. Anderson, Portland, Oreg., assignors of one-half to Georgia-Pacific Corporation, Portland, Oreg., a corporation of Georgia, and one-half to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Apr. 12, 1963, Ser. No. 172,698
18 Claims. (Cl. 99—9)

1. The process of converting lignocellulose material into stock feed which comprises:

- preferentially hydrolyzing the hemicellulose content of the material in aqueous medium, thereby forming an aqueous pentose-containing liquor and a solid cellulose- and lignin-containing residue,
- separating the pentose-containing liquor from the cellulose- and lignin-containing residue,
- preferentially hydrolyzing the cellulose content of the residue in aqueous acid medium, thereby forming an aqueous hexose-containing liquor and a solid lignin-containing residue,
- separating the hexose-containing liquor from the lignin-containing residue, thereby providing a hexose sugar stock feed material,
- growing yeast in the pentose-containing liquor thereby converting its sugar content substantially to a yeast protein stock feed material, and
- mixing the said hexose sugar and yeast protein stock feed materials in predetermined proportions, thereby providing a balanced stock feed derived substantially in its entirety from the lignocellulose starting material.

3,314,798

DAIRY PRODUCT AND METHOD OF PRODUCING SAME

Roy R. Graves, Germantown, Md., assignor to The Graves-Stambaugh Corporation, a corporation of Delaware

No Drawing. Filed Aug. 14, 1963, Ser. No. 301,945
9 Claims. (Cl. 99—123)

1. A continuous method of preparing a spreadable dairy product which is stable at room temperatures and which is essentially non-fluid at ordinary refrigeration temperatures comprising forming a mixture of a dairy cream, fluid whole, condensed skim or reconstituted dry skim milk, emulsifier, stabilizer and bodying agent, heating the mixture to a temperature of from 160° F. to about 170° F., deaerating the heated mixture, homogenizing the deaerated mixture at a pressure of from about 1300 to 2000 p.s.i., sterilizing the mixture, cooling the sterilized mixture, homogenizing the sterilized mixture under substantially sterile conditions at a pressure of from about 400 to 750 p.s.i. to obtain a spreadable dairy product having a butterfat content of from about 22% to about 32%, a milk solids not fat content of from about 5% to about 9%, and a lactose content of from about 1% to about 3%, and packaging said product under conditions to maintain it in its sterile state.

3,314,799

TASTE IMPROVEMENT IN MARGARINE
Anne Josephine Neilson, Cambridge, and Richard Lawrence Hughes, West Roxbury, Mass., assignors, by mesne assignments, to Abbott Laboratories, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Dec. 16, 1964, Ser. No. 418,888
2 Claims. (Cl. 99—123)

1. The process of adding cyclamic acid to margarine and blending the mixture uniformly, said cyclamic acid being added in an amount between 0.01% and 0.02% by weight of said margarine.

3,314,800

PROCESS FOR COATING HOT DRY ROASTED NUTS AND THE RESULTING PRODUCT

Peter P. Noznick, Evanston, and Robert H. Bundus, Riverside, Ill., assignors to Beatrice Foods Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Aug. 24, 1966, Ser. No. 574,556
17 Claims. (Cl. 99—127)

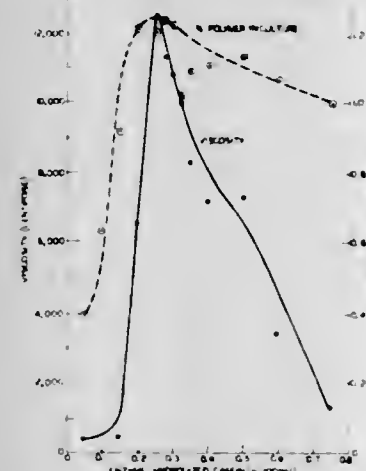
8. Dry roasted peanuts having an adhesive coating comprising vital wheat gluten and salt.

3,314,801

MICROBIAL POLYSACCHARIDE AND PROCESS

Martin C. Cadmus and Ralph F. Anderson, Peoria, Ill., assignors to the United States of America as represented by the Secretary of Agriculture

Original application Oct. 24, 1963, Ser. No. 318,769, now Patent No. 3,228,855, dated Jan. 11, 1966. Divided and this application Aug. 17, 1964, Ser. No. 399,117
1 Claim. (Cl. 99—139)



A method of increasing by about twenty-fold the viscosity of a 1 percent aqueous solution of a polysaccharide consisting of glucose, galactose, mannuronic acid and O-acetyl moieties that are respectively present in the molar proportions of 1:1:1:5 and which polysaccharide is prepared by the process comprising inoculating a sterilized fermentation medium present in a paddle equipped fermentor and having the following composition per 100 ml.

Commercial corn sugar	g	3.0
Enzyme-hydrolyzed casein	g	0.25
MgSO ₄ ·7H ₂ O	g	0.08
MnSO ₄ ·4H ₂ O	g	0.005
KH ₂ PO ₄	g	0.4
Water q.s.a.d.	ml	100

with a culture of a species of diphtheroidic bacterium selected from the group consisting of *Arthrobacter viscosus* NRRL B-1973 and *Arthrobacter viscosus* NRRL B-1797, internally agitating the inoculated medium at 25° C. in the presence of air for about 96 hours while periodically increasing the rate of agitation by operating the paddles at 200 r.p.m. for the first 24 hours, then at 300 r.p.m. for the second 24 hours, and then at 500 r.p.m. for the remainder of the fermentation, diluting the viscous me-

dium with dilute aqueous methanol, removing unwanted cells and debris, adding ethanol and a salt selected from the group consisting of potassium chloride and potassium acetate to precipitate the polysaccharide, and isolating the precipitated polysaccharide, said method comprising adding to said 1 percent aqueous solution of said polysaccharide at least 0.05 percent but not exceeding 0.25 percent by weight of aluminum sulfate.

3,314,802

METHOD OF TEMPERATURE REGULATION IN A SPICE GRINDING PROCESS

Alvin M. Cohodas, Allentown, Pa., assignor to The Glidden Company, Cleveland, Ohio, a corporation of Ohio

Filed Mar. 22, 1965, Ser. No. 441,583
4 Claims. (Cl. 99—140)

1. In a process for the grinding of solid spice in a milling zone in the presence of normally gaseous refrigerant wherein spice to be ground and a flow of said refrigerant are fed to said milling zone and a suspension of ground spice in resulting vapor is discharged from said milling zone, the improvement which comprises: establishing and maintaining a fixed rate main refrigerant flow to said milling zone a smaller variable rate auxiliary fluid refrigerant flow to said milling zone; and maintaining temperature of resulting output refrigerant vapor substantially constant at a predetermined value above the ambient dew point and below the spice deterioration temperature by varying the rate of said auxiliary flow in response to temperature change in said resulting output vapor.

3,314,803

MANNITOL FIXED FLAVOR AND METHOD OF MAKING SAME

Charles Dame, Jr., Tarrytown, N.Y., and Robert E. Smiles, Ramsey, N.J., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 26, 1966, Ser. No. 523,038
11 Claims. (Cl. 99—140)

1. A process for making a dry flavor enhancer containing a stable level of acetaldehyde in an amount effective to produce flavor enhancement which comprises forming an aqueous solution of mannitol and acetaldehyde and spray-drying said solution to obtain a powdered product.

3,314,804

METHOD FOR PACKAGING EGGS

Frank V. Kosikowski, Ithaca, N.Y., assignor to Cornell Research Foundation, Inc., Ithaca, N.Y., a corporation of New York

Filed July 24, 1964, Ser. No. 384,907
4 Claims. (Cl. 99—177)

1. The method of packaging an egg comprising placing an egg within an encapsulation of flexible material which is non-permeable to air, evacuating the air from said encapsulation to a degree representing a substantially high vacuum about 29.5 inches of mercury which will create sufficient forces causing said nonpermeable flexible material to cling to the shell of said egg despite the tendency for oxygen and CO₂ to seep through the shell of said egg, and then sealing said encapsulation to the atmosphere.

3,314,805

MANUFACTURE OF DEHYDRATED POTATOES

Robert A. S. Templeton, Cereal House, 58 Mark Lane, London, England

No Drawing. Filed Apr. 4, 1963, Ser. No. 270,529
Claims priority, application Great Britain, Apr. 6, 1962, 13,433/62; June 14, 1962, 22,994/62
6 Claims. (Cl. 99—207)

1. In a process for the production of a dehydrated mashed potato product, the improvement comprising in

that the potatoes are initially precooked in an unpeeled condition for 10-60 minutes in a dilute alkali solution having a strength of less than 5% to effect simultaneous precooking of the potato flesh and softening of the potato skin to ease its subsequent removal.

3,314,806

PRODUCTION OF REFRACTORY OBJECTS

Harold Garton Emblem, Grappenhall, and Stanley Arthur Trow, Salford, England, assignors to Philadelphia Quartz Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed June 5, 1963, Ser. No. 285,615
Claims priority, application Great Britain, June 6, 1962, 21,844/62

10 Claims. (Cl. 106-38.2)

1. A method for producing a binder composition having a gelation time of at least five hours, which comprises admixing:

- (a) an isopropyl silicate selected from the group consisting of isopropylorthosilicate, isopropyl polysilicate and admixtures thereof,
- (b) sufficient water for the hydrolysis and gelation of the silicate, and
- (c) a base as a hydrolysis and gelation accelerator, said base being selected from the group consisting of piperidine, isopropylamine, monoethanolamine, tri-ethanolamine, n-butylamine, sec-butylamine, di-n-butylamine, di-n-propylamine, ammonia, hydrazine and water stable reaction products of oxirane compounds and aminoalkyl silicates.

3,314,807

WATER-BASE ADHESIVE CONTAINING A HYDROXYLAMINE STABILIZER

Kenneth A. E. Blackmore, Bellingham, Wash., assignor to Georgia-Pacific Corporation, Portland, Oreg., a corporation of Georgia

No Drawing. Filed Oct. 17, 1963, Ser. No. 317,037
14 Claims. (Cl. 106-127)

1. A water-base adhesive comprising a mixture of a lignosulfonate adhesive, animal glue, and an effective stabilizing amount of hydroxylamine.

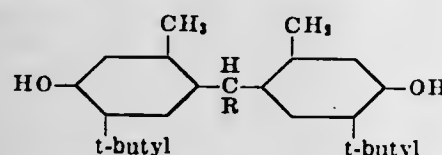
3,314,808

STABILIZED CELLULOSE ESTER

Gordon Mars Moulds, Waynesboro, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 2, 1964, Ser. No. 348,872
3 Claims. (Cl. 106-183)

1. A composition of matter comprising a major amount of a cellulose ester and a stabilizing quantity of a dialkyl ester of 3,3'-thiodipropionic acid wherein each alkyl group contains from 4 to 20 carbon atoms and a bisphenol having the formula



wherein R is a lower alkyl radical of from one to about four carbon atoms.

3,314,809

PROCESS OF MAKING THERMOPLASTIC SHAPED ARTICLES FROM HYDROXYPROPYL CELLULOSE HAVING AN M.S. OF AT LEAST 2

Eugene D. Klug, Wilmington, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 8, 1963, Ser. No. 257,062
6 Claims. (Cl. 106-197)

1. Process of preparing articles of manufacture of any desired shape which comprises subjecting hydroxypropyl

cellulose to a temperature of about 80° C.-250° C. and a pressure of about 50-25,000 pounds per square inch, said hydroxypropyl cellulose being characterized by: having a high degree of thermoplasticity and an M.S. of at least 2, being soluble in cold water and polar organic solvents and insoluble in hot water.

3,314,810

AMYLOSE MATERIAL PLASTICIZED WITH QUATERNARY AMMONIUM SALT

Austin H. Young, Decatur, Ill., assignor to A. E. Staley Manufacturing Company, Decatur, Ill., a corporation of Delaware

No Drawing. Filed June 19, 1963, Ser. No. 288,897
20 Claims. (Cl. 106-210)

11. A composition comprising an amylose material containing at least 50% by weight amylose wherein the amylose portion of said amylose material is present in the form of a material selected from the group consisting of the separated amylose fraction of whole starch, whole starch containing at least 50% by weight amylose and mixtures thereof, plasticized with a plasticizing concentration of a water-soluble quaternary ammonium salt having a total of from 4 to 16 carbon atoms.

3,314,811

METAL TREATING COMPOSITIONS AND PROCESSES

Abraham J. Mitchell, Stratford, and Paul R. Jarvi, Orange, Conn., assignors to The Mitchell-Bradford Chemical Co., Milford, Conn., a corporation of Connecticut

No Drawing. Filed Jan. 2, 1964, Ser. No. 335,393
7 Claims. (Cl. 106-284)

1. The method of blackening aluminum which comprises the steps of preparing a blackening composition by dissolving in water from about 1 ounce to about 3 pounds per gallon of a mixture of compounds which are reactive with aluminum to render it receptive to the deposit of blackening compounds comprising up to 80% by weight of a water-ionizable chloride and from 3% to 40% by weight of water-soluble salt of a metal falling below aluminum in the electromotive series, and a mixture of blackening compounds comprising from 0.5% to 20% by weight of water-soluble sulfur-bearing compound capable of forming a black metal-sulfur reaction product upon reaction with the said metal falling below aluminum in the electromotive series and from 2% to 25% by weight of water-soluble molybdate, maintaining the pH of the solution below about 6.5, maintaining the temperature of the solution within the range of from about 50° F. to about 212° F., immersing the aluminum into the blackening composition for a period of from 1 to 30 minutes, and removing the blackened aluminum.

5. A blackening composition useful for the blackening of aluminum surfaces when dissolved in an aqueous solution in an amount ranging from about 1 ounce to about 3 pounds per gallon, said composition comprising a mixture of compounds which are reactive with aluminum to render it receptive to the deposit of blackening compounds and which comprise up to about 80% by weight of a water ionizable chloride and from 3% to 40% by weight of water-soluble salt of a metal falling below aluminum in the electromotive series, and a mixture of blackening compounds comprising from 0.5% to 20% by weight of water-soluble sulfur-bearing compound capable of forming a black metal-sulfur reaction product upon reaction with the said metal falling below aluminum in the electromotive series and from 2% to 25% by weight of water-soluble molybdate.

3,314,812

METHOD FOR BLACKENING METALS AND NOVEL COMPOSITIONS THEREFOR

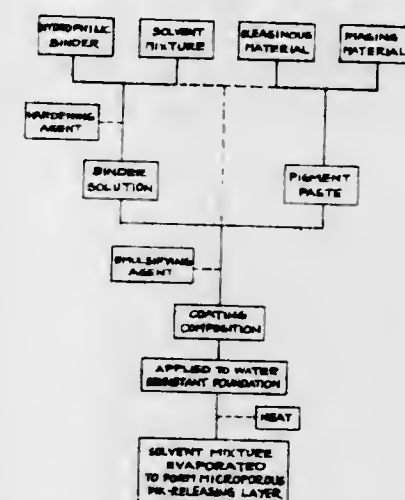
Abraham J. Mitchell, Stratford, Conn., assignor to The Mitchell-Bradford Chemical Co., Milford, Conn., a corporation of Connecticut

No Drawing. Filed Jan. 17, 1964, Ser. No. 338,315
14 Claims. (Cl. 106-286)

1. The method of blackening stainless steel which comprises immersing the stainless steel for a period of from 1 to 30 minutes in an aqueous blackening bath having a temperature between 220° F. and 310° F. and consisting essentially of from about 2 to about 12 pounds per gallon of a blackening composition consisting essentially of from 40 to 90 parts by weight of an alkali metal hydroxide, from 0.1 to 50 parts by weight of an alkali metal nitrate, from 0.1 to 50 parts by weight of a water-soluble sulfur-bearing compound which is reactive with the stainless steel to form a black sulfur reaction product thereon and at least one water-soluble salt selected from the group consisting of from 0.0001 to 20 parts by weight of a molybdate salt and from 0.0001 to 2 parts by weight of a dichromate salt.

8. An aqueous composition for the blackening of stainless steel which consists essentially of from about 2 to about 12 pounds per gallon of a blackening composition consisting essentially of from 40 to 90 parts by weight of an alkali metal hydroxide, from 0.1 to 50 parts by weight of an alkali metal nitrate, from 0.1 to 50 parts by weight of a water-soluble sulfur-bearing compound which is reactive with the stainless steel to form a black sulfur reaction product thereon and at least one water-soluble salt selected from the group consisting of from 0.0001 to 20 parts by weight of a molybdate salt and from 0.0001 to 2 parts by weight of a dichromate salt.

porous coating containing pressure-exudable ink composition, which comprises the steps of forming a coating composition from a compatible solvent mixture comprising water and from 3% to 80% by weight of an aliphatic solvent, a hydrophilic film-forming binder material which is soluble in said solvent mixture, an amount in excess of the amount of binder material of an oleaginous material which is incompatible with said binder material and is at least partially soluble in said solvent mixture, and a quantity of imaging material; applying said coating com-



position to a water-resistant flexible foundation selected from the group consisting of sized paper, wet-strength coated paper and plastic film in the form of a coating of uniform thickness, the aliphatic solvent providing the composition with an affinity for the foundation; and evaporating said solvent mixture to solidify the coating and form a microporous structure containing within the pores thereof a pressure-exudable ink composition containing said oleaginous material and said imaging material.

3,314,813

PRINTABLE POLYOLEFIN COMPOSITIONS AND PRODUCTS

Emil J. Maxlon, Park Forest, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Feb. 5, 1963, Ser. No. 256,298
9 Claims. (Cl. 117-12)



1. The method of preparing a printed body containing a non-polar polyolefin, which comprises intimately blending the polyolefin with a drying oil, said drying oil having at least 40 percent of its total acid components in polyunsaturated form and being present as 0.05 to 15 percent by weight of the blend of polyolefin and drying oil, forming the body from the blend, effecting drying of the drying oil at the surface of the body until the surface is non-tacky, applying an ink deposit to the said surface, and drying the ink.

3,314,814

METHOD OF PREPARING TRANSFER ELEMENTS

Douglas A. Newman, Glen Cove, N.Y., assignor to Columbia Ribbon and Carbon Manufacturing Co., Inc., Glen Cove, N.Y., a corporation of New York

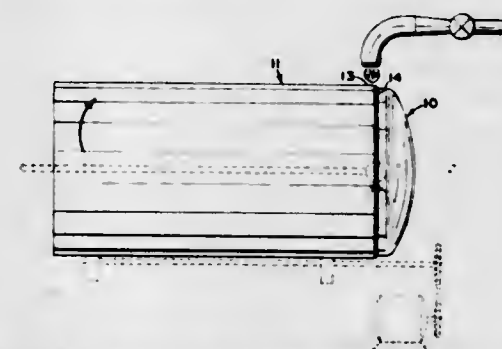
Filed Mar. 2, 1964, Ser. No. 348,822
13 Claims. (Cl. 117-36.1)

1. The process of preparing a pressure-sensitive transfer element having a water-resistant flexible foundation carrying a uniform water-applied pressure-sensitive micro-

METHOD OF APPLYING A PROTECTIVE COATING TO A METALLIC STRUCTURE

Lee R. Erwin, Duarte, Douglas W. McCallum, Hacienda Heights, and Ralph H. Gieser, La Habra, Calif., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Continuation of application Ser. No. 90,844, Feb. 21, 1961. This application Oct. 25, 1963, Ser. No. 319,046
1 Claim. (Cl. 117-40)



In a method of applying a coating of porcelain enamel to a surface of a structural unit wherein said surface includes angularly related portions presenting an irregular configuration, which comprises the steps of preheating the outer surface of the structural unit in the region of said irregular configuration prior to the application of a porcelain enamel slip to the inner surface of said region, and continuing to heat said unit in the region of said irregular configuration while applying a coating of porcelain enamel in slip form so that the vehicle content of said slip is partially evaporated thus providing a coating of relatively dry porcelain enamel on said inner surface of said structural unit in the region of said irregular configuration.

3,314,816

METHOD OF MAKING PHOTOGRAPHICALLY ACCURATE PRINTS

Frederic S. Tobey, Walpole, Mass., assignor to W. H. Brady Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Aug. 2, 1962, Ser. No. 214,282
1 Claim. (Cl. 117-101)



The method of manufacturing a print which comprises the steps of supporting against the cylindrical wall of a centrifuge basket a base and supporting against the base and inwardly thereof a layer of hydrophilic colloid carrying dispersed therein silver particles defining a photographic image, rotating said basket to give said base and said layer the same angular velocity, dissolving said hydrophilic colloid to release said silver particles therefrom, and moving said silver particles radially onto said base for retention thereon to give an image reproducing with photographic accuracy the image already referred to.

3,314,817

HIGH TEMPERATURE INSULATION FOR ELECTRICAL CONDUCTORS

Ralph L. Tiede, Newark, Ohio, assignor to Owens-Corning Fiberglass Corporation, a corporation of Delaware
Original application Aug. 23, 1960, Ser. No. 51,351, now Patent No. 3,179,739, dated Apr. 20, 1965. Divided and this application Feb. 25, 1963, Ser. No. 260,601
9 Claims. (Cl. 117-125)

1. A glass composition consisting essentially by weight:

Ingredient:	Proportion
SiO ₂ -----	25 to 30
CaO -----	3 to 5
Na ₂ O -----	10 to 20
B ₂ O ₃ -----	20 to 30
CaF ₂ -----	6 to 12
ZnO -----	0 to 7
RO -----	14 to 20

with RO representing an oxide from the group consisting of SrO, BaO and PbO.

8. Glass fiber insulation for an electrical conductor comprising a layer of relatively high melting textile fiber comprising an aluminum boro-silicate glass and in juxtaposition thereto a layer of a lower melting glass consisting essentially of about 28.7% SiO₂, 4.5% CaO, 11.7% Na₂O, 26.3% B₂O₃, 6.4% CaF₂, 5.3% ZnO and 17.2% BaO.

3,314,818

PROCESS FOR DEFECTION OF SUGAR SOLUTIONS

Earl Jack Swarthout, Edwardsburg, Mich., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

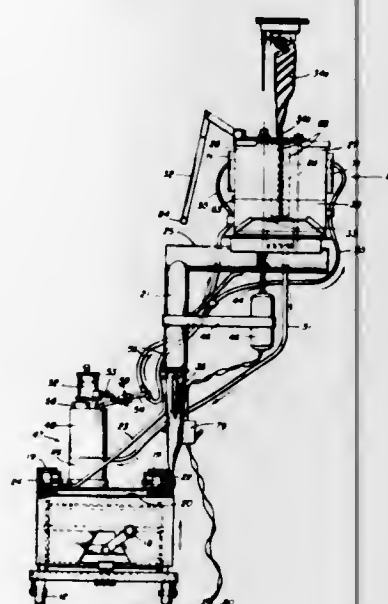
No Drawing. Filed Mar. 27, 1964, Ser. No. 355,439
2 Claims. (Cl. 127-48)

1. A process for defection of sugar solutions containing undesirable impurities which consists essentially of adding ferric citrate to a sugar solution, said ferric citrate being added in an amount containing from about 50 to about 1000 parts by weight iron per million parts by weight sugar solution, mixing said sugar solution and said ferric citrate at a pH of from about 2.5 to about 5 until a floc is formed with the undesirable impurities, and then separating the floc and the so-purified sugar solution.

3,314,819

METHOD FOR CLEANING VENETIAN BLINDS

Andrew L. Dyer, 278 W. 120th St.,
New York, N.Y. 10027
Filed Sept. 28, 1962, Ser. No. 227,024
2 Claims. (Cl. 134-6)



1. A method of cleaning a Venetian blind without removing it from its normal operative position, said method including the steps of closing said blind to bring the slats into vertical position, pulling the blind up until only a desired number of upper slats remain in vertical position, placing the collapsed slats in a cleaning unit and removing the tension on the raising cord, moving said unit from end to end across the vertical slats to clean both sides thereof, lowering said unit to automatically release another series of slats into vertical position, repeating said process until the lowest slats have been cleaned and then removing these slats from said unit.

3,314,820

COMPACT ELEMENT FOR ELECTRIC STORAGE BATTERY CELLS AND A METHOD FOR PREPARING IT

William Wharton Smith, Philadelphia, Pa., assignor to The Electric Storage Battery Company, a corporation of New Jersey

Filed Feb. 4, 1963, Ser. No. 256,032
10 Claims. (Cl. 136-6)

7. A compact storage battery element having a unitary structure comprising a positive active material dispersed in a microporous thermoplastic resin binder, a negative active material dispersed in a microporous thermoplastic resin binder and a microporous thermoplastic resin separator interposed between the positive and negative active material, said microporous thermoplastic resin separator being fused to both the microporous thermoplastic resin binder for the positive active material and the microporous thermoplastic resin binder for the negative active material so as to form a strong, unitary storage battery element.

3,314,821

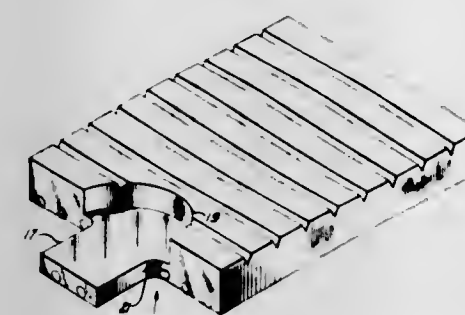
STORAGE BATTERY ELECTRODE OF SINTERED METAL PARTICLES

Robert L. Lambert, Emporium, and William R. McKelrnan, Crosby, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Feb. 28, 1964, Ser. No. 348,038
4 Claims. (Cl. 136-6)

3. In a storage battery, the improvement in combination therewith comprising: a porous layer of sintered metal particles having the pores thereof loaded with active electrode material, a compacted tab portion integral

therewith and extending outwardly therefrom, a plurality of parallelly aligned and laterally spaced electrical conductors integral with said porous layer of metal particles and



said tab portion and a plurality of parallelly aligned and laterally spaced score marks on at least one surface of said porous layer.

3,314,822

METHOD OF MAKING STORAGE BATTERY PLAQUES

Ernest M. Jost, Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed May 18, 1964, Ser. No. 368,055
2 Claims. (Cl. 136-24)

1. The method of making a battery plaque comprising sintering a comparatively thick layer of nickel flakes to form a porous plaque, saturating the sintered plaque substantially to infill its pores with a melt of a nitrate selected from the group consisting of cadmium nitrate, nickel nitrate and mixtures thereof, cooling the plaque to solidify the nitrate, heating the saturated plaque under a vacuum at a temperature below the melting temperature of the nitrate to dehydrate the nitrate by removing its crystal water while it is in the solid state within the plaque, converting the dehydrated nitrate while in its solid state to an hydroxide by cathodically treating the plaque in an alkali metal hydroxide, and compressing the cathodically treated plaque.

3,314,823

BATTERY PACK

Rodolfo Rodriguez Balaguer, Fort Lauderdale, Fla., assignor, by mesne assignments, to Patent Holding Corporation, Fort Lauderdale, Fla.

Filed May 18, 1965, Ser. No. 456,618
6 Claims. (Cl. 136-166)



1. A battery pack for a plurality of individual primary cells including a tubular shell having a height greater than the height of an individual cell, an imperforate closure for the bottom of said shell, a perforated bottom spacer overlying said bottom closure, a plurality of cell-containing tubes fitted into the perforations of said bot-

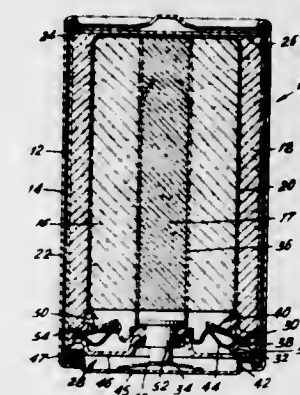
tom spacer, cushioning means positioned at the bottoms of said tubes for maintaining the cells carried therein above the top of said bottom spacer, a perforated top spacer engaged with the tops of said tubes at a level above the tops of the cells carried therein, cushioning means positioned at the tops of said tubes for restraining said cells against upward vertical movement, and an imperforate closure for the top of said shell.

3,314,824

PUNCTURE-TYPE SAFETY SEAL FOR GALVANIC CELLS

Frank G. Spanur, Parma Heights, Ohio, assignor to Union Carbide Corporation, a corporation of New York

Filed Mar. 22, 1965, Ser. No. 441,648
6 Claims. (Cl. 136-178)



1. A sealed galvanic cell having a centralized terminal and a cover having a vent comprising, in combination, a cupped metallic container subject to internal gas pressure and a safety seal comprising an annular-shaped seal gasket of plastic material sealing the open end of said cupped container between said centralized terminal and said cover of said cell and between said cover and said cupped container, said seal gasket having an inner flange for supporting said centralized terminal, an outer flange portion and a thin vertical wall portion surrounding said inner flange, a yieldable annular-shaped metallic back-up washer having an inwardly inclined surface disposed below and in juxtaposition with said seal gasket leaving exposed said thin vertical wall portion of said seal gasket, a bowed annular-shaped metallic washer having a plurality of inwardly inclined teeth provided with sharp edges disposed in juxtaposition with said annular-shaped washer, said teeth being projected against and bearing on said inwardly inclined surface, said seal gasket being deflected outwardly in a longitudinal direction upon the generation of a predetermined gas pressure, whereby said teeth of said annular-shaped washer slide and move relative to said inclined surface of said annular-shaped back-up washer, and whereby at least one of said teeth penetrate said thin vertical wall portion of said seal gasket thereby diminishing said cell pressure.

3,314,825

COMPOSITE METAL STRUCTURAL COMPONENTS

Peter Joseph Forsyth, Farnham, Surrey, and Ronald Walter George, Dennis Arthur Ryder, and Robin Edwin Vian, Farnborough, England, assignors to National Research Development Corporation, London, England, a British corporation

No Drawing. Filed May 20, 1963, Ser. No. 281,755
Claims priority, application Great Britain, May 24, 1962, 19,984/62

16 Claims. (Cl. 148-12.7)

13. A method of producing a composite material of a high strength aluminium alloy and a reinforcement of an-

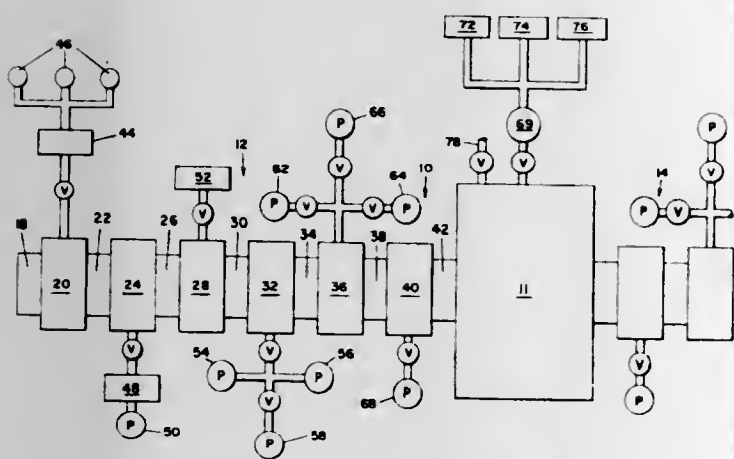
other metal comprising assembling in a stack external relatively thicker sheet matrix layers of the aluminium alloy and sandwiched between the external layers at least one reinforcing layer including at least a proportion of relatively higher strength substantially parallel fine wires selected from the group consisting of stainless steel, tungsten and cobalt alloy wires, which proportion constitutes from 1 to 20% by volume of the composite material, hot rolling the assembled stack at a temperature in the range 400 to 450° C. with the higher strength wires parallel with the roll axes to convert the stack into composite substantially homogeneous sheet material containing the embedded high strength wires and solution heat treating and age hardening the composite sheet at temperatures appropriate to the treatment of the matrix material.

3,314,826

METHOD AND APPARATUS FOR SEALING CONTROLLED ATMOSPHERE

Alexander D. Garwood, Riverton, N.J., and Charles L. Starbuck, Valley Forge, and Kendrick C. Taylor, Oreland, Pa., assignors, by mesne assignments, to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

Filed Aug. 9, 1962, Ser. No. 215,880
8 Claims. (Cl. 148-13)



1. A method of conveying material into and out of a controlled atmosphere comprising the steps of conveying material to be processed through a seal into an interstage chamber, conveying the material from said interstage chamber through a second seal into a processing chamber, processing the material while it is in said processing chamber, conveying the material from said last mentioned chamber through a seal into a second interstage chamber, conveying the material from said last mentioned interstage chamber through another seal, and reducing the pressure in said interstage chambers below the pressure within said processing chamber, whereby the atmosphere in the process chamber may be free from external contamination due to conveyance of the material into and out of the process chamber.

3,314,827

PROCESS FOR THE HARDENING OF METALS

Hendrik de Vries, Amsterdam, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 3, 1964, Ser. No. 372,395
Claims priority, application Netherlands, Dec. 24, 1963, 302,544

4 Claims. (Cl. 148-13.1)

1. A process for hardening metal surface of metals selected from the group consisting of titanium, zirconium, vanadium, tantalum, chromium, molybdenum and

tungsten, by means of oxygen diffusion, comprising: coating said metal surfaces with a brushable suspension of metal oxide corresponding to the metal surface to be hardened; and, subsequently heating the metal oxide coated metal in an inert atmosphere at a temperature from 700-1100° C. for a period from 1-60 minutes.

3,314,828

PERMANENT MAGNETS

John Harrison, Sheffield, England, assignor to Swift Levick & Sons Limited

No Drawing. Filed Jan. 22, 1964, Ser. No. 339,320
4 Claims. (Cl. 148-31.57)

1. An anisotropic columnar crystal magnet consisting essentially of:

	Percent
Al	5 to 9
Ni	11 to 22
Co	20 to 40
Cu	0 to 6
Ti	1 to 8
Nb (Cb)	0 to 4
Si	Up to 1
Se	0.05 to 2.0
Balance	essentially iron.

3,314,829

HIGH STRENGTH PRESSURE DIE CASTING ALLOY

David C. Sunnucks, Como, Quebec, Canada, assignor to Aluminium Laboratories Limited, Montreal, Quebec, Canada, a corporation of Canada

No Drawing. Filed Jan. 13, 1964, Ser. No. 337,147

2 Claims. (Cl. 148-31.5)

2. An article of manufacture comprising a pressure die cast structural configuration of aluminum alloy consisting of copper, about 3.0-4.0 weight percent; iron, about 0.7-1.2 weight percent; magnesium, about 0.4-0.8 weight percent; silicon, about 7.5-9.5 weight percent; zinc, about 0.5-1.2 weight percent; and the remainder essentially only aluminum, which structure has been aged at a temperature of about 150°-170° C. for a time of about 4-8 hours.

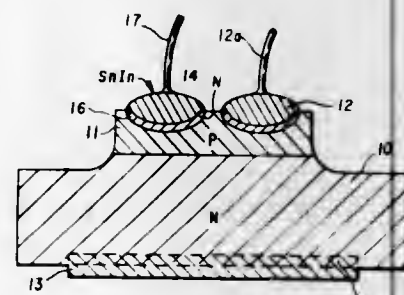
3,314,830

SEMICONDUCTOR CONTACT ALLOY

Wava M. Abercromble and Ernest C. Wurst, Jr., Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Aug. 3, 1964, Ser. No. 386,862

2 Claims. (Cl. 148-33)



1. In an N-P-N gallium arsenide transistor comprising a body of gallium arsenide defining contiguous N- and P-regions and having a rectifying contact alloyed to said P-region forming an N-type conductivity region therein,

the improvement wherein said rectifying contact is an alloy containing about 0.05% to about 2.0% by weight of indium, the remainder of said alloy consisting essentially of tin.

3,314,831

HEAT TREATMENT FOR PRECIPITATION-HARDENING STEELS

Arthur F. Hoenle and Richard M. Potter, Columbus, Ohio, assignors to North American Aviation, Inc.

No Drawing. Filed Oct. 26, 1961, Ser. No. 147,768
6 Claims. (Cl. 148-125)

1. A method of heat treating precipitation-hardening steel containing from about 0.03% to about 0.15% carbon, from about 12.0% to about 18.0% chromium, and from about 3.5% to about 7.0% nickel prior to process anneal, transformation, and aging operations, and which comprises the steps of:

- annealing said steel at a temperature which is above the minimum solutioning temperature of said steel to dissolve metal carbides within an austenite phase of said steel and then rapidly cooling said steel to ambient temperature,
- stabilizing said steel at a temperature which is in the range of approximately 1500° F. to approximately 1625° F. to disperse the carbon and carbide constituents of said steel uniformly in said steel austenite phase,
- and then rapidly cooling said steel ambient temperature to precipitate said carbon and carbide constituents within said steel, austenite phase in a uniformly dispersed manner, and
- sub-cooling said steel at a temperature which transforms a substantial portion of said steel austenite phase to martensite, said stabilizing step increasing the transverse ductility of said steel.

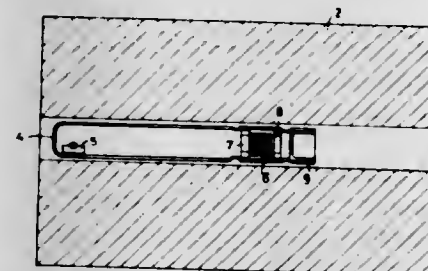
3,314,832

METHOD FOR HEAT TREATING OF MONO-CRYSTALLINE SEMICONDUCTOR BODIES

Kurt Raithe, Uffenreuth, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Erlangen, Germany, a corporation of Germany

Filed Mar. 17, 1964, Ser. No. 352,599

Claims priority, application Germany, Dec. 7, 1962, S 82,758; Mar. 29, 1963, S 84,444
5 Claims. (Cl. 148-186)



3. The method of producing a p-doped region in a semiconductor body of silicon, which comprises sealing the silicon body and a quantity of gallium into a vessel of quartz at mutually spaced locations, heating the silicon body to above 1200° C. to form silicon monoxide and simultaneously keep the gallium locality at a temperature of about 1000 to 1100° C. for causing the evolving monoxide to precipitate near said gallium quantity, and thereafter diffusing gallium from said quantity into said silicon body by lowering the temperature of said quantity to approximately 950° C. for effecting diffusion doping while maintaining the silicon body above 1200° C.

3,314,833

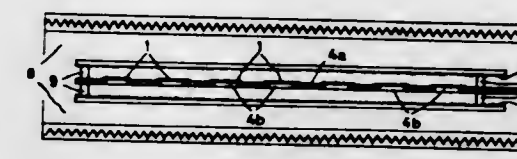
PROCESS OF OPEN-TYPE DIFFUSION IN SEMI-CONDUCTOR BY GASEOUS PHASE

Heinz-Herbert Arndt, Nurnberg, Jürgen Schüdel, Hochstadt (Aisch), and Hans Uebel, Nurnberg, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, and Erlangen, Germany

Filed Sept. 28, 1964, Ser. No. 399,731

Claims priority, application Germany, Sept. 28, 1963, S 87,592

3 Claims. (Cl. 148-189)



1. The method of doping semiconductor bodies by diffusing dopant from the gaseous phase into the bodies, which comprises placing the semiconductor bodies upon a perforated holder so as to cover respective openings of said holder, disposing two plate-shaped dopant sources on opposite sides of said holder in parallel relation to the semiconductor bodies, each of said sources being formed by a plate of carrier material and a surface region facing said bodies and containing doping substance in homogeneous distribution within the carrier material, and conjointly heating said bodies on the holder and said two sources in an open space and thereby vaporize a homogeneous layer of dopant from each of said sources onto one of the respective sides of said semiconductor bodies.

3,314,834

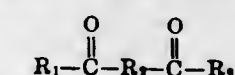
METHOD OF POT LIFE EXTENSION FOR POLYURETHANE PROPELLANTS

Ernest J. Walden, Mountain View, and Jack K. West, Palo Alto, Calif., assignors to United Aircraft Corporation, a corporation of Delaware

Filed Dec. 14, 1962, Ser. No. 244,753

7 Claims. (Cl. 149-19)

1. In the process of making a polyurethane propellant wherein a diisocyanate is polymerized with a polyhydroxy organic compound in the presence of a curing rate catalyst, the improvement comprising: adding to the composition a diketo compound of the formula



wherein R₁ and R₃ are alkyl, haloalkyl and aromatic radicals and R₂ is selected from the group consisting of lower alkylene and lower alkenyl radicals.

3,314,835

SMOKE GENERATING COMPOSITIONS

George Thomas White and Lewis Robert Rothstein, Asheville, N.C., assignors, by mesne assignments, to Northrop Carolina, Inc., Swannanoa, N.C., a corporation of North Carolina

No Drawing. Filed Apr. 20, 1965, Ser. No. 449,625

4 Claims. (Cl. 149-23)

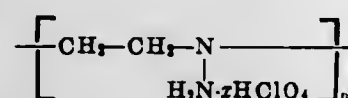
1. A composition adapted to be ignited to produce a disseminated gasiform material comprising a carried material selected from the group consisting of volatile dye-stuffs, herbicides, insecticides, and physiological agents and a propellant consisting essentially of an explosive cyclic compound selected from the group consisting of cyclotrimethylene trinitramine, 2,4,6-trinitro resorcinol, trinitrotoluene, cyclotetramethylene tetranitramine, and trinitrophenol, and a metal base selected from the group consisting of hydroxides and salts of alkali and alkaline earth metals.

3,314,836
METHOD COMPRISING MIXING A WAX, KEROSENE OR NAPHTHA AND PHOSPHORUS
 Alfred Lachs, 1760 Clay Ave., Bronx, N.Y. 10457
 No Drawing. Filed Dec. 14, 1965, Ser. No. 513,857
 7 Claims. (Cl. 149—29)

1. A method of preparing an inflammable composition comprising melting a solid carrier selected from the group consisting of rosin, ozokerite and paraffin, and mixing an inflammable medium selected from the group consisting of kerosene and naphtha and a solution of yellow phosphorus in carbon disulfide therewith.

3,314,837
HYDRAZINE BASED SOLID PROPELLANTS
 Henry Philip Heubusch, Buffalo, N.Y., assignor to Bell Aerospace Corporation
 No Drawing. Filed Mar. 20, 1964, Ser. No. 353,601
 3 Claims. (Cl. 149—36)

2. Polyethylene hydrazine perchlorate useful as a solid propellant characterized by its high burning rate combined with high stability and relative insensitivity to impact, having the general structure:



where x is about 0.8 and n is an integer.

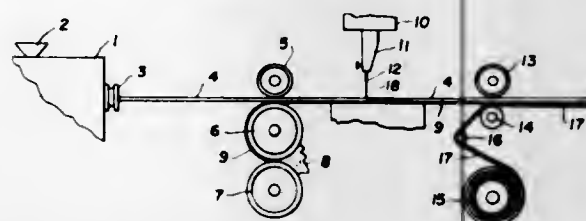
3. A method of making a polymer characterized by its ability to evolve sufficient quantity of gaseous products as to render the polymer useful as a rocket propellant and the like, which comprises, forming a slurry of polyethylene hydrazine and a solvent therefor, adding an inorganic oxidizing acid to said slurry in about the ratio of 2 moles of acid to 1 mole of polyethylene hydrazine, while maintaining the temperature of the mixture below about 25° C., agitating the mixture at room temperature and recovering the solid formed.

3,314,838
PRESSURE SENSITIVE ADHESIVES CONTAINING HOLLOW SPHEROIDAL PARTICLES
 James V. Erwin, North St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
 Filed Aug. 26, 1964, Ser. No. 392,184
 5 Claims. (Cl. 156—71)

1. An adhesive composition adapted for depositing pressure-sensitive adhesive coatings capable of slidably supporting flexible adhesive-receptive sheet materials laid thereagainst, said composition being a spreadable liquid comprising a pressure-sensitive adhesive, a volatile liquid vehicle for said adhesive in an amount sufficient to impart spreadability, and a quantity of small rigid lightweight fragile thin-walled hollow spheroidal particles having a particle size within the range of about 20 to about 500 microns and in an amount of from about one to about 40 percent by volume of the total volume of said spheroids and said adhesive.

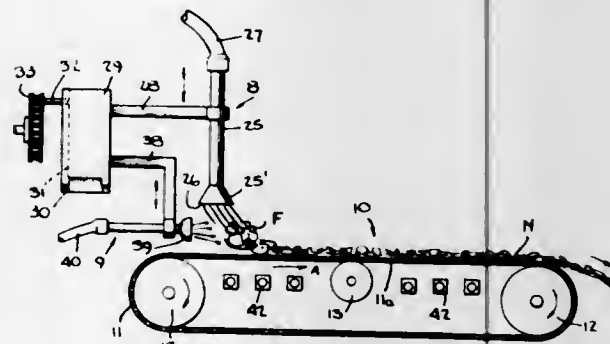
3. The method of adhering flexible adhesive-receptive sheet material to the surface of a rigid substrate, comprising applying to said surface a thin uniform coating of an adhesive composition as defined in claim 1, drying said coating by evaporation of said volatile liquid vehicle, placing said sheet material over the dried coating under low contact pressure permitting sliding contact therebetween, and then pressing said sheet material against said coating with a force sufficient to cause crushing of the spheroidal particles.

3,314,839
PROCESS OF RECAPPING A WORN PNEUMATIC TIRE USING CORD-STITCHED CAMELBACK
 Dean R. Hough, Pittsburgh, Pa., assignor to Washington Rubber Company, Washington, Pa.
 Filed Feb. 8, 1963, Ser. No. 257,132
 9 Claims. (Cl. 156—87)



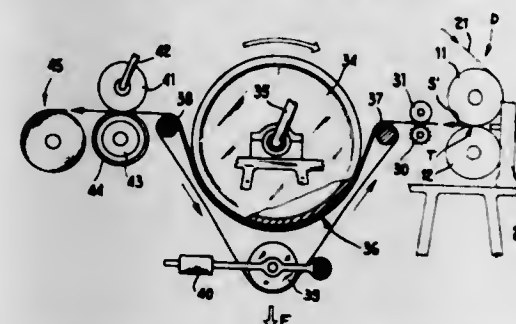
9. In the process of recapping a worn vehicle pneumatic tire, the method of bleeding air trapped between the carcass and the tread layer by passing it through a plurality of small holes in the worn tread layer and thence through a tread rubber strip impregnated with fabric, comprising buffing the worn tire, puncturing it with a plurality of small holes up to the carcass, adhering a strip of tread rubber impregnated with cords of a material to permit air seepage therethrough, whereby trapped air in the carcass and between the buffed surface and tread rubber will escape through said cords.

3,314,840
PROCESS AND APPARATUS FOR PRODUCING A NON-WOVEN FABRIC
 Neil E. Lloyd, Rock Hill, and Julian C. Powell and James F. Carothers, Fort Mill, S.C., assignors to Celanese Corporation, a corporation of Delaware
 Filed Aug. 1, 1961, Ser. No. 129,495
 24 Claims. (Cl. 156—167)



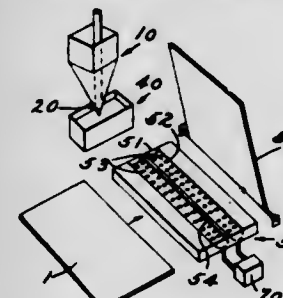
1. The process of producing a non-woven fabric, comprising the steps of extruding a mass of filament forming material in liquid phase downwardly toward a movable, substantially horizontal take-up surface through a plurality of orifices to form a stream of substantially parallel continuous filaments, directing a stream of air under pressure at the still plastic filaments at a point above said take-up surface thereby to agitate said stream of filaments and cause the latter to be whipped about and entangled into contact with one another at randomly spaced points prior to their arrival at said take-up surface, traversing the stream of filaments while still in plastic condition, said stream of filaments being associated with said stream of air back and forth across said take-up surface while the latter is stationary, and advancing said take-up surface in a direction transverse to the direction of traverse of said filaments only when the latter reach the reversal points of their transverse movements, to enable said filaments to be deposited in their entangled state on said take-up surface in the form of an elongated matted web composed of a plurality of substantially parallel, laterally contiguous layers and having a coherent structure in all directions resulting from the coalescence of said filaments at said points of contact.

3,314,841
METHOD AND APPARATUS FOR MANUFACTURING COMPOUND NON-WOVEN TEXTILE STRUCTURES
 Bruno Romanin, 8 Via Vincenzo Monti, Milan, Italy
 Filed Apr. 12, 1963, Ser. No. 275,787
 Claims priority, application Italy, Jan. 25, 1958, 598,602/58; Apr. 16, 1962, 22,524/62; Jan. 16, 1963, 30,920/63
 18 Claims. (Cl. 156—179)



1. An improvement in and to the method for the manufacturing of non-woven textile structures, comprising the steps of feeding at least two groups of originally straight and parallel yarns, along an equal number of converging respected planes, to two members that are driven in opposite directions, gripping the yarns into contact between the members to set them in the relative positions in which they enter between the members; causing laterally reciprocating, along a line transverse to the direction of yarn feed and upstream of the members, at least some of the yarns of at least one group, whereby the thus reciprocated yarns will enter between the members at an angle to the direction of yarn feed, and which angle is continuously varied due to the reciprocation, so that the thus reciprocated yarns will follow a sinusoidal course downstream of the members; the thus reciprocating yarns forming the weft of a net-like weave while those yarns which are not reciprocated laterally and thus pass through the members in parallel relation to the direction of yarn feed form the straight warp of the net-like weave; characterized by laterally reciprocating the weft-forming yarns through a range such that the weft is formed with undulations the height of which is only a fraction of the overall width of weave, and that at least ten warp yarns are crossed by each undulation of weft yarn; the distance between the line of reciprocation and the gripping line being less than the amplitude of said undulations.

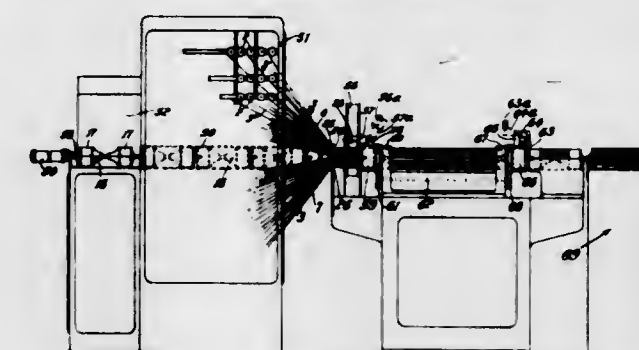
3,314,842
PLEATING METHOD
 Kurt J. Hertz, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
 Filed Dec. 26, 1962, Ser. No. 247,083
 1 Claim. (Cl. 156—196)



The method of forming a pleated assembly from a flexible, sheet-like first member having a bonding side and a side opposite and a sheet-like, resilient second member having a preformed surface, comprising the steps of applying a vacuum to said first member and thereby forming a plurality of pleats in said first member, distributing an adhesive over said bonding side of said first member,

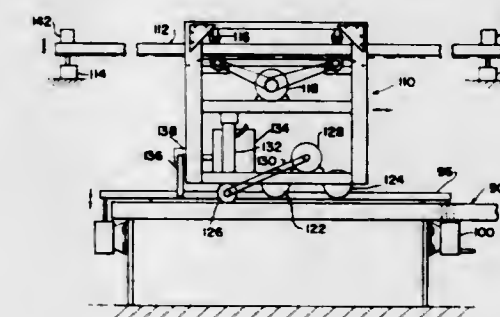
and bonding said second member to said first member by bringing said preformed surface of said second member into contact with the resulting adhesive-bearing bonding side of said first member while said first member is held in pleated configuration by said vacuum, said preformed surface being shaped to conform with the bonding side of said first member after the pleating thereof.

3,314,843
APPARATUS FOR ASSEMBLING THE REINFORCEMENT CORDS IN THE MANUFACTURE OF DIAPHRAGMS
 Brian Harry Beebe, Walsall, and Harold Arthur Bea, Tyseley, Birmingham, England, assignors to Dunlop Rubber Company Limited, London, England, a British company
 Filed Nov. 15, 1963, Ser. No. 324,131
 Claims priority, application Great Britain, Nov. 22, 1962, 44,113/62
 32 Claims. (Cl. 156—433)



1. An apparatus for assembling the reinforcement cords in the manufacture of rolling lobe diaphragms which comprises guide means for spacing cords peripherally of a succession of axially aligned individual forming reels each having a circumferential covering of a flexible material on its end portions, a reel magazine, means for guiding a succession of axially aligned individual forming reels from the reel magazine through a laying zone and a cutting zone, means for intermittently advancing the forming reels through the laying and cutting zones by a predetermined distance, pressing means in the laying zone for pressing the cords into contact with the flexible material on the circumferential end portions of the forming reels and not into contact with central portions of the reels, and cutting means in the cutting zone for severing the cords between the end portions of adjacent forming reels.

3,314,844
FABRIC SEAM BONDING
 Wilfred N. Hadley, Springfield, Vt., assignor to Hadley Company, Inc., Springfield, Vt., a corporation of Vermont
 Filed May 1, 1963, Ser. No. 277,250
 1 Claim. (Cl. 156—509)



Apparatus for bonding together the free ends of two separate sections of web material, comprising a generally horizontally disposed table adapted to support the leading end of one web section and the trailing end of

another web section in end to end alignment, said table being formed with an opening extending in a direction generally transverse to the length of said web material, said opening being sufficiently deep to receive the leading end of said one web section, a hardened strip fixed to said table along the edge of said opening over which is placed said leading end of said one web section, a power operated carriage mounted above said table adapted to reciprocate in a horizontal plane along said edge and in a direction transverse to the length of said web, cutting means mounted on said carriage for trimming the leading end of said one web section along a line generally transverse to the length of said web, dispensing means mounted on said carriage for depositing an adhesive stratum along the marginal edge of the trimmed leading edge of said one web section, roller means mounted on said carriage adapted for pressing together the leading and trailing ends of said web sections after they have been overlapped and after application of said adhesive stratum, and power jacking means engaging said carriage for raising and lowering said carriage into and out of operative engagement with said table.

3,314,845

METHOD OF FLOCKING AND SUBSEQUENTLY DEVELOPING LATENTLY CRIMPABLE FIBERS AND ARTICLE PRODUCED THEREBY

Joseph Mark Perri, Waynesboro, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed July 23, 1964, Ser. No. 384,647
16 Claims. (Cl. 161-64)



10. A pile fabric comprising a plurality of short synthetic organic polymeric fibers individually and randomly attached in generally upstanding relationship to an adhesive layer, the pile formed of said fibers comprising a support portion occupied by the lower 50% sections of the extended length of said fibers and an upper portion occupied by the remaining 50% sections of the extended length of said fibers, fiber sections in said support portion being essentially spaced apart, free of crimp, and perpendicularly aligned with respect to said adhesive layer, fiber sections in said upper portion having an average crimp frequency of 1 to 8 crimps per inch thereby creating a pile surface having a random and multidirectional array of fiber sections and fiber-to-fiber entanglements.

3,314,846

EXPANSIBLE HOLLOW CORE

Takato Niwa, 93 1-chome, Kibogaoka, Chigusa-ku, Nagoya, Japan

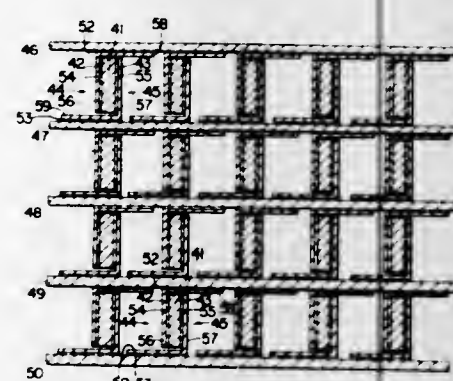
Filed July 11, 1961, Ser. No. 123,177
Claims priority, application Japan, July 26, 1960, 35/38,786; Sept. 28, 1960, 35/48,617, 35/48,618
4 Claims. (Cl. 161-69)

1. An expansible hollow core comprising in combination:

(a) at least three spacedly superposed diaphragm members, each of said members having two opposite face portions at least one face portion of each member

being opposite a face portion of an adjacent diaphragm member, opposite face portions constituting a pair of face portions;

(b) a plurality of connecting sheet members interposed between each of said pairs, each connecting sheet member including a plate member having two opposite faces, two junction members attached to a respective one of the plate member faces, and two flange portions integrally connected to respective ones of the junction members, said flange portions being hingedly movable relative to said plate member about respective axes extending in a common direction, each flange portion having a mounting face extending away from the corresponding axis; and



(c) fastening means fastening the two flange portions of each connecting sheet member to the opposite face portions of the corresponding pair of diaphragm members, each member of said pair of diaphragm members being movable toward and away from the other member of the pair when the flange portions of the interposed connecting sheet members move about the respective axes.

3,314,847

TEXTILE

Herbert G. Lanterbach, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 30, 1962, Ser. No. 234,215
4 Claims. (Cl. 161-173)

3. A structure such as a tire, conveyor belt, drive belt, hose, and the like, having a matrix of cured rubber, and embedded therein a synthetic, linear polymeric filament bulked with at least about five percent overfeed and impregnated with an elastomeric composition.

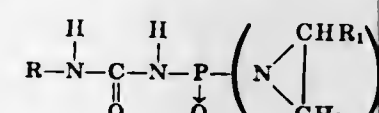
3,314,848

SEXUAL STERILIZATION OF INSECTS WITH N-SUBSTITUTED UREIDO PHOSPHINE OXIDES

Rudi F. W. Ratz, Hamden, and Miriam J. Gruber, New Haven, Conn., assignors to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia

No Drawing. Original application Mar. 19, 1963, Ser. No. 266,224. Divided and this application June 30, 1964, Ser. No. 387,258
13 Claims. (Cl. 167-13)

1. A method for the sterilization of insects which comprises contacting said insects with an amount sufficient to exert a sterilizing action of a compound having the formula



where R is selected from the class consisting of phenyl, naphthyl, halogenated phenyl, nitrated phenyl, and cyano-phenyl; and R₁ is hydrogen or methyl.

3,314,849

ANTHELMINTIC PROCEDURE

Philip C. Hamm, Webster Groves, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Jan. 4, 1965, Ser. No. 423,296
6 Claims. (Cl. 167-53)

1. The method of inhibiting parasitic helminths in animal digestive systems which comprises orally feeding the animal an inhibitory amount of a compound of the formula:



wherein n is an integer from five to eighteen, and wherein X is a halogen of the group consisting of bromine and chlorine.

3,314,850

2,2-BIS(TRIFLUOROMETHYL)-1,3-DIOXOLANE AS INHALATION ANESTHETIC

Everett E. Gilbert, Morristown, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Sept. 17, 1965, Ser. No. 488,240
1 Claim. (Cl. 167-52)

The process which comprises administering 2,2-bis(trifluoromethyl)-1,3-dioxolane as a general inhalation anesthetic to inhalation-anesthetic-susceptible organisms.

3,314,851

PROCESS FOR REDUCING THE TOXICITY OF POISONS

Palmer H. Craig, Fort Lauderdale, Fla.
(3200 NE. 6th Drive, Boca Raton, Fla. 33432)

No Drawing. Filed Aug. 30, 1963, Ser. No. 305,834
13 Claims. (Cl. 167-55)

1. The process of reducing mammalian toxicity of a compound selected from the class of chemical compounds characterized as extra-neural hydrolysis-protected acetylcholine-esterase inhibitors, which comprises mildly oxidizing the compound in an aqueous medium in the presence of a small amount of catalyst consisting of a soluble copper salt with an oxidizing agent selected from the class consisting of ozone, H₂O₂, and mixtures of such agents with inert diluents and stabilizing the oxidized product with an antioxidant.

3,314,852

METHOD OF PRODUCING ATARAXIC, ANTI-CONVULSANT ACTIVITY AND SKELETAL MUSCLE RELAXATION

Daniel M. Green and Russell F. Krueger, University City, Mo., assignors to Bristol-Myers Company, a corporation of Delaware

No Drawing. Filed Oct. 4, 1963, Ser. No. 313,791
15 Claims. (Cl. 167-65)

1. A method of (a) inducing relaxation of at least one of skeletal muscle in animals suffering from involuntary contractions of skeletal muscle; and (b) relieving convulsions in an animal suffering from the same; and (c) inducing ataraxia in an animal suffering from nervous tension; which comprises orally administering to said animal a therapeutically effective quantity of the combination of a skeletal muscle relaxant and an antihistamine or a pharmaceutically acceptable non-toxic acid addition salt thereof in the ratio of 4 to 32 parts of skeletal muscle relaxant per part of antihistamine; said muscle relaxant being selected from the group consisting of glyceryl guaiacolate, methocarbamol, mephenesin, mephenesin carbamate, carisoprodol, emylcamate, meprobamate, hydroxyphenamate, styramate, chlorzoxazone, zoxazolamine, hydroxyzine and phenaglycodol; and said antihistamine being selected from the group consisting of tripeleminamine HCl, pyrilamine maleate, thonzylamine

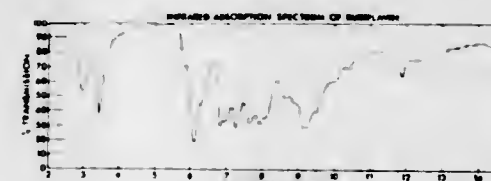
HCl, metaphephenilene HCl, methapyrilene HCl, chlorothene citrate, thenyldiamine HCl, meclizine hydrochloride, cyclizine hydrochloride, chlorcyclizine, promethazine hydrochloride, pyrazinazine hydrochloride, pheniramine maleate, chlorpheniramine maleate, brompheniramine maleate [d-isomer], triprolidone hydrochloride, pyrrobutamine phosphate, diphenylpyraline hydrochloride, phenindamine tartrate, diphenhydramine, dimenhydrinate, bromodiphenhydramine, doxylamine succinate, carbinoxamine maleate, phenyltoloxamine dihydrogen citrate and phenyltoloxamine dihydrogen hydrochloride.

3,314,853

RUBIFLAVIN AND A PROCESS FOR MAKING SAME USING STREPTOMYCES GRISEUS

Felix Edward Pansy, Jamesburg, Adorjan Azzalos, Kendall Park, and Robert S. Robison, North Brunswick, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

Filed Aug. 25, 1964, Ser. No. 391,911
2 Claims. (Cl. 167-65)



1. An antibiotic selected from the group consisting of rubiflavin and salts thereof, said rubiflavin being a red amorphous material having the following average elemental analysis: C, 68.5; H, 7.5; N, 3.45; O, 20.55; a molecular formula of C₂₂H₂₀NO₆; a molecular weight about 400; melting in the range of about 149° to 157° C.; soluble in methanol, ethanol, butanol, acetone, dimethylsulfoxide, ethyl acetate, chloroform, benzene and ether; absorption bands in the ultraviolet and visible spectra as follows: maxima at 244 and 428 mμ and shoulders at 265, 395 and 446 mμ (in ethanol); and an infrared absorption spectrum as shown in the drawing.

2. A process for producing the antibiotic of claim 1 which comprises culturing *Streptomyces griseus* ATCC 15569 under aerobic conditions in an aqueous nutrient medium comprising an assimilable, fermentable carbohydrate and assimilable organic nitrogen source for about three to seven days and recovering rubiflavin from the medium.

3,314,854

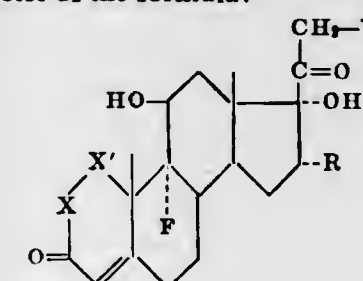
21-HETEROCYCLIC CARBOXYLIC ACID ESTERS OF PREGNANES

Joachim Helder and Dietrich Jerchel, Biberach an der Riss, Germany, assignors to Boehringer Ingelheim G.m.b.H., Ingelheim am Rhine, Germany, a corporation of Germany

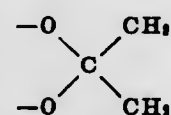
No Drawing. Filed Nov. 3, 1964, Ser. No. 408,660
Claims priority, application Germany, Aug. 19, 1961, T 20,620

18 Claims. (Cl. 167-65)

17. A method for inhibiting inflammation which comprises administering daily an effective amount of a carboxylic acid ester of the formula:



wherein X and X' form a radical selected from the groups consisting of ethylene and vinylene, R is selected from the group consisting of hydrogen and methyl and together with the 17-hydroxyl group forms the radical



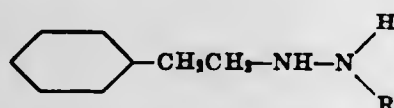
and Y is selected from the group consisting of pyridine-2, 3 and 4-carboxyloxy radicals and pyridine-2,3 and 4-acetoxy radicals.

3,314,855

ANTIDEPRESSANT COMPOSITIONS AND METHODS OF USING SAME

Max Chessin, Fair Lawn, N.J., assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
No Drawing. Filed Oct. 10, 1958, Ser. No. 766,407
10 Claims. (Cl. 167-65)

1. A therapeutic composition in dosage unit form comprising a pharmaceutical carrier and from 5 to 200 milligrams per unit of a substituted hydrazine of the group consisting of the non-toxic acid salts of the base and the base of the formula



wherein R is selected from the group consisting of hydrogen and lower alkyl.

3,314,856

HEXAHYDROBENZYL CARBONATE ESTER OF TESTOSTERONE

André Allais, Les Lilas, and Jean Meier, Coeuilly-Champigny, France, assignors to Roussel-Uclaf, Paris, France, a corporation of France

Filed Aug. 21, 1964, Ser. No. 391,120
Claims priority, application France, Mar. 28, 1961, 857,055

The portion of the term of the patent subsequent to Oct. 2, 1979, has been disclaimed
5 Claims. (Cl. 167-74)

2. A composition having prolonged anabolic and androgenic activity which comprises 100 to 500 mg. of the hexahydrobenzyl carbonate of testosterone and a major amount of a pharmaceutical carrier.

3,314,857

SHAVING ASSISTANT COMPOSITION

Percy Fainer, Ridgefield, Conn., assignor to Clairol Incorporated, New York, N.Y., a corporation of Delaware

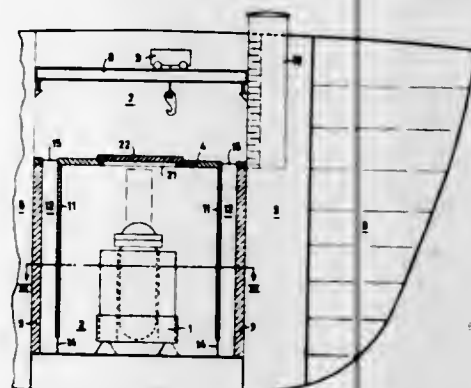
No Drawing. Filed July 29, 1964, Ser. No. 386,072
4 Claims. (Cl. 167-85)

1. A shaving assisting composition consisting essentially of from about 3 to 7% by weight of the total composition of a polymeric dimethylpolysiloxane in the form of an oil-in-water emulsion emulsified with an amount not greater than about 10% by weight of said dimethylpolysiloxane of a non-ionic polyethoxylated higher fatty alcohol surfactant blended with from 0.2 to 1.0 by weight of a water-soluble polymer of acrylic acid crosslinked with a polyallyl ether of sucrose in gel form, said acrylic polymer being neutralized with triethanolamine to a pH of about 6.5 to 7.2 said non-ionic surfactant constituting between about 0.3 to 0.7 percent by weight of the total composition.

3,314,858 NUCLEAR REACTOR CONTAINMENT INSTALLATION

Peter Mogens Villadsen, Herlev, Denmark, assignor to Aktieselskabet Burmeister & Wain's Maskin- og Skibbyggeri, Copenhagen, Denmark, a company of Denmark
Filed Sept. 17, 1963, Ser. No. 309,569
Claims priority, application Denmark, Sept. 20, 1962, 4,085/62

8 Claims. (Cl. 176-37)



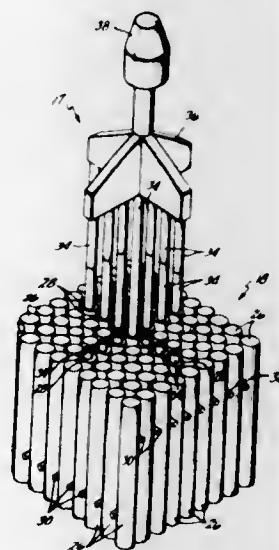
2. An installation comprising a shell defining an outer containment, means within said containment defining a first chamber, a nuclear reactor located within said first chamber and including a pressurized liquid circuit, means within said containment defining a second chamber arranged for receiving liquid and vapor escaping from said reactor in case of a rupture in said liquid circuit, at least one duct having at least one inlet opening from said first chamber and one outlet opening to said second chamber, a plurality of closed, at least substantially liquid-filled condenser elements located within said duct, each of said openings of said duct being normally closed by a diaphragm which is dimensioned to break at a small differential pressure, and said duct containing an inert gas.

3,314,859

NUCLEAR REACTOR FUEL ASSEMBLY-CONTROL ROD ORGANIZATION

Andrew J. Anthony, Tariffville, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed Dec. 5, 1963, Ser. No. 328,306
5 Claims. (Cl. 176-50)



1. A fuel assembly for use in an upright position in the core of a nuclear reactor employing a liquid coolant comprising a plurality of upright tubular members in fixed

uniform spaced relation, a majority of said members containing a nuclear fuel, some of said members being hollow and open at their upper ends, control rods containing a neutron poison material telescoped within said hollow members and connected at their upper ends to a common header member whereby they may be simultaneously moved longitudinally of the hollow members between an upper position where only the tips of the control rods extend within the hollow members and a lower position where the rods extend into and generally the full length of the hollow members, said hollow members having openings in the lower region thereof for the passage of liquid therethrough with at least some of these openings being above the lower end of said poison members when said members occupy their lowermost position.

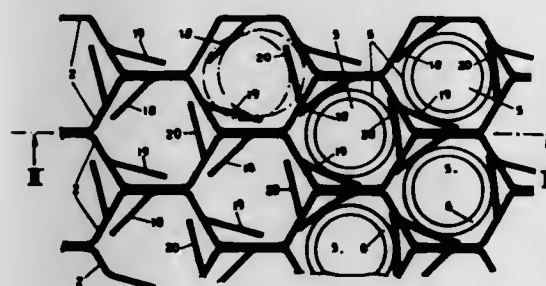
3. In a nuclear reactor having a core with a coolant-moderator being passed through the core and over the fuel elements of the core and with the core being comprised of a number of separate fuel assemblies, the improvement wherein at least some of said assemblies are comprised of upright tubular members in fixed spaced relation, some of these tubular members in a predetermined transverse pattern being hollow and open at their upper ends, a control rod received within each of said hollow members in a manner permitting relative longitudinal movement therewithin with the upper end of the rods extending from the upper end of the tubular members and being secured to a common header, said hollow tubular members being of a material that contains a burnable poison, and the remaining tubular members of the assembly containing a nuclear fuel.

3,314,860

NUCLEAR REACTOR FUEL ELEMENTS WITH SUPPORTING LATTICES HAVING RESILIENT SPACING MEANS

Johannes T. Wilman, Rotterdam, Netherlands, assignor to Reactor Centrum Nederland, The Hague, Netherlands, an institute of the Netherlands

Filed May 17, 1963, Ser. No. 281,213
Claims priority, application Netherlands, May 25, 1962, 278,888
4 Claims. (Cl. 176-78)



1. A fuel element assembly for a nuclear reactor, the assembly comprising: a plurality of vertical rods containing fissionable material, each rod having a round cross sectional area; at least one horizontal supporting lattice made of strip material and having equal meshes, each rod being located in an individual mesh of said lattice, the inscribed circle of each mesh having a greater diameter than that of the rods; and resilient spacing members forming part of the lattice and projecting into the meshes thereof, said spacing members resiliently contacting said rods and holding them both centralized in said meshes and spaced apart from one another, all meshes being provided with equally arranged sets of equal numbers of spacing members, those spacing members which are located in the same horizontal one halves of the meshes being disposed nearer the upper surface of the lattice than to the lower surface of the lattice, and those spacing

members located in the other halves of the meshes being disposed nearer to the lower surface of the lattices than to the upper surface of the lattice.

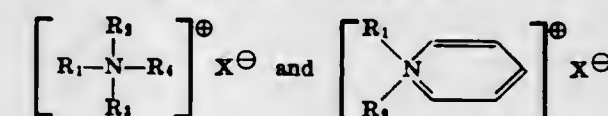
3,314,861

METHOD FOR SOLUBILIZING INSOLUBLE COLLAGEN FIBERS

Tadahiko Fujii, 75 Kotake-cho, 2-chome, Nerima-ku, Tokyo, Japan

No Drawing. Filed Nov. 18, 1965, Ser. No. 508,594
Claims priority, application Japan, May 11, 1963, 38/24,814; Mar. 18, 1964, 39/14,788
9 Claims. (Cl. 195-6)

1. A method for converting insoluble collagen into a fiber reconstitutable form in an aqueous solution which comprises treating insoluble collagen with a proteolytic enzyme other than collagenase which will hydrolyze the telopeptide group of collagen and which is active in a pH range of about 2 to 10 in the presence of an aqueous solution of at least one water-soluble cationic surfactant selected from the group consisting of



each of R₁, R₂, R₃ and R₄ being selected from the group consisting of hydrogen, lower alkyl radicals containing from 1 to 3 carbon atoms in the alkyl group, and long-chain alkyl, aryl, and arylalkyl hydrocarbons containing from 6 to 20 carbon atoms, there being in said cationic surfactant from 1 to 3 hydrogen and lower alkyl radicals, and from 1 to 3 long-chain alkyl, aryl and arylalkyl radicals and X is a water-solubilizing anion, said cationic surfactant being present in a concentration between about 0.01 M and 0.1 M, said reaction being carried out at a pH between about 2 and 10 at which said enzyme is active and at a temperature below the denaturing temperature of said collagen.

3,314,862

PROCESS AND APPARATUS FOR SOLAR DISTILLATION

Harold R. Hay, 795 Roble, Menlo Park, Calif. 94027
Filed Aug. 16, 1965, Ser. No. 482,032
14 Claims. (Cl. 203-10)

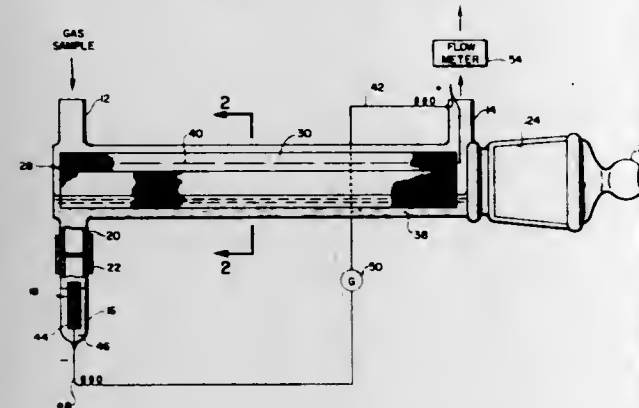


1. An apparatus for solar distillation comprising an enclosure having in combination: a cover of at least semi-transparent material capable of transmitting radiant energy, at least one stationary distilland basin having bottom and side walls for confining distilland arranged in said enclosure and beneath said cover, a distillate reservoir disposed above the distilland basin, means for supporting said cover, means for sealing said enclosure, means for feeding distilland into at least one distilland basin, means for removing concentrated distilland, means for removing distillate, and means to move said distillate reser-

voir laterally with respect to the distilland basin and means to move said distillate reservoir.

3,314,863 GAS ANALYSIS

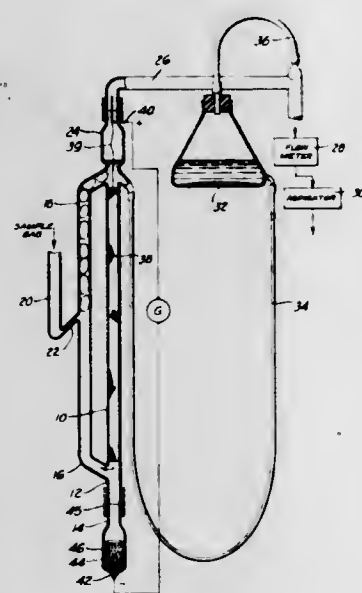
Paul A. Hersch, Fullerton, and Rudolf Deuringer, Garden Grove, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed Sept. 16, 1963, Ser. No. 309,015
9 Claims. (Cl. 204—1)



1. In a galvanic monitoring process for a gas stream containing NO_2 , the steps comprising:
providing a platinum cathode and an anode joined by a neutral buffered halide electrolyte with said cathode being only partly submerged in said electrolyte and said anode being formed of active carbon;
conveying the gas stream directly to the unsubmerged portion of the cathode
whereby the NO_2 in the gas stream is reduced at the cathode; and
measuring the current across said electrodes without driving a current through said electrodes from an external electrical power source.

3,314,864 GAS ANALYSIS

Paul A. Hersch, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed June 11, 1964, Ser. No. 375,421
26 Claims. (Cl. 204—1)



1. In a galvanic monitoring process for determining a species in a sample gas stream that oxidizes a halide, the steps comprising:
conveying said gas stream into a body of aqueous halide

electrolyte having immersed therein a cathode of inert conductive material and an anode of active carbon, whereby said oxidizing species in said gas stream reacts with halide ions resulting in the formation of free halogen and said halogen is subsequently reduced at said cathode to halide ions and, therefore, the halide ions formed at the cathode are available for reaction with additional oxidizing species in the sample gas stream; and
measuring the current across said electrodes without driving a current through said electrodes from an external electrical power source whereby the current measured is a function of the rate of entry of said oxidizing species into the electrolyte.

ERRATUM

For Class 204—1 see:
Patent No. 3,315,270

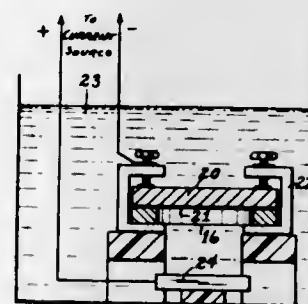
3,314,865 ELECTROLYTIC DEPOSITION OF ACTINIDE OXIDES

John H. Kleinpeter, Richland, and George Jansen, Jr., Kennewick, Wash., assignors to the United States Atomic Energy Commission
No Drawing. Filed Nov. 26, 1963, Ser. No. 326,303
1 Claim. (Cl. 204—1.5)

A process of electrolytically depositing pure actinide oxides by cathodic deposition, comprising heating a graphite electrode; pyrolytically decomposing hydrocarbon in contact with said heated electrode, whereby graphite forms and deposits in pores of the graphite electrode and in the form of a layer on said electrode; dissolving actinide oxide material in molten alkali metal chloride while passing a chlorinating gas therethrough; immersing the pyrolytically coated graphite electrode and another graphite electrode in the molten salt solution; passing a direct electric current through said salt solution, making the coated electrode the cathode, whereby pure actinide oxide deposits on said cathode; removing said cathode with the deposit of actinide oxide from the salt solution; cooling said cathode; and removing the deposit from the cathode by mechanical means.

3,314,866 METHOD OF FABRICATING DIAPHRAGM ASSEMBLIES

William Liben, 17404 Monticello Ave., Silver Spring, Md. 20902
Filed Dec. 9, 1963, Ser. No. 329,102
6 Claims. (Cl. 204—3)



3. A method of fabricating a diaphragm assembly comprising forming an oxidized surface on a matrix plate on which plating is non-adherent, detachably securing a rigid metal frame ring to said matrix plate in contact with said oxidized surface, placing the matrix plate and frame ring

in an electroplating bath, electroplating a film of the same metal as said ring adherently onto the inside of the ring and across the central aperture of the ring adjacent said oxidized surface, removing the matrix plate, frame ring and plated film from the electroplating bath, and then detaching the matrix plate.

3,314,867 METHOD OF ETCHING TANTALUM AND NIOBIUM FOR ELECTROPLATING

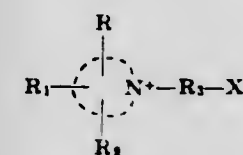
James K. Gore and Robert Seegmiller, Los Alamos, N. Mex., assignors to the United States Atomic Energy Commission
No Drawing. Filed Nov. 1, 1963, Ser. No. 320,967
4 Claims. (Cl. 204—32)

1. A method for electrodepositing an adherent metallic film on a metal selected from the class consisting of tantalum and niobium comprising the steps of making the said metal anodic in a methyl alcohol bath consisting essentially of approximately equal amounts of concentrated hydrofluoric and concentrated hydrochloric acids, the concentration of each of said acids ranging between 1.0–10.0 volume percent, the temperature of said bath ranging between 15–65° C., and the current density of the said metal ranging between 0.05–0.50 amp per square inch and electrodepositing any desired metal as a film on the etched surface of the said metal.

3,314,868 ACID NICKEL ELECTROPLATING BATHS AND PROCESSES

Wolf-Dieter Willmund and Wennemar Strauss, Düsseldorf-Holthausen, Germany, assignors to Dehydag Deutsche Hydrierwerke G.m.b.H., Düsseldorf, Germany, a corporation of Germany
No Drawing. Filed Jan. 28, 1964, Ser. No. 340,787
Claims priority, application Germany, May 15, 1963, D 41,559
20 Claims. (Cl. 204—49)

1. An aqueous acid nickel electroplating bath for obtaining level nickel electrodeposits, which comprises an organic betaine additive compound of the general formula



wherein



represents a member selected from the group consisting of mono- and polynuclear aromatic heterocyclic nitrogen base groups having at least one nitrogen atom,

R , R_1 and R_2 are selected from the group consisting of hydrogen and alkyl groups,

R_3 is an aliphatic radical with 1 to 12 carbon atoms, and

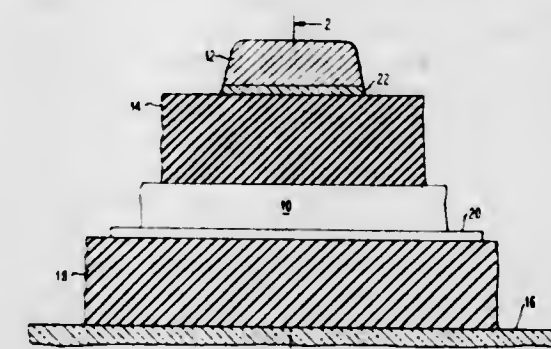
X is selected from the group consisting of an acid sulfuric acid ester radical and an acid phosphoric acid ester radical,

wherein a radical $-R_3-X^-$ is attached to at least one nitrogen atom of said aromatic heterocyclic base group, said additive being added in sufficient amount to obtain said level nickel deposits.

3,314,869 METHOD OF MANUFACTURING MULTILAYER MICROCIRCUITRY INCLUDING ELECTROPOLISHING TO SMOOTH FILM CONDUCTORS

William J. Dobbin, Endwell, Arthur E. Lessor, Jr., West Hurley, and Fred S. Maddocks, Kingston, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Jan. 21, 1963, Ser. No. 252,628
7 Claims. (Cl. 204—140.5)

1. In the production of a deposited multilayer thin film assembly comprising a pair of conductor elements in



different layers of said assembly with an insulating material layer in the order of one to ten microns thick therebetween,

the improvement which comprises electro-polishing the outer face surface of the first of said elements to be deposited, before depositing said insulating material over said face surface,

said first element being copper in the order of one micron thick,

and said electro-polishing being undertaken in a viscous electrolyte, until said first element is substantially smoothed,

said electrolyte consisting essentially of phosphoric acid and an effective amount of chemically inert thickening agent.

5. In the production of a deposited multilayer thin film assembly comprising a pair of conductor elements in different layers of said assembly with an insulating material layer in the order of one to ten microns thick therebetween,

the improvement which comprises electro-polishing the outer face surface of the first of said elements to be deposited, before depositing said insulating material over said face surface,

said first element being gold in the order of one micron thick,

and said electro-polishing being undertaken in a viscous electrolyte, until said first element is substantially smoothed,

said electrolyte consisting essentially of potassium cyanide and an effective amount of chemically inert thickening agent.

3,314,870 PHOTOCHEMICAL PROCESS FOR PREPARING CHLORO-SULFONYL CARBOXYLIC ACID CHLORIDES

Peter Börner, Kamen, Germany, assignor to Schering AG., Berlin, Germany
No Drawing. Filed Oct. 28, 1963, Ser. No. 319,535
Claims priority, application Germany, Nov. 2, 1962, Sch 32,276
4 Claims. (Cl. 204—158)

1. A process for the preparation of chloro-sulfonyl carboxylic acid chlorides having a $-\text{COCl}$ group and a $-\text{SO}_2\text{Cl}$ group in the molecule which comprises react-

ing sulfur dioxide and chlorine with a member selected from the group consisting of saturated aliphatic and alicyclic carboxylic acid chlorides having at most 12 carbon atoms and having a —C—H bond removed by at least the beta position from the —COCl group at a temperature of from about —40° C. to about 100° C. under irradiation with light of wavelengths from about 2000 Å. to about 7000 Å.

3,314,871

METHOD OF CATAPHORETIC DEPOSITION OF LUMINESCENT MATERIALS

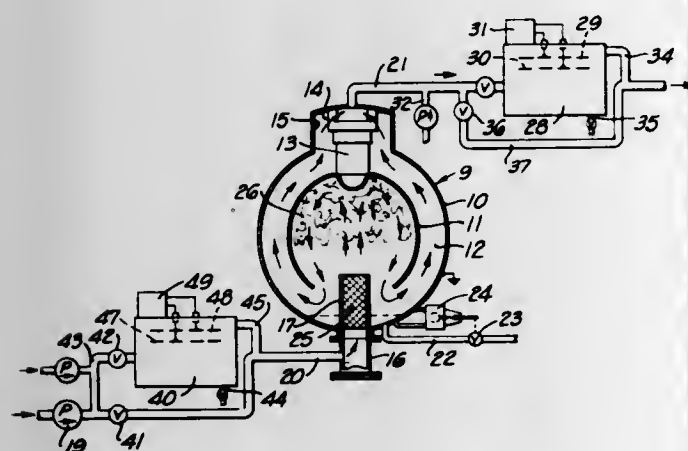
Raymond F. Heck, Wilton, Roland W. Muehleisen, Norwalk, and Kenneth Spigel, Stamford, Conn., assignors to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York
No Drawing. Filed Dec. 20, 1962, Ser. No. 245,999
5 Claims. (Cl. 204—181)

1. In a process for forming a luminescent layer on a substrate, the steps of forming a thin coating of a conductive vaporizable material selected from the group consisting of metals and metal compounds with vaporization temperatures below the softening point in the substrate on the substrate, utilizing said conductive coating to effect cataphoretic deposition of a layer of luminescent material thereon, and removing said conductive coating by heating it to a high enough temperature below the softening point of the substrate and for a sufficient period of time to vaporize the same, leaving said luminescent material on said substrate.

3,314,872

ELECTRIC TREATING PROCESS AND APPARATUS

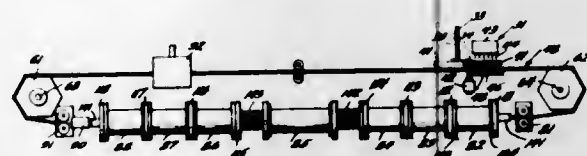
Logan C. Waterman, Houston, Tex., and Howard J. Hickman, Madras, India, assignors to Petrolite Corporation, Wilmington, Del., a corporation of Delaware
Filed Nov. 5, 1963, Ser. No. 321,589
17 Claims. (Cl. 204—188)



11. A method of electrically treating a hydrocarbon-continuous dispersion comprising a hydrocarbon phase with dispersed particles therein, in a space defined by first and second electrodes and in the absence of potential applied between said electrodes by any external source of potential connected thereto, to join the dispersed particles together, including the steps of:
producing an electrically charged fluid stream;
flowing the charged stream into electrical contact with the first electrode to impart a charge thereon and establish an electrostatic field in the space between the electrodes;
delivering a stream of the dispersion to said space;
and
withdrawing treated dispersion constituents from said space.

METHOD AND APPARATUS FOR CATHODE SPUTTERING USING A CYLINDRICAL CATHODE

Gus Lunsford, Winston-Salem, N.C., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 28, 1962, Ser. No. 140,599
6 Claims. (Cl. 204—192)



1. A method of coating articles by cathodic sputtering which comprises the steps of:
applying a sputtering potential between a cylindrical cathode having a circular cross-section and a major axis and to an anode positioned therewithin, and
moving articles to be coated through said cathode along a path which is parallel to and removed from both said major axis and the walls of said cathode so that no portion of said articles impinges upon said major axis.
5. In a sputtering machine for coating articles with material,
(a) a sputtering chamber open on at least one end,
(b) a tubular cathode of said material to be sputtered within said chamber, the cathode having a circular cross section and a major axis,
(c) means for supporting articles to be coated within said cathode and for sealing said open end of said chamber, said supporting and sealing means including,
(1) a conveyor extending through said cathode for transporting a plurality of said articles along a predetermined path in a uniformly oriented configuration spaced along said path, the path being longitudinal and parallel to and removed from both said major axis and the walls of said cathode so that no part of said articles or of said supporting means impinges upon said major axis, and
(2) a tube of length greater than the article spacing maintainable by said conveyor, said tube defining a passage which surrounds said conveyor and has a cross section corresponding to the cross section taken through both the conveyor and an article loaded therein, and
(d) electric potential-producing means, including said cathode and said conveyor, for impressing a negative potential on said cathode and a positive potential on said conveyor to cathodically sputter said material and coat said supported articles.

ERRATUM

For Class 204—195 see:
Patent No. 3,315,271

3,314,874

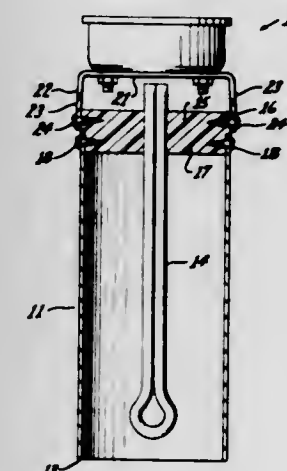
APPARATUS FOR DETERMINING CATHODIC PROTECTION

Rowland W. Flournoy, Henrico County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Mar. 21, 1963, Ser. No. 267,042
2 Claims. (Cl. 204—195)

1. A self-contained and portable apparatus for determining whether proper cathodic protection will be provided for particular pipe lines when utilized with a particular sacrificial anode and a particular environmental electrolyte comprising a sample of said pipe line, a sample of said anode, an insulating member interconnecting said

samples together so that said samples can be simultaneously immersed in said electrolyte, a conductor means connecting said samples together and being adapted to have a current flow therethrough when said samples are immersed in said electrolyte, and circuit means connected to said conductor means, said circuit means being adapted to provide an amplified current flow proportional to said

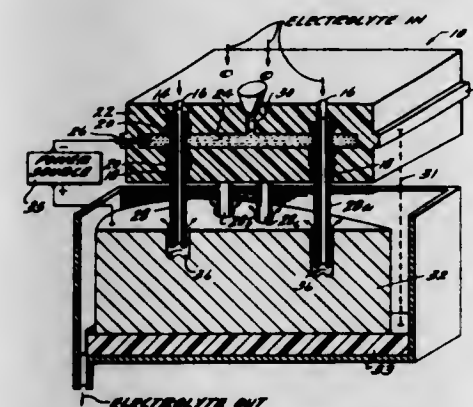


first-named current flow and substantially immediately and automatically measure the amperage of said amplified current flow to directly indicate whether the amperage is in the proper range for proper cathodic protection of said pipe line whereby no adjustments or computations are required by the user, said pipe line sample being a cylindrical sleeve, said anode being mounted inside said sleeve.

3,314,875

ELECTRODE HOLDER

James D. Andrews, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed July 24, 1962, Ser. No. 211,965
2 Claims. (Cl. 204—224)



1. An electrode holder of insulating material for a plurality of hollow replaceable electrodes;
positioning means on the holder;
a plurality of electrode chambers extending inwardly from one face of the holder;
means to introduce electrolyte into the electrode chambers from the opposite face of the holder;
an electrical conductor chamber contained within the holder and intersecting each electrode chamber and adapted to confine a liquid electrical conductor; and
electrical contact means electrically connected with the electrical conductor chamber to provide electrical contact between the liquid conductor and an electrical power source;
each electrode chamber having
(a) electrode stop means located at a predetermined position with respect to the positioning

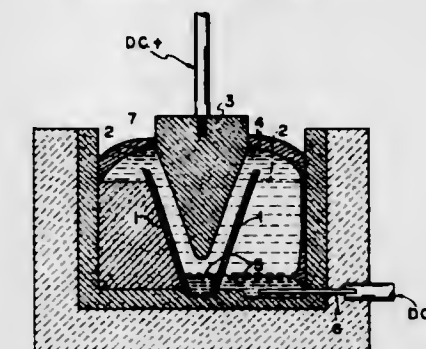
means to locate penetration of the electrode into the electrode chamber; and

- (b) a plurality of resilient, releasable electrode holding and fluid sealing means embedded in walls of each electrode chamber to hold an electrode during operation and to guide a replacement electrode into position,
- (c) one of the plurality of electrode holding means being located between the means to introduce electrolyte into the electrode chamber and the electrical conductor chamber to function as fluid sealing means separating the liquid electrolyte from the liquid electrical conductor and another of the plurality of electrode holding means being located between the electrical conductor chamber and said one face of the holder to function as fluid sealing means confining the liquid electrical conductor to the electrical conductor chamber.

3,314,876

METHOD FOR MANUFACTURING SOLID CURRENT CONDUCTING ELEMENTS

Charles Eric Ransley, Chesham Bois, England, assignor to The British Aluminium Company Limited, London, England, a company of Great Britain
Original application Dec. 16, 1960, Ser. No. 76,265. Divided and this application Jan. 27, 1966, Ser. No. 523,300
Claims priority, application Great Britain, Nov. 28, 1960, 40,853/60
4 Claims. (Cl. 204—291)



1. A method of producing a current conducting element having high resistance to failure under aluminum producing electrolytic cell operating conditions, said method comprising:
pressing powder consisting essentially of a mixture of titanium diboride and titanium carbide, said powder also containing small proportions of oxygen and free carbon; and
maintaining the present weight ratio of total oxygen present in the powder to the total carbon available in the powder for reduction of oxygen at a value of less than 1.33.

3,314,877

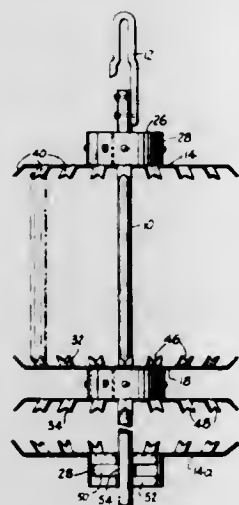
PLATING AND ANODIZING RACK

Joseph Novitsky, Massapequa, N.Y., assignor to Joseph Novitsky Rack Manufacturer, Inc., Jamaica, N.Y.
Filed Aug. 29, 1963, Ser. No. 305,459
2 Claims. (Cl. 204—297)

1. A rack for supporting articles to be anodized or plated, comprising:
a supporting bar,
a hook for suspending said supporting bar from above,
a plurality of holders for the articles to be anodized or plated, each holder having a generally cylindrical central portion and fingers radiating outwardly from at least one end of said cylindrical central portion, said fingers being adapted to engage and support the articles to be anodized or plated each holder

being formed from a single piece of conductive material, the grain flow of which, in the cylindrical central portion thereof, is parallel to the longitudinal axis of said cylindrical central portion and the grain flow in each finger thereof is parallel to the longitudinal dimension of such finger, and clamping means connected to said cylindrical central portion of each holder for mounting the holders on said supporting bar, said clamping means comprising:

a relatively narrow U-shaped clamp member mounted on the inside of said cylindrical central portion, and

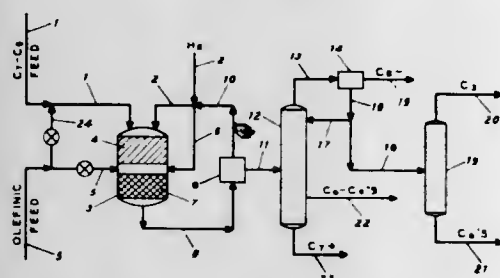


a relatively wide, flanged U-shaped clamp member mounted on the inside of said cylindrical central portion disposed oppositely said narrow clamp member, said wide clamp member having an aperture in the base of the U-shaped portion to receive and pass the yoke of said narrow clamp member such that a passageway parallel to the longitudinal axis of the cylindrical central portion is formed, said passageway being alternately enlarged to pass therethrough said supporting bar and reduced to grip said supporting bar by respectively squeezing and releasing said cylindrical central portion.

3,314,878

HYDROCARBON CONVERSION FOR LIGHT GAS PRODUCTION

Robert H. Kozlowski, Berkeley, Calif., assignor to Chevron Research Company, a corporation of Delaware
Filed July 29, 1964, Ser. No. 385,992
10 Claims. (Cl. 208-58)



1. A hydrocracking-hydrogenation process which comprises contacting a hydrocarbon distillate feed boiling between about 170° and 320° F. and hydrogen in a hydrocracking zone with a hydrocracking catalyst comprising a hydrogenating-dehydrogenating component and an active acidic cracking component comprising a conventional cracking catalyst at operating conditions of about 550°-750° F., about 800-1000 p.s.i.g. and about 0.3-1.0 LHSV on a once-through basis thereby converting above about 60 percent of said distillate feed to products boiling below the C₇ boiling range and predominantly comprising C₃, iC₄ and nC₄ hydrocarbons, and contacting the effluent

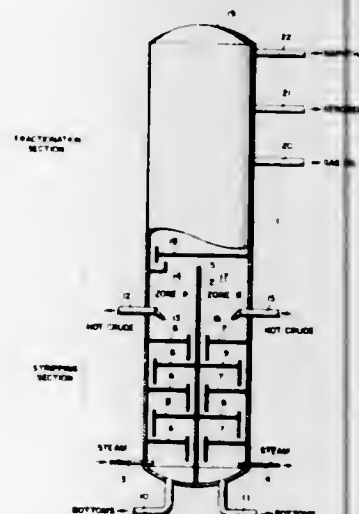
from said hydrocracking zone and an olefinic feed selected from the group consisting of C₃-C₆ olefins in a hydrogenation zone with a hydrogenation catalyst consisting essentially of a hydrogenating-dehydrogenating component and a nonactive non-acidic cracking component selected from the group consisting of silica, titania, zirconia, bauxite, charcoal and alumina, at operating conditions of about 500°-775° F., about 800-1000 p.s.i.g. and about 0.1-10 LHSV on a once-through basis to convert above about 90 percent of said olefinic feed to paraffins.

3,314,879

FRACTIONATION PROCESS AND APPARATUS

Richard Kenneth Lacy, Morristown, N.J., and Clark Henry Zakovi, Stanford, Calif., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Mar. 10, 1965, Ser. No. 438,652
4 Claims. (Cl. 208-356)



1. An improved process for fractionating petroleum crude oils consisting essentially of the steps of establishing two separate and distinct side-by-side stripping zones in the stripping section of a fractionation tower, introducing a first hot crude oil containing relatively low value bottoms into the flash section of the first stripping zone, introducing a second hot crude oil containing relatively high value bottoms into the flash section of the second stripping zone, simultaneously steam stripping the lighter components from the crude oils as they pass through their respective stripping zones, passing stripped materials from the two independent stripping zones into a common fractionation section, fractionating said stripped materials, recovering at least one fraction from the fractionation section, recovering segregated low value bottoms from the first stripping zone; recovering segregated high value bottoms from the second stripping zone whereby two petroleum crude oils are processed in a single fractionation tower to provide low boiling overhead and side stream products containing the desirable lighter hydrocarbon materials of the two crude oils and to provide segregated bottoms fractions of each crude oil in condition for further appropriate processing of each bottoms fraction.

3,314,880

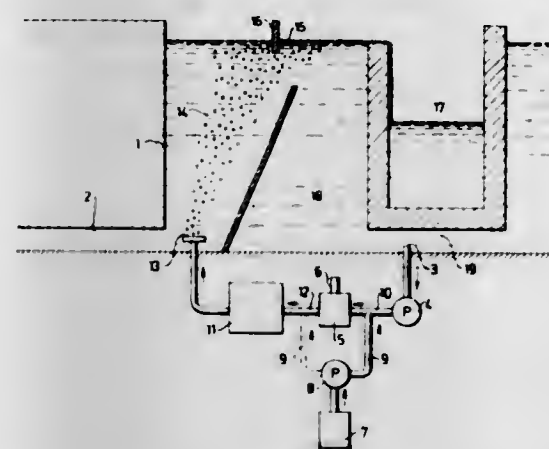
METHOD OF REMOVING A CONTAMINATING SUBSTANCE FROM A LIQUID BY FLOTATION

Ernst Arne Rubin, Lund, Sweden, assignor to AB Parac, Lund, Sweden, a company of Sweden
Filed June 28, 1965, Ser. No. 467,517
Claims priority, application Sweden, June 29, 1964, 7,894/64

1 Claim. (Cl. 210-44)

A method of flocculating a substance present as contamination in a liquid and effecting flotation of the resulting flocculated substance which comprises continu-

ously flowing said contaminated liquid into and maintaining a body thereof in a flotation container, preparing a dispersion consisting essentially of a gas, a precipitant for said substance and uncontaminated liquid, introducing

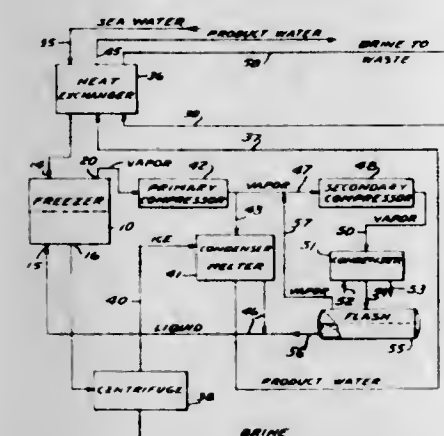


said dispersion directly into said container, mixing said dispersion and said liquid for the first time in said container and separating the resulting flocculated substance from the resulting liquid mixture.

3,314,881

WATER EXTRACTION BY FREEZING

Sidney B. Tuwiner, 8 Lincoln Ave.,
Baldwin, N.Y. 11510
Filed July 12, 1963, Ser. No. 294,581
11 Claims. (Cl. 210-59)



1. The method of concentrating an aqueous solution of a material, comprising intimately contacting the solution with a boiling liquid refrigerant mixture to produce therewith a system, one refrigerant component of said mixture being a clathrate-former and another refrigerant component being a non-clathrate former to produce ice crystals in said system, said components being so proportioned that in the system, said components are substantially in equilibrium with the ice crystals, clathrate formed from said clathrate-former and an aqueous solution of said material.

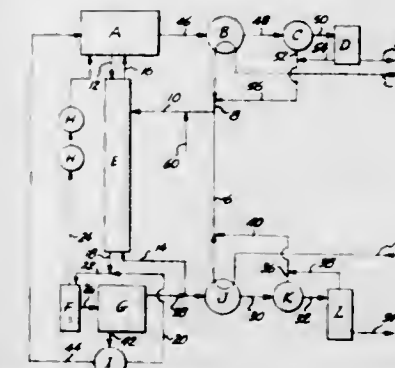
3,314,882

PROCESS AND APPARATUS FOR THE DESALINATION OF SALT WATER

David W. Schroeder, Seattle, Wash., assignor to Seattle University, Seattle, Wash., a corporation of Washington
Filed Dec. 28, 1964, Ser. No. 421,203
18 Claims. (Cl. 210-59)

1. A process for the desalination of salt water using an organic solvent extraction compound for water which is sparingly soluble in the same and which forms a pair of

conjugate solutions with salt water when added thereto in greater than a saturating amount at a temperature above the crystallization point of the compound in the resulting water-organic system, one of which solutions is relatively salt-depleted and organic-rich, and the other of which is relatively salt-rich and organic-depleted, comprising contacting the salt water with a greater than saturating amount of the compound, in a liquid-liquid extractor, at a temperature above the crystallization point of the compound in the water-organic system, so as to form the pair of conjugate solutions, separating the salt-



depleted, organic-rich solution from the salt-rich organic-depleted solution, at a temperature above the crystallization point of the compound in the salt-depleted, organic-rich solution, so that the compound remains in a molten state in the latter solution at the point of separation, thereafter cooling the salt-depleted, organic-rich solution to at least the temperature of crystallization of the compound so as to form a liquid water phase and a solid organic phase therein, and displacing the liquid water phase from the solid organic phase with a third phase which is fluid and dissolves neither water nor the organic compound.

3,314,883

DRILLING FLUID

Clarence O. Walker, Houston, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 26, 1965, Ser. No. 443,171
14 Claims. (Cl. 252-8.5)

1. An aqueous well drilling fluid containing at least about 0.5 pound per barrel of a modified starch dextrin produced by subjecting a hypochlorite preoxidized starchy material to a temperature above 300° F. but below a temperature at which combustion occurs for a period of time between about at least 15 minutes and 6 hours to provide improved dispersibility and improved high temperature stability to said well drilling fluid, said modified starch dextrin being fully soluble in aqueous caustic solution and being at least about 90% by weight insoluble in boiling water.

3,314,884

FUELS AND LUBRICANTS CONTAINING INCLUSION COMPOUNDS

Richard E. Cover, Woodhaven, N.Y., assignor to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Jan. 2, 1964, Ser. No. 335,422
20 Claims. (Cl. 252-10)

1. An organic composition selected from the group consisting of lubricants and normally liquid hydrocarbon fuels containing an amount effective to enhance the useful characteristics of said composition of a chemical additive in the form of an inclusion compound wherein said additive is enclosed within the cavities of a host compound having a structure selected from the group consisting of a lattice structure and a mono-molecular structure, the molecule of the said additive being smaller than that of the said host.

3,314,885

CORROSION INHIBITING RESIN-BONDED SOLID FILM LUBRICANT

George P. Murphy, Jr., Rock Island, Ill., assignor to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Apr. 15, 1964, Ser. No. 360,150

4 Claims. (Cl. 252-25)

1. A composition for forming a solid film lubricant, which consists essentially of the following ingredients:

Percentages by wt.	
Epoxy-phenolic resin system	35.4
Antimony trioxide	6.2
Molybdenum disulfide	17.4
Dibasic lead phosphite	4.1
Modified magnesium bentonite	0.5
and	
1,4-diethylene dioxide	36.4

3,314,886

CALCIUM MIXED SALT LUBRICATING GREASES CONTAINING POLYCARBOXYLIC ACID

Arnold J. Morway, Clark, and Albert J. Bodner, Linden, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 22, 1964, Ser. No. 420,456

7 Claims. (Cl. 252-32.7)

2. A method of preparing a calcium mixed salt, normally solid, lubricating grease comprising a major amount of mineral lubricating oil and about 20 to 40 wt. percent of said mixed salt, wherein said mixed salt is formed by neutralizing acetic acid and C_8 to C_{30} fatty acid with lime, and wherein said grease is substantially free of contaminants, which comprises neutralizing in at least a portion of said oil, said acetic acid and said fatty acid in a relative molar proportion of about 1 to 40 moles of said acetic acid per mole of said fatty acid in the presence of 2 to 6 wt. percent of a dispersant which fluidizes said mixed salt composition to thereby obtain a fluid mixed salt composition, filtering said fluid mixed salt composition to remove contaminants, and then adding about 0.5 to 5 wt. percent of a polycarboxylic acid of the formula: $R(COOH)_n$, wherein R is a hydrocarbon radical containing 18 to 60 carbon atoms, and n is 2 to 3, to thereby convert said fluid composition into said normally solid lubricating grease.

3. A method according to claim 2, wherein said dispersant is selected from the group of materials consisting of (a) phosphosulfurized polymers of C_2 to C_6 monoolefin-1 containing 40 to 250 carbon atoms in said polymer, (b) polyisobutenylsuccinic anhydride, (c) polyisobutenyl monocarboxylic acid, calcium salts of the aforesaid materials (a), (b), and (c), and (d) condensation products of materials b and c with polyethylenamines containing 2 to 12 nitrogen atoms per molecule.

3,314,887

FUNCTIONAL FLUID COMPOSITIONS

Emil Herbert Carlson, Kirkwood, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Jan. 2, 1964, Ser. No. 335,386

12 Claims. (Cl. 252-42.7)

1. A functional fluid composition comprising a fluid polyphenyl ether having from 3 to 10 benzene rings and a sum of from 2 to 9 oxa and thia ether linkages therein, and an effective amount of a metal chelate of diphenoxydibenzoylmethane antioxidant composition, wherein the metal is selected from the group consisting of the heavy metals of Periods 4, 5 and 6 and Groups 1B to 8B and 3A to 4A of the Periodic Table of Elements.

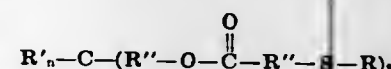
**3,314,888
EXTREME PRESSURE LUBRICANT COMPOSITIONS**

Howard J. Matson, Harvey, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 1, 1964, Ser. No. 371,753

4 Claims. (Cl. 252-48.6)

1. A lubricating oil composition consisting essentially of a major amount of a base oil of lubricating viscosity and a small amount effective to increase the load carrying capacity of the base oil of an oil-soluble additive having the structure



where R is an aliphatic hydrocarbon radical of about 8 to 24 carbon atoms, R' is an aliphatic hydrocarbon radical of about 1 to 8 carbon atoms, R'' is a divalent aliphatic hydrocarbon radical of about 1 to 9 carbon atoms, n is an integer from 0 to 1, and t equals 4-n.

3,314,889

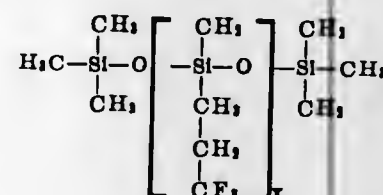
MULTIPURPOSE GREASE COMPOSITION

John B. Christian, Yellow Springs, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force

No Drawing. Filed Mar. 27, 1964, Ser. No. 355,511

6 Claims. (Cl. 252-49.6)

1. A multipurpose high-speed, heavy-load grease compound operable over a broad temperature range comprising 65 to 70 parts by weight of a fluorosilicone base fluid of the structure



and 35 to 30 parts by weight of a powdered fluoroethyl-polymer as a filler.

3,314,890

ALKALI ETCHING SOLUTION FOR ALUMINUM

Harold Vernon Smith, Philadelphia, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Apr. 9, 1965, Ser. No. 447,073

8 Claims. (Cl. 252-79.3)

1. The aqueous solution consisting essentially of alkali metal hydroxide, water soluble hexavalent chromium ion, water soluble fluoride ion, and at least one surface modifying agent selected from the group consisting of manitol, ascorbic acid, sorbose, sorbitol, tannic acid, ethylenediaminetetraacetic acid, sodium chrom glucosate, diglycolic acid, picolinic acid, aspartic acid, dithiooxamide, d-glyconolactone, and l-rhamnose in which the alkali metal hydroxide concentration is within the range of 13 to 90 grams per liter, in which the water soluble hexavalent chromium ion concentration is within the range of 0.02% to 4.5% of the alkali metal hydroxide concentration, in which the water soluble fluoride ion concentration is within the range of 0.04% to 2% of the alkali metal hydroxide concentration, and in which solution the concentration of the said surface modifying agent is at least the sum of 100% of the water soluble chromium ion concentration and 2.0% of the alkali metal hydroxide concentration.

3,314,891

LOW FOAMING DETERGENT

Irving R. Schmolka, Grosse Ile, Mich., and Mason H. Earing, Danville, Ill., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Filed Nov. 12, 1965, Ser. No. 507,561

14 Claims. (Cl. 252-89)

1. A composition adapted to be formulated with automatic dishwashing detergents for reducing foam during use thereof in the presence of proteinaceous matter, comprising:

about 50.0 to 99.9 weight percent nonionic surface active component, selected, from the group consisting of

polyoxyethylene condensates of alkyl phenols having from about 6 to 20 carbon atoms in the alkyl portion, the benzyl ethers of said polyoxyethylene condensates of alkyl phenols,

cogeneric mixtures of conjugated polyoxyalkylene compounds containing in their structure the residue of an active hydrogen-containing compound and at least one hydrophobic chain of units selected from the group consisting of oxypropylene and oxypropylene-oxyethylene units in which the oxygen/carbon atom ratio does not exceed 0.40 and at least one hydrophilic chain of units selected from the group consisting of oxyethylene and oxyethylene-oxypropylene units in which the oxygen/carbon atom ratio is greater than 0.40,

polyoxyethylene esters of higher fatty acids having from about 8 to 22 carbon atoms in the acyl group,

polyoxyethylene condensates of higher fatty amines having from about 8 to 22 carbon atoms in the fatty alkyl group,

polyoxyethylene condensates of higher fatty amides having from about 8 to 22 carbon atoms in the fatty acyl group, and

alkylene oxide adducts of higher aliphatic compounds selected from the group consisting of alcohols and thioalcohols having from about 8 to 22 carbon atoms in the aliphatic portion, and about 0.1 to 50.0 weight percent alkyl phosphate ester component selected from the group consisting of stearyl acid phosphate and oleyl acid phosphate.

3,314,892

STABILIZATION OF HALOHYDROCARBONS

George Whitlock Graham, Beloeil Station, Quebec, Canada, assignor to Canadian Industries Limited, Montreal, Quebec, Canada, a corporation of Canada

No Drawing. Filed Sept. 18, 1961, Ser. No. 138,564

Claims priority, application Canada, Oct. 27, 1960, 809,883

3 Claims. (Cl. 252-153)

1. A degreasing solvent selected from the group consisting of trichloroethylene and methyl chloroform having incorporated therein (1) between 0.0005% and 0.2% by weight of at least one amine selected from the group consisting of triethylamine, dimethylaniline and diisopropylamine, (2) between 0.01% and 1.0% by weight of at least one vic-epoxy compound selected from the group consisting of butylene oxide and styrene oxide, and (3) between 0.0005% and 0.2% by weight of at least one quaternary ammonium compound selected from the group consisting of cetyl trimethyl-ammonium bromide, cetyl trimethyl-ammonium hydroxide, tetraethyl-ammonium iodide, coco-trimethyl-ammonium chloride, coco-trimethyl-ammonium acetate and coco-trimethyl-ammonium hydroxide.

3,314,893

GROUP II METAL-THORIUM PHOSPHATE PHOSPHORS

Mary V. Hoffman, South Euclid, Ohio, assignor to General Electric Company, a corporation of New York

Filed Jan. 3, 1966, Ser. No. 518,363

8 Claims. (Cl. 252-301.1)

1. A metal thorium phosphate phosphor selected from the group consisting of:

$MThP_2O_8$ wherein M is a metal selected from the group consisting of calcium, magnesium and zinc, and

$MM'Th_2P_4O_{16}$ wherein M is a metal selected from the group consisting of magnesium and zinc, when M is zinc, M' is barium, and when M is magnesium, M' is a metal selected from the group consisting of barium and strontium,

said phosphor being activated by at least one element selected from the group consisting of divalent tin, divalent manganese, terbium, dysprosium and uranium.

3,314,894

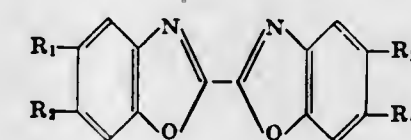
SCINTILLATORS, COMPOUNDS USEFUL THEREIN, AND METHOD OF MAKING THE SAME

Emery Nyilas, Bedford, and Imre L. Pinter, Belmont, Mass., assignors to American Polymer and Chemical Corp., Natick, Mass., a corporation of Massachusetts

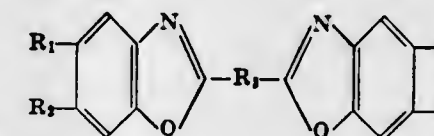
No Drawing. Filed Nov. 30, 1962, Ser. No. 241,181

2 Claims. (Cl. 252-301.2)

1. A scintillator consisting essentially of transparent, water-white, optically pure, non-polar, organic, fluorescent solvent carrier and fluorescent solute dissolved therein, said solute being present in an effective amount, in proportion to the amount of said solvent carrier, to significantly increase the wave length of incident light energy, said solute being selected from the class consisting of

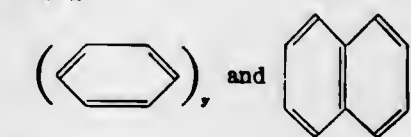


and



in which

R_1, R_2, R_3 , and R_4 are selected from the class consisting of H^- , CH_3^- , $C_2H_5^-$, CH_3O^- , and $(CH_3)_2N^-$; and R_5 is selected from the class consisting of fully trans $-(CH=CR_5)_x-$,



wherein R_5 is chosen from the group consisting of H^- and CH_3^- , x is an integer from 1 to 4, and y is an integer from 1 to 2.

3,314,895

PROCESSES FOR SELECTIVE DEMETHYLATION AND FOR PREPARATION OF CATALYSTS FOR USE THEREIN

George W. Munns, Jr., West Deptford Township, Gloucester County, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed June 16, 1964, Ser. No. 375,669

19 Claims. (Cl. 252-455)

1. A process for preparing a crystalline aluminosilicate having substantially uniform interstitial spaces and containing a material selected from the group consisting

of cobalt and nickel-containing materials and wherein substantially all of said material is restricted to said interstitial spaces, said process comprising: providing a crystalline aluminosilicate having substantially uniform interstitial spaces, said aluminosilicate having in its interstitial spaces and on its outer surfaces a material selected from the group consisting of cobalt and nickel-containing materials, treating said aluminosilicate with a reagent capable of converting said material to a new form sufficiently large to prevent it from passing between said interstitial spaces and said outer surfaces and removing said new form of said material which is on said outer surfaces without at the same time removing said new form of said material in said interstitial spaces.

3,314,896

CYCLIC EPOXIDES AND COMPOSITIONS CONTAINING SAME

Samuel W. Tinsley, Jr., South Charleston, and Erich Marcus, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 29, 1961, Ser. No. 163,059

19 Claims. (Cl. 260—2)

1. A compound from the class consisting of 3-(vic-epoxyalkyl)-vic-epoxycyclopentane, wherein the vic-epoxy moiety of said vic-epoxyalkyl group is at least one carbon atom removed from the vic-epoxycyclopentane nucleus; 3-(vic-epoxyalkyl-4-(or 5)-(vic-epoxycycloalkyl)-vic-epoxycyclopentane; and 3-(vic-epoxyalkyl-4-(or 5)-vic-epoxycycloalkyl-vic-epoxycycloalkyl)-vic-epoxycyclopentane; wherein the vic-epoxyalkyl substituent contains up to 18 carbon atoms and the vic-epoxycycloalkyl substituent contains 5 to 7 carbon atoms in the ring thereof.

3,314,897

WATER-SOLUBLE NITROGEN PREPOLYMER COMPOSITIONS

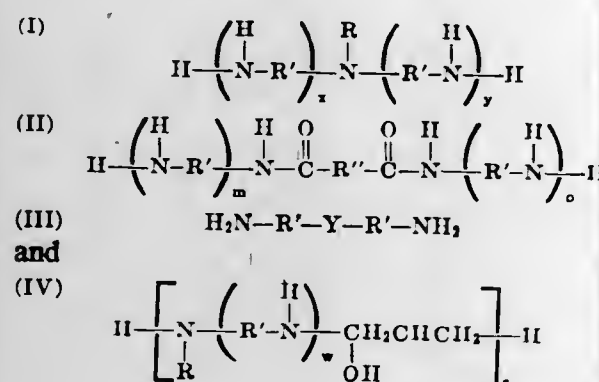
Van R. Gaertner, Ballwin, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Jan. 16, 1963, Ser. No. 251,743

14 Claims. (Cl. 260—2)

1. A water-soluble prepolymer composition comprising the reaction product of from two to four components wherein one component (a) is a prepolymer and at least one of the other components is selected from the group consisting of (b) aliphatic amines (c) an adduct of an epihalohydrin and an aliphatic amine, and mixtures of aliphatic amines, and (d) prepolymers, all of said components being further defined as follows:

(a) is a prepolymer obtained by reacting
(1) an adduct of an epihalohydrin and aliphatic amine having at least one primary amino nitrogen and at least two amino hydrogens, said adduct having from two to ten haloalkanol equivalents per mole of amine, said aliphatic amine, having a formula selected from the group consisting of



wherein R is selected from the group consisting of hydrogen, alkyl groups having from 1 to about 24 carbon atoms, alkenyl groups having from 3 to about 24 carbon atoms with the double bond thereof at least two carbon atoms removed from a nitrogen-carbon bond, and acyl radicals of the type $\text{R}'''\text{C}(\text{O})-$ wherein R''' is an alkyl group having from 1 to about 24 carbon atoms, R' is a bivalent alkylene group having from 2 to 6 carbon atoms, R'' is a bivalent group selected from the class consisting of alkylene and alkenylene groups having from 2 to 40 carbon atoms, each of x and y is an average number of from 0 to 6, x plus y equals 0 to 10, each of m and n is an average number of at least 1 and m plus n equals from 2 to 6, Y is a bivalent oxygen ether group selected from the class consisting of $-\text{O}-$, $-\text{O}-\text{R}'-\text{O}-$, and $-\text{O}(\text{R}'-\text{O})_u\text{R}'-\text{O}-$ wherein R' is as defined above, and u is an average number of from 1 to about 100, w is an average number of from 0 to 4, and z is an average number of from 2 to 20, and mixtures of said types of amines, prepared by reacting said aliphatic amine with the epihalohydrin at least equivalent to the number of amino hydrogens in said aliphatic amine, in the presence of a non-aqueous liquid diluent containing at least a trace amount of an hydroxyl-containing material, at a temperature of from about 0°C . to about 50°C ., with

(2) an aliphatic amine of the types described above under (a)(1);

(b) is an aliphatic amine of the type described above under (a)(1);

(c) is an adduct of the type described above under (a)(1);

(d) is a prepolymer of the types described above under (a);

at least one of said components of said prepolymer composition having at least three moieties per molecule selected from the group consisting of haloalkanol equivalent derived from the epihalohydrin used and amino hydrogen, the molar proportion of said components in said prepolymer composition providing at least about 3 haloalkanol equivalents and 3 amino hydrogens for each combined total of from 6 to 14 haloalkanol and amino hydrogen equivalents, said prepolymer composition being characterized in that when a water solution of 5% or more by weight of prepolymer composition solids is treated with an alkali sufficient to raise the pH of the mixture to pH 11 to 13, the prepolymer composition will crosslink.

3,314,898

POLYMERIZATION OF TETRAHYDROFURAN

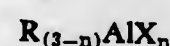
Junji Furukawa and Takeo Saegusa, Kyoto, and Hirotsugu Imal, Kobe, Japan, assignors to Zaiden Hojin Nihon Kagaku Seni Kenkyusho, Kyoto, Japan, a corporation of Japan

No Drawing. Filed Feb. 18, 1963, Ser. No. 259,408

Claims priority, application Japan, Mar. 31, 1962, 37/12,118

4 Claims. (Cl. 260—2)

1. A method for producing polytetrahydrofuran comprising polymerizing tetrahydrofuran in the presence of a catalyst comprising an organoaluminum compound having the general formula



wherein R is a radical selected from the group consisting of alkyl, aryl, cycloalkyl an daralkyl, X is a halogen and n is an integer from 0-2 and a cocatalyst selected from the group consisting of β -propiolactone, β -butyrolactone, α -butyrolactone and diketene.

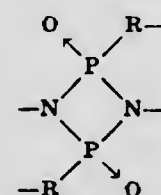
3,314,899
POLYMERIC DIAZADIPHOSPHETIDINE DIOXIDES

Leo P. Parts and Morris L. Nielsen, Dayton, Ohio, assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Nov. 26, 1963, Ser. No. 326,212

11 Claims. (Cl. 260—2)

1. A solid, cross-linked polymer consisting essentially of the repeating unit



wherein R is a monocyclic aromatic hydrocarbon radical of from 6 to 12 carbon atoms, free of olefinic and acetylenic unsaturation, and linked through nuclear carbon to the remainder of the molecule.

3. The method of preparing a solid, cross-linked polymer which comprises heating at from 300°C . to 800°C . a 2,4-bis(arylamino)-1,3-diaryl-1,3,2,4-diazadiphosphetidine-2,4-dioxide wherein aryl is monocyclic hydrocarbon, has from 6 to 12 carbon atoms and is free of olefinic and acetylenic unsaturation and is linked through nuclear carbon to the remainder of the molecule, said heating being conducted while removing by-product arylamine from the reaction chamber and, when the heating is conducted below the melting point of said dioxide, providing for so rapid a removal of the arylamine that chemical reaction of the amine in said chamber is substantially prevented.

3,314,900

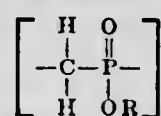
PHOSPHORUS POLYMERS

Eugene H. Uhlig, Chicago Heights, Ill., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

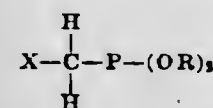
No Drawing. Filed Apr. 28, 1965, Ser. No. 451,611

1 Claim. (Cl. 260—2)

A process for preparing phosphorus polymers corresponding to the general formula



wherein R is selected from the group consisting of hydrogen and hydrocarbon radicals free of ethylenic and acetylenic unsaturation and containing from one to eight carbon atoms, and n is an integer of from about 20 to about 10,000, which comprises contacting a compound of the formula



wherein X is a halogen selected from the group consisting of chlorine and bromine and R is as previously defined, with a free radical catalyst selected from the group consisting of oxygen and a peroxide at a temperature below 50°C .

3,314,901

PRODUCTION OF POLYURETHANE FOAMS

Guenther Daumiller, Ziegelhausen, Hans Wilhelm, Ludwigshafen (Rhine), and Eberhard Wegner, Frankenthal, Pfalz, Germany, assignors to Badisch Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed July 3, 1963, Ser. No. 293,237

Claims priority, application Germany, July 5, 1962, B 67,923

7 Claims. (Cl. 260—2.5)

1. In a process for the production of polyurethane foams by reacting an organic aromatic polyisocyanate

and a hydroxyl containing compound selected from the group consisting of polyesters and polyethers in the presence of a compound selected from the group consisting of (1) water and (2) a readily volatile organic compound which is inert to isocyanates and whose boiling point is between 0°C . and 100°C ., the improvement which comprises: carrying out the reaction in the presence of at least one copolymer containing (1) a group selected from the group consisting of hydroxyl, carboxyl, and carboxylic amide and (2) tertiary nitrogen atoms; said copolymer having been obtained from the copolymerization of monomeric polymerizable alpha-beta-ethylenically unsaturated monomers; the amount of said copolymer comprising from 5 to 75% by weight of the total initial reaction mixture.

3,314,902

STABILIZED MASTERBATCH FOR PREPARING FIRE-RETARDANT POLYURETHANE FOAMS

Marco Wismer, Gibsonia, Herman P. Doerge, Verona, Paul R. Mosso, Natrona Heights, and James F. Foote, Sarver, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 21, 1965, Ser. No. 500,361

15 Claims. (Cl. 260—2.5)

1. A stabilized masterbatch suitable for incorporation with an organic polyisocyanate to form a fire-retardant, cellulated polyurethane, said masterbatch comprising:

(A) a polyol which is the reaction product of:

(1) a polyhydroxy compound containing about 3 to about 8 hydroxyl groups per molecule, with

(2) an alkylene oxide,

(B) a phosphorus-containing polyol resulting from reacting:

(1) an alkylene oxide containing from about 2 to about 6 carbon atoms per molecule, with

(2) an acid of phosphorus having at least one OH group attached to the phosphorus atom;

(C) a stabilizing amount of polyhydroxyalkyl amine which has the structure of the reaction product of an amine containing at least two active hydrogen atoms with an alkylene oxide containing 2 to 4 carbon atoms per molecule, said polyhydroxyalkyl amine being the sole stabilizer added to the mixture;

(D) a blowing agent for cellulation of polyurethane resin, and

(E) a catalyst of urethane formation.

3,314,903

OIL EXTENDED POLYURETHANE FOAM AND PROCESS FOR PREPARING SAME

Steven G. Belak, Claymont, and William J. Stout, Wilmington, Del., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed June 2, 1966, Ser. No. 554,742

14 Claims. (Cl. 260—2.5)

1. A process for the production of an oil-extended rigid polyurethane foam having 96 to 100% of the cell walls intact comprising blending (1) from 5 to 17 weight percent of an oil derived from petroleum refining operations having a viscosity in the range of 30-100 Saybolt Universal seconds at 210°F ., a viscosity-gravity constant in the range of 0.79 to 1.05, and a molecular weight in the range of 200-500; (2) a liquid polyol having a molecular weight in the range from about 500 to about 10,000 and a hydroxyl number of at least 250; (3) an aromatic diisocyanate; (4) an emulsifier; (5) a catalyst and (6) a blowing agent; and foaming the mixture.

3,314,904

GUM PLASTIC COMPOSITIONS CONTAINING A RESINOUS GRAFT COPOLYMER AND A COMPATIBLE RUBBER

John Burkus, Woodbridge, Conn., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 27, 1962, Ser. No. 247,547
11 Claims. (Cl. 260-4)

1. A composition comprising an intimate uniform mixture made by blending together

(A) a resinous graft copolymer selected from the group consisting of

- (a) resinous graft copolymer of from 75 to 95% by weight of bound styrene on correspondingly from 25 to 5% by weight of a linear poly-1-olefin selected from the group consisting of polyethylene and polypropylene, and
- (b) resinous graft copolymer of from 75 to 95% by weight of bound styrene and acrylonitrile on correspondingly from 25 to 5% by weight of a linear poly-1-olefin selected from the group consisting of polyethylene and polypropylene, and

(B) a rubber, compatible with said graft copolymer, selected from the group consisting of

- (c) rubbery copolymers of butadiene and styrene,
- (d) rubbery copolymers of ethylene and propylene,
- (e) Hevea rubber
- (f) cis-polybutadiene
- (g) polychloroprene
- (h) rubbery graft copolymers of styrene on polybutadiene
- (i) rubbery copolymers of butadiene and acrylonitrile, and
- (j) rubbery graft copolymers of styrene and acrylonitrile on polybutadiene,

the said rubber being selected from the group consisting of non-polar rubbers (c), (d), (e), (f), (g) and (h) when the said resinous graft copolymer is (a), and the said rubber being selected from the group consisting of polar rubbers (i) and (j) when the said resinous graft copolymer is (b), the proportions of said graft copolymer (A) and said rubber (B) being from 60 to 95% by weight of (A) and correspondingly from 40 to 5% by weight of (B), based on the total weight of (A) plus (B).

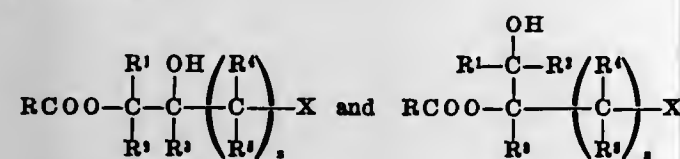
3,314,905

ACYCLIC ORGANIC ACID-HALOGENATED EPOXY COMPOUND ESTER MODIFIED PROTEIN

Stewart B. Luce, La Grange, and Harland H. Young, Western Springs, Ill., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Mar. 16, 1962, Ser. No. 180,345
10 Claims. (Cl. 260-8)

1. A modified protein substance comprising: the reaction product of a protein with a member selected from the group consisting of esters represented by the following formulas:



where X is selected from the group consisting of F, Cl, Br and I; R is the residue of an organic acid of 2-20 carbon atoms, and R¹, R², R³, R⁴ and R⁵ are selected from the group consisting of hydrogen and alkyl radicals and z is an acyclic integer from 1 to about 10, said reaction being conducted under aqueous alkaline conditions.

3,314,906

VINYL ASBESTOS COMPOSITION STABILIZED WITH MELAMINE AND ROSIN

George E. Bagley, Lancaster County, Pa. (2425 Mayfair Drive, Lancaster, Pa. 17603), and William F. Good-year, Jr., Lancaster County, Pa. (72 Barre Drive, Lancaster, Pa. 17601)

No Drawing. Filed Feb. 26, 1965, Ser. No. 435,721
8 Claims. (Cl. 260-27)

1. A vinyl asbestos composition comprising a vinyl chloride resin, asbestos, and a stabilizing system comprising a stabilizing amount of about 0.1%-2.5% by weight melamine and about 0.05%-4% by weight rosin acid based on the weight of said composition.

3,314,907

HYDROCARBON RESIN AQUEOUS COATING COMPOSITION

Ernest T. Fronczak, Crystal Lake, Ill., assignor, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed May 22, 1963, Ser. No. 282,245
13 Claims. (Cl. 260-28.5)

1. A coating composition consisting essentially of about 10% to about 22% by weight of a heat-reactive unsaturated hydrocarbon resin derived from the polymerization of cracked gasoline hydrocarbons and characterized by the following properties:

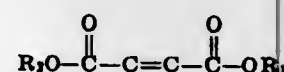
Property:	Value
M.P. (ball and ring) -----	200-220° F.
Form -----	Friable, clear solid.
Iodine No. -----	Approximately 220 min.
Saponification No. -----	0 to 2.0.
Acid No. -----	0 to 2.0.
Sp. gr. -----	1.07-1.09.

about 15% to about 25% by weight of solvent extract obtained in the solvent extraction of mineral lubricating oil using a solvent selective for aromatic compounds and characterized by being complex, high molecular weight, polynuclear, heterocyclic, sulfur-containing compounds, about 40% to about 70% of water and a sufficient amount of an emulsifying agent from the group consisting of an aminoalkanol ester of tall oil fatty acids and an aminoalkanol ester of vegetable oil fatty acids to form a stable emulsion.

3,314,908

EMULSION POLYMERS OF A 2-METHYL ALPHA OLEFIN AND A DIALKYL FUMARATE

George M. Kagan, Fords, and Alfred L. Miller, Cranford, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed July 1, 1964, Ser. No. 379,731
16 Claims. (Cl. 260-29.6)1. An emulsion polymer comprising about 45 to 55 mole percent of a C₄ to C₆ 2-methyl alpha olefin and about 55 to 45 mole percent of a dialkyl fumarate ester system selected from the group consisting of a mixed dialkyl fumarate ester having the general formula:

wherein R₁ is a C₁ to C₃ alkyl radical and R₂ is a C₄ to C₁₈ alkyl radical and a mixture of dialkyl fumarate esters comprising 5 to 95 mole percent of a dialkyl C₄ to C₃ fumarate ester and 95 to 5 mole percent of a dialkyl C₄ to C₁₈ fumarate ester.

3,314,909

CROSS-LINKING COPOLYMERS CONTAINING N-METHYLCARBAMYL RADICALS

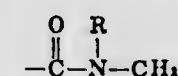
Robert E. Whitfield, Pleasant Hill, and Howard L. Needles, Pinole, Calif., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed June 9, 1965, Ser. No. 462,761
19 Claims. (Cl. 260-29.6)

1. A process for preparing a cross-linked polymer which comprises heating at about 50-100° C. an aqueous composition containing:

(I) A copolymer of:

(A) A polymerizable ethylenically unsaturated monomer containing the N-methylcarbamyl radical



wherein R is a member of the group consisting of hydrogen and lower alkyl, and

(B) a polymerizable ethylenically unsaturated monomer containing a radical selected from the group consisting of -CONH₂, -NH₂, -OH, -COOH, and esterified carboxyl, and

(II) A water-soluble persulfate in the amount of at least one-tenth mole thereof per mole of N-methylcarbamyl radical in said copolymer.

3,314,910

COPOLYMERS OF CYCLOBUTENE-1,2-DICYANIDE AND A CONJUGATED DIOLEFIN

Dorothy C. Prem and June T. Duke, Maple Heights, and Janice L. Greene, Warrensville Heights, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Apr. 16, 1964, Ser. No. 360,445
12 Claims. (Cl. 260-29.7)

1. The polymer derived from the polymerization of a mixture of

- (1) from about 10 to 70% by weight of cyclobutene-1,2-dicyanide,
- (2) from about 30 to 90% by weight of at least one conjugated diolefin, and
- (3) from about 0 to 60% by weight of at least one other vinyl monomer which is copolymerizable with (1) and (2).

3,314,911

COLLOIDAL SILICA CONTAINING LATICES OF HYDROFORMYLATED POLYMERS OF CONJUGATED DIENES

Neville Leverne Cull, Atlantic Highlands, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed June 24, 1964, Ser. No. 377,473
3 Claims. (Cl. 260-29.7)

1. In a method for preparing films from a hydroformylated liquid polymer of a conjugated diolefin in which the hydroformylated polymer is emulsified with an anionic emulsifier and the emulsified polymer laid down as a film, the improvement which comprises adding 2 to 5 wt. percent, based on polymer, of a polyoxyethylated alkyl phenol and at least two parts by weight of a colloidal silica per 100 parts by weight of polymer to the emulsion prior to laying it down as a film whereby smooth, wrinkle-free films are obtained.

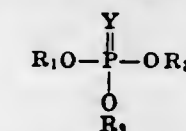
3,314,912

EPOXY RESIN COMPOSITIONS CONTAINING TRI-ORGANO PHOSPHATE DILUENTS

Claude Thomas Bean, Jr., Niagara Falls, and Norman Bedziner, Buffalo, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Jan. 23, 1963, Ser. No. 253,300
12 Claims. (Cl. 260-30.6)

1. A composition consisting essentially of an uncured epoxy resin and, as a viscosity reducing diluent therefor, a phosphorus compound having the following formula:



wherein Y is selected from the group consisting of oxygen and sulfur, R₁ and R₂ are selected from the group consisting of methyl and phenyl, and R₃ is methyl; provided that when R₁ is phenyl, R₂ and R₃ when taken together form an ethylene group, said phosphorus compound being present in a proportion from about 2 to about 40 parts by weight per 100 parts of the epoxy resin.

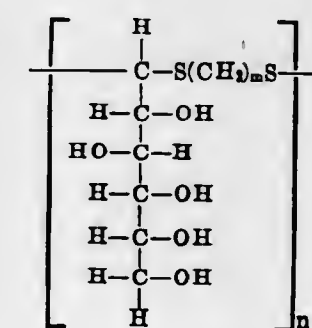
3,314,913

HEXOSE POLYTHIOMERCAPTAL ADHESIVES

Arlie J. Deutschman, Jr., and James W. Berry, Tucson, Ariz., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Jan. 18, 1965, Ser. No. 426,456
4 Claims. (Cl. 260-30.8)

1. A stable dimethyl sulfoxide solution of a linear hexose dimercaptal polymer having the structure:



wherein m is an integer of value 5-10 inclusive and the value of n is derived from the molecular weights inherent in intrinsic viscosities of 0.02-0.24 in N-methyl-2-pyrrolidone at 30° C., said linear polymer being free of acidic contaminants.

3,314,914

PROCESS FOR THE PRODUCTION OF STABILIZED ACRYLONITRILE POLYMER SOLUTIONS

Carl Hans Silling, Leverkusen, Ernst Roos, Cologne-Flietard, and Heino Logemann, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed June 22, 1962, Ser. No. 204,626
Claims priority, application Germany, July 7, 1961, F 34,378

4 Claims. (Cl. 260-32.2)

1. In the process for the production of a solution of an acrylonitrile polymer containing at least 80% of polymerized acrylonitrile the balance, if any, comprising at least one member selected from the group consisting of acrylates, methacrylates, vinyl acetate, acrylamide, methacrylamide, methyl vinyl ketone, styrene, vinyl pyridine, styrene sulphonic acid, acrylic acid, and methacrylic acid which is stabilized against discoloration upon standing and heating, which process comprises dissolving

such polymer in an organic solvent selected from the group consisting of dimethyl formamide, dimethyl acetamide, and ethylene glycol carbonate, and admixing with said solution 0.01 to 5% by weight of a stabilizer selected from the group consisting of

- (I) a thiosemicarbazide selected from the group consisting of acetyl thiosemicarbazide, propionyl thiosemicarbazide, benzoyl thiosemicarbazide, furoyl thiosemicarbazide, and 1-phenyl thiosemicarbazide,
- (II) benzene sulphonylthiosemicarbazide,
- (III) a combination of said thiosemicarbazide and a carboxylic acid anhydride selected from the group consisting of acetic anhydride, propionic anhydride, maleic anhydride, succinic anhydride, phthalic anhydride, benzoic anhydride, mucic anhydride, and benzoic-acetic mixed anhydride,
- (IV) a combination of benzenesulphonylthiosemicarbazide and a carboxylic acid anhydride as defined in (III) and a complex forming compound selected from the group consisting of salicylic acid, 8-hydroxy quinoline and ethylene diamine tetraacetic acid, and
- (V) a member selected from the group consisting of a thiosemicarbazone selected from the group consisting of benzaldehyde thiosemicarbazone and a mixture of said thiosemicarbazone, and a member selected from the group consisting of a carboxylic acid anhydride as defined in (III) and a complex-forming compound as defined in (IV).

3,314,915

MOLDING COMPOSITION FOR MAKING THERMAL BARRIERS AND METHOD OF MAKING SAME

Frederick P. Baughman, Wilmington, Del., and Bennie Frank Douglas, Norristown, Pa., assignors to Taylor Corporation, Valley Forge, Pa., a corporation of Delaware

No Drawing. Filed Nov. 2, 1962, Ser. No. 235,106
4 Claims. (Cl. 260—38)

1. A thermal barrier structure comprising a mixture of asbestos fibers from about 0.010 to about 0.50 inch of length and nylon staple from about 0.125 to about 2.50 inches in length, the weight of asbestos fibers being from about 45% to about 55% by weight of the total weight of the asbestos and nylon, said mixture of fibers being impregnated with a thermoplastic polymeric compound having a minimum hydrogen atom to carbon atom ratio of 1.3 to 1, the polymeric compound being from about 10% to about 14% by weight of the total of the weight of the nylon, asbestos and polymeric compound and with a phenolic aldehyde resin in an amount of from about 47% to about 52% by weight of the composition, said thermoplastic polymeric compound being rubber.

3,314,916

PROCESS FOR MAKING FIBER-FILLED POLYTETRAFLUOROETHYLENE PACKING MATERIALS

Martin E. Cupery, 7 Crestfield Road, Wilmington, Del. 19803

No Drawing. Filed July 22, 1963, Ser. No. 296,472
5 Claims. (Cl. 260—41)

1. A process for the manufacture of fibrous packing and gasket material which comprises mixing intimately a fibrous material with a dilute aqueous dispersion of colloidal polytetrafluoroethylene at a pH of at least about 8.5, neutralizing the resulting suspension to a pH of substantially between 5 and 7.5 to exhaust and coagulate the polymer, removing water, and recovering the fiber-filled polymer in a substantially dry, compressed, non-porous form.

2. A process for the manufacture of fibrous packing and gasket material which comprises mixing intimately a fibrous material with a dilute aqueous dispersion of colloidal polytetrafluoroethylene at a pH of substantially between 2 and 4, neutralizing the resulting suspension to a pH of substantially between 5 and 7.5 to exhaust and coagulate the polymer, removing water, and recovering the fiber-filled polymer in a substantially dry, compressed, non-porous form.

3,314,917

POLY- α -OLEFIN COMPOSITIONS CONTAINING THIONOPHOSPHINE SULFIDES AS STABILIZERS

Sheldon Herbstman, Bronx, N.Y., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 2, 1964, Ser. No. 356,974
4 Claims. (Cl. 260—45.7)

1. A stabilized poly- α -olefin composition comprising a solid poly- α -olefin formed from an α -mono-olefinic aliphatic hydrocarbon having from 2 to 10 carbon atoms and as a stabilizer therefor a stabilizing quantity of a hydrocarbylthionophosphine sulfide wherein the hydrocarbyl group contains from 1 to 30 carbon atoms.

3,314,918

OXYMETHYLENE POLYMERS STABILIZED WITH A COMBINATION OF CYCLIC AMIDINE COMPOUNDS AND AMINO SUBSTITUTED AMIDES

Frank M. Berardinelli, South Orange, and Thomas J. Dolce, Springfield, N.J., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 25, 1962, Ser. No. 233,143
12 Claims. (Cl. 260—45.8)

1. A moldable composition comprising an oxymethylene polymer, an amine-substituted symmetrical triazine and a tertiary amine compound containing from one to three terminal amide groups per tertiary amino nitrogen atom.

10. A moldable composition comprising an oxymethylene polymer, an amine-substituted symmetrical triazine, a tertiary amine compound containing from one to three terminal amide groups per tertiary amino nitrogen atom, and a phenolic stabilizer selected from the group consisting of alkylene bisphenols and alkyl phenols containing one to three alkyl groups, each of which has up to eight carbon atoms per alkyl group.

3,314,919

PROCESS OF MELT SPINNING ROUGH-SURFACED FIBERS

Elmer E. Most, Kinston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 22, 1962, Ser. No. 196,615
2 Claims. (Cl. 260—45.85)

1. In the production of textile fibers of polyhexamethylenedipamide by melt-spinning the polymer and drawing the spun filaments into oriented fibers, which fibers are conventionally delustered by incorporating TiO_2 in the polymer, the improvement for decreasing the dynamic friction of the fibers produced and increasing the resistance to light aging which comprises replacing at least part of the TiO_2 with 0.1 to 5%, based on the weight of the polymer, of a finely-divided normal terephthalate salt of a metal of atomic number 20 to 56 from Group II of the Periodic Table.

3,314,920 POLYESTER COMPOSITIONS HAVING IMPROVED DYEABILITY

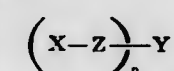
Ryoichi Sakurai, Shigemitsu Tsunawaki, Kiyoshi Nawata, Takeo Shima, and Iwao Fujimoto, all of Iwakuni-shi, Yamaguchi-ken, Japan, assignors to Teikoku Jinzo Kenshi Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed July 11, 1961, Ser. No. 123,963
Claims priority, application Japan, July 19, 1960, 35/31,564; Oct. 6, 1960, 35/40,931; Nov. 8, 1960, 35/44,862

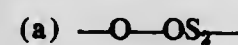
2 Claims. (Cl. 260—75)

1. A novel fiber-forming polyester composition having an improved dyeability which comprises

- (i) a linear fiber-forming polyester derived from the reaction of at least one acid component selected from the group consisting of terephthalic acid, functional derivatives thereof, and mixtures containing at least one of the foregoing acid components and a minor amount of an additional dibasic acid component or functional derivative thereof, with at least one glycol; and
- (ii) at least one organo sulfonic acid ester having the following formula:



wherein Z is selected from the group consisting of the following radicals:



and



n is an integer of 1 to 4, X and Y are each selected from the group consisting of aliphatic hydrocarbon residues having from 1 to 12 carbon atoms and aromatic radicals having a nucleus selected from benzene and naphthalene, said organo sulfonic acid ester being mixed such that the sulfonic acid bond is contained in said fiber-forming polyester in an amount of 0.1 to 20 mol percent of the carboxylic ester bonds contained in said fiber-forming polyester.

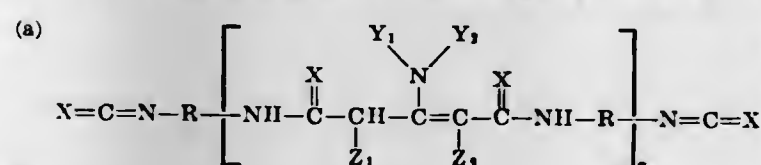
3,314,921

CHEMICAL PROCESS AND PRODUCT

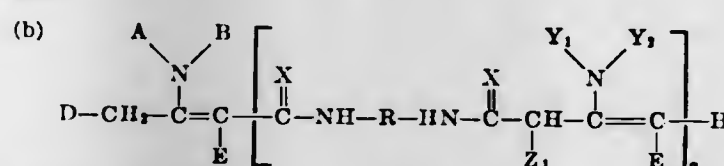
Glenn A. Berchtold, Watertown, Mass., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 21, 1961, Ser. No. 132,573
7 Claims. (Cl. 260—77.5)

1. A polyenamine selected from the group consisting of



and



wherein Y_1 , Y_2 , Z_1 , and Z_2 are radicals which are inert toward isocyanates and enamines, selected from the group consisting of hydrocarbon and substituted hydrocarbon radicals, said substituents being from the group consisting of nitro, alkoxy, aryloxy, thioalkoxy, and thioaryloxy; R is a bivalent non-polymetric hydrocarbon or substituted hydrocarbon radical which is inert toward isocyanates and enamines, said radicals having a molecular weight less than 500 and said substituents being from the group consisting of alkoxy, aryloxy and halo; q is a positive integer; X is selected from the group consisting of sulfur and oxygen; with the provisos that (1) Y_1 is joined to the nitrogen

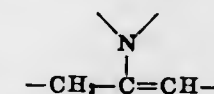
atom bearing Y_2 through a carbon atom selected from the group consisting of primary aliphatic and secondary aliphatic carbon atoms; (2) at least one of the pairs Y_1 - Y_2 and Z_1 - Z_2 is joined together to form a 5 to 7 membered ring, said members being selected from the group consisting of carbon atoms and not more than one heteroatom from the group consisting of sulfur, oxygen, and a tertiary nitrogen atom having a hydrocarbon radical attached thereto, and (3) any aliphatic carbon atom joining Y_2 to the nitrogen atom bearing Y_1 is selected from the group consisting of primary and secondary aliphatic carbon atoms.

3,314,922

POLYMERS AND PROCESS OF MAKING SAME Glenn A. Berchtold, Watertown, Mass., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 21, 1961, Ser. No. 132,574
9 Claims. (Cl. 260—77.5)

1. A composition obtained by reacting a polyurethane having a molecular weight of from 500 to about 20,000 and having at least two XCN-groups per molecule, wherein X is selected from the group consisting of oxygen and sulfur, with an organic compound having at least one enamine structural unit, said enamine unit being represented as follows:



wherein the residual valences are attached to carbon atoms, with the provisos that (a) at least one residual nitrogen valence is attached to an aliphatic carbon atom, (b) any aliphatic carbon atoms attached to the nitrogen atom are selected from the group consisting of primary and secondary carbon atoms, and (c) the compound is free from enamine-reactable substituents.

3,314,923

PROCESS FOR PREPARING IMIDE CONTAINING POLYISOCYANATES

Gerhard Muller, Leverkusen, and Rudolf Merten, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Nov. 26, 1963, Ser. No. 326,255
16 Claims. (Cl. 260—78)

1. A process for the preparation of polyisocyanates containing imide groups which comprises condensing a carbocyclic aromatic compound having functional groups selected from the class consisting of hydroxyl, mercapto, amino, carboxylic acid and cyclic carboxylic acid anhydrides, said compound containing at least one cyclic carboxylic acid anhydride group with a monomeric polyisocyanate at a temperature of at least about 50° C., said polyisocyanate being used in a stoichiometric excess over the functional groups in said compound.

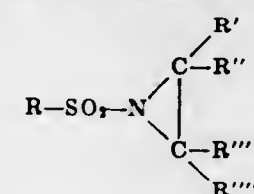
3,314,924

POLYMERIZATION OF N-SULFONYLAZIRIDINES

Morton H. Litt and Taghi G. Bassiri, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 22, 1963, Ser. No. 318,092
13 Claims. (Cl. 260—79.3)

1. The process for the polymerization of an N-sulfonylaziridine having the structure:



wherein R is selected from the group consisting of alkyl, aryl, alkylaryl, aralkyl and cycloalkyl; and R', R'', R''' and R'''' are members independently selected from the group consisting of hydrogen, alkyl, aryl, aralkyl and alkylaryl with at least two of said members being hydrogen, which comprises heating said N-sulfonylaziridine in its liquid state in the presence of an inorganic halide Friedel-Crafts reaction catalyst.

3,314,925

PROCESS FOR CHLOROSULFONATING SOLID POLYETHYLENE

Kenneth Francis King, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Dec. 27, 1963, Ser. No. 334,016
5 Claims. (Cl. 260—79.3)

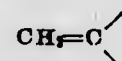
1. A process for chlorosulfonating solid polyethylene which comprises (1) contacting polyethylene with vapors of trichlorofluoromethane at a temperature of from about 115° C. to 135° C. and a partial pressure of said trichlorofluoromethane of from about 5 to 12 atmospheres thereby swelling said polyethylene, (2) contacting and reacting said swollen polyethylene with chlorine at about 1 to 3 atmospheres partial pressure and sulfur dioxide at about 0.4 to 1.5 atmospheres partial pressure while maintaining said temperature, and (3) recovering the chlorosulfonated polyethylene so produced; the polyethylene employed in step (1) having a melt index between about 0.2 and 20, and having its smallest dimension no greater than 0.003 inch prior to exposure to said trichlorofluoromethane.

3,314,926

VULCANIZATION

Gerard Kraus and Kent W. Rollmann, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed July 12, 1963, Ser. No. 294,759
15 Claims. (Cl. 260—79.5)

1. A process for improving the cure of a sulfur-vulcanizable elastomer selected from the group consisting of homopolymers and copolymers of conjugated dienes having from 4 to 8 carbon atoms and mixtures thereof and copolymers having a major amount of conjugated diene and a minor amount of a copolymerizable monomer containing a



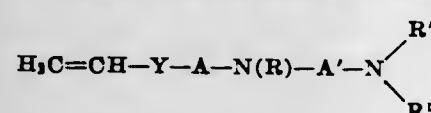
group which comprises intimately admixing with said elastomer at least one vulcanizing agent selected from the group consisting of elemental sulfur and a sulfur donor and an accelerator composition comprising a primary accelerator and an accelerator adjuvant to achieve delayed cure selected from the group consisting of substituted and unsubstituted pyridine, pyridine-N-oxide, quinoline, quinoline-N-oxide, isoquinoline and isoquinoline-N-oxide.

3,314,927

COPOLYMERS OF ALKYLENE POLYAMINE-SUBSTITUTED ALKYL VINYL ETHERS AND THIOETHERS

Everett J. Kelley, Moorestown, N.J., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed July 21, 1964, Ser. No. 384,240
4 Claims. (Cl. 260—79.7)

1. As a composition of matter, a copolymer of about 1/2 to 20% by weight of a polyamine of the formula



wherein

Y is selected from the group consisting of O and S, A is an alkylene group having 2 to 4 carbon atoms, A' is an alkylene group having 2 to 3 carbon atoms, R is selected from the group consisting of H and (C₁—C₄)-alkyl, and R' and R'' are individually selected from the group consisting of H and (C₁—C₈)-alkyl,

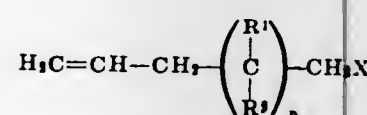
at least one other monomer selected from the group consisting of esters of acrylic acid and methacrylic acid with a (C₁—C₁₈)-alcohol selected from the group consisting of saturated aliphatic, saturated alicyclic, and aralkyl alcohols, vinyl esters of a saturated (C₁—C₄)-aliphatic carboxylic acid, and vinylaromatic hydrocarbons, 0 to 70% by weight of at least one compound selected from the group consisting of acrylonitrile, methacrylonitrile, vinyl chloride, and vinylidene chloride, 0 to 10% by weight of at least one other monomer having a polar group selected from the group consisting of amine, amide, and hydroxyl groups, and 0 to 2% by weight of an α,β-monoethylenically unsaturated carboxylic acid, said polymer imparting improved adhesive characteristics to coating or impregnating compositions containing it.

3,314,928

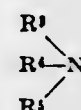
COPOLYMERS OF 1-ALKENES AND 1-ALKENES HAVING AN ω-N-SUBSTITUENT

Robert Bacskai, Berkeley, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
No Drawing. Filed Aug. 23, 1965, Ser. No. 481,910
7 Claims. (Cl. 260—87.5)

1. A solid dyeable product prepared by copolymerizing a hydrocarbon mono-1-alkene having 2 to 10 carbon atoms and an ω-monohalo-mono-1-alkene of the formula



wherein n is an integer from 0 to 8, X is halogen of atomic number 17 to 35 and R¹ and R² are hydrogen or lower alkyl groups, wherein the mol ratio of ω-monohalo-1-monoalkene to mono-1-alkene is in the range of 1:99 and 3:7, with a catalyst comprising a hydrocarbyl aluminum compound wherein the hydrocarbyl groups contain 1 to 10 carbon atoms, the ratio of hydrocarbyl groups to aluminum is greater than 1 and the remaining valences of aluminum are satisfied by halogen atoms and a vanadium halide wherein the halogens are of atomic number 17 to 35, titanium halide wherein the halogens are of atomic number 17 to 35 or vanadium oxychloride and aminating the product of the copolymerization with ammonia, an amine of the formula



wherein R³ and R⁴ are individually hydrogen or hydrocarbyl groups free of ethylenic and acetylenic unsaturation and having 1 to 16 carbon atoms and R⁵ is a hydrocarbyl group free of ethylenic and acetylenic unsaturation and having 1 to 16 carbon atoms or a heterocyclic amine having a secondary or tertiary nitrogen in the heterocyclic ring and the nitrogen content of said product is from about 0.1 to 10 percent, based on said product.

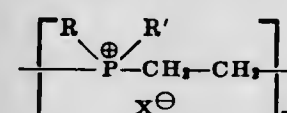
3,314,929

QUATERNARY PHOSPHORUS COMPOUNDS AND METHOD OF PREPARING SAME

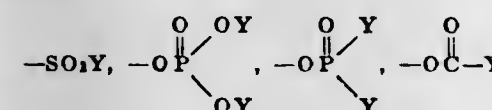
Michael McKay Rauhut, Norwalk, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Original application Sept. 6, 1960, Ser. No. 53,902, now Patent No. 3,206,496, dated Sept. 14, 1965. Divided and this application June 26, 1964, Ser. No. 378,418

4 Claims. (Cl. 260—89.1)

1. A homopolymeric di-substituted-ethylene-phosphonium compound derived by polymerization and composed of the recurring structural unit



wherein R and R' each represent a member selected from the group consisting of mono-substituted and unsubstituted, branched and straight chain saturated alkyl having from 1 to 12 carbon atoms, and cyclohexyl, said substituents being selected from the group consisting of cyano, phenyl, lower alkoxy, carbalkoxy, carboxy, sulfo and amido, X is an anion selected from the group consisting of halogen, sulfate, phosphite, phosphate, tetraphenylboride $\text{B}(\text{C}_6\text{H}_5)_4$



wherein Y in the last four moieties is selected from the group consisting of phenyl, alkyl, having from 1 to 18 carbon atoms, and alkenyl having from 1 to 18 carbon atoms, and n represents a value greater than 2.

3,314,930

BUTENE-1 POLYMERIZATION CATALYST

Roger M. Nagel, Pennington, N.J., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed Dec. 27, 1962, Ser. No. 247,496

3 Claims. (Cl. 260—93.7)

1. A process for polymerizing butene-1 which comprises contacting butene-1 with a catalyst comprising an alkyl aluminum sesquihalide wherein the alkyl groups contain 2 to 6 carbon atoms, titanium trichloride-aluminum trichloride obtained by reducing titanium tetrachloride with aluminum, and potassium iodide in a molar ratio of 0.1 to one mol of titanium trichloride-aluminum trichloride per mol of alkyl aluminum sesquihalide and 0.1 to 0.5 mol of potassium iodide per mol of alkyl aluminum sesquihalide.

3,314,931

POLYMERIZATION IN NON-AQUEOUS SYSTEMS

Pauls Davis, Gibraltar, and Oskar E. H. Klopfer, Bloomfield Hills, Mich., assignors, by mesne assignments, to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
No Drawing. Filed Mar. 6, 1961, Ser. No. 93,334

6 Claims. (Cl. 260—94.2)

1. In the method of polymerizing butadiene with an alfin catalyst under anhydrous conditions to yield polybutadiene having a dilute solution viscosity in the range of about 5 to 10, the improvement which comprises contacting at least a part of the butadiene with the catalyst and thereafter adding tertiary alkyl mercaptan to the polymerization mass whereby the extent of polymerization of the butadiene is regulated by the added mercaptan.

3,314,932 CHROMIUM COMPLEX MIXED AZO DYESTUFFS

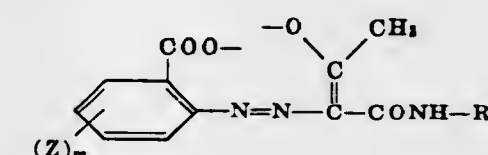
Walter Scholl, Cologne-Mulheim, and Gerhard Dittmar, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Jan. 30, 1964, Ser. No. 341,415
Claims priority, application Germany, Feb. 19, 1963, F 39,054

8 Claims. (Cl. 260—145)

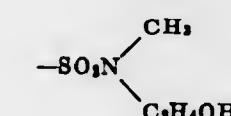
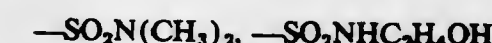
1. An asymmetrical chromium mixed complex azo dyestuff of the formula



wherein K denotes a cation, X is the radical of a monoazo dyestuff, and Y is the radical of a monoazo dyestuff differing from X and being of the formula:



wherein Z stands for $-\text{SO}_2\text{NH}_2$, $-\text{SO}_2\text{NHCH}_3$,



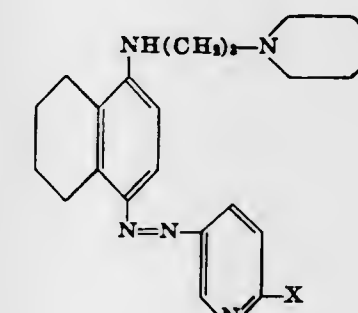
$-\text{SO}_2\text{NH}$ - isopropyl, $-\text{SO}_2\text{CH}_3$, $-\text{SO}_2\text{C}_2\text{H}_5$, $-\text{NO}_2$, Cl, or hydrogen, m stands for an integer ranging from 1 to 2, and R₁ represents a monocyclic six-membered aryl radical having a lower alkyl group as a substituent in each o-position relative to the carbon atom attached to the $-\text{CONH}-$ group.

3,314,933

PYRIDYLAZO COMPOUNDS

Edward F. Elsager and Leslie M. Werbel, Ann Arbor, Mich., assignors to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan
No Drawing. Filed Aug. 30, 1963, Ser. No. 305,866
3 Claims. (Cl. 260—156)

1. A member of the class consisting of 1-{3-[(5,6,7,8-tetrahydro-4-(3-pyridylazo)-1-naphthyl)amino]propyl}piperidine compounds of the formula



and non-toxic acid-addition salts thereof; where X is a member of the class consisting of hydrogen and methoxy.

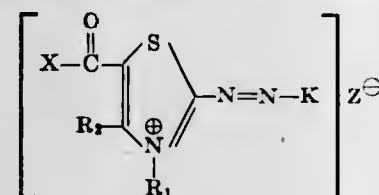
3,314,934

BASIC THIAZOLE-AZO DYES

Dieter Leuchs, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Dec. 30, 1963, Ser. No. 334,599
Claims priority, application Germany, Jan. 3, 1963, B 70,207

6 Claims. (Cl. 260—158)

1. A dye of the formula



wherein

K represents a radical selected from the class consisting of N-dimethylaniline, N-dimethyl-m-toluidine, N-methyl-N-hydroxyethyl-m-toluidine, N-methyl-N-cyanoethyl-aniline, N-dimethyl-m-chloroaniline, 2-phenylindole, 1-methyl-2-phenylindole, 1,3,3-trimethyl-2-cyanomethylene-indolenine, 1,3,3-trimethyl-2-methylene-indolenine, 1,3-dimethyl-2-cyanomethylene-benzimidazolidine and 1,3-dimethyl-2-carbamoylmethyl-methylene-benzimidazolidine

X represents a radical selected from the class consisting of methyl, phenyl, ethoxy, hydroxy, phenylamino, 4-chlorophenylamino, 2,4-dimethoxyphenylamino and butylamino,

R₁ represents a radical selected from the class consisting of methyl and ethyl,

R₂ represents a radical selected from the class consisting of methyl and phenyl, and

Z represents a colorless anion.

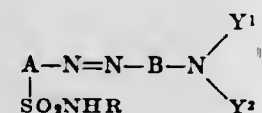
3,314,935

MONOAZO DYESTUFFS

Gerald Booth, George Trapp Douglas, James Stuart Hunter, and Eric Leslie Johnson, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Jan. 3, 1964, Ser. No. 335,661
Claims priority, application Great Britain, Oct. 4, 1957, 31,143/57

4 Claims. (Cl. 260—206)

1. The monoazo dyestuffs of the formula:



wherein

A is an arylene radical selected from the class consisting of phenylene and naphthylene radicals and any further substituents on said phenylene radical are selected from the class consisting of chlorine, bromine, lower alkyl, lower alkoxy and trifluoromethyl; R is selected from the class consisting of β-chloroethyl, β-bromoethyl, β-γ-dichloropropyl, β-γ-dibromopropyl, γ-chloro-β-hydroxypropyl and γ-bromo-β-hydroxypropyl;

B is an arylene radical selected from the class consisting of 1:4-phenylene, 1:4-naphthylene and 1:2-naphthylene radicals, and any further substituents on said arylene radical are selected from the class consisting of chlorine, bromine, lower alkyl, lower alkoxy and acetyl-amino;

Y¹ is selected from the class consisting of hydrogen, lower alkyl, hydroxy lower alkyl, acetoxy lower alkyl and β-lower alkoxy ethyl;

and Y² is selected from the class consisting of hydrogen, lower alkyl, hydroxy lower alkyl, β-aminoethyl, β-cyanoethyl and acetoxy lower alkyl.

3,314,936

PROCESS FOR THE PRODUCTION OF ETHERS OF ORGANIC POLYHYDROXY COMPOUNDS

Geoffrey R. Ames, Redhill, Surrey, England, assignor to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Aug. 14, 1963, Ser. No. 302,218
Claims priority, application Great Britain, Sept. 10, 1962, 34,519/62

3 Claims. (Cl. 260—209)

3. A process for the direct conversion of saccharides into saccharide ethers which comprises reacting a saccharide containing free hydroxyl groups with an α-haloalkyl ether, the said saccharide being dissolved in an inert organic liquid which has the ability to dissolve carbohydrates, said liquid being selected from the group consisting of dimethylformamide, dimethylacetamide, dimethylsulphoxide, N-acetylmorpholine, and N-formylpiperidine, the reaction being applied in a system consisting solely of the saccharide, the α-haloalkyl ether, and the inert organic liquid.

3,314,937

PROCESS FOR PRODUCING HIGHLY POLYMERIZED DESOXYRIBONUCLEIC ACIDS

Roger Vendrely and Colette Vendrely (born Randavel), Villejuif, and Jean Philippe Simon Vallée, Grenoble, France; said Roger Vendrely and said Colette Vendrely assignors of one-fourth to said Vallée and three-fourths to Centre Nationale de la Recherche Scientifique, Paris, France, a public establishment of France
No Drawing. Filed July 28, 1964, Ser. No. 385,805
Claims priority, application France, July 30, 1963, 943,181, Patent 1,371,944

5 Claims. (Cl. 260—211.5)

1. A process for the manufacture of highly polymerized desoxyribonucleic acids which comprises contacting sterilized and alcohol-washed animal tissue containing said acids with solid sodium chloride crystals, subjecting the mass thus obtained to a thermic shock in a semi-solid medium to remove adhering proteins and facilitate extraction of desoxyribonucleoprotein; and splitting the latter into free nucleic acids and protein.

3,314,938

METHOD OF PREPARING 2,6-DICHLOROPURINE AND 2,6-DICHLOROPURINE RIBOFURANOSYL
Hideaki Kawashima, 2-87 Nagaura-machi, Yokosuka-shi, Kanagawa-ken, Japan; Izumi Kumashiro, 647 Osone-cho, Kohoku-ku, Yokohama-shi, Kanagawa-ken, Japan; and Tadao Takenishi, 13 Tamagawa-Noge-cho, Setagaya-ku, Tokyo, Japan
No Drawing. Filed Nov. 30, 1964, Ser. No. 414,853
Claims priority, application Japan, Dec. 6, 1963, 38/65,643; May 25, 1964, 39/29,231

5 Claims. (Cl. 260—211.5)

1. A method of preparing a purine derivative selected from the group consisting of 2,6-dichloropurine and 2,6-dichloro-9-(2',3',5'-tri-O-acetyl-β-D-ribofuranosyl) purine, which comprises heating the corresponding hypoxanthine derivative selected from the group consisting of hypoxanthine 1-N-oxide and 2',3',5'-tri-O-acetyl-inosine 1-N-oxide with phosphoryl chloride in the presence of an amine.

3,314,939

PHOTOINITIATING COMPOUNDS PREPARED BY ESTERIFYING CELLULOSIC MATERIAL WITH SUBSTITUTED ANTHRAQUINONES

Norman Thomas Notley, London, England, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed July 6, 1962, Ser. No. 208,090

9 Claims. (Cl. 260—214)

1. A cellulose compound selected from the group consisting of cellulose, cellulose esters of fatty acids of 2-4

carbon atoms and cellulose alkyl and aryl ethers containing from 1-7 carbon atoms, having attached to the glucose units thereof a polynuclear quinone nucleus of the anthraquinone series, said nucleus having two intracyclic carbonyl radicals in a conjugated ring, there being at least one aromatic carbocyclic ring fused to said conjugated ring; said compound being characterized in that a carbon atom in a glucose unit is linked to a carbon atom of the anthraquinone nucleus through a linkage selected from a group consisting of carbonamide, sulfonamide, carboxylic acid ester and sulfonic acid ester linkages, there being an anthraquinone radical substitution per glucose unit of at least .0003.

3,314,940

POLYSACCHARIDE DERIVATIVES AND PREPARATION THEREOF

José Thérèse Lemmerling, Edegem, and Johan Lodewijk Verelst, Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel-Antwerp, Belgium, a Belgian company
No Drawing. Filed Oct. 1, 1962, Ser. No. 227,563
Claims priority, application Great Britain, Oct. 2, 1961, 35,570/61

5 Claims. (Cl. 260—215)

1. A process for preparing a sulfobenzoyl ester of a polysaccharide compound having free hydroxyl groups which comprises reacting at a temperature between about room temperature and about 100° C. said polysaccharide compound with a member selected from the group consisting of m-halogenosulfonylbenzoic acid and p-halogenosulfonyl benzoic acid in the presence of an organic base.

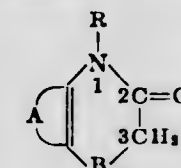
3,314,941

NOVEL SUBSTITUTED PYRIDODIAZEPINS

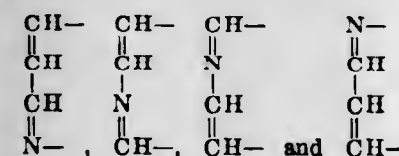
Ruddy Littell, River Vale, N.J., and Duff Shederic Allen, Jr., Dobbs Ferry, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed June 23, 1964, Ser. No. 377,406

15 Claims. (Cl. 260—239.3)

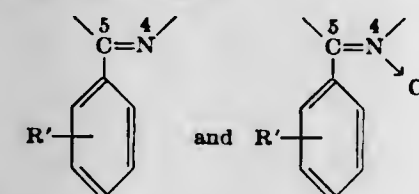
1. A compound selected from the group consisting of compounds of the formula:



wherein R is selected from the group consisting of hydrogen and lower alkyl, A represents a nitrogen atom and the three carbon atoms which completes the 6-membered pyridine ring and which is selected from the group consisting of

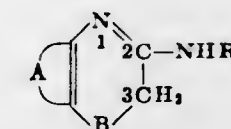


and B represents a carbon-nitrogen linkage which completes the 7-membered diazepine ring and which is selected from the group consisting of

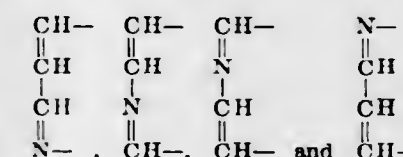


wherein R' is selected from the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy, nitro, amino and trifluoromethyl; and the pharmaceutically acceptable non-toxic acid-addition and lower alkyl quaternary ammonium salts thereof.

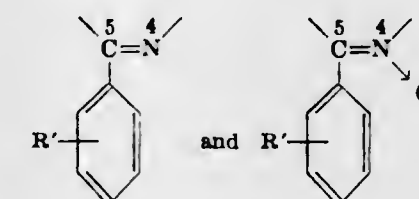
11. A compound selected from the group consisting of compounds of the formula:



wherein R is selected from the group consisting of hydrogen and lower alkyl, A represents a nitrogen atom and the three carbon atoms which completes the 6-membered pyridine ring and which is selected from the group consisting of



and B represents a carbon-nitrogen linkage which completes the 7-membered diazepine ring and which is selected from the group consisting of



wherein R' is selected from the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy, nitro, amino and trifluoromethyl; and the pharmaceutically acceptable non-toxic acid-addition and lower alkyl quaternary ammonium salts thereof.

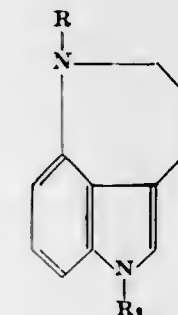
3,314,942

3,4,5,6-TETRAHYDRO-1H-AZEPINO(4,3,2-cd) INDOLES

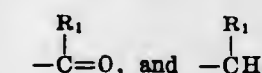
Jackson B. Hester, Jr., Portage, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Aug. 6, 1964, Ser. No. 387,994

13 Claims. (Cl. 260—239.3)

1. A compound selected from the group consisting of (1) 3,4,5,6-tetrahydro-1H-azepino[4,3,2-cd]indoles having the formula:

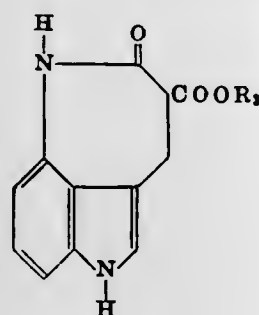


wherein R is selected from the group consisting of hydrogen,



wherein R₁ is selected from the group consisting of hydrogen and alkyl of one to three carbon atoms, inclusive, R₂ is selected from the group consisting of hydrogen and alkyl of one to four carbon atoms, inclusive, and (2) acid addition salts thereof.

4. A 5-oxo-3,4,5,6-tetrahydro-1H-azepino[4,3,2-cd]indole-4-carboxylic acid alkyl ester having the formula:



wherein R_3 is alkyl of one to four carbon atoms, inclusive.

3,314,943

PREPARATION OF 6-KETO- $\Delta^5(10)$ -19-NOR STEROIDS

Albert Bowers and Otto Halpern, Mexico City, Mexico, assignors to Syntex Corporation, Panama, Panama, a corporation of Panama
No Drawing. Filed July 9, 1963, Ser. No. 293,891
8 Claims. (Cl. 260—239.55)

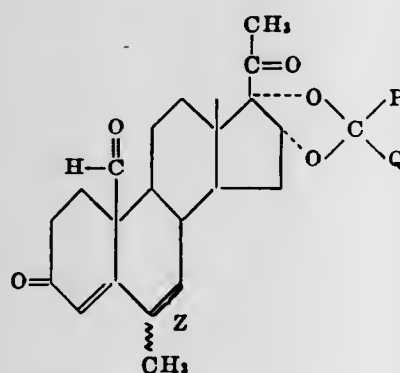
1. A process for the production of 3-acyloxy 6-keto- $\Delta^5(10)$ -19-nor-steroids selected from the group consisting of the androstane, pregnane and sapogenin series which comprises reacting a 3-acyloxy- Δ^5 -19-hydroxy steroid selected from the group consisting of the androstane, pregnane and sapogenin series with an excess of an oxidation agent derived from chromic acid for at least 3 hours.

3,314,944

6-METHYL-19-NOR STEROIDS AND INTERMEDIATES THEREOF

Patrick A. Diassi, Westfield, and Raymond C. Erickson, Metuchen, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 29, 1964, Ser. No. 407,513
4 Claims. (Cl. 260—239.55)

1. A compound selected from the group of steroids having the formula



wherein P is selected from the group consisting of hydrogen, lower alkyl, halo lower alkyl, monocyclic cycloalkyl, monocyclic cycloalkyl lower alkyl, monocyclic aryl, monocyclic aryl lower alkyl, monocyclic heterocyclic and monocyclic heterocyclic lower alkyl; Q is selected from the group consisting of lower alkyl, halo lower alkyl, monocyclic cycloalkyl, monocyclic cycloalkyl lower alkyl, monocyclic aryl, monocyclic aryl lower alkyl, monocyclic heterocyclic and monocyclic heterocyclic lower alkyl; and together with the carbon to which they are joined P and Q is selected from the group consisting of monocyclic cycloalkyl and monocyclic heterocyclic and Z is selected from the group consisting of a single and double bond.

3,314,945

6-FORMYL PREGNADIENES

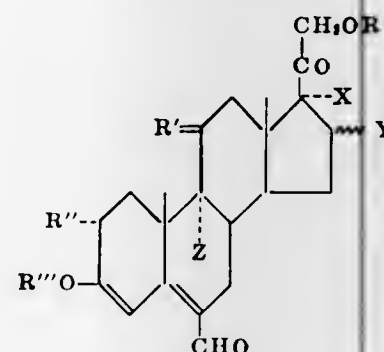
Bruno Camerino, Bianca Patelli, and Roberto Sciaky, all of Milan, Italy, assignors to Società Farmaceutici Italia, Milan, Italy, a corporation of Italy

No Drawing. Filed July 12, 1965, Ser. No. 471,450

Claims priority, application Italy, July 15, 1964, 15,418/64

24 Claims. (Cl. 260—239.55)

3. A steroid compound of the formula:



wherein R is an acyl group of a carboxylic acid having up to 9 carbon atoms;

R' is selected from the group consisting of $(\alpha H)\beta Cl$, O , $(\alpha H)\beta OH$, $(\alpha H)\beta OR$ wherein R has the above meaning;

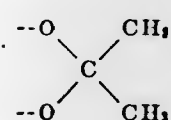
R'' is selected from the group consisting of H and CH_3 ;

R''' is T-A where T is F, Cl, Br and A is a linear alkylene radical which may be substituted with chlorine and having from 2 to 8 carbon atoms;

X is selected from the group consisting of H and OH;

Y is selected from the group consisting of H, αOH , αCH_3 and βCH_3 ;

X and Y together may form the group



Z is selected from the group consisting of F and Cl.

3,314,946

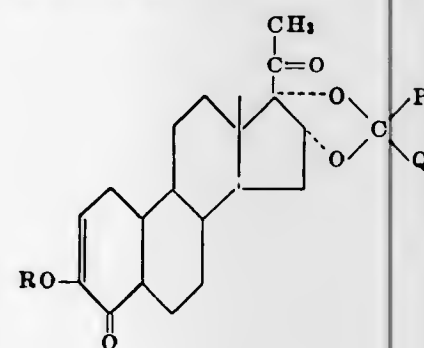
16 α ,17 α -ACETONIDES OF 19-NOR PREGNANE DERIVATIVES AND INTERMEDIATES IN THE PREPARATION THEREOF

Josef Fried, Chicago, Ill., and Mariano Andrew Guiducci, Edison, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

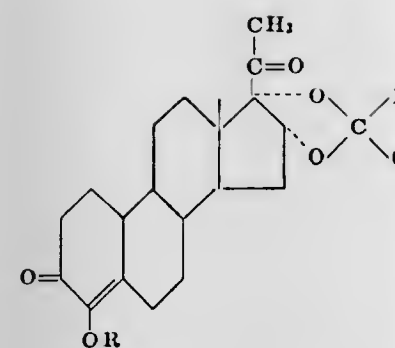
No Drawing. Filed June 8, 1966, Ser. No. 555,976

10 Claims. (Cl. 260—239.55)

1. A compound selected from the group consisting of steroids of the formulae:



and



wherein R is selected from the group consisting of hydrogen and the acyl radical of a hydrocarbon carboxylic acid of less than twelve carbon atoms; P and Q each represents a member of the group consisting of hydrogen, lower alkyl, halo-lower alkyl, monocyclic aromatic, monocyclic aromatic lower alkyl, monocyclic heterocyclic, monocyclic heterocyclic lower alkyl, and, together with the carbon atoms to which they are attached, P and Q are selected from the group consisting of cycloalkyl and monocyclic heterocyclic.

3,314,947

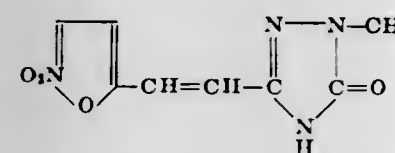
1-METHYL-3-[2-(5-NITRO-2-FURYL)VINYL]- Δ^2 -1,2,4-TRIAZOLIN-5-ONE

Louis Edmond Benjamin, Norwich, N.Y., assignor to The Norwich Pharmacal Company, a corporation of New York

No Drawing. Filed Oct. 23, 1964, Ser. No. 406,178

2 Claims. (Cl. 260—240)

1. The compound of the formula:



3,314,948

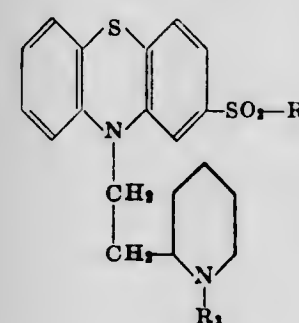
HETEROCYCLIC COMPOUNDS

Jany Renz, Jean-Pierre Bourquin, and Hans Winkler, Basel, Conrad Bruschweiler, Birsfelden, Basel-Land, and Gustav Schwarb, Neu-Altschwil, Basel-Land, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed July 17, 1963, Ser. No. 295,836
Claims priority, application Switzerland, July 19, 1962, 8,708/62, 8,709/62; Oct. 23, 1962, 12,407/62, 12,408/62

3 Claims. (Cl. 260—243)

1. A compound selected from the group consisting of the compound of the formula:



in which each of R_1 and R_2 is a lower alkyl radical, and the acid addition salt of said phenothiazine with an acid selected from the group consisting of non-toxic, pharmaceutically acceptable organic acid and inorganic acid.

3,314,949

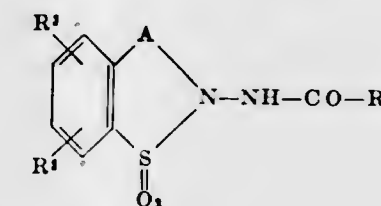
2-SUBSTITUTED AMINO-2H-1,2,4-BENZOTHIADIAZINE 1,1-DIOXIDES

Peter H. L. Wel, Upper Darby, and Stanley C. Bell, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

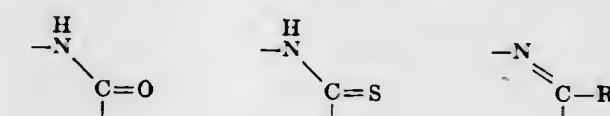
No Drawing. Filed Feb. 14, 1964, Ser. No. 344,820

7 Claims. (Cl. 260—243)

5. A compound of the formula



where A is selected from the group of



and R^4 is selected from the group of hydrogen and lower alkyl; R^1 is selected from the group consisting of an alkyl of less than six carbon atoms; and R^2 and R^3 are selected from the group consisting of hydrogen, chloro, lower alkyl, lower alkoxy, trifluoromethyl, dichloromethyl and nitro.

3,314,950

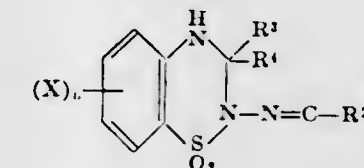
2-ALKYLIDENEAMINO-2H-1,2,4-BENZOTHIADIAZINE 1,1-DIOXIDES AND RELATED COMPOUNDS

Peter H. L. Wel, Upper Darby, and Stanley C. Bell, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

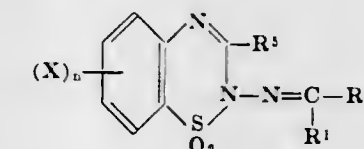
No Drawing. Filed Feb. 14, 1964, Ser. No. 344,830

5 Claims. (Cl. 260—243)

1. A compound selected from the group consisting of those of the formula



and



wherein R^1 is selected from the group consisting of hydrogen and alkoxy of less than six carbon atoms; R^2 is selected from the group consisting of lower alkyl and phenyl lower alkyl, and together with the carbon to which they are joined R^1 and R^2 is cyclohexylidene phenyl and indolylidene; R^3 is selected from the group consisting of hydrogen, alkyl of less than six carbon atoms and haloalkyl of less than six carbon atoms; R^4 is selected from the group consisting of hydrogen, alkyl of less than six carbon atoms, haloalkyl of less than six carbon atoms, and phenyl, and together R^3 and R^4 is oxo ($O=$); R^5 is selected from the group consisting of hydrogen and alkyl of less than six carbon atoms; X is selected from the group consisting of hydrogen, alkyl of less than six

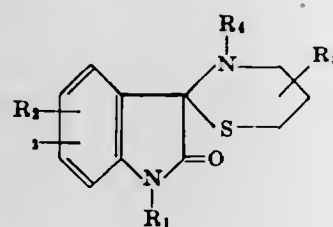
carbon atoms, chloro, bromo, trifluoromethyl, dichloromethyl, nitro and alkoxy of less than six carbon atoms; and n is a positive integer less than four.

3,314,951

SPIRO(INDOLINE-3,2'-(2H-1,3)THIAZIN)-2-ONES AND DERIVATIVES THEREOF

Milton Wolf, West Chester, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 24, 1964, Ser. No. 354,456
13 Claims. (Cl. 260-243)

1. A compound selected from the group consisting of those having the formula:



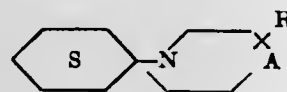
wherein R_1 is selected from the group consisting of hydrogen, lower alkyl, phenyl, benzyl, di(lower)alkylamino, (lower)alkyl, lower alkanoyl and chloro(lower)alkanoyl; R_2 and R_3 are both selected from the group consisting of hydrogen, lower alkyl, phenyl, benzyl, di(lower)alkylamino, (lower)alkyl, lower alkanoyl, chloro(lower)alkanoyl, halogen, hydroxy, nitro, lower alkoxy, lower alkoxy-carbonyl, amino and carboxamido; R_4 is selected from the group consisting of hydrogen, lower alkyl and carbamoyl and R_5 is selected from the group consisting of hydrogen, lower alkyl, 2-thienyl, morpholino, pyrrolidino and piperazino.

3,314,952

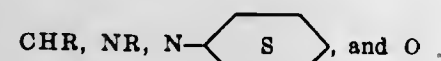
PROCESS FOR MAKING TERTIARY AMINES

Ralph M. Robinson, Waukegan, Ill., assignor to Abbott Laboratories, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Sept. 1, 1964, Ser. No. 393,723
8 Claims. (Cl. 260-247)

1. A process of preparing tertiary amines of the formula



wherein A is selected from the group consisting of



and wherein R is selected from the group consisting of hydrogen and loweralkyl, consisting essentially of hydrogenating a mixture of phenol and a heterocyclic reactant selected from the group consisting of pyridine, piperidine, morpholine, and piperazine, carrying in the heterocyclic moiety a substituent R, with gaseous hydrogen at a pressure between atmospheric pressure and 100 p.s.i.g. at a temperature between 60° C. and 120° C. in the presence of catalytic amounts of palladium.

3. The process of claim 1 wherein equimolar amounts of said phenol and said heterocyclic reactant are subjected to hydrogenation.

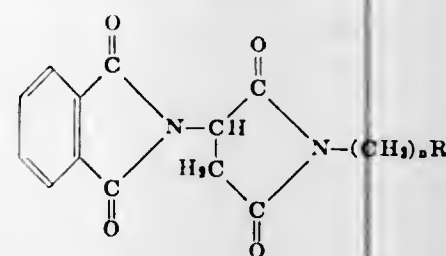
8. The process of claim 3 wherein said heterocyclic reactant is morpholine.

3,314,953

1-SUBSTITUTED-3-PHTHALIMIDO-2,5-DIOXOPYRROLIDINES

Aristotle J. Vazakas, Ambler, and Walter W. Bennetts, Jr., Richboro, Pa., assignors to Richardson-Merrell Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 16, 1964, Ser. No. 352,324
17 Claims. (Cl. 260-247.2)

1. A compound of the formula:



in which n is a small whole number from 1 to 3, inclusive, and R is selected from the group consisting of lower alkoxy, diloweralkylamino, dibenzylamino, morpholino, pyrrolidino, diloweralkoxyphenyl, and benzhydryl.

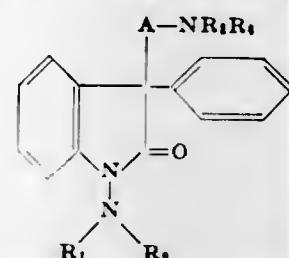
7. The compound 1-(3-morpholinopropyl)-3-phthalimido-2,5-dioxopyrrolidine.

3,314,954

1-(DILOWERALKYLAMINO)-3-(AMINOLOWER-ALKYL)-3-PHENYLOXINDOLES

Robert F. Meyer, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan
No Drawing. Filed Dec. 9, 1964, Ser. No. 417,210
6 Claims. (Cl. 260-247.2)

1. A member of the class consisting of 1-(di-lower alkyl - amino) - 3 - (amino - lower alkyl) - 3 - phenyloxindole compounds, having the formula



pharmaceutically-acceptable acid-addition salts thereof, and pharmaceutically-acceptable quaternary ammonium salts thereof; where each of R_1 and R_2 is a member of the class consisting of methyl and ethyl; R_3 and R_4 are members of the class consisting of hydrogen, lower alkyl, and, together with the nitrogen atom to which they are attached, morpholino, 4-methyl-1-piperazinyl, alkylene-imino, and lower alkyl-alkyleneimino, said alkyleneimino group having more than 3 and fewer than 6 carbon atoms; and A is a member of the class consisting of ethylene, propylene, and trimethylene.

5. 1 - (dimethylamino) - 3 - (2 - morpholinoethyl) - 3-phenyloxindole.

3,314,955

PROCESS FOR PROVIDING 2,4,6-TRIFLUOROPYRIMIDINE

Max M. Boudakian and Charles W. Kaufman, Hamden, Conn., assignors to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia
No Drawing. Filed Feb. 11, 1964, Ser. No. 343,966
3 Claims. (Cl. 260-251)

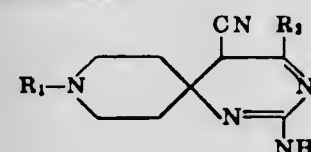
1. A process for the preparation of 2,4,6-trifluoropyrimidine which comprises reacting 2,4,6-trichloropyrimidine with potassium fluoride in tetramethylene sulfone solvent at a reaction temperature range of from about 75° C. to about 220° C., and isolating said fluorinated derivative from the reaction mixture.

3,314,956

1,3,9-TRIAZASPIRO[5.5]UNDECA-1,3-DIENE-CARBONITRILES

Milton Wolf, West Chester, and Albert A. Mascitti, Norristown, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 22, 1965, Ser. No. 489,427
17 Claims. (Cl. 260-256.4)

1. A compound selected from the group consisting of those having the formula:



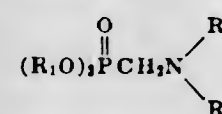
wherein R_1 is selected from the group consisting of hydrogen, lower alkyl, phen(lower)alkyl, phenyl, lower alkyl-phenyl, lower alkoxyphenyl, halophenyl and di(lower)alkylamino(lower)alkyl; R_2 is selected from the group consisting of amino and hydroxy; and the pharmaceutically acceptable acid addition salts thereof.

3,314,957

AMINOMETHYL-PHOSPHONATES

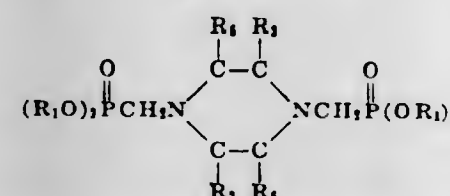
Lester Friedman, Beachwood, Ohio, assignor, by mesne assignments, to Union Carbide Corporation, a corporation of New York
No Drawing. Filed May 21, 1963, Ser. No. 282,118
10 Claims. (Cl. 260-268)

1. A compound having the formula



where R_1O is the residue of an oxy lower alkylated polyhydric alcohol having 2 to 8 hydroxyl groups from which one of the alcoholic hydrogen atoms has been removed from one group and R_2 is an alkenyl group having 3 to 4 carbon atoms.

6. A compound having the formula



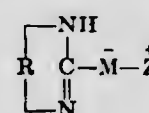
where R_1O is the residue of an oxy lower alkylated polyhydric alcohol having 2 to 8 hydroxyl groups from which one of the alcoholic hydrogen atoms has been removed from one group, and R_2 is selected from the group consisting of hydrogen and methyl not over two of R_2 being methyl.

3,314,958

QUATERNARY AMMONIUM ENOLATES OF UREA DERIVATIVES

Reginald L. Wakeman, Philadelphia, Pa., and Joseph F. Coates, Washington, D.C., assignors, by mesne assignments, to Millmaster Onyx Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed June 29, 1964, Ser. No. 378,992
7 Claims. (Cl. 260-258)

1. A quaternary ammonium enolate of a cyclic derivative of a urea and an aliphatic acid selected from the group consisting of dicarboxylic, hydroxycarboxylic, aldcarboxylic and ketocarboxylic acids, having the following structure:



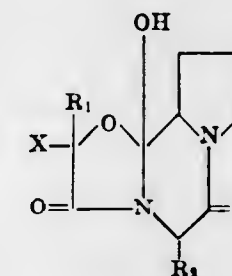
wherein Z is the cation of a quaternary ammonium compound having a single nitrogen atom and a phenol coefficient of at least 100 with respect to both *Staphylococcus aureus* and *Salmonella typhosa* at 20° C., and having an alkyl group of from 8 to 22 carbon atoms attached to the quaternary ammonium nitrogen atom; M is a member of the group consisting of oxygen and sulfur, and R is the residue of the said dicarboxylic, hydroxy-, aldo- or keto-carboxylic acid, said cyclic derivative being a member of the group consisting of parabanic acid, barbituric acid, diethylbarbituric acid, ethylphenylbarbituric acid, dialuric acid, uric acid, alloxan, acetylacetoneurea, uracil, thiouracil, xanthine and hydantoin.

3,314,959

INTERMEDIATES FOR THE SYNTHESIS OF ERGOT ALKALOIDS

Albert Hofmann, Böttingen, Switzerland, and Albert Frey, Essex Fells, and Hans Ott, Convent Station, N.J., assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel Switzerland
No Drawing. Filed July 26, 1965, Ser. No. 474,947
Claims priority, application Switzerland, May 10, 1961, 5,497/61; Nov. 8, 1962, 13,069/62; Oct. 26, 1964, 13,837/64, 13,838/64
11 Claims. (Cl. 260-268)

1. A compound of the formula,



wherein R_1 is selected from the group consisting of hydrogen and lower alkyl, R_2 is selected from the group consisting of hydrogen, lower alkyl and benzyl, and X is selected from the group consisting of NH_2 and COO -lower alkyl.

3,314,960

BENZISOTHIAZOL GLUTARIMIDES

Meier E. Freed and Scott J. Childress, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 25, 1964, Ser. No. 392,029
6 Claims. (Cl. 260-281)

2. 2-(1,1,3-trioxo-1,2-benzisothiazol-2-yl) glutarimide.

3,314,961

HETEROCYCLIC CARBOXYLIC ACIDS AND THEIR PRODUCTION

Jürg Rutschmann, Oberwil, Basel-Land, and Hans Kobel and Emil Schreier, Basel, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland
No Drawing. Filed Aug. 27, 1964, Ser. No. 392,648
Claims priority, application Switzerland, Aug. 29, 1963, 10,637/63; Oct. 24, 1963, 13,053/63
6 Claims. (Cl. 260-285.5)

1. 6-methyl- $\Delta^{8,9}$ -ergolene-8-carboxylic acid.

4. A process for the production of lysergic acid, which comprises rearranging 6-methyl- $\Delta^{8,9}$ -ergolene-8-carboxylic acid by addition of an aqueous base thereto at an elevated temperature and adjusting the pH of the resulting lysergic acid solution to the isoelectric point of lysergic acid.

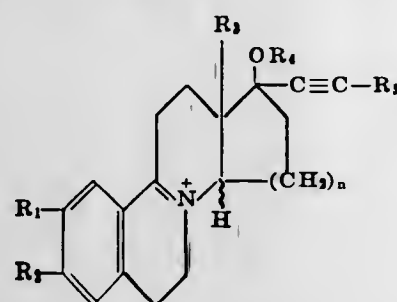
3,314,962 ETHYNYLATED QUINOLIZINIUM

Richard E. Brown, Hanover, and Robert I. Meltzer, Rockaway, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Original application Nov. 15, 1963, Ser. No. 323,896, now Patent No. 3,261,839, dated July 19, 1966. Divided and this application Oct. 11, 1965, Ser. No. 494,868

4 Claims. (Cl. 260—286)

1. A compound selected from the group consisting of those having the formula:



wherein R_1 and R_2 is each a member of the group consisting of hydrogen, hydroxy and lower alkoxy; R_3 is a member of the group consisting of hydrogen and lower alkyl; R_4 is a member selected from the group consisting of hydrogen and acyl and R_5 is a member of the group consisting of hydrogen, halogen, lower alkoxy, aryl and lower alkyl and n is an integer of 1 to 2.

2. Cis - 2,3,3a,5,6,12,12a - octahydro - 1 - hydroxy - 1-ethynyl - 8 - methoxy - 12a - methyl - 1H - benzo[a]cyclopenta[f]quinolizinium perchlorate.

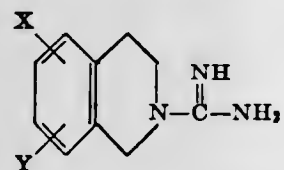
3,314,963

AZABENZOCYCLOALKANE-N-CARBOXAMIDINES
Richard C. Koch, Waterford, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 19, 1963, Ser. No. 310,154

4 Claims. (Cl. 260—288)

1. A compound of the formula:



wherein X and Y are each members selected from the group consisting of hydrogen, and halogen, with at least one of said X and Y always being halogen.

3,314,964

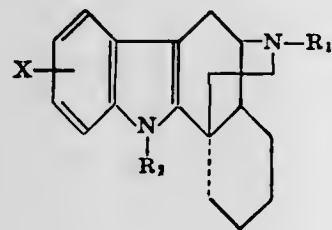
TRANS INDOLOMORPHINANS AND PROCESS FOR THEIR PRODUCTION

John Shavel, Jr., Mendham, and Glenn Curtis Morrison, Dover, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Jan. 16, 1964, Ser. No. 338,028

10 Claims. (Cl. 260—288)

1. A compound selected from the group consisting of those having the formula:



wherein R_1 is a member of the group consisting of lower alkyl of 1 to 6 carbons, cycloalkylmethyl, aralkyl, alkenyl, R_2 is a member of the group consisting of hydrogen and lower alkyl and X is a member of the group consisting of hydrogen, lower alkyl, halogen, lower alkoxy, nitro, and amino, and the non-toxic pharmaceutically acceptable acid addition salts thereof.

2. Trans-2-methylcyclohex[j]indolo[2,3-f]morphane.

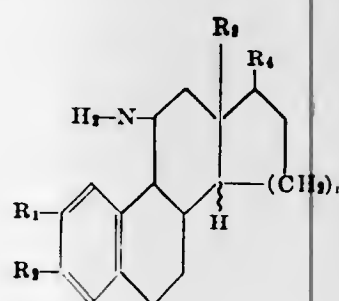
3,314,965

11- OR 12-AMINO SUBSTITUTED QUINOLIZINES
Robert J. Stanaback, Morristown, Richard E. Brown, Hanover, and Robert I. Meltzer, Rockaway, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Aug. 25, 1965, Ser. No. 482,607

4 Claims. (Cl. 260—288)

1. A compound of the formula:



wherein R_1 and R_2 are each a member of the group consisting of hydrogen, hydroxy, lower alkoxy and R_3 and R_4 taken together form a methylene dioxy group; R_5 is a member of the group consisting of hydrogen methyl and ethyl; R_6 is a member of the group consisting of hydrogen, $-\text{COOR}_6$, in which R_6 is a member of the group consisting of lower alkyl and n is an integer of from 1 to 2.

2. 1,2,3,3a,5,6,10b,11,12,12a-decahydro - 8 - methoxy-11-amino-benz[a]cyclopenta[f]quinolizine.

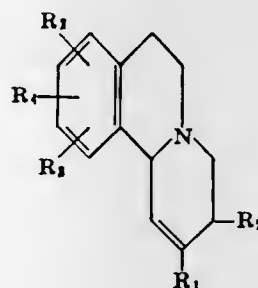
3,314,966

SUBSTITUTED BENZO[a]QUINOLIZINES
Arnold Brosi, Verona, N.J., and Hans Bruderer, Riehen, and Otto Schnider, Basel, Switzerland, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 6, 1964, Ser. No. 357,796
Claims priority, application Switzerland, Aug. 31, 1962, 10,375/62

12 Claims. (Cl. 260—249)

1. A compound selected from the group consisting of compounds of the formula



wherein R_1 is selected from the group consisting of lower alkyl, lower alkenyl, phenyl-lower alkyl, phenyl, lower alkoxy phenyl, lower alkyl phenyl and halophenyl; R_2 is selected from the group consisting

of hydrogen, lower alkyl, lower alkenyl, phenyl-lower alkyl, phenyl, lower alkoxyphenyl, lower alkyl phenyl and halo-phenyl and R_3 , R_4 and R_5 are selected from the group consisting of individually, hydrogen, lower alkyl, lower alkoxy and when two adjacent substituents are taken together, lower alkylendioxy

and their pharmaceutically acceptable salts.

3. 2,3-diethyl - 9,10 - dimethoxy - 1,4,6,7 - tetrahydro-11bH-benzo[a]quinolizine.

3,314,967

ALPHA PHENYL - BETA - (2-TETRAHYDROFURYL) ALPHA-TERTIARY AMINO ALKYL PROPIONITRILES

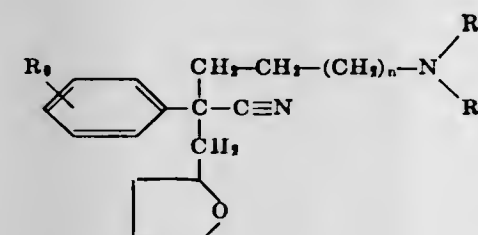
Marcel Pesson, Paris, France, assignor to Societe anonyme dite: Laboratoire Roger Bellon, Neuilly-sur-Seine, France, a French company

No Drawing. Filed Oct. 2, 1964, Ser. No. 401,260

Claims priority, application Great Britain, Oct. 4, 1963, 39,261/63

8 Claims. (Cl. 260—294)

1. A compound selected from the group consisting of an α -phenyl- β -(2-tetrahydrofuryl) propionitrile of the formula



wherein:

R_3 and R_4 are members selected from the group consisting of lower alkyl and R_3 and R_4 , together with the nitrogen atoms to which they are attached, form the piperidine ring and the morpholine ring;

R_5 is a member selected from the group consisting of hydrogen, lower alkoxy and phenoxy; and n indicates the numerals 0 and 1,

and their pharmaceutically acceptable in acid addition salts.

2. A compound selected from the group consisting of the α -phenyl - α -[2-(piperidino)ethyl]- β -(2-tetrahydrofuryl) propionitrile and its pharmaceutically acceptable acid addition salts.

3,314,968

SALTS OF NAPHTHENOYL SARCOSE

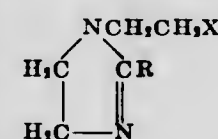
Reginald L. Wakeman, Philadelphia, Pa., and Zdzislaw W. Dudzinski, Hasbrouck Heights, N.J., assignors, by mesne assignments, to Millmaster Onyx Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed May 23, 1963, Ser. No. 282,578

2 Claims. (Cl. 260—309.6)

1. Barium naphthenoyl sarcosinate.

2. An imidazoline salt of naphthenoyl sarcosine, wherein the imidazoline has the following structure:



in which R is the residue of a fatty acid or a naphthenic acid and in which X is OH or NH_2 .

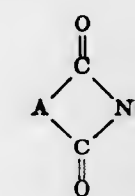
3,314,969 PROCESS FOR THE PREPARATION OF N-POLYHALOETHYLTHIO COMPOUNDS

Roy B. Flay, Concord, Calif., assignor to Chevron Research Company, a corporation of Delaware

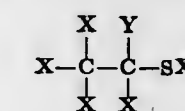
Filed May 3, 1965, Ser. No. 456,027

6 Claims. (Cl. 260—326)

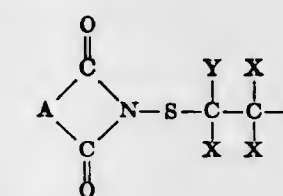
1. In the process for making N-polyhaloethylthio compounds wherein an acyl nitrogen compound of the formula



wherein M is an alkali metal cation and A is a divalent radical of from 1 to 10 carbons and having from 0 to 1 heteroatoms selected from the group consisting of oxygen and nitrogen is reacted in the presence of a polar solvent, with a polyhaloethylsulfenyl halide of the formula



wherein X' and Y are halogen of atomic number 17 to 35, and X is selected from the group consisting of hydrogen and halogen of atomic number 17 to 35, with the proviso that at least 2 X 's are halogen, to form a reaction mixture comprising as a solid product an N-polyhaloethylthio compound of the formula



wherein A , Y and X are as previously defined; the improved purification procedure which comprises isolating said N-polyhaloethylthio compound from the aforesaid reaction mixture as a polar solvent dispersion; contacting said dispersion with an aromatic hydrocarbon solvent of from 6 to 10 carbons at a temperature in the range of about 50° to 100° C. for a time sufficient to dissolve substantially all of the N-polyhaloethylthio compound; separating the polar solvent phase from the aromatic hydrocarbon solvent phase; cooling the aromatic hydrocarbon phase and isolating therefrom the purified N-polyhaloethylthio compound.

3. The process according to claim 1 wherein said polar solvent is an aqueous polar solvent, and said aromatic hydrocarbon solvent is toluene.

4. The process according to claim 3 wherein A is

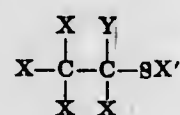


and said polyhaloethylsulfenyl halide is 1,1,2,2-tetrachloroethylsulfenyl chloride.

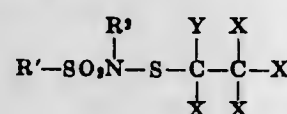
5. In the process for making N-polyhaloethylthio compounds wherein an acyl nitrogen compound of the formula



wherein M is an alkali metal cation, R' is a radical of not more than 10 carbons and is selected from the group consisting of aliphatic hydrocarbyl, aromatic hydrocarbyl, halohydrocarbyl and dialkylamino and R² is a radical of not more than 10 carbons and is selected from the group consisting of aliphatic hydrocarbyl, aromatic hydrocarbyl and halohydrocarbyl, is reacted in the presence of a polar solvent with a polyhaloethylsulfenyl halide of the formula



wherein X' and Y are halogen of atomic number 17 to 35, and X is selected from the group consisting of hydrogen and halogen of atomic number 17 to 35, with the proviso that at least 2 X's are halogen, to form a reaction mixture comprising as a solid product an N-polyhaloethylthio compound of the formula



wherein R', R², Y and X are as previously defined; the improved purification procedure which comprises isolating said N-polyhaloethylthio compound from said reaction mixture as a polar solvent dispersion; contacting said dispersion with an aromatic hydrocarbon solvent of from 6 to 10 carbons at a temperature in the range of about 50° to 100° C. for a time sufficient to dissolve substantially all of the N-polyhaloethylthio compounds; separating the polar solvent phase from the aromatic hydrocarbon solvent phase; cooling the aromatic hydrocarbon phase and isolating therefrom the purified N-polyhaloethylthio compound.

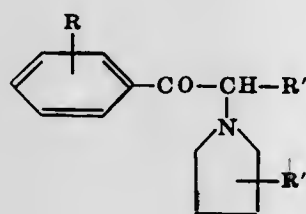
3,314,970

α-PYRROLIDINO KETONES

Ernst Seeger, Biberach an der Riss, Germany, assignor to Boehringer Ingelheim G.m.b.H., Ingelheim am Rhine, Germany, a corporation of Germany
No Drawing. Filed Oct. 14, 1964, Ser. No. 403,943
Claims priority, application Germany, Apr. 7, 1960, T 18,199

15 Claims. (Cl. 260—326.5)

1. A compound selected from the group consisting of α-pyrrolidino ketones of the formula



wherein

R is selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, hydroxyl and halogen, R' is selected from the group consisting of alkyl of 2 to 8 carbon atoms, inclusive, and alkenyl of 2 to 8 carbon atoms, inclusive, and R'' is selected from the group consisting of hydrogen and lower alkyl, and their non-toxic, pharmacologically acceptable acid addition salts.

4. 1-phenyl-2-pyrrolidino-butanone-(1).

3,314,971

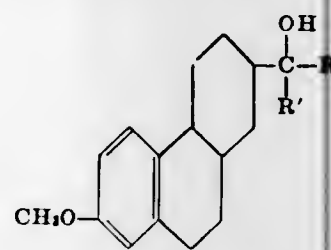
7-METHOXY-1,2,3,4,4a,9,10,10a-OCTAHYDRO-PHENANTHRENE-2-METHANOLS AND 7-PYRROLIDINO-2-ACETYL-1,2,3,4,4a,4b,5,6,10,10a-DECAHYDROPHENANTHRENE

Moses Wolf Goldberg and Lester Mischa Jampolsky, Upper Montclair, and Richard Wightman Kierstead, North Caldwell, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Original application Apr. 11, 1962, Ser. No. 186,651, now Patent No. 3,275,691, dated Sept. 27, 1966. Divided and this application May 26, 1966, Ser. No. 566,171

5 Claims. (Cl. 260—326.5)

1. A compound having the formula



wherein R is selected from the group consisting of hydrogen and lower alkyl and R' is selected from the group consisting of hydrogen, lower alkyl, vinyl and ethynyl.

5. 7-(1-pyrrolidinyl)-2-acetyl-1,2,3,4,4a,5,6,10,10a-decahydrophenanthrene.

3,314,972

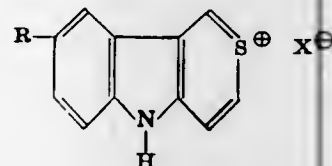
INDOLO[3,2-c]THIOPYRYLIUM COMPOUNDS AND INTERMEDIATES THEREFOR

Thomas E. Young, Bethlehem, Pa., and Peter H. Scott, Guilford, Conn., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed May 23, 1966, Ser. No. 551,904

8 Claims. (Cl. 260—326.9)

1. A compound of the formula:



wherein R is hydrogen, lower alkyl of 1 to 4 carbon atoms, or halogen; and X[⊖] is perchlorate or halide.

3,314,973

5-(N-METHYL-PYRROLIDYL)-DIBENZO[a,d]CYCLOHEPTA[1,4]DIENE OR ACID ADDITION SALTS THEREOF

Ernst Jucker, Ettingen, and Anton Ebnöther, Reinach, Basel-land, Switzerland, assignors to Sandoz Ltd., also known as Sandoz A.G., Basel, Switzerland

No Drawing. Filed Nov. 26, 1965, Ser. No. 510,030
Claims priority, application Switzerland, July 14, 1961, 8,265/61

3 Claims. (Cl. 260—326.3)

1. 5-{[1'-methyl-pyrrolidinyl-(3')-methyl]-dibenzo[a,d]-cyclohepta[1,4]diene or its physiologically acceptable acid addition salts.

3,314,974

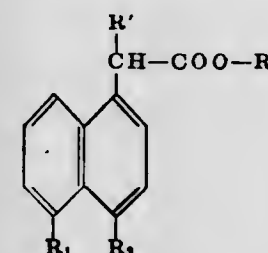
THIENYL-1-NAPHTHALENE ACETIC ACIDS AND RELATED COMPOUNDS

James S. Kaltenbronn, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed May 12, 1966, Ser. No. 549,439

6 Claims. (Cl. 260—332.2)

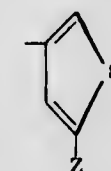
1. A compound of the formula



where R is a member of the class consisting of hydrogen, pharmaceutically-acceptable cations, lower alkyl and lower dialkylaminoalkyl; R' is a member of the class consisting of hydrogen and lower alkyl; one of R₁ and R₂ is hydrogen; and the other of R₁ and R₂ represents a member of the class consisting of a 2-thienyl substituent of the formula



and a 3-thienyl substituent of the formula



where Z is a member of the class consisting of hydrogen, bromine, and chlorine.

3,314,975

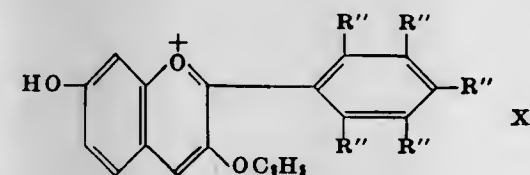
FLAVYLIUM COMPOUNDS AND METHODS OF USING THEM

Leonard Jurd, Berkeley, Calif., assignor to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application Jan. 25, 1963, Ser. No. 254,030, now Patent No. 3,266,903, dated Aug. 16, 1966. Divided and this application Dec. 26, 1963, Ser. No. 341,155

2 Claims. (Cl. 260—345.2)

1. A 3-phenoxy flavylum salt of the structure—



wherein each R'' is a radical selected from the group consisting of hydrogen, hydroxyl, and lower alkoxy and wherein X represents an anion selected from the group consisting of chloride and bromide.

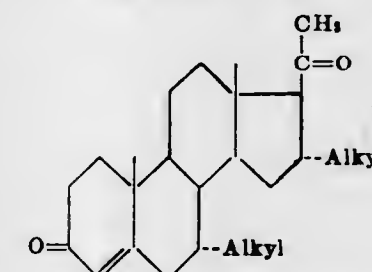
3,314,976

7,16-DIALKYL-PREGNANES

Colin Leslie Hewett, Bearsden, Glasgow, and Gilbert Frederick Woods, Bishopbriggs, Glasgow, Scotland, assignors to Organon Inc., West Orange, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 28, 1964, Ser. No. 399,891
Claims priority, application Great Britain, Oct. 4, 1963, 39,198/63; Mar. 4, 1964, 9,149/64
3 Claims. (Cl. 260—397.3)

1. Novel steroid compounds of the formula:



wherein the alkyl groups at carbon atoms 7 to 16 are saturated aliphatic hydrocarbon radicals having 1-4 carbon atoms.

3,314,977

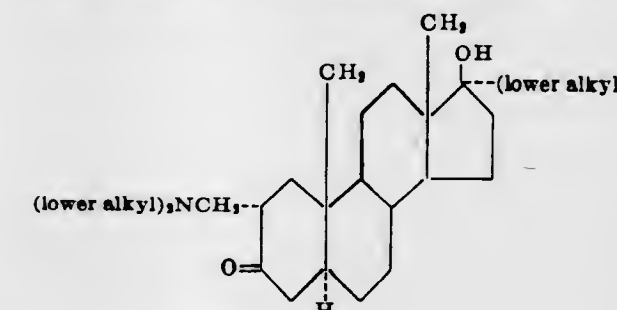
OPTIONALLY 17α-ALKYLATED 3-OXYGENATED 2α-DIALKYLAMINOMETHYL-5α-ANDROSTAN-17β-OLS AND ESTERS THEREOF

Raymond E. Counsell, Skokie, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed June 18, 1962, Ser. No. 203,015

10 Claims. (Cl. 260—397.4)

3. A compound of the structural formula



3,314,978

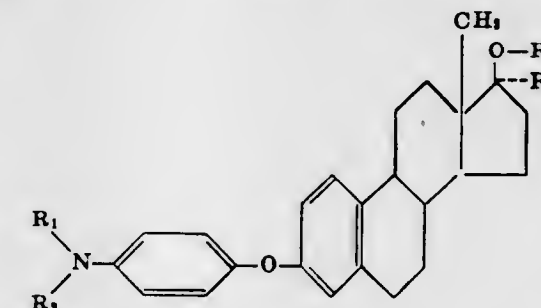
3-(p-AMINOPHENOXY)ESTRA-1,3,5(10)-TRIENES

David Darwin Evans, Staines, England, assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Sept. 27, 1965, Ser. No. 490,644
Claims priority, application Great Britain, Oct. 21, 1964, 43,018/64

5 Claims. (Cl. 260—397.5)

1. A member of the class consisting of 3-(p-aminophenoxy)estra-1,3,5(10)-triene compounds, having the formula



and pharmaceutically-acceptable salts thereof; where each of R₁ and R₂ is a member of the class consisting of hydrogen, methyl, and ethyl; R₂ is a member of the class consisting of hydrogen and lower alkanoyl; and R₁ is a member of the class consisting of hydrogen, methyl, ethyl, and ethynyl.

3,314,979

NOVEL BENZAMIDINES

Andre Allais, Les Lilas, and Pierre Girault, Paris, France, assignors to Roussel-UCLAF, Paris, France, a corporation of France.

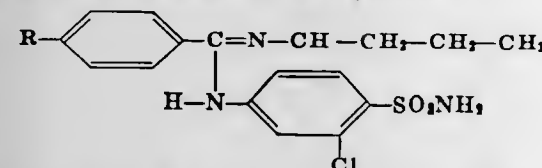
No Drawing. Filed Feb. 20, 1964, Ser. No. 346,107

Claims priority, application France, Feb. 25, 1963,

925,916; July 5, 1963, 940,550

6 Claims. (Cl. 260-397.7)

1. A compound selected from the group consisting of a N-n-butyl-benzamide of the formula



wherein R is selected from the group consisting of hydrogen, halogen and lower alkoxy having 1 to 6 carbon atoms and the non-toxic, pharmacologically acceptable acid addition salt.

3,314,980

COMPLEX ALKYLENE-BRIDGED DI(SILICON, GERMANIUM, TIN AND LEAD) POLYMERS AND THEIR PREPARATION

Bernard Rudner, Pittsburgh, Pa., and Mead S. Moores, Wilmington, Del., assignors to Koppers Company, Inc., a corporation of Delaware

No Drawing. Filed Oct. 24, 1963, Ser. No. 318,506

12 Claims. (Cl. 260-429)

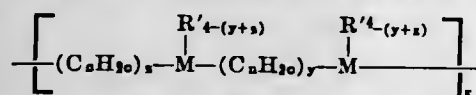
1. A method of making a mixture of monomeric and polymeric organometallic compounds, wherein

(a) said monomeric compounds have the formula



wherein R is alkyl having 2-12 carbon atoms, R' is a member selected from the group consisting of R, phenyl and hydrogen, M is a metal of Group IVA of the Periodic Table having an atomic number of 14-82 inclusive, X is a halogen, r is an integer having a value of 1-3, p is an integer having a value of 1-2, and the values of r and p being such that their sum is equal to 2-5, and

(b) said polymeric compounds have the formula:



wherein R' and M are as defined above; each C_2H_5 moiety directly bridges two metal atoms, y and z indicating the number of such independent bridges; n is an integer having one of the values 2 and 4; x is an integer having a value of 2-10, and y is an integer having a value of 2-3, and z is an integer having a value of 1-2, such that the sum of y plus z is not greater than four,

comprising reacting under anhydrous oxygen-free conditions a compound of the formula $R'_{p-1}MX_{m+1-p}$ wherein R', M, X and p are defined as above and m is the valence of said metal, with a hydrocarbon having 2-12 carbon atoms and containing sterically unhindered, non-aromatic unsaturation, aluminum, and hydrogen, at a temperature of 150-450° C. and under superatmospheric pressure.

3,314,981

LIQUID POLYTERPENE AND METHOD

Arthur R. Clark and Margaret M. Clark, both of P.O. Box 283, Spring Lake, N.J. 07762

No Drawing. Filed Mar. 11, 1965, Ser. No. 439,061

27 Claims. (Cl. 260-448)

8. A coordination complex of a polymerizable terpene and an anhydrous metal halide that is non-gaseous at ambient temperature having the general formula:



in which M is a polyvalent metal, R is a halide, and x and n are integers from 2 to 4.

3,314,982

ORGANOSILICON COMPOUNDS

Götz Koerner, Mulheim (Ruhr), and Gerd Rossmay, Altdorf (Ruhr), Germany, assignors to Th. Goldsmidt A.-G., Essen, Germany

No Drawing. Filed May 3, 1963, Ser. No. 277,680

Claims priority, application Germany, May 5, 1962, G 34,907

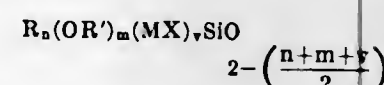
17 Claims. (Cl. 260-448.2)

1. A process for preparing organosilicon compounds containing the grouping Si-M-SH wherein M is a divalent hydrocarbon group which connects the silicon and sulphur atoms through a chain of three alkylene carbon atoms, which comprises subjecting a compound of the average formula $R_b(R'O)_a\text{SiMX}$, wherein M has the above meaning, X is an isothiuronium halide, R and R' are each selected from the group consisting of alkyl and aryl and a and b are average numerical values defined by

$$\begin{aligned} b &= 0-2 \\ a &= 1-3, \text{ and} \\ a+b &= 3, \end{aligned}$$

to alkaline cleavage.

9. A process for preparing organosilicon compounds containing the grouping Si-M-SH wherein M is a divalent hydrocarbon group which connects the silicon and sulphur atoms through a chain of three alkylene carbon atoms, which comprises subjecting a compound of the average formula



wherein

M has the above meaning, X is an isothiuronium halide, R and R' are each selected from the group consisting of alkyl and aryl, and n, m and r are average numerical values defined by

$$\begin{aligned} n &= 0-2.999 \\ m &= 0-2 \\ r &= 0.001-1, \text{ and} \\ (n+m+r) &= 1-3, \end{aligned}$$

to alkaline cleavage.

3,314,983

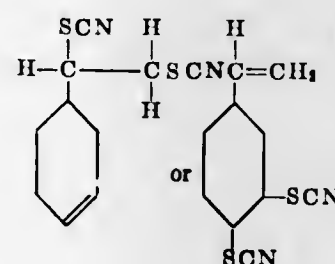
DITHIOCYANO DERIVATIVES OF VINYL CYCLOHEXENE-3

Eldon E. Stahly, 2812 NE. 27th St., Pompano Beach, Fla. 33064

No Drawing. Filed July 24, 1963, Ser. No. 297,192

3 Claims. (Cl. 260-454)

1. A compound of the formula



3,314,984

SYNTHESIS OF HALOGEN-CONTAINING NITRITES

Nathan Mayes, Ironia, and Ronald Michaels, Boonton, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed June 3, 1966, Ser. No. 555,015

6 Claims. (Cl. 260-467)

1. A process for preparing aliphatic halogen-containing acyl and diacyl nitrites comprising contacting nitrogen sesquioxide with a compound selected from the group consisting of perhaloalkyl acyl chloride, perhaloalkyl diacyl chloride, and a mixture thereof.

3,314,985

RECOVERY OF THE MONODIETHYLENE GLYCOL ESTER OF p-FLUOROPHENOXYACETIC ACID FROM A MIXTURE CONTAINING DIETHYLENE GLYCOL

Floro F. Frulla and Max M. Boudakian, Niagara Falls, N.Y., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

Filed June 13, 1958, Ser. No. 741,971

2 Claims. (Cl. 260-473)



1. In the recovery of the monodiethylene glycol ester of p-fluorophenoxyacetic acid from a mixture which consists essentially of from 10 percent to 30 percent by weight of the said ester, from 90 percent to 70 percent by weight of diethylene glycol, from 0 percent to 5 percent by weight of water, from 0 percent to 10 percent by weight of the di-diethylene glycol ester of p-fluorophenoxyacetic acid, from 0 percent to 5 percent by weight of p-fluorophenoxyacetic acid, and from 0 percent to 20 percent by weight of benzene, the aforesaid percentages being based upon the combined weight of the monodiethylene glycol ester of p-fluorophenoxyacetic acid and the diethylene glycol, the steps of extracting said mixture with benzene and water and forming a benzene phase and a water phase, and recovering the monodiethylene glycol ester of p-fluorophenoxyacetic acid from the benzene phase.

3,314,986

BENZOIC ACID ESTER OF M-(2-PRO-PYNYLOXY)PHENOL

Chester E. Pawloski, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,756

1 Claim. (Cl. 260-476)

m(2-propynyloxy)phenyl benzoate.

3,314,987 CATALYTIC REDUCTION OF FLUORINATED ESTERS

Leslie C. Case, 14 Lockeland Road, Winchester, Mass. 01890, and Tsoung-Yuan Yan, Paulsboro, N.J. (6-B Morris Ct. Apts., Gloucester, N.J. 08030)

No Drawing. Filed Dec. 15, 1965, Ser. No. 514,145

3 Claims. (Cl. 260-484)

1. The process for catalytically reducing perfluorinated diesters having the general formula $\text{ROOC}(\text{CF}_2)_n\text{COOR}$, wherein R is a lower alkyl radical, and n is a positive integer having a value of from 2 to 4, inclusive, which process comprises reacting said perfluorinated diester with hydrogen at pressures of from about 8000 to more than 16,000 p.s.i. and temperatures of from about 50-300° C., in the presence of from 20% to 300% by weight, based on the weight of the perfluorinated diester, of a copper-chromium oxide catalyst essentially free of uncombined alkaline earth oxide.

3. The process for catalytically reducing perfluoro-keto-esters having the general formula



wherein R is a lower alkyl radical, and n is an integer having a value of from 0 to 6, inclusive, which process comprises reacting said perfluoro-keto-ester with hydrogen at pressures of from about 8000 p.s.i. to more than 16,000 p.s.i. and temperatures of from about 50-300° C., in the presence of from 20% to 300% by weight, based on the weight of the perfluoro-keto-ester, of a copper-chromium oxide catalyst essentially free of uncombined alkaline earth oxide.

3,314,988

PROCESS FOR THE PREPARATION OF HYDROXYALKYL METHACRYLATES

Joseph W. Nemec, Rydal, Edward L. Wolfe, Furlong, and Sheldon N. Lewis, Willow Grove, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Jan. 2, 1964, Ser. No. 335,417

5 Claims. (Cl. 260-486)

1. A method for the preparation of hydroxyalkyl methacrylates, which comprises reacting in the temperature range of about 65° to about 130° C. in the presence of an inert, volatile, organic solvent, methacrylic acid with an alkylene oxide containing 2 to 4 carbon atoms in the presence of potassium methacrylate whereby an essentially 1:1 molar complex is formed between said potassium methacrylate and said methacrylic acid, said potassium methacrylate being used in amounts of about 2 to 8 mole percent based on said methacrylic acid, cooling the reaction medium at the conclusion of the reaction to a temperature of no higher than 10° C. such that said molar complex forms a precipitate and separating the product therefrom.

3,314,989

PROCESS OF PREPARING N-METHYL-5-NITROISOPHTHALIC ACID

Lawrence A. Patterson and George Brooke Hoey, Ferguson, Mo., assignors to Mallinckrodt Chemical Works, St. Louis, Mo., a corporation of Missouri

No Drawing. Filed July 1, 1963, Ser. No. 292,165

11 Claims. (Cl. 260-518)

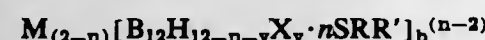
1. The method which comprises heating together 5-nitroisophthalic acid and an N-methyl amide selected from the group consisting of N,N'-dimethylurea and N,N'-dimethyl-5-nitroisophthalamide, to form N-methyl-5-nitroisophthalic acid.

3,314,990

SULFUR-CONTAINING BORON COMPOUNDS
Norman E. Miller, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 28, 1961, Ser. No. 141,537
17 Claims. (Cl. 260-551)

1. A compound of the formula



wherein

M is a cation of valence 1-3;

X is bonded to boron and is a monovalent group which is capable of bonding to nuclear carbon of a carbocyclic aromatic compound in place of hydrogen, and is (1) a group derived from an electrophilic reagent by direct attack on the boron cage, or (2) is a group derived by modification of the group in (1) by reduction, esterification, hydrolysis, oxidation, amidation, or diazotization;

R and R' are monovalent substituents on sulfur of up to 18 carbon atoms and are selected from the class consisting of alkyl, cycloalkyl, aryl, aralkyl and alkaryl;

n is an integer of 1 through 2;

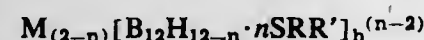
(2-n) represents the number of M cations present in the compound;

(n-2) represents the ionic charge of the group in brackets;

y is a cardinal number of 0 through (12-n); and

b is at least 1 and is equal to the valence of M.

15. In a process for the formation of a compound of the formula



wherein

M is a cation of valence 1-3;

R and R' are monovalent substituents on sulfur of up to 18 carbon atoms and are selected from the class consisting of alkyl, cycloalkyl, aryl, aralkyl and alkaryl;

n is an integer of 1 through 2;

(2-n) represents the number of M cations present in the compound;

(n-2) represents the ionic charge of the group in brackets; and

b is at least 1 and is equal to the valence of M, the step which comprises reacting a boron hydride selected from the class consisting of B₂H₆, B₃H₉, and B₁₀H₁₄ with an adduct of the formula RR'S·BH₃ wherein R and R' are defined as above, at a temperature of at least 50° C.

3,314,991

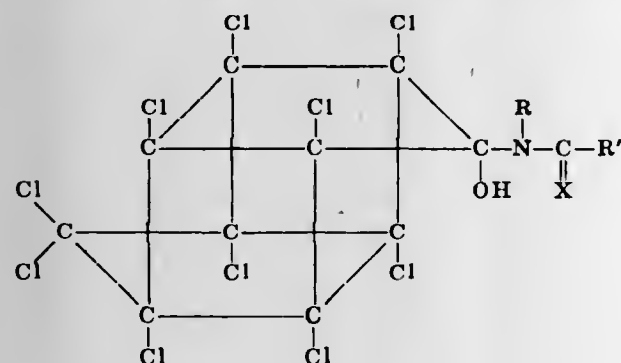
N-DECACHLORO-3-HYDROXYPENTACYCLO (5.3.0.0^{2,6}.0^{4,10}.0^{5,9})DECYL-3) UREAS

Edward D. Weil, Lewiston, and Keith J. Smith, Lockport, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Nov. 30, 1965, Ser. No. 510,659

6 Claims. (Cl. 260-553)

1.



where R is selected from the group consisting of hydrogen and lower alkyl, and R' is selected from the group consisting of amino and lower alkyl-substituted amino and X is selected from the group consisting of oxygen and sulfur.

3,314,992

1-(p-SEMICARBAZOMETHYL-BENZYL)-2-METHYL-HYDRAZINE SALTS

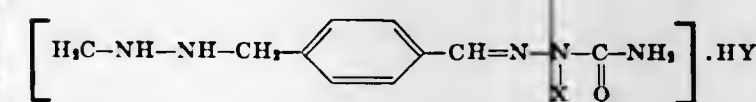
Ado Kaiser, Neu-Frenkendorf, and Paul Zeller, Allschwil, Switzerland, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Feb. 10, 1966, Ser. No. 526,370

Claims priority, application Switzerland, Mar. 5, 1965, 3,128/65

3 Claims. (Cl. 260-554)

1. A compound of the formula



in which X is hydrogen or lower alkyl and Y is the cation of an inorganic or organic acid.

3,314,993

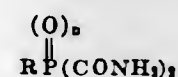
CARBAMOYL PHOSPHINES

Grace Peters Papp and Sheldon A. Buckler, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Sept. 11, 1963, Ser. No. 308,082

3 Claims. (Cl. 260-557)

1. A dicarbamoyl-substituted tertiary organic phosphine of the formula



wherein R is a member selected from the group consisting of substituted and unsubstituted, branched and straight chain alkyl of from 1 to 18 carbon atoms, cyclopentyl, cyclohexyl, substituted and unsubstituted phenyl, substituted and unsubstituted naphthyl, and n is selected from 0 and 1, wherein the substituents for alkyl are selected from the group consisting of cyano, phenyl, halogen, and lower alkoxy and the substituents for phenyl and naphthyl are selected from the group consisting of cyano, lower alkyl, halogen and lower alkoxy.

3,314,994

CONCENTRATED SOLUTIONS OF AURAMINE DYES

Fritz Schubert and Eberhard Luecke, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Dec. 3, 1963, Ser. No. 327,834

Claims priority, application Germany, Dec. 7, 1962, B 69,895; Dec. 18, 1962, B 70,021

6 Claims. (Cl. 260-566)

1. A concentrated solution containing from about 20 to about 60% by weight of a dye of the formula A⁺X⁻ where A⁺ represents the cation of an auramine selected from the class consisting of Auramine O and Auramine G and X⁻ represents an anion selected from the class consisting of SO₄²⁻, SO₃H⁻, NH₂SO₃⁻, ClSO₃⁻, CH₃OSO₃⁻ and C₂H₅OSO₃⁻, in an inert organic solvent which is miscible with water in all proportions, which is liquid at normal temperature and which has a boiling point above 80° C.

3,314,995

ALKYLENE OXIDE ADDUCTS OF BIS(2,4-DIAMINO-5-METHYL PHENYL)METHANE

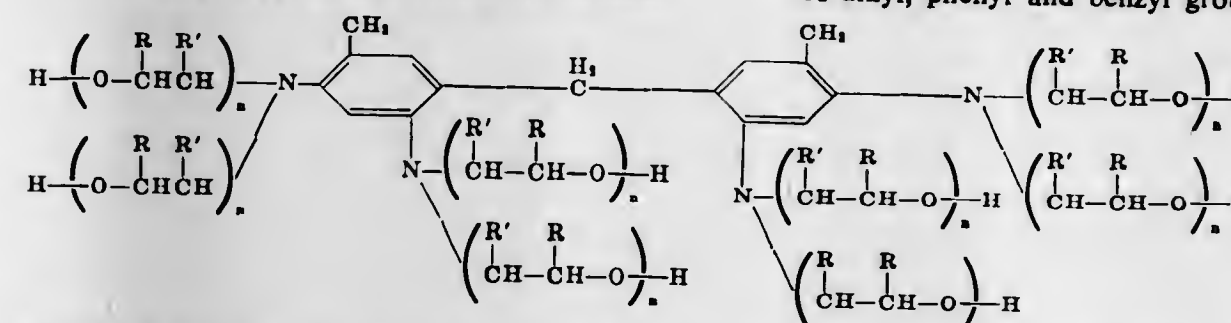
James M. Cross, New Martinsville, Clyde D. Campbell, Wheeling, and Sidney Metzger, New Martinsville, W. Va., assignors to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Dec. 9, 1963, Ser. No. 329,213

7 Claims. (Cl. 260-570)

1. Bis(2,4-diamino-5-methyl phenyl)methane at least two primary amino hydrogen atoms of which are oxalkylated.

2. Alkylene oxide adducts having the formula:



wherein R and R' are members selected from the group consisting of hydrogen, lower alkyl and phenyl and n is selected from the group consisting of 0 and a positive integer and is a positive integer on different nitrogen atoms at least twice in the molecule.

3,314,996

PROCESS FOR SEPARATING VICINAL AND NON-VICINAL TOLUENE DIAMINES

Benjamin J. Luberoff, Monsey, N.Y., and Daniel H. Gold, Plainfield, N.J., assignors to The Lummus Company, New York, N.Y., a corporation of Delaware

Filed May 21, 1963, Ser. No. 281,905

8 Claims. (Cl. 260-582)

1. A process for separating a non-vicinal toluene diamine from a solution containing a mixture of vicinal and non-vicinal toluene diamines comprising:

(a) contacting the solution with a saturated solution of a metallic compound, said metal being selected from the group consisting of metals having atomic numbers 22 through 30 and 40 through 48, thereby forming a precipitate containing said vicinal toluene diamine; and

(b) recovering non-vicinal toluene diamine from the solution.

3,314,997

DINITROHYDRAZINOETHANE

Joseph M. Greendorfer, Santa Clara, Calif., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

No Drawing. Filed Dec. 20, 1963, Ser. No. 332,245

1 Claim. (Cl. 260-583)

1,1-dinitro-2-hydrazinoethane.

3,314,998

METHOD FOR PRODUCING SALICYLALDEHYDE

Joseph Levy, Paramus, and Robert M. Lusskin, Haworth, N.J., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed July 10, 1964, Ser. No. 381,924

6 Claims. (Cl. 260-600)

6. The method of producing salicylaldehyde which comprises hydrolyzing an ester compound selected from the group consisting of tri-(alpha,alpha-dichloro-o-cresyl) phosphate and di-(alpha,alpha-dichloro-o-cresyl) carbonate in the presence of about an equal amount of alkali-free liquid water by heating the mixture of said ester compound and water with refluxing to a temperature of about 100° to about 110° C. for a period of about 7 to 10 hours and thereafter steam distilling the resulting salicylaldehyde from the reaction mixture.

PROCESS FOR THE PREPARATION OF ORGANIC DISULPHIDES

Pierre Bapseres and Michel Biensan, Pau, France, assignors to Societe Nationale des Petroles d'Aquitaine, Paris, France, a corporation of France

Filed Nov. 15, 1963, Ser. No. 324,907

10 Claims. (Cl. 260-608)

1. A method for producing a disulphide having two identical hydrocarbon radicals, each radical having one to seven carbon atoms selected from the group consisting of alkyl, phenyl and benzyl groups, by reacting a mer-

captan having the same radical with sulphur, which consists in:

(a) dissolving sulphur in a quantity of the same disulphide which is to be produced and to which has been added 0.04 to 5.0% of an amine having 1 to 7 carbon atoms selected from the group consisting of alkylamines and alkanolamines,

(b) contacting the solution of sulphur in said amount of disulphide with the mercaptan at a temperature between 0° C. and the boiling point of the disulphide, and

(c) removing from the resulting liquid the fraction of unreacted mercaptan and recovering the product which remains.

3,315,000

SULFUR COMPOUNDS FROM ALLENE

Derek L. Ransley, Berkeley, Calif., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Filed Nov. 6, 1963, Ser. No. 321,675

4 Claims. (Cl. 260-609)

1. Process for the production of bis-hydrocarbyl thiopropane-1,3 compounds in a liquid phase reaction which comprises reacting allene with a thiol of the formula

RSH

wherein R is a saturated hydrocarbon radical containing from 6 to 18 carbon atoms, inclusive, wherein said reaction is catalyzed by free radicals at a temperature in the range 50-60° C., at a pressure sufficient to maintain said liquid phase and at a mol ratio of said thiol to allene of at least about 2; thereby producing the corresponding bis-thiopropene-1,3 compound.

3,315,001

PRODUCTION OF ALKYL CHLORIDES

Elliott L. Weinberg, 8 Clovis Road, East Brunswick, N.J. 08816

No Drawing. Filed Dec. 16, 1963, Ser. No. 330,606

4 Claims. (Cl. 260-652)

1. Process for preparing alkyl chlorides which comprises subjecting a monoalkoxy phosphorus dichloride to chlorination with an equimolar amount of chlorine gas at temperatures between -10° and +10° C., thereby obtaining the desired alkyl chloride and, as a by-product, phosphorus oxychloride.

3,315,002

METHOD OF SEPARATION OF LOWER ALKYL MONO- AND DIALCOHOLS, ACETONE AND METHYLETHYLKETONE, AND ETHYLAMINE AND BUTYL AMINE WITH NOVEL ION EXCHANGE RESIN DERIVATIVES

Hamish Small, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Sept. 24, 1962, Ser. No. 225,809
2 Claims. (Cl. 260-637)

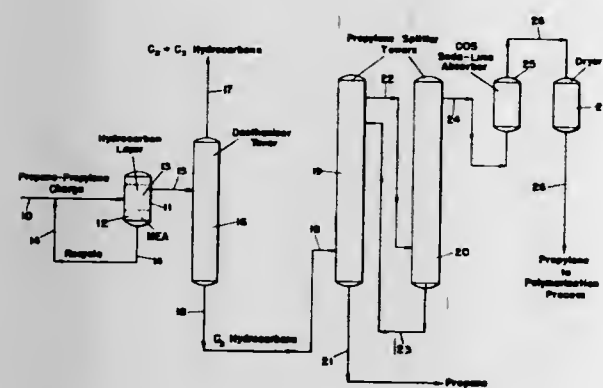
1. A method for separating mixtures of (a) lower straight and branched chain alkyl monoalcohols and dialcohols, (b) acetone and methylethylketone or (c) ethylamine and butylamine, which comprises

- (1) applying said mixture on a resin bed of an amphiphilic sorptive resin consisting of a conventional ion exchange resin having a polymeric vinylaromatic matrix, said matrix being free of reactive substituents other than its ion exchanging groups, a major proportion of the counter ions of which have been exchanged for ionic 6-18 carbon alkyl groups, and
- (2) eluting said solutes from the resin bed with water, said separations being carried out at a temperature between 15° and 100° C.

3,315,003

PROCESS FOR REMOVING CARBONYL SULFIDE FROM NORMALLY GASEOUS HYDROCARBONS
Habet M. Khelghatian, Springfield, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed Aug. 26, 1960, Ser. No. 52,211
6 Claims. (Cl. 260-677)



1. Process for purifying liquefied normally gaseous hydrocarbons containing carbonyl sulfide which comprises contacting the liquid hydrocarbons with soda-lime.

3. In a process for polymerizing propylene to a solid polymer by means of a polymerization catalyst system which is adversely affected by carbonyl sulfide, the step of producing a suitable feed for the polymerization reaction which comprises contacting liquefied propylene containing carbonyl sulfide with soda-lime, whereby the carbonyl sulfide content of the propylene is substantially reduced.

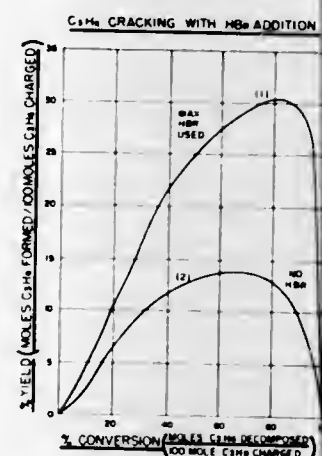
3,315,004

PROCESS FOR CRACKING PROPYLENE AND ISOBUTYLENE IN THE PRESENCE OF HBr
John Happel, Hastings-on-Hudson, and Charles J. Marsel, New York, N.Y., assignors to National Lead Company, New York, N.Y., a corporation of New Jersey

Filed Mar. 6, 1963, Ser. No. 263,189
2 Claims. (Cl. 260-678)

1. A process for preparing allene and methyl acetylene from propylene which comprises subjecting a mixture of propylene and hydrogen bromide or a bromide containing material capable of yielding hydrogen bromide at

the reaction conditions, the mole ratio of propylene to hydrogen bromide being from 1 to 1 to 15 to 1, to a temperature of above 900° C. for from about 0.0005 to 0.01 second and under conditions such that about 70 to 90 percent of the propylene is converted, and separating allene and methyl acetylene from the resulting product.



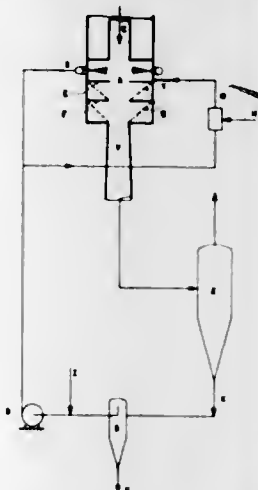
2. A process for preparing allene and methyl acetylene from isobutylene which comprises subjecting a mixture of isobutylene and hydrogen bromide or a bromine containing material capable of yielding hydrogen bromide at the reaction conditions, the mole ratio of isobutylene to hydrogen bromide being from 1 to 1 to 15 to 1, to a temperature of above 700° C. for from about 0.0005 to 0.06 second, and under conditions such that about 80 to 90 percent of the isobutylene is converted and separating allene and methyl acetylene from the resulting product.

3,315,005

PROCESS AND DEVICE FOR QUENCHING AND REMOVING TARS AND CARBON BLACK FROM A PYROLYSIS GAS OBTAINED IN THE PRODUCTION OF ACETYLENE

Walter Billi, Milan, Italy, assignor to Montecatini Edison S.p.A., Milan, Italy

Filed Aug. 26, 1963, Ser. No. 304,420
Claims priority, application Italy, Aug. 30, 1962, 17,219/62
5 Claims. (Cl. 260-679)



1. A device for simultaneous quenching and removal of tars and carbon black from an acetylene-production pyrolysis gas, which consists of a series of restrictions in the passage leading from a pyrolysis burner to provide a series of restricted and widened portions, a quenching means between the first of said restrictions and said burner section, said restricted and widened portion being so dimensioned that the speed of the cooled and saturated pyrolysis gas in the restricted portion is 50 to 200 m./sec. and the speed in the widened portion decreases to 10 to 50 m./sec.

3,315,006

DEHYDROGENATION PROCESS

Douglas S. Alexander and John Firko, Sarnia, Ontario, Canada, assignors to Polymer Corporation Limited, Sarnia, Ontario, Canada, a body corporate
No Drawing. Filed Dec. 3, 1962, Ser. No. 241,526
Claims priority, application Canada, Jan. 6, 1962, 839,491

7 Claims. (Cl. 260-680)

1. In the process of dehydrogenating a hydrocarbon feed comprising at least one hydrocarbon selected from paraffinic hydrocarbons having at least four carbon atoms, aliphatic monoolefinic hydrocarbons containing at least four carbon atoms in their olefinic chains and alkylated aromatic hydrocarbons containing at least two carbon atoms in their alkyl groups, in the presence of steam and with a fixed bed of a pelleted calcium nickel phosphate dehydrogenation catalyst, in a cyclic operation, comprising alternately dehydrogenating the hydrocarbon feed at a dehydrogenation temperature in a process period and regenerating the catalyst in a regeneration period, the improvement which comprises limiting the duration of the process period to between 30 seconds and 5 minutes.

3,315,007

DEHYDROGENATION OF SATURATED HYDROCARBONS OVER NOBLE-METAL CATALYST
Joseph B. Abell, Jr., St. Louis, Loyd W. Fannin, Creve Coeur, and James F. Roth, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 28, 1964, Ser. No. 421,689
5 Claims. (Cl. 260-683.3)

1. A process for dehydrogenation of saturated hydrocarbons to mono-ethylenically unsaturated hydrocarbons which comprises contacting said saturated hydrocarbons concurrently with hydrogen in a mole ratio of hydrogen to saturated hydrocarbons of 0.1:1 to 5:1 at a temperature of 400 to 650° C. and at a pressure and space velocity sufficient to cause dehydrogenation of said saturated hydrocarbons with a catalyst comprising 0.02 to 5 percent by weight of a noble metal, said catalyst having been activated in an atmosphere consisting essentially of hydrogen at elevated temperatures within the range of 350 to 550° C. for at least 2 hours after completion of reduction of said catalyst.

3,315,008

DEHYDROGENATION OF SATURATED HYDROCARBONS OVER NOBLE-METAL CATALYST
Joseph B. Abell, Jr., St. Louis, Loyd W. Fannin, Creve Coeur, and James F. Roth, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 28, 1964, Ser. No. 421,622
7 Claims. (Cl. 260-683.3)

1. A process for the dehydrogenation of saturated hydrocarbons to mono-ethylenically unsaturated hydrocarbons which comprises contacting said saturated hydrocarbons concurrently with hydrogen in a mole ratio of hydrogen to saturated hydrocarbons of 0.1:1 to 5:1 at an elevated temperature within the range of 400 to 600° C. and at a pressure and space velocity sufficient to cause dehydrogenation of said saturated hydrocarbons with a catalyst comprising 0.02 to 5 percent by weight of a noble metal, at least 0.01 percent by weight of a metal selected from the group consisting of alkali and alkaline earth metals, and an alumina support having a surface area of at least 10 square meters per gram and a macropore volume of at least 0.05 cc./gram, said noble metal uniformly distributed such that at least 50% by weight of the total noble metal present in a catalyst particle is present in a local concentration of no greater than twice that of the total concentration of noble metal in said catalyst particle,

said catalyst being prepared by impregnation of said metal selected from the group consisting of alkali and alkaline earth metal into said alumina support prior to impregnation with said noble metal.

3,315,009

POLYMERIZATION PROCESS

Robert M. Engelbrecht, St. Louis, James M. Schuck, Webster Groves, and Robert G. Schultz, Vinita Park, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed July 12, 1963, Ser. No. 294,745
9 Claims. (Cl. 260-683.15)

1. A process for preparing an olefin fraction suitable for the preparation of biodegradable alkyl aromatic compounds, said process comprising contacting in a first polymerization zone normally gaseous alpha mono-olefin hydrocarbons at a temperature of 0 to 200° C. and a pressure of atmospheric to 2500 p.s.i.g. with an activated carbon supported cobalt oxide catalyst activated at a temperature of 200 to 350° C. to form a polymer fraction, separating said polymer fraction to obtain a fraction comprised of relatively linear dimers of the normally gaseous mono-olefin hydrocarbons, said dimers being of 4 to 8 carbon atoms, contacting said relatively linear dimer fraction in a second polymerization zone at a temperature of 50 to 250° C. and a pressure of atmospheric to 2500 p.s.i.g. with an activated carbon supported cobalt oxide catalyst activated at a temperature of 400 to 575° C. to form a second polymer fraction, separating said second polymer fraction to obtain a fraction comprised of relatively linear mono-olefin dimers of 8 to 16 carbon atoms, said relatively linear mono-olefin dimers being suitable for the preparation of biodegradable alkyl aromatic compounds.

3,315,010

MIXTURE OF AN EPOXY RESIN AND AN O-TOLUIDINE-ALDEHYDE CONDENSATE
David E. Graham, Westfield, N.J., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 23, 1962, Ser. No. 196,873
4 Claims. (Cl. 260-834)

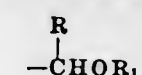
1. A composition consisting essentially of a hardened mixture of an epoxy resin comprising a polyglycidyl ether of a polyol and a condensation product of substantially equimolar amounts of o-toluidine and formaldehyde condensed in the presence of an acid in an amount at least equal to the combined mols of o-toluidine and formaldehyde.

3,315,011

THERMOSETTING COMPOSITIONS OF ALKYLATED ACRYLAMIDE-FORMALDEHYDE INTERPOLYMERS AND A PREFORMED POLYESTER CONTAINING UNREACTED 1,2-EPOXY GROUPS

Robert A. Baugh, Gibsonia, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Oct. 16, 1963, Ser. No. 316,551
9 Claims. (Cl. 260-834)

1. A resinous composition comprising (1) an interpolymer of from about 2 to about 50 percent by weight of an unsaturated carboxylic acid amide and at least one other polymerizable ethylenically unsaturated monomer, said interpolymer being characterized by containing amido hydrogen atoms replaced by the structure:



where R is selected from the group consisting of hydrogen and alkyl radicals, and R₁ is selected from the group

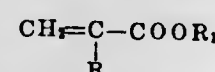
consisting of hydrogen and organic radicals, and (2) from about 3 to about 50 percent by weight of a preformed polyester containing unreacted 1,2-epoxy groups in the polyester molecules, said polyester being the reaction product of a polyepoxide having a 1,2-epoxy equivalency of greater than 1.0 with a preformed esterification product of a polyhydric alcohol and a polycarboxylic acid, said esterification product having an acid number of at least about 5, using at least about 1 mole of the polyepoxide per unreacted carboxyl equivalent in the preformed esterification product.

3,315,012

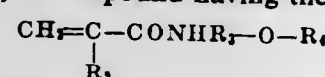
SELF-CURING SYNTHETIC POLYMER BLENDS
August H. Jorgensen, Jr., Philip H. Starmer, and James F. Stuesse, Avon Lake, Ohio, assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed June 4, 1962, Ser. No. 199,638
8 Claims. (Cl. 260-851)

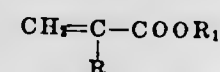
1. The heat curable rubber composition comprising a mixture of (1) an interpolymers of from 75 to 99.9% by weight of (a) at least one compound having the structure



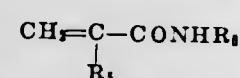
wherein R is a member of the class consisting of hydrogen and an alkyl group having from 1 to 4 carbon atoms and R₁ is a member of the class consisting of alkyl groups having from 1 to 8 carbon atoms and cyano alkyl groups having from 2 to 8 carbon atoms and from 0.1 to 25% by weight of (b) a compound having the structure



wherein R₂ is a member of the group consisting of hydrogen and an alkyl group having from 1 to 4 carbon atoms, R₃ is an alkylene group containing from 1 to 8 carbon atoms and R₄ is a member of the group consisting of hydrogen and an alkyl group having from 1 to 8 carbon atoms; and (2) an interpolymers of from 75 to 99.9% by weight of (a) at least one compound having the structure



wherein R and R₁ have the foregoing designations and from 0.1 to 25% by weight of (b) a compound having the structure



wherein R₃ is a member of the group consisting of hydrogen and an alkyl group having from 1 to 4 carbon atoms and R₄ is a member of the group consisting of hydrogen and an alkyl group having from 1 to 6 carbon atoms wherein the proportions of components (1) and (2) are present in the weight ratios of from 1:10 to 10:1 respectively.

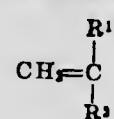
3,315,013

GRAFT AND CROSS LINKED COPOLYMERS OF POLAR VINYLIDENE MONOMERS WITH ACRYLOXYPHENONES

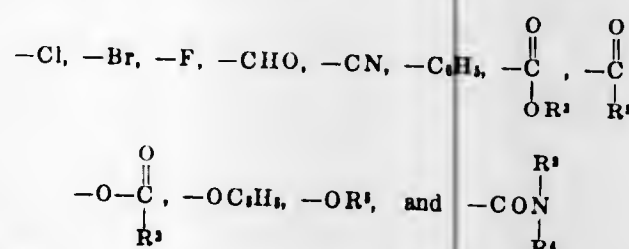
Stanley Tocker, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 28, 1962, Ser. No. 227,067
10 Claims. (Cl. 260-881)

1. A cross-linked copolymer of at least one polar vinylidene monomer having the formula



wherein R¹ is selected from one of the following groups:

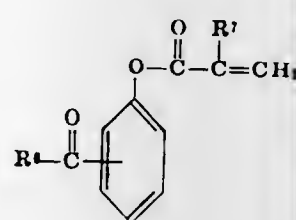


wherein

R² and R⁴ are each selected from the group consisting of alkyl and -H, R³ is alkyl;

and wherein

R² is selected from the group consisting of R¹, -H and alkyl of 1-4 carbon atoms; and at least 0.01 mole percent of a monomer having the formula



wherein

R⁶ is selected from the group consisting of methyl and phenyl and

R⁷ is selected from the group consisting of methyl and -H;

characterized by its insolubility in a solvent in which the copolymer, prior to cross-linking, was soluble.

3,315,014

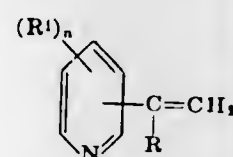
DYEABLE POLYPROPYLENE FIBERS CONTAINING POLYMERS OF VINYL PYRIDINES

Harry W. Coover, Jr., and Frederick B. Joyner, Kingsport, Tenn., assignors, by mesne assignments, to Uniroyal, Inc., a corporation of New Jersey

No Drawing. Filed Feb. 4, 1960, Ser. No. 6,597
14 Claims. (Cl. 260-895)

1. A melt spun polypropylene textile fiber exhibiting excellent dye affinity, light and gas fastness, resistance to oxidation and weathering, said fiber containing a polymeric modifier selected from the group consisting of:

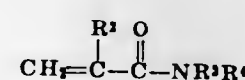
(a) homopolymers of vinyl pyridine monomers having the formula:



wherein R is a member selected from the group consisting of hydrogen and methyl, R¹ is a lower alkyl group, and n is an integer from 0 to 4,

(b) copolymers of at least two vinyl pyridine monomers having said formula (a), and

(c) copolymers of vinyl pyridine monomers having said formula (a) with N-substituted acrylamide monomers having the formula:



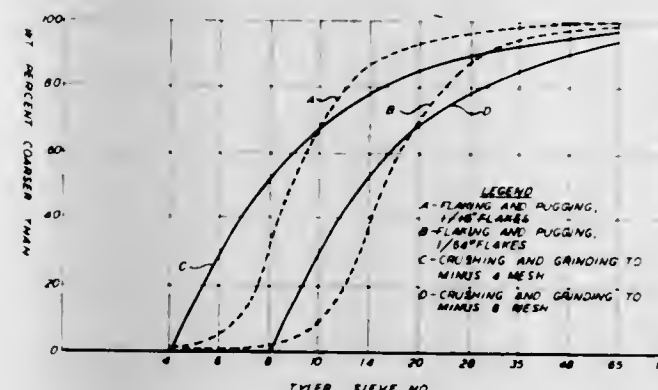
wherein R² is a member selected from the group consisting of hydrogen and lower alkyl, R³ is a member selected from the group consisting of hydrogen,

alkyl, cycloalkyl, aralkyl and aryl groups containing 1-18 carbon atoms, and R⁴ is a member selected from the group consisting of alkyl, cycloalkyl, aralkyl and aryl groups containing 1-18 carbon atoms.

3,315,015

METHOD FOR GRANULATING MATERIAL
Ernest W. Greene, Westfield, and Tom A. Cecil, Highland Park, N.J., assignors to Minerals & Chemicals Philipp Corporation, Menlo Park, N.J., a corporation of Maryland

Filed June 16, 1964, Ser. No. 375,557
10 Claims. (Cl. 264-15)



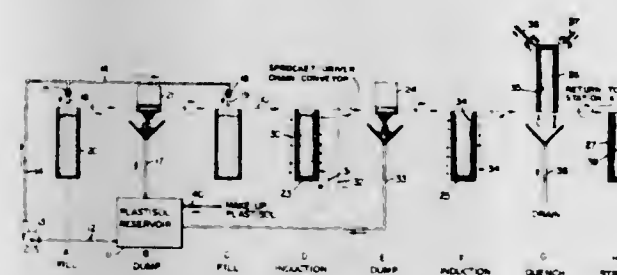
1. A method for granulating material of plastic consistency which comprises:

forming said plastic material into flakes by compressing it between closely spaced rotating rolls, and, while the flakes are still plastic, continuously cutting and tumbling them until substantially uniform plastic granules are formed.

3,315,016

INDUCTION HEATED-SLUSH MOLDING PROCESS
John M. Wersosky, Dover, and Donald A. Moore, New Castle, N.H., assignors to Davidson Rubber Company, Incorporated, a corporation of Delaware

Filed June 25, 1964, Ser. No. 377,887
7 Claims. (Cl. 264-25)

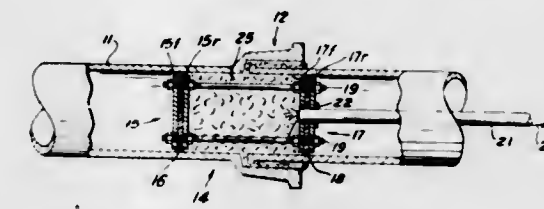


1. In a process of slush molding hollow thin-walled flexible plastic articles from a plastisol wherein: a hollow metal mold is filled with said plastisol, the wall of said metal mold is heated to heat gel a thin layer of said plastisol thereon, ungelled plastisol is dumped from said metal mold, the metal mold is then heated to fuse said thin layer and the completed plastic article is thereafter stripped from said metal mold; the improvement comprising heating said metal mold by induction heating to heat gel said plastisol while maintaining during and after said induction heating the temperature of the main ungelled body of said plastisol in said mold at a temperature that does not cause appreciable viscosity buildup when said plastisol is recycled, said mold consisting of at least two layers of metals of dissimilar compositions, the outer layer having

good magnetic permeability and the inner layer adjacent thereto having relatively good heat conductivity, said mold being of elongated and of varying cross sections along the long axis thereof, and the spacing of the coils used for said induction heating being such that the lower 1/4 portion of said mold reaches an average temperature after said induction heating that is at least 20° F. higher than average temperature reached by the upper 3/4 portion thereof.

3,315,017

GASPROOFING LEAKING GAS MAIN
Woodrow E. Kemp, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed Dec. 13, 1963, Ser. No. 330,464
10 Claims. (Cl. 264-36)



6. A method for internally sealing a leaking joint between lengths of pipe comprising the steps:

(a) locating leaking joint between adjacent lengths of pipe;

(b) moving a traveling plug through said pipes to the vicinity of said leaking joint, said plug being adapted to straddle said leaking joint and seal off an environment within said pipe on both sides of said joint from the remainder of said pipes;

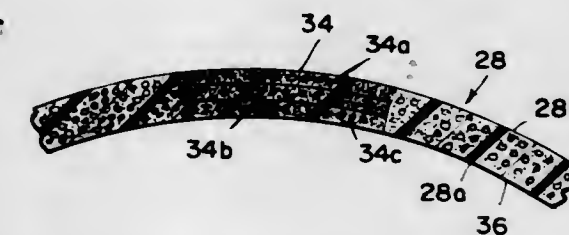
(c) flowing into said environment a sealing composition heated to a temperature in the range of 200-450° F. and comprising a tar-rubber solution containing acrylonitrile and butadiene in coal tar pitch together with an inert filler; and

(d) moving one portion of said plug relative to the remainder of said plug within said pipes so as to exert a pressure on said sealing composition greater than the external pressure around said leaking joint whereby said sealing composition flows into said leaking joint and seals the same.

3,315,018

METHOD OF MAKING FOAMED PLASTIC CONTAINERS
André F. Commeyras, Concord, Mass., assignor to Sweetheart Plastics, Inc., Wilmington, Mass., a corporation of Maryland

Filed Nov. 26, 1963, Ser. No. 326,099
7 Claims. (Cl. 264-51)



1. A method of making disposable plastic containers comprising the steps of

providing a blank made of expandable thermoplastic material, overlapping seamless portions of the blank to shape it into a container in a mold, compressing the mold about the shaped blank so that the thickness of the mold cavity is somewhat less than the original total thickness of the overlapping portions of the blank,

and thereafter, without changing the cavity size, heating the shaped container within the mold to bond the overlapped portions of the blank, permanently setting the blank in the container form, and expanding the portions of the container wall which are not overlapped.

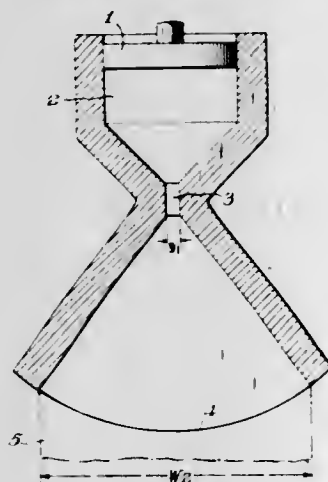
3,315,019 METHOD OF MAKING ORNAMENTAL PLASTICS AND RESULTANT PRODUCT

Daniel A. Fischler, New Hyde Park, N.Y., assignor, by mesne assignments, to Emsig Manufacturing Corp., New York, N.Y., a corporation of New York
No Drawing. Filed Sept. 22, 1961, Ser. No. 141,240
7 Claims. (Cl. 264-73)

1. The method of forming an ornamental plastic article comprising the steps of providing a liquid batch of flowable polyester resin having nacreous filler dispersed therein, introducing into said batch at spaced points a plurality of solid carrier particles having a dry surface coating comprising a dye slowly soluble in said liquid resin, moving said carrier particles through said liquid batch and causing said batch to harden.

3,315,020 PROCESS FOR PREPARING BIAXIALLY FIBRILLATED SHEETS

Wilbert L. Gore, Newark, Del., assignor to W. L. Gore & Associates, a corporation of Delaware
Filed Mar. 21, 1962, Ser. No. 181,295
8 Claims. (Cl. 264-120)



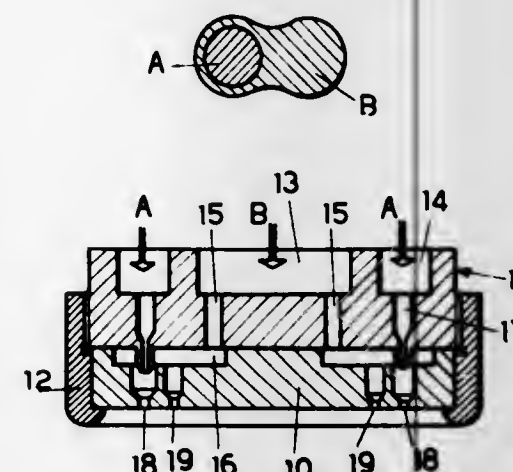
1. A process for the formation of sheeting from a polymer of tetrafluoroethylene which process comprises mixing pulverulent powder comprising said polymer with about 20% to about 50% by volume, based on the total volume of the resultant mixture, of a fluid lubricant which wets the said polymer forcing the resultant mass from a cylinder through a first constricting orifice to form a rod-like mass, the cross-sectional area of the cylinder divided by the cross-sectional area of the first constricting orifice defining longitudinal stretch ratio; and then forcing the rod-like mass through a second constricting orifice

to form a flat ribbon-like mass, the width of the second orifice divided by the width of the first constricting orifice defining lateral stretch ratio; the overall stretching of the mass from the cylinder through the second constricting orifice being such that the ratio of the longitudinal stretch ratio to the lateral stretch ratio is 1.4 ± 0.30 .

3,315,021 PROCESS FOR THE PRODUCTION OF CRIMPABLE COMPOSITE SYNTHETIC YARNS

Ettore Luzzatto, Milan, Italy, assignor to SNIA Viscosa Società Nazionale Industria Applicazioni Viscosa S.p.A., Milan, Italy, an Italian company
Filed June 9, 1965, Ser. No. 462,537
Claims priority, application Italy, June 19, 1964, 13,593/64

2 Claims. (Cl. 264-168)



1. A method for producing crimped synthetic textile fibers, comprising the steps of feeding two streams of a molten first synthetic high molecular weight fiber-forming polymer simultaneously into and through two adjacent spinneret passageways, of feeding a stream of a molten second high molecular weight polymer centrally and axially of one of the said two streams in one of said passageways and concurrently therewith, to cause a compound stream of molten polymer filamentary structure to issue from said one passageway, consisting of an outer portion of said first polymer and of a core portion of said second polymer, said core portion being coaxial of said outer portion, the remaining stream of said molten first polymer issuing as a one component filamentary structure from the other passageway adjacent said compound filamentary structure, whereby the one component filamentary structure and the two component filamentary structure become fused after passing through the passageways of the spinneret to provide a compound unitary filament having an elongated cross-sectional shape and wherein said second polymer is asymmetrically located, and promoting permanent crimp in said compound filament by heat processing the same to cause a differing longitudinal contraction in said first and second polymer portions.

ELECTRICAL

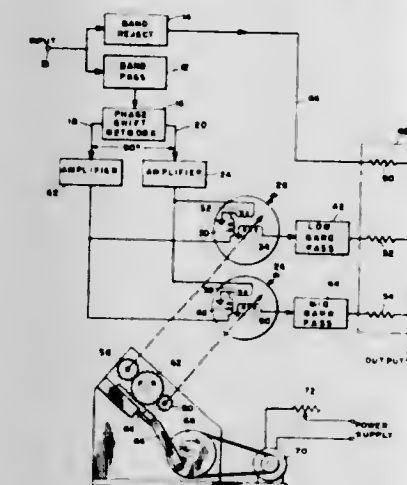
3,315,022 VIBRATO SYSTEM FOR ELECTRONIC MUSICAL INSTRUMENTS

Oliver C. Stanley, 5352 Van Nuys Court,
San Diego, Calif. 92109
Filed Nov. 9, 1964, Ser. No. 409,910
7 Claims. (Cl. 84-1.25)

1. A vibrato system for electronic musical instruments, comprising:

an input for connection to an electronic musical instrument;
phase shifting means connected to said input and having a pair of outputs providing similar signals separated in phase;
frequency changing means including at least one pair of fixed electromagnetic field elements connected each to one of said outputs, and a movable electromagnetic field element;

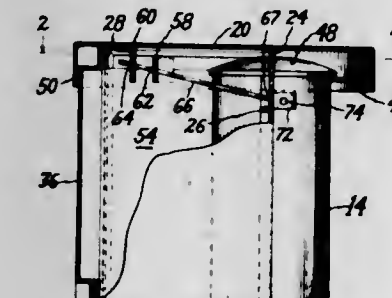
drive means coupled to said movable element to move the same cyclically in relation to said fixed elements;



and an output connected to said movable element.

3,315,023 TRANSFORMER HOUSING AND LOCKING MEANS THEREFOR

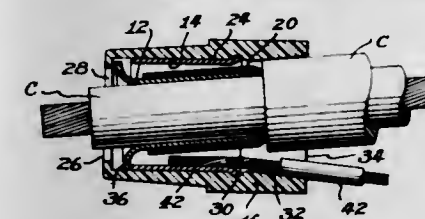
John N. Davis, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York
Filed Mar. 23, 1964, Ser. No. 354,076
8 Claims. (Cl. 174-52)



1. A transformer housing for use with a pad mounted transformer comprising, in combination, a transformer tank, a pair of side wall members secured to opposite sides of said transformer tank, sill members connecting the free ends of the side walls, a removable front wall member engaging one of said sill members and being in contact with the other sill member, a removable cover member, said removable cover member having a flange in the rear thereof interlocking with the cover of said transformer tank, and the front end of said cover extending over said removable front wall firmly securing said removable front wall to said enclosure.

3,315,024 GROUNDING SHEATH CONNECTOR

Ralph Ball, Colonia, N.J., assignor to The Thomas & Betts Co., Elizabeth, N.J., a corporation of New Jersey
Filed Nov. 19, 1964, Ser. No. 412,469
5 Claims. (Cl. 174-75)



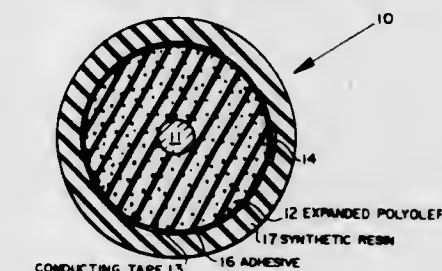
1. An electrical connector adapted for grounding the high frequency shield of coaxial conductors comprising, an insulating cap having a first end and a second end, a central opening through its first end forming an annular

shoulder therein, said second end being open, and a pair of conductive sleeves differing in diameter and length within said cap in annular spaced telescopic relation, wherein the outer sleeve is force fitted within said cap between its respective ends and the inner end of the inner sleeve is disposed between said first end of the cap and the inner end of the outer sleeve, retention means on the inner end of said inner sleeve allowing limited relative endwise and angular movement between said inner sleeve and said outer sleeve sufficient to permit tilting of the inner sleeve within and relative to the axial center of said cap.

3,315,025 ELECTRIC CABLE WITH IMPROVED RESISTANCE TO MOISTURE PENETRATION

Harry M. Tomlinson, Sycamore, Ill., assignor to Anaconda Wire and Cable Company, a corporation of Delaware

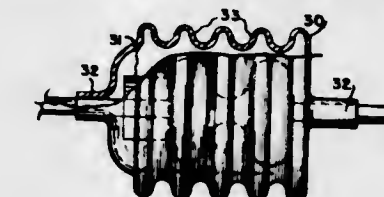
Filed Dec. 30, 1964, Ser. No. 422,275
19 Claims. (Cl. 174-107)



1. A coaxial cable comprising:
(A) an inner copper conductor,
(B) a cylindrical wall of expanded polyolefin insulation surrounding said conductor,
(C) an outer conducting tape around said wall of insulation wrapped with its edges overlapping to form a longitudinal seam,
(D) a thick, solid, abrasion resistant synthetic-resin jacket surrounding said tape, and
(E) a layer of adhesive,
(a) between said tape and said jacket, and between the overlapped portions of said tape, bonding said jacket to said tape over substantially the entire area of contact between them, and
(b) sealing the edges of said tape together at said seam.

3,315,026 INSULATOR COVERED WITH A PROTECTIVE ENVELOPE

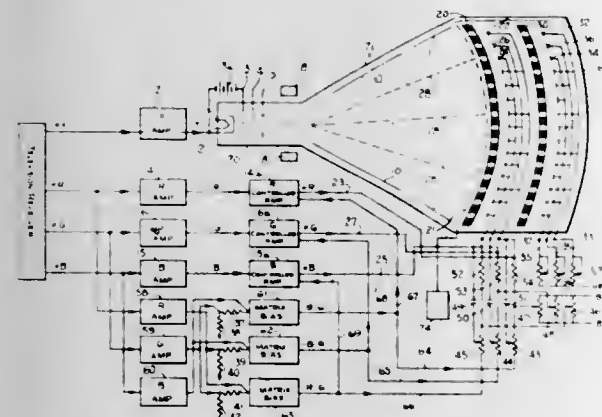
William C. Gregory, 520 N. Burris Ave.,
Compton, Calif. 90223
Filed Nov. 25, 1964, Ser. No. 415,564
7 Claims. (Cl. 174-139)



1. An insulator comprising a first central terminal element made of electrically conductive material, a second central terminal element made of electrically conductive material, a substantially rigid dielectric material binding a portion of said first and second terminal elements together in a fixed relative position wherein said terminal elements are spaced and insulated from each other by said dielectric material to provide a spaced juncture, an envelope made of electrically nonconductive, water repellant, flexible material sealingly engaged at opposite

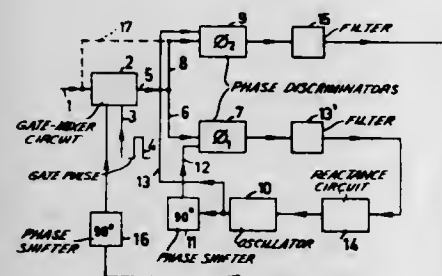
ends to said first and second central terminal elements respectively, and spaced from the juncture of said terminals and the dielectric binder material which are completely encapsulated by said envelope, wherein said envelope is formed with adjacent alternatively varying expansion means which cause it to expand and to contract automatically in response to atmospheric temperature variations so as to substantially dislodge dust particles settling thereon.

3,315,027
COLOR TELEVISION TUBE
Bernice Ray Winge, 39 E. Surrey Drive,
Charleston Heights, S.C. 29405
Filed Dec. 13, 1963, Ser. No. 330,283
4 Claims. (Cl. 178-5.4)



1. In a color television circuit and image tube having a single electron beam, an image screen, a plurality of control electrodes controlling electron flow to the image screen responsive to each color signal, the improvement including, amplifying means, for amplifying each color signal individually, a controlled amplifier receiving each amplified signal, matrix bias means receiving each amplified signal and applying same to the controlled amplifier of each other color signal, and means connecting the controlled amplifier output signals to the color electrodes within the tube.

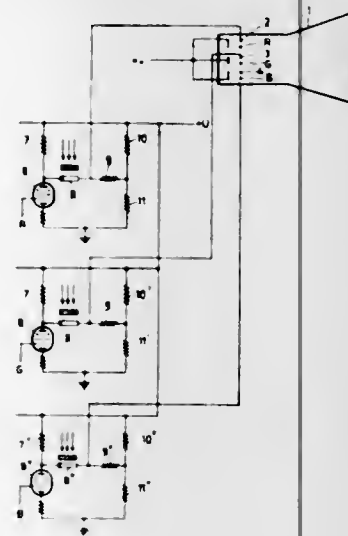
3,315,028
CIRCUIT ARRANGEMENT FOR SYNCHRONIZING THE SUB-CARRIER OSCILLATOR IN A COLOR TELEVISION RECEIVER
Gerrit Kool, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 3, 1964, Ser. No. 394,166
Claims priority, application Netherlands, Sept. 4, 1963, 297,518
9 Claims. (Cl. 178-5.4)



1. A circuit arrangement for synchronizing the sub-carrier oscillator in a color television receiver for use in a color television system in which two color signals modulate a sub-carrier in quadrature and the burst signal is co-transmitted as a separate synchronizing signal during the occurrence of a back-porch between two lines, which

circuit arrangement includes a gate circuit for amplifying at least the burst-signal, a first phase-discriminator to which are applied at least the said burst signal and a signal derived from the oscillator, this first phase-discriminator forming part of the normal control loop of the synchronizing circuit owing to the fact that from this phase-discriminator is derived the control voltage for controlling the frequency of the oscillator, and a second phase discriminator to which are applied at least the burst signal and a signal derived from the oscillator with a phase differing from the phase of the corresponding signal applied to the first phase-discriminator in a degree such that, if required with the addition of matrix circuits, the output signals taken from the two phase-discriminators may be regarded as produced by a difference in direction of demodulation of about 90°, wherein the improvement comprises a phase-shifting network connected between an output terminal of the second phase-discriminator and an input electrode of the gate-circuit whereby the output of said phase shifting network is mixed with said burst signal.

3,315,029
DEVICE FOR THE DISPLAY OF COLOR IMAGES
Robert Suhrmann, Hamburg, Rahlstedt, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 13, 1964, Ser. No. 403,614
Claims priority, application Germany, Oct. 18, 1963, P 32,800
9 Claims. (Cl. 178-5.4)



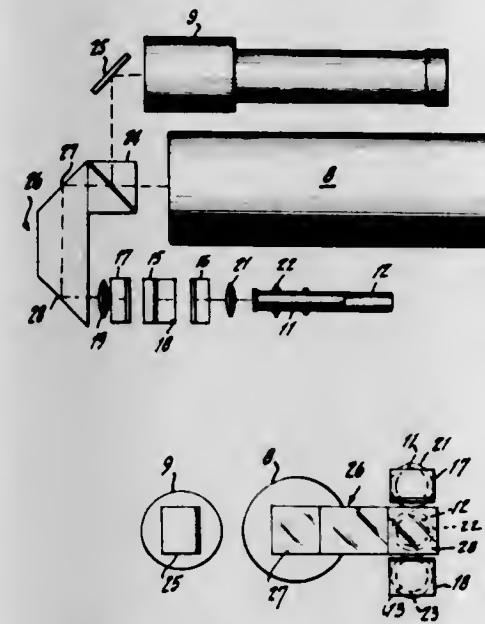
1. A color television receiver comprising a source of color television signals, an image reproducing device, means responsive to the color temperature of ambient light for modifying said signals, and means applying said modified signals to said image reproducing device, whereby the white point of color images displayed on said image reproducing device is substantially matched to the color temperature of said ambient light.

3,315,030
OPTICAL SYSTEM FOR COLOR TELEVISION CAMERAS
Harry G. Wright, Haddonfield, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Nov. 18, 1964, Ser. No. 412,070
4 Claims. (Cl. 178-5.4)

1. In a color TV camera comprising a luminance signal pickup tube located at one side of the central longitudinal axis of said camera and responsive to all color components of subject-representative light and a plurality of vertically arranged chrominance signal pickup tubes

located at the other side of said central longitudinal camera axis and respectively responsive to selected color components of subject-representative light, an optical system for admitting light from a subject and directing suitably selected portions of said admitted light to said respective pickup tubes comprising in combination:

a subject-representative light gathering lens system located on said central longitudinal camera axis;
a panchromatic light divider located to receive subject-representative light from said lens system and to direct a first part of said light toward said luminance signal pickup tube and a second part of said light toward said chrominance signal pickup tubes;

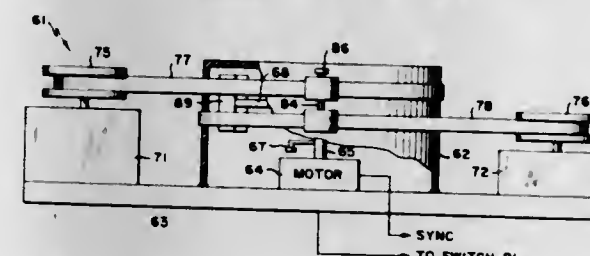


the light path from said lens system to said luminance signal pickup tube being principally in air and having a given length;

a trapezoidal prism located to receive said second light part and to direct it in a horizontal plane toward said chrominance signal pickup tubes, and providing a light path from said lens system to said chrominance signal pickup tubes which is greater than said given length; and

a multi-element color-sensitive light divider located to receive said second light part from said trapezoidal prism and to direct different color light components in a vertical plane respectively to said plurality of chrominance signal pickup tubes.

3,315,031
SIGNAL INTERLACER
Eugene Kadak, Baltimore, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed May 18, 1964, Ser. No. 369,052
4 Claims. (Cl. 178-6.6)

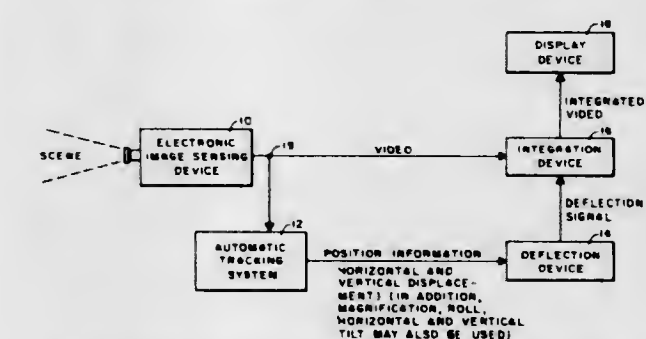


1. A signal interlacer means comprising in combination:

a hollow cylinder;
a first magnetic tape contiguously disposed with said hollow cylinder for movement in a predetermined direction around a first exterior peripheral sector thereof;

a second magnetic tape contiguously disposed with said hollow cylinder for movement around a second exterior peripheral sector of said hollow cylinder;
an electromagnetic recording-playback head means mounted in said hollow cylinder for rotary movement therein adjacent to the inner peripheral surface thereof and for timely disposition within the magnetic influence range of said first and second magnetic tapes;
means connected to said electromagnetic recording-playback head means for the driving thereof in a predetermined rotary direction;
means connected to said first and second magnetic tapes for the driving thereof in predetermined circular directions around their respective peripheral sectors of said hollow cylinder;
means connected to said means for driving said electromagnetic recording-playback head means and to said electromagnetic recording-playback head means for producing a synchronizing signal that is indicative of an instantaneous predetermined disposition of said electromagnetic recording-playback head means, as it rotates within said hollow cylinder; and
means connected to said first and second magnetic tape driving means, said electromagnetic recording-playback head means, and the aforesaid hollow cylinder for the mounting thereof in a predetermined geometrical configuration.

3,315,032
LOW LIGHT LEVEL TELEVISION IMAGING SYSTEM FOR TRACKING, GUIDANCE, OR RECONNAISSANCE APPLICATIONS
Klaus J. Hecker, Oberursel, Taunus, Germany, assignor to the United States of America as represented by the Secretary of the Navy
Filed July 8, 1965, Ser. No. 472,079
7 Claims. (Cl. 178-6.8)



1. A low-light-level television imaging system which can be used from a moving platform and which permits integration of the signal from a scene over a substantially long period of time, comprising:

(a) a television camera using a low-light-level pickup tube having an electron beam for scanning an image of a scene viewed by said television camera,
(b) automatic tracking means including at least one point-tracker being connected to said television camera for point tracking of at least one high contrast spot present in the scene viewed by said television camera, each said at least one point-tracker producing an error signal corresponding to two dimensional motion of the high contrast spot tracked thereby, said automatic tracking means also including analog adding means for computing position information values corresponding to degrees of freedom of motion of the television camera with respect to the scene being viewed thereby from the two dimensional error signals of said at least one point-tracker, said position information being available as signals at the output of said automatic tracking means,

- (c) integration means having an adjustable electron beam also being connected to said television camera for integrating video signals of the scene being viewed by said television camera, the electron beam in said integration means being adjusted until a desired integrated image results,
- (d) deflection means including line and field deflection generators for generating a deflection signal being connected to the output of said automatic tracking means for receiving position information signals therefrom and also being connected to said integration means, the amplitude and phase of the deflection signal generated by said deflection means being controlled in response to position information signals from said automatic tracking means, said deflection signal being fed to said integration means for adjusting the electron beam in said integration means with respect to the electron beam in the television camera at any instant such that resolution elements corresponding to the same spot on the scene are hit by the respective electron beams in both the integration means and television camera, whereby when the image of the scene being viewed by the television camera shifts, the electron beam in said integration means will shift in an opposite direction to correct for image motion, results,
- (e) said integrated image being obtained from an integrated video signal at the output of said integration means for use where a video signal from an integrated image is required.

3,315,033

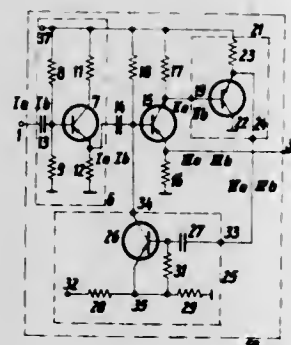
TRANSISTOR CLAMP CIRCUIT FOR ALTERING THE DIRECT CURRENT COMPONENT OF A TELEVISION SIGNAL

Emil Sennhenn, Darmstadt-Arheilgen, and Hans Horneff, Darmstadt, Germany, assignors to Fernseh G.m.b.H., Darmstadt, Germany

Filed July 10, 1963, Ser. No. 294,085

Claims priority, application Germany, July 11, 1962, F 37,287

14 Claims. (Cl. 178-7.1)



1. Apparatus for altering the direct current component of a television signal being composed of picture signal components and further signal components, the peak levels of said further signal components not exceeding the peak levels of said picture signal components, in such a way that the signal potentials corresponding to the peak levels of said television signal are held approximately at a predetermined potential, said television signal being conducted within a first signal channel, comprising in combination, a capacitor; a transistor; connection means connecting one first point of said first signal channel within a second signal channel via said capacitor to the base of said transistor; connection means connecting the emitter/collector path of said transistor with a second point of said first signal channel and to a point held at said predetermined potential; a resistor; and further connection means connecting the base of said transistor via said resistor to its emitter.

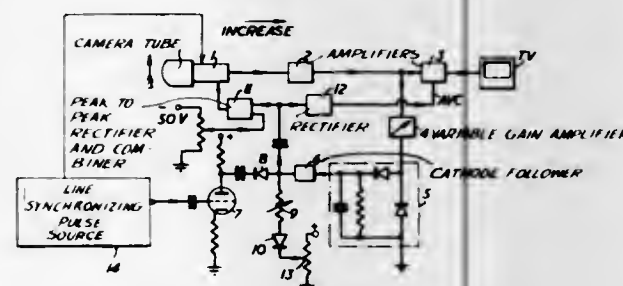
TELEVISION CAMERA SYSTEM FOR AUTOMATICALLY MAINTAINING AN OPTIMUM BEAM INTENSITY

Norman William White, Harpenden, England, assignor to Marconi Instruments Limited, London, England, a British company

Filed May 27, 1963, Ser. No. 283,324

Claims priority, application Great Britain, June 20, 1962, 23,737/62

11 Claims. (Cl. 178-7.2)



1. In a television camera including a camera cathode ray tube of the storage target type, said cathode ray tube having a characteristic curve of output signal strength vs. beam current which includes a knee portion at which said characteristic curve changes from one slope to another, the improvement comprising means for generating a control signal dependent on the maximum peak output signal strength of said cathode ray tube integrated over a time period which is long relative to the time required to scan across one storage element of the target therein, means for applying said control signal to said cathode ray tube to automatically vary the target scanning beam intensity of the tube, and said means for generating said control signal including means for automatically and non-linearly varying the relation between the amplitude of said control signal and the output signal strength of said cathode ray tube to maintain the tube operating point near said knee portion of said characteristic curve.

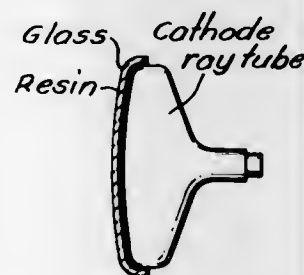
3,315,035

TRANSPARENT MIXED EPOXY RESIN COMPOSITION AND SAFETY LAMINATED ARTICLES MADE THEREFROM

Douglas D. Applegath and Walter A. Benson, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Mar. 29, 1961, Ser. No. 99,306

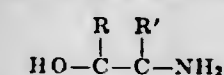
26 Claims. (Cl. 178-7.82)



4. A safety cathode ray tube comprising a cathode ray tube having a viewing surface, a transparent, generally similar, contoured plate spaced apart from said viewing surface and having said viewing surface adhered to said plate by a transparent solid flexible elastomeric composition consisting essentially of the cured reaction product of: (A) a first transparent polyglycidyl ether; (B) a second transparent polyglycidyl ether, and a compatible hardening agent; said first glycidyl ether being a diglycidyl

ether of 4,4'-isopropylidenediphenol, said ether having a molecular weight of from about 900 to 1200; said second diglycidyl ether being a diglycidyl ether of polyoxypropylene glycol, said glycol having a molecular weight of about 400; said hardening agent being a mixture of about 5.5 parts by weight of monoethanolamine and about 1 part by weight of diethylenetriamine; the ingredients (A) and (B) being employed in an amount by weight of about 33 parts of (A) and about 67 parts of (B) and said hardening agent being employed in an amount of about 6.5 parts.

5. The liquid homogeneous resinous composition curable on standing to an elastomeric thermoset resin which, when set, is capable of transmitting at least 80 percent of light within the visible spectrum incident thereto without adverse effect on the color or image produced by the light transmitted therethrough when said resin is in a layer that has a thickness not substantially greater than 0.1 inch, which is capable of forming cohesive bonds of high strength with glass in contact therewith during cure, which possesses high thermal stability, which has an elastic recovery of at least about 80 percent, and which better withstands sudden shock and pressure changes without damage, said resinous composition consisting essentially of a mixture of between about 25 and about 40 parts by weight of component (A) which is an aromatic polyepoxide ether of a polynuclear polyhydric phenol and between about 75 and about 60 parts by weight of component (B) which is an aliphatic polyepoxide ether of a dihydric aliphatic compound, to make 100 parts of (A) and (B), and a hardening agent consisting by weight of (1) between about 78 and about 92 percent of a mono-alkanolamine having the generic formula



wherein R and R' are independently selected from lower alkyl groups, and (2) between about 22 and about 8 weight percent, to make 100% of (1) and (2), of a polyalkylenepolyamine having the generic formula



wherein R is an alkylene group containing from 2 to 18 carbon atoms and x has a value of from 1 to 18, in a total amount of said hardening agent to provide between about 0.5 and about 1.5 equivalent amine hydrogen atoms per oxirane group present in said liquid resin composition.

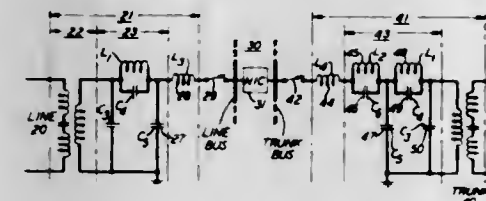
3,315,036

RESONANT TRANSFER TIME DIVISION MULTIPLEX SYSTEM UTILIZING NEGATIVE IMPEDANCE AMPLIFICATION MEANS

Wilmer B. Gaunt, Jr., Lincroft, and George B. Thomas, Jr., Summit, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Aug. 16, 1963, Ser. No. 302,507

6 Claims. (Cl. 179-15)



1. A resonant transfer circuit comprising signal storage means, inductance means, a transmission channel including a sustained oscillation producing negative impedance means, gating means for connecting said storage and inductance means simultaneously to said channel in one of a

plurality of distinct time intervals in a repetitive cycle, and means for rendering inaudible said sustained oscillations produced in the resonant transfer circuit by said negative impedance means.

3,315,037

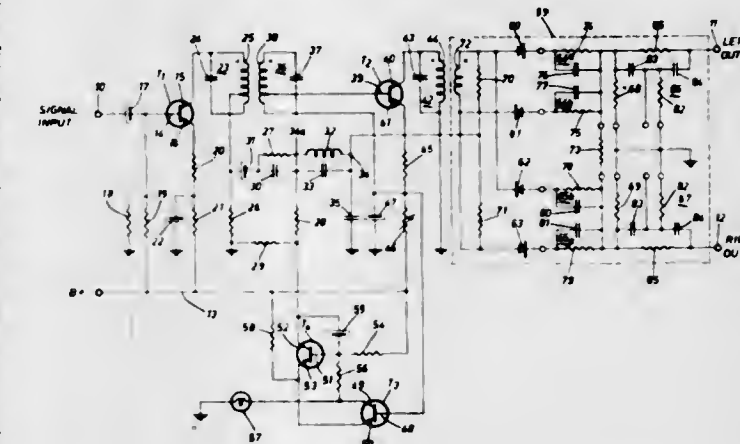
STEREOPHONIC DECODER FOR FREQUENCY MODULATED SIGNALS

Eric Gschwandtner, Rexdale, Ontario, Canada, assignor to Dominion Electrohome Industries Limited, Kitchener, Ontario, Canada

Filed Feb. 1, 1965, Ser. No. 429,421

Claims priority, application Canada, Feb. 1, 1964, 894,625

11 Claims. (Cl. 179-15)



1. In an FM receiver, means for obtaining separate L and R audio frequency signals from a composite signal containing a monophonic signal (L+R), a pilot carrier and the sideband frequencies of an amplitude modulated carrier suppressed carrier amplitude modulated by an L-R signal, said amplitude modulated carrier being of a frequency harmonically related to said pilot carrier comprising, amplifying means for amplifying said composite signal, attenuating means for attenuating said L+R component of the amplified composite signal, means for conducting said amplified composite signal from said amplifying means to said attenuating means, a stereophonic detector for deriving individual L and R signals from the amplified composite signal with attenuated L+R component, means for conducting the amplified composite signal with attenuated L+R component from said attenuating means to said stereophonic detector, selective amplifying means for selectively amplifying said pilot carrier, a frequency modifier for rectifying the selectively amplified pilot carrier and for modifying the frequency thereof to the suppressed carrier frequency of said amplitude modulated carrier, said frequency modifier including a first transistor for rectifying the selectively amplified pilot carrier, means for biasing said first transistor to collector current cut-off means for conducting the selectively amplified pilot carrier from said selective amplifying means to said frequency modifier, means for conducting the selectively amplified and rectified pilot carrier of modified frequency from said frequency modifier to said stereophonic detector, a trigger circuit comprising second and third transistors, means for conducting the selectively amplified and rectified pilot carrier from said first transistor to said trigger circuit, means electrically connecting said second transistor and said attenuating means, said second transistor being cut-off and said third transistor being conductive when the selectively amplified and rectified pilot carrier is in excess of a predetermined magnitude, said second transistor being conductive and said third transistor being cut-off when the selectively amplified and rectified pilot carrier is

below said predetermined magnitude, and means for increasing the attenuation of said attenuating means when said second transistor is conductive.

3,315,038

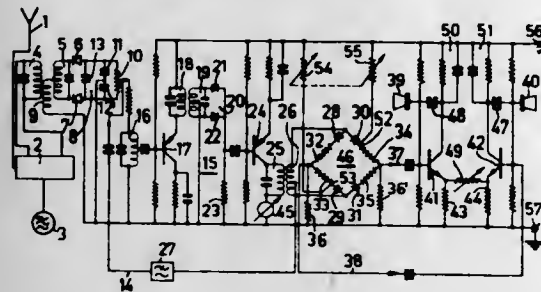
DEVICE FOR THE STEREOPHONIC REPRODUCTION OF SIGNALS

Petrus Willem Zwollo, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 16, 1965, Ser. No. 448,603

Claims priority, application Netherlands, Apr. 25, 1964, 6,404,602

4 Claims. (Cl. 179—15)



3. A demodulator circuit for stereophonic signals of the type comprising a sum signal of first and second coherent stereophonic signals and a difference signal of said first and second signals amplitude modulated on a suppressed subcarrier wave, said demodulator circuit comprising a source of said stereophonic signals, a source of oscillations of the frequency of said subcarrier wave, a bridge circuit, each arm of said bridge circuit comprising a series-connected resistor and rectifier, said rectifiers being poled to pass current in the same direction around said bridge circuit, means applying said oscillations with opposite phase to a first pair of diagonal junctions of said bridge circuit, first output impedance means connected between one of the remaining junctions of said bridge circuit and a point of reference potential, second output impedance means connected between the other remaining junction of said bridge circuit and said point, means applying said stereophonic signals between said point and said first pair of junctions with the same phase, bias means having one terminal connected to said point, and separate resistor means connecting the other terminal of said bias means to separate junctions between resistors and rectifiers of a pair of opposite arms of said bridge circuit, said bias means providing substantially identical forward bias for all rectifiers of said bridge circuit.

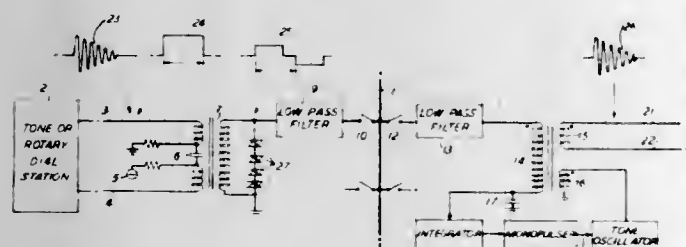
3,315,039

TELEPHONE SIGNALING CONVERSION CIRCUIT FOR PULSES AND TONES

Robert C. Gebhardt, Parsippany, Albert E. Spencer, Jr., Holmdel, and Terry A. Taebel, Red Bank, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 30, 1963, Ser. No. 312,463

17 Claims. (Cl. 179—18)



1. A transmission circuit comprising a transformer having three inductively coupled windings, a plurality of telephone lines connected through a time division switch-

ing network to a first one of said windings, a trunk connected to a second one of said windings, a tone oscillator connected to the third one of said windings, means connected to said first winding for turning on said tone oscillator for a predetermined time interval in response to receipt in said first winding of rotary dial pulses appearing on said line, and means for inhibiting the operation of said tone oscillator responsive to the receipt in said first winding of tone bursts appearing on said line.

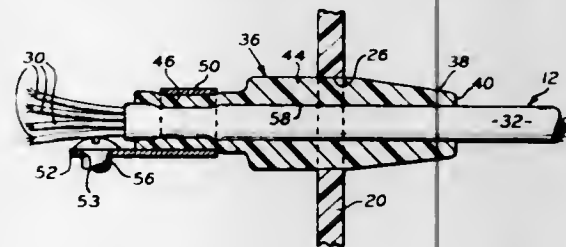
3,315,040

RETRACTILE CORD GROMMET FOR TELEPHONE SUBSCRIBER HAND SETS

William J. Brorein, Whippany, N.J., assignor to General Cable Corporation, New York, N.Y., a corporation of New Jersey

Filed Oct. 29, 1963, Ser. No. 319,798

10 Claims. (Cl. 179—100)



9. A grommet for a telephone hand set including a sleeve made of resilient material having an inside diameter substantially uniform throughout its length and having a main body portion of substantially uniform outside diameter and substantially uniform radial thickness, and having an inner end portion of substantially uniform radial thickness extending beyond the body portion and with an outside diameter less than that of the body portion for receiving a stay band to clamp the grommet to a jacket of a cord contained within the grommet.

3,315,041

TRACK SELECTION CONTROL MEANS FOR MAGNETIC SIGNAL RECORDING AND REPRODUCING SYSTEMS

Sidney O. Sampson, New York, N.Y., assignor to Robot Education Systems, New York, N.Y., a corporation of New York

Filed Jan. 22, 1965, Ser. No. 432,049

10 Claims. (Cl. 179—100.2)

1. A track selection means for a magnetic signal recording system, comprising a head assembly including multiple recording heads and multiple associated erase heads disposed on the tracks of a multiple track tape for recording and erasing signals, three individual controls, said recording heads and said erase heads being connected to the three controls, the first control being a play selector control having multiple track selection positions, the second control being a stereo selector control connected to one position of said play selector control and having multiple predetermined sequences of stereo tracks selection positions, the third control being a sequence selector control connected to the off position of said stereo selector control and having multiple predetermined sequences of tracks selection positions, said stereo selector control being activated when the play selector control is disabled, said sequence selector control being activated when the play selector control and the stereo selector control are disabled, each control including selective switch means arranged for selectively activating and deactivating the heads, and means connecting respective recording means, and respective erasing means to the respective operating selective switch means of said each control for energizing same thereby applying track selection means for selectively activating and deactivating respective operating

3,315,042

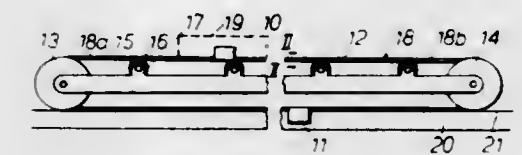
ARRANGEMENT FOR THE SUPPLY OF ELECTRIC POWER TO A RAIL TRAVELLING CARRIAGE

Sverre Munck, Mollendalsbakken 1, Bergen, Norway

Filed Sept. 9, 1963, Ser. No. 307,737

Claims priority, application Norway, Sept. 12, 1962, 145,677; July 6, 1963, 149,301

3 Claims. (Cl. 191—12)



1. Apparatus for electrically connecting a carriage travelling on rails to a relatively fixed supply station comprising, in combination, two sets of cables extending between said carriage and said station, each set of cables being anchored at one end relative to said carriage and, at the other end, relative to said station; a relatively elongated rigid connecting member supported for movement longitudinally of the path of travel of said carriage; a pair of supporting rolls each rotatably mounted at a respective end of said connecting member and each having a respective set of cables trained therearound; plural idler rollers rotatably mounted in longitudinally spaced relation along the upper surface of said connecting member and supporting the upper runs of said cable sets intermediate said supporting rolls; each set of cables including plural electric cables and at least one tension cable, arranged in parallel relation to form a cable band; plural supporting members extending transversely of and embracing said bands at longitudinally spaced intervals therealong, each supporting member having plural apertures therethrough and through which the cables extend, the apertures receiving the electric cables having clearance with the latter for relative movement of the supporting members and said electric cables; means anchoring said tension cables to certain supporting members separated from each other by at least one intermediate supporting member; and sleeves embracing said tension cables and extending between and abutting said supporting members to maintain the latter at positions substantially fixed longitudinally of said tension cables.

3,315,043

TRANSFER SWITCH FOR TAP CHANGING REGULATING TRANSFORMERS INCLUDING A CONTACT SUPPORT FOR THE FIXED CONTACTS HAVING NO CREEPAGE PATH

Ernst Baumgartner, Regensburg, Germany, assignor to Maschinenfabrik Reinhausen Gebrüder Scheubeck K.G., Regensburg, Germany

Filed June 8, 1966, Ser. No. 556,061

Claims priority, application Germany, July 13, 1965, M 65,937

5 Claims. (Cl. 200—11)

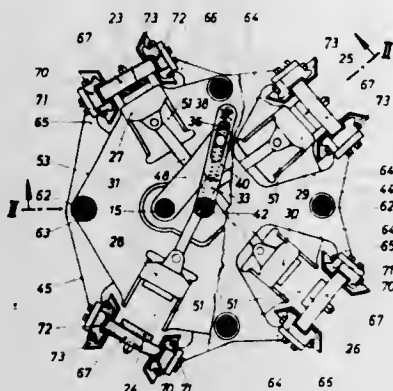
1. A transfer switch for tapped regulating transformers comprising in combination:

- a first plurality of fixed contacts arranged around a center in a circular pattern;
- a second plurality of fixed contacts arranged around said center in a circular pattern, each of said second plurality of contacts being arranged in registry with one of said first plurality of contacts;
- a plurality of movable contact bridges each co-operating with one of said first plurality of fixed contacts and one of said second plurality of fixed contacts;
- a plurality of link means each operatively related to one of said plurality of contact bridges for moving said one of said plurality of contact bridges into

terminated position of said another selected sequence, and activates another pair of recording heads and another pair of respectively associated erase heads simultaneously on another pair of predetermined stereo tracks while simultaneously deactivating said one pair of recording heads and said one pair of respectively associated erase heads, and also whereby when the said play selector control and the said stereo selector control are both disabled the said sequence selector control selectively activates one recording head and one respectively associated erase head simultaneously on one predetermined track at the predetermined position of the selected sequence of said multiple predetermined sequences of tracks selection positions, and activates another recording head and another respectively associated erase head simultaneously on another predetermined track while simultaneously deactivating said one recording head and said one respectively associated erase head, then deactivates said selected sequence and activates another selected sequence of said multiple predetermined sequences of tracks selection positions thereby selectively activates one recording head and one respectively associated erase head simultaneously on one predetermined track at the predetermined position of said another selected sequence, and activates another recording head and another respectively associated erase head simultaneously on another predetermined track while simultaneously deactivating said one recording head and said one respectively associated erase head.

and out of engagement with one of said first plurality of fixed contacts and one of said second plurality of fixed contacts;

- (e) contact operating means pivotally connected to the ends of said plurality of link means remote from said first plurality of fixed contacts and said second plurality of fixed contacts for operating said plurality of contact bridges in a predetermined sequence;
- (f) common shaft means for operating said contact operating means;
- (g) a pair of parallel spaced plates having bearing means for supporting said shaft means, each of said pair of plates having a plurality of slots extending radially inwardly from the periphery thereof;



- (h) a plurality of spacing rods extending parallel to said shaft means and integrating said pair of plates into a squirrel-cage-like frame structure;
- (i) a first plurality of contact-supporting insulating members each inserted into one of said plurality of slots in the upper of said pair of plates and each supporting one of said first plurality of fixed contacts; and
- (j) a second plurality of contact-supporting insulating members each inserted into one of said plurality of slots in the lower of said pair of plates and each supporting one of said second plurality of fixed contacts.

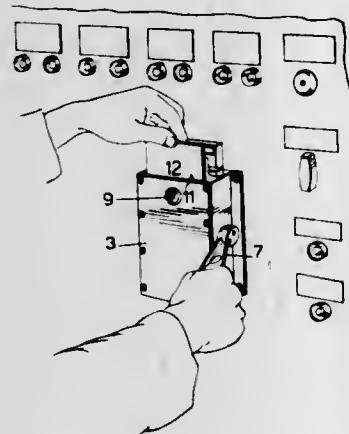
3,315,044

MULTI-CHANNEL TIME AND SEQUENCE ELECTRICAL CONTROL APPARATUS

Leslie Newsome, Wheatley, and Margaret H. Fisher, Mytholmroyd, England, assignors to Process Units (Halifax) Limited, Halifax, England, a corporation of Great Britain

Filed Oct. 1, 1963, Ser. No. 312,921
Claims priority, application Great Britain, Oct. 5, 1962, 37,704/62

6 Claims. (Cl. 200-46)



1. A multi-channel time and sequence electrical control apparatus comprising a multi-banked electromagnetically stepped sequentially switching means, one bank

of contacts thereof operating as a time control for a sequence of operations which are initiated and controlled by a further bank thereof; a casing within which said switching means is mounted; a panel located in said casing; spring terminals disposed on said panel and electrical conductor means connecting each of said spring terminals to said switching means; a program card located between said panel and said casing and having electrical contacts engaging said spring terminals, said program card providing instructions for the time and sequence operations; a spindle carrying said panel; and eccentric bushings in which said spindle is journaled and which, when rotated, clamp said program card between said panel and said casing.

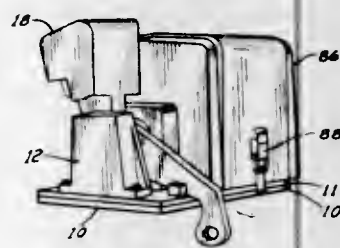
3,315,045

OVERHOIST LIMIT SWITCH

James Baker, Black Mountain, N.C., Fred Bould, Pittsburgh, Pa., and Charles Allan Schurr, Shaker Heights, Ohio, assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed Jan. 11, 1965, Ser. No. 424,565

6 Claims. (Cl. 200-47)



1. An overhoist limit switch comprising: support means; stationary contacts carried by the support means; an operating shaft oscillatably supported at its opposite end portions in respective bearings carried directly by said support means, thereby permitting oscillation of said shaft about its longitudinal axis; movable contacts fixedly mounted on said shaft for movement therewith, into and out of engagement with the stationary contacts; operating means, including a weight arm, journaled solely on said shaft between said bearings and rotatably movable relative to said shaft, in opposite direction, to preselected positions, respectively; and snap acting means operatively interposed between said operating means and said shaft; said operating means being operative to cause said snap acting means to oscillate said shaft with a snap action in one direction when said operating means is moved in one of said directions to one of said positions, and to oscillate said shaft with a snap action in the other direction when said operating means is moved in the opposite direction to another of said positions.

3,315,046

COMBINATION LINE INSULATOR AND CABLE POTHEAD

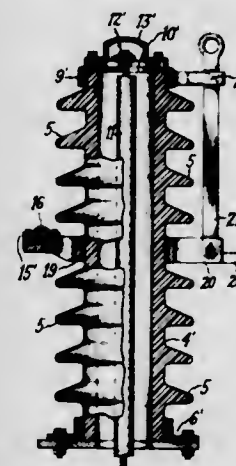
Howard A. Frey, Towson, Md., assignor to General Electric Company, a corporation of New York

Filed Sept. 29, 1965, Ser. No. 491,105

2 Claims. (Cl. 200-48)

1. A combined line conductor insulator and cable tap pothead comprising, in combination, a unitary elongated hollow combination post-type and pothead insulator, mounting hardware attached to one end of said insulator and cable clamping hardware attached to the other end of said insulator for receiving and clamping the end of a cable which extends through said insulator from its mounting end to its clamping end, external line

conductor receiving clamping hardware means mounted on said insulator intermediate its ends, and integral cir-



3,315,047

FILAMENT BREAK DETECTOR

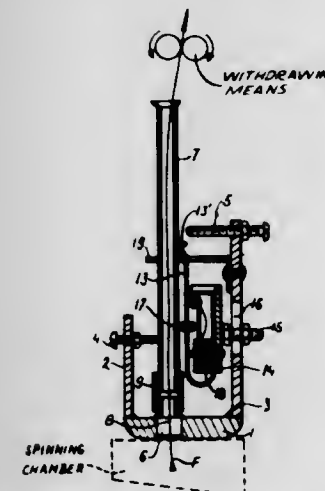
Vladimir Pesek, Zamberk, Jiri Elias, Brandys, nad Orlici, Jan Holub, Zamel, Pavel Celerin, Usti, nad Orlici, and Oldrich Rehurek, Nachod, Czechoslovakia, assignors to Vyzkumny Ustav Bavlnarsky, Usti, Czechoslovakia

Filed Dec. 14, 1965, Ser. No. 513,865

Claims priority, application Czechoslovakia,

Dec. 15, 1964, 7,085/64

14 Claims. (Cl. 200-61.18)



1. In a textile machine, a control device comprising a support; tubular detector means mounted on said support and movable between a first position and a second position; biasing means urging said tubular detector means from said first into said second position thereof; means for advancing a filament under tension and lengthwise along a predetermined path extending lengthwise through said tubular detector means when the same is in said first position thereof with said filament contacting said tubular detector means in such a manner as to tend to retain said tubular detector means in said first position thereof against the action of said biasing means when said filament is under a predetermined minimum tension, said tubular detector means being moved by said biasing means into said second position thereof when the tension of said filament decreases below said predetermined tension and said filament thereby deviates from said predetermined path thereof; signal generating means for generating a signal in response to movement of said tubular detector means from one to the other position thereof; and actuating means comprising an operative connection with said tubular detector means and with said signal generating means for actuating the latter when said tubular detector means moves into said second position thereof.

3,315,048

CONTROL SYSTEM FOR MOLDING MACHINES AND THE LIKE

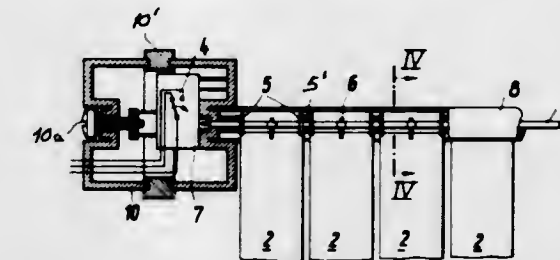
Werner Brummund, Uffeln über Vlotho, Germany, assignor to Friedrich Stübbe, Vlotho (Weser), Germany

Filed Jan. 27, 1964, Ser. No. 340,142

Claims priority, application Germany, Jan. 29, 1963,

St 20,235

10 Claims. (Cl. 200-61.41)



1. In a system for the automatic control of an apparatus producing a series of workpieces, the combination with an electric circuit adapted to be triggered upon the output of workpieces from said apparatus for controlling said apparatus, of:

guide means at said apparatus forming a path for the workpieces discharged therefrom; sensing means along said guide path and responsive to the passage of a workpiece therealong, said sensing means including an elongated element extending above said path transversely thereof and journaled for rotation about a longitudinal axis of said element, a plurality of longitudinally offset sensing leaves depending from said element into said path and journaled on said element for independent rotation thereon, and abutment means on said element and on said leaves for rotatable entraining said element along with one of said leaves deflected in one rotational sense by a workpiece traversing said path while permitting said leaves to swing freely relatively to said element in the opposite rotational sense; and switch means operatively connected with and actuatable by said element upon rotation of said element by one of said leaves and connected in said circuit for operating same to control said apparatus upon displacement of said one of said leaves by a workpiece discharged from said apparatus.

3,315,049

SAFETY SWITCH MEANS FOR MACHINE HAVING A POWER-STROKING OPERATION

Gardner M. Cain, 1318 Hoyt Ave.,

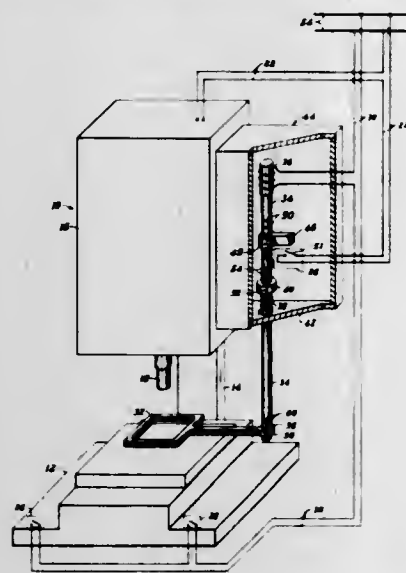
Indianapolis, Ind. 46203

Filed Sept. 15, 1965, Ser. No. 487,475

12 Claims. (Cl. 200-61.42)

1. Safety means for a machine having a power stroke in which a member moves along a path, comprising: a sensor means; a control rod connected at one end to said sensor means; motive means located at the other end of said control rod for moving said sensor means from a first position to a second position, the path of said movement of the sensor means co-inciding with the path of movement of said power stroke member so that any obstruction in said path of said power stroke member will be sensed by said sensing means; said motive means being of low force to permit the sensor means to stop its said movement upon encountering an obstruction present in the sensing path of said sensing means; a control means which when actuated actuates the power stroke of the machine, said control means being located in the path of movement of an actuator means;

said actuator means being mounted intermediate the ends of said control rod, and associated with said sensor means for actuating said control means when said sensor means is in its said second position, assuring that no such obstruction has been encountered;



an operator-controlled actuation means connected to and actuating the said motive means for the said sensor means, assuring that the sensing operation of the said sensing means will be performed preliminarily to the power stroke of the machine, and subsequent to actuation by the operator of the operator-controlled actuation means.

3,315,050

SAFETY DOOR-EDGE CONSTRUCTION

Norman K. Miller, Havertown, Pa., assignor to Miller Brothers, Upper Darby, Pa., a partnership
Filed Apr. 4, 1966, Ser. No. 539,787
7 Claims. (Cl. 200—61.43)

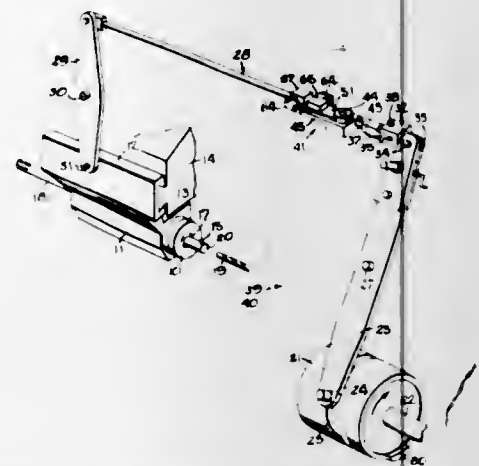


1. A safety edge for a power-operated door, comprising an elongate generally straight formation of resiliently yieldable material adapted to extend along a door edge, said formation having at least one internal hollow, actuating means connected between said internal hollow and a device to be actuated upon localized transverse compression of said formation to close said hollow, a flexible cover conformably and hermetically encasing said formation and adapted for securement to a door, and a spaced pair of relatively stiff limit means extending at least partially through said formation for limiting transverse compression of said cover and formation over the entire length thereof to prevent rupture of said cover and operation of said actuating means upon door closure.

3,315,051
AUTOMATIC SAFETY SHUT-DOWN DEVICE FOR A MACHINE TOOL

Ambrose A. Hasselblad and Walter J. Hasselblad, both % Hasselblad Machine Co., 2405 Mason St., Green Bay, Wis. 54301

Filed May 8, 1964, Ser. No. 366,056
8 Claims. (Cl. 200—61.54)



4. An automatic shut-down device for deactivating a machine tool including a reciprocating machine element and an actuating element therefor, said device having, in combination, a movable base connected to one of said elements, a gear journaled on said base for rotation about a predetermined axis, a rack meshing with said gear and connected to the other of said elements to transmit motion from said actuating element, through said gear and said base, and said machine element, a lever fast on and rotatable with said gear and to extending radially of said axis along said base in a predetermined angular position, first means acting between said lever and said base with a predetermined force and yieldably resisting rotation of the gear and swinging of the lever in one direction from said position, second means acting between said lever and said base with a predetermined force and yieldably resisting rotation of the gear and swinging of the lever in the other direction from said position whereby said lever and said gear are held yieldably against moving relative to said rack, and means for sensing swinging of said lever from said position as an incident to relative movement between said gear and said rack and producing a signal indicating such swinging.

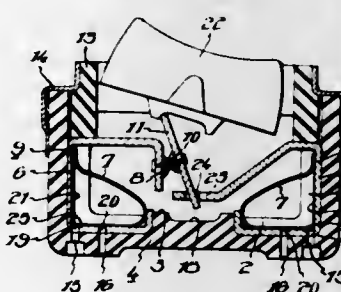
3,315,052

OPERATING MECHANISM FOR A MINIATURE TUMBLER SWITCH

Mo Goto, 57 Matsugaoka, Kanagawa-ku, Yokohama, Japan

Filed Mar. 23, 1966, Ser. No. 536,860
Claims priority, application Japan, July 16, 1965 (utility model), 40/58,046; July 24, 1965 (utility model), 40/60,427; Dec. 28, 1965 (utility model), 40/106,558

4 Claims. (Cl. 200—67)



1. A miniature tumbler switch comprising a casing having an open end, wall means within the casing providing at least two oppositely disposed spaces, an input contact

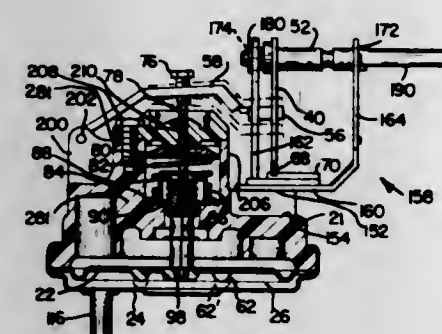
element in one space, an output contact element in the other space, a lid for the open end of the casing fixing said contact elements in place within the casing, means operable with the exterior of said lid and casing for attaching said lid to said casing, said input contact element including a base, an upturned flange at one end of the base, a vertical portion extending along a wall of said casing, an upper horizontal portion, a downturned flange at the end of said horizontal portion terminating short of said upturned flange, and a contact on said downturned flange, said casing and base having aligned apertures therein, a lead wire extending through said apertures and along at least a part of said vertical portion and a resilient plate biased between said upturned flange and said vertical portion for securing said wire to said input contact element, said output contact element including a base, an upturned flange at one end of said base, a vertical portion extending along a wall of the casing, an arm extending inwardly and downwardly from said vertical portion and terminating in a horizontal portion spaced from said input contact element, said horizontal portion having an opening therein, said casing and base having aligned apertures therein, a lead wire extending through said apertures and along at least a part of said vertical portion, and a resilient plate biased between said upturned flange and said vertical portion securing said wire to said output element, a manually operable tumbler button, a plate having one end in engagement with said button and its other end positioned in the opening of said horizontal portion of said resilient arm of said output contact element, and a contact on said plate for cooperation with the contact on the downturned flange of said input contact element upon manipulation of said tumbler button.

3,315,053

PRESSURE RESPONSIVE RESETTING CONTROLLER

Werner R. Bauer, Columbus, Ohio, assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Apr. 16, 1964, Ser. No. 360,368
9 Claims. (Cl. 200—83)



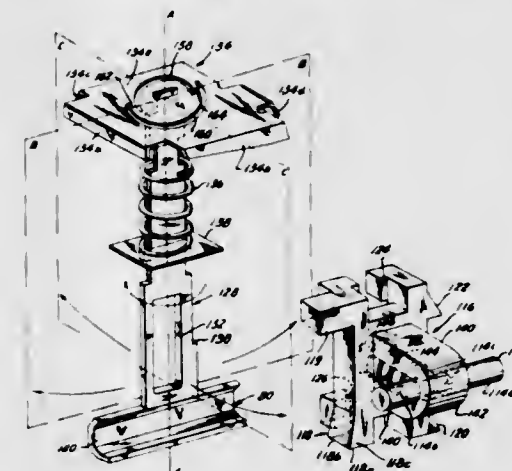
1. In combination: a diaphragm; means forming a variable fluid pressure responsive chamber on one side of said diaphragm; fluid flow means connected with said variable fluid pressure responsive chamber and connectable with a variable fluid pressure producing means; a controller; connecting means connecting said diaphragm and said controller to cause said controller to be changed to a set condition, when said variable fluid pressure on one side of said diaphragm is substantially at a generally low limit, and an actuated condition when said variable fluid pressure on one side of said diaphragm is at any one of a plurality of selected upper pressure limits; an adjusting cam member rotatable about an axis and having a curved upper pressure limit selecting adjustable surface eccentric to said axis adjustable by rotation of said cam member, surface operated means operated by said adjusting surface to cause said connecting means to cause

said controller to be actuated to said actuated condition in response to said any one of a plurality of selected upper pressure limits, said cam member having a resetting adjusting surface connected to one end of said selecting adjusting surface movable to cause said surface operated means to cause said connecting means to cause said controller to be reset to said set condition while said fluid pressure chamber is at a higher pressure than said generally low limit said cam member including holding means, and a holding spring engaging said holding means to hold said cam members in adjusted position, and in which said selecting adjusting surface and said resetting adjusting surface form one edge of a curved closed slot in said adjusting cam member.

3,315,054

OVERLOAD RELAY WITH SNAP-ACTING CONDITION RESPONSIVE SWITCH

Howard Dale Langley, Cranford, N.J., assignor to Federal Pacific Electric Company, a corporation of Delaware
Filed June 28, 1965, Ser. No. 467,492
16 Claims. (Cl. 200—116)



1. A switch including an enclosure, an elongated guide member mounted in said enclosure and movable from a first position to a second position, a carriage slidably mounted on said guide member and movable therewith between said first and second positions, a movable contact on said carriage, companion contact means mounted in said enclosure and engageable by said movable contact for closing the switch, biasing means in said enclosure resiliently urging said carriage along said guide member from a normal position wherein said contacts are in engagement toward a position remote from said normal position, restraining means in said enclosure in engagement with said carriage when said guide member is in said first position for releasably holding said carriage in said normal position, and deflecting means adjacent said guide member and movable into engagement therewith for moving said guide member from said first position toward said second position to release said carriage from said restraining means thereby to free said carriage for movement toward said remote position and to open said contacts.

3,315,055

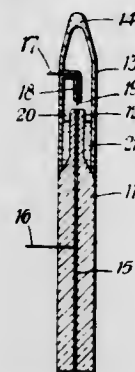
TEMPERATURE-RESPONSIVE EXPANSIBLE-FLUID SWITCH

Walter Alfred Broad, Glamorgan, Wales, assignor to H. J. Elliott Limited, Glamorgan, Wales, a British company
Filed Nov. 16, 1964, Ser. No. 411,437
Claims priority, application Great Britain, Nov. 18, 1963, 45,493/63

3 Claims. (Cl. 200—141)

1. A temperature-responsive instrument comprising a tubular reservoir, a quantity of electrically conductive liquid in the reservoir, portions of the reservoir defining

an opening at the top thereof, a chamber through the bottom of which the reservoir projects so that said opening is above the bottom of the space within the chamber so that upon the instrument being subjected to a sufficiently high temperature some of the liquid can emerge from the reservoir through said opening and upon the instrument being subjected to a substantially higher temperature the liquid which has emerged as aforesaid can fall in said space, a first electrical conductor in the chamber, means sup-



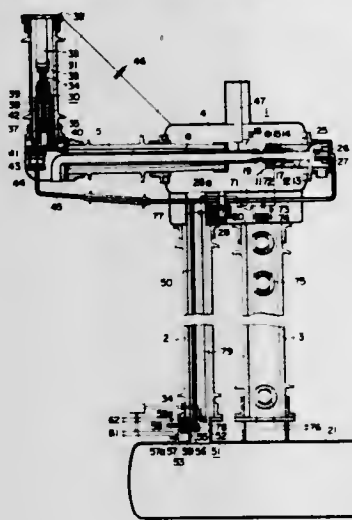
porting the first electrical conductor and causing its lower extremity to be maintained just above said opening at the top of the reservoir so as to be contacted by the liquid as it emerges through said opening upon a slow increase in the temperature to which the instrument is subjected and to be out of contact with the liquid as it falls in said space, and a second electrical conductor supported in the reservoir in a position to be connected by the liquid to the first electrical conductor upon the latter being contacted by the liquid as aforesaid.

3,315,056

GAS BLAST CIRCUIT BREAKER WITH ELECTRO-MAGNETIC CONTACT ACTUATING MEANS

Tetsuya Furukawa and Yoshio Nitta, Tokyo-to, and Nobuaki Kiyokuni, Kawasaki-shi, Japan, assignors to Fuji Denki Seizo Kabushiki Kaisha, Kawasaki-shi, Japan, a joint-stock company of Japan

Filed Oct. 14, 1964, Ser. No. 403,832
5 Claims. (Cl. 200-148)



1. A gas blast circuit breaker with electromagnetic contact actuating means comprising a first contact, a second contact of construction normally in contact with said first contact and having a coaxial passage therethrough disposed coaxially with said first contact and adapted to be movable on the common axis to contact said first contact, a casing which encloses both said contacts and is normally filled with a compressed gas and electrically insulated from ground potential, means to prevent leakage of the compressed gas in said casing between the contacting surfaces of the first and second contacts when in contact,

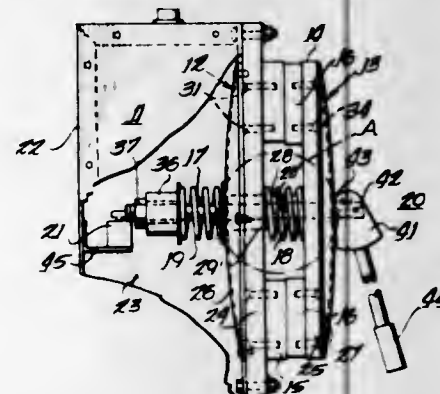
a flange member provided on said second contact, a driving coil which is fixedly disposed so as to be closely coupled, in an electromagnetic manner, with said flange member, a switching element, a capacitor connectable to said driving coil through said switching element, and means to charge said capacitor, said switching element, capacitor and driving coil being combined so that an electrostatic charge in said capacitor is discharged into said driving coil upon operation of said switching element to cause a current to flow through said driving coil, whereby said second contact will be separated from said first contact by the resulting repulsive force between said current in said driving coil and an induced current in said flange member.

3,315,057

POLARITY REVERSING SWITCH FOR ELECTROPLATING EQUIPMENT

Edward B. Geltner, Chicago, Ill., assignor to Clinton Supply Company, Chicago, Ill., a corporation of Illinois

Filed Sept. 29, 1964, Ser. No. 400,037
6 Claims. (Cl. 200-153)



1. A polarity-reversing switch for electroplating comprising:

- (a) a support for coaxially mounting aligned first and second bus-bar mounting panels,
- (b) said first mounting panel having two aligned pairs of spaced parallel bus-bars mounted on one face thereof, each of said pairs of bus-bars spaced an equal distance from the common axis of said panels,
- (c) said second mounting panel having a third pair of parallel bus-bars mounted on the face thereof opposite to said face of said first mounting panel, each bus-bar of said third pair having respective lengths sufficient to span the gaps between corresponding bus-bars of each pair of said two pairs of bus-bars, and
- (d) shaft means secured to one of said panels, said shaft means having a manually operated means pivotally connected thereto for effecting relative rotative and axial shifting of said panels, whereby said third pair of bus-bars, in one position, spans said gaps between said two pairs of bus-bars, and in another position, spans the gaps between the same pairs of said two pairs of bus-bars.

3,315,058

MOTOR CONTROLLER FOR AN INDUSTRIAL TRUCK

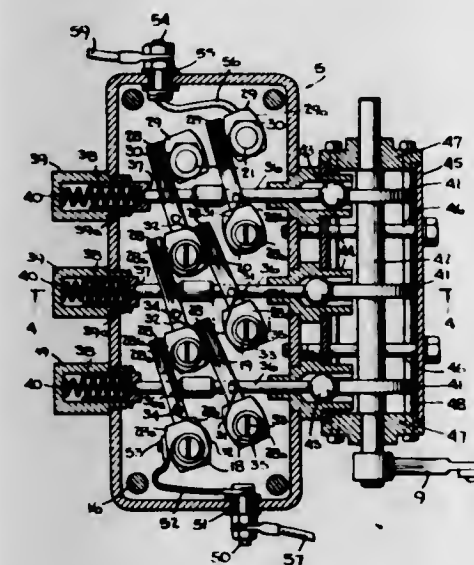
Bronislaus I. Ullinski, Jenkintown, Pa., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio

Application Feb. 12, 1965, Ser. No. 436,989, which is a continuation of application Ser. No. 101,705, Apr. 10, 1961. Divided and this application Mar. 14, 1966, Ser. No. 534,190

8 Claims. (Cl. 200-153)

1. A controller comprising, at least two pairs of spaced terminals, a contact finger pivotally mounted on each terminal of one pair of terminals, one contact finger being

pivotally movable into and out of electrical contact with one terminal of the other pair of terminals, the other contact finger being pivotally movable between positions of electrical contact with both terminals of the other pair of terminals, and means for selectively pivoting said fingers to three different positions of electrical contact with said terminals of said other pair of terminals including a first position in which both said contact fingers are in electrical contact with said one terminal of the other pair of terminals, a second position in which said one contact finger



is out of electrical contact with said one terminal of the other pair of terminals and said other contact finger is in electrical contact with said one terminal of said other pair of terminals, and a third position in which said one contact finger is in electrical contact with said one terminal of said other pair of terminals and said other contact finger is in electrical contact with said other terminal of said other pair of terminals, whereby elements connected between each of said pair of terminals may be connected in parallel, in series, or certain elements shorted out.

3,315,059

ELECTRICAL CONNECTION APPARATUS

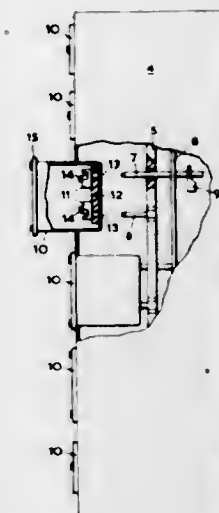
Eric Jacks, Charles Rowe, and Kenneth Herbert Black, Liverpool, England, assignors to The English Electric Company Limited, London, England, a British company

Filed Aug. 10, 1964, Ser. No. 388,599
Claims priority, application Great Britain, Aug. 15, 1963, 32,258/63

5 Claims. (Cl. 200-166)

- 1. Electrical connection apparatus comprising support means,
- a plurality of parallel spaced elongated conductors supported by, and protruding from, said support means,
- mounting means movable relatively to said support means,
- a plurality of electrical housings secured to said mounting means and having a forward side and a rearward side,
- a plurality of terminal blocks disposed in each said housing and each defining a recess having an angled side, a screw-threaded bore communicating with the recess and an aperture extending through the block into the recess, said aperture lying in alignment with a corresponding one of said conductors whereby said terminal blocks are engageable with and disengageable from, one another in response to said relative movement,
- a wedge disposed in said recess and having a first side adapted to mate with said angled side and a second side opposite the first side for engaging with the conductor, said wedge further defining a plain bore in alignment with said screw-threaded bore in the block, and

clamping means accessible from the forward side of said housing and selectively operable to force the first side of said wedge into mating contact with said angled side of the recess, whereby to lock the conductor against said second side, and to release the first side from said angled side whereby to unlock the conductor and permit said relative movement between the housing and the support means, the clamping means comprising,



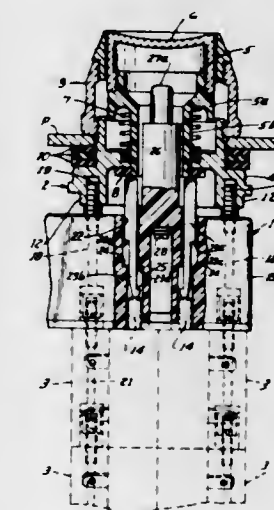
- a screw having a small diameter portion extending through said plain bore and a larger diameter screw-threaded portion for threadably engaging the bore in the block, and
- a washer captively held about said small diameter portion of the screw and adapted to abut the wedge whereby, upon rotation of the screw in a sense such as to withdraw the screw the said larger diameter portion thereof abuts the washer and positively releases the wedge to unlock the conductor.

3,315,060

LIGHT MODULE AND COMBINATION THEREOF WITH PUSH BUTTON OPERATOR AND SWITCH

Richard C. Rothweller, Wauwatosa, Josef Bierenfeld, Shorewood, and Carl B. Sohns, Whitefish Bay, Wis., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed Nov. 8, 1965, Ser. No. 506,696
10 Claims. (Cl. 200-167)



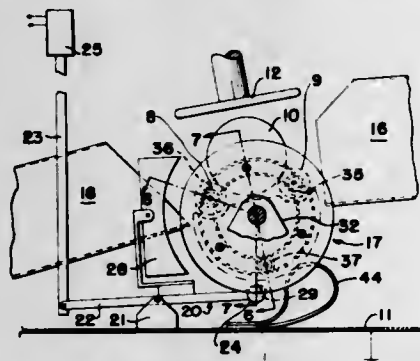
- 1. A light module comprising a body having a front end and a rear end, a light bulb socket on the front end of the body and including contacts for connection to a light bulb,

said body being a hollow housing with the cavity thereof open through the rear end of the housing and a detachable cover on the rear end of the housing and closing said open end of the cavity, said housing having a passage extending therethrough from said front end to the rear end, and said cover having a passage aligned with said passage in the housing, an actuating pin in, and movable endwise of, the passage, said front end of the body being arranged for connection to a push button operator, having an actuator, with the actuator aligned with the pin and socket, and having a window at its forward end, and operable to engage and move the pin endwise in said passage by operation of the actuator, the body being arranged for connection to a push button switch disposed at the rear of the cover with the push button extending part way into said passages and aligned with, and engageable by, the pin for endwise movement thereby, and means for connecting the contacts of the socket to a source of power.

3,315,061

HIGH FREQUENCY HEATING SYSTEM

Gordon C. Trabue, Louisville, Ky., assignor to Chemtron Corporation, Chicago, Ill., a corporation of Delaware
Filed Apr. 29, 1963, Ser. No. 276,448
6 Claims. (Cl. 219-10.69)



1. In a high frequency dielectric heating system for heating round dielectric objects, the combination comprising, electrode means for establishing a high frequency heating field; carrier means including a carrier member; a pair of spaced rollers mounted on said carrier member for supporting and rotating round objects; and gear means for moving said round dielectric objects with respect to said electrode means, said gear means comprising a pinion gear, spur gear means mounted on at least one of said rollers in driving relation with said pinion gear, an internal ring gear in engagement with said spur gear means; means operable sequentially to hold and to release said ring gear, and synchronously therewith to hold and to release said carrier member, said rollers being free to rotate dielectric objects about their axes in the heating field when said ring gear is held, and said carrier moving said dielectric objects laterally with respect to said electrodes means when said ring gear is released.

3,315,062

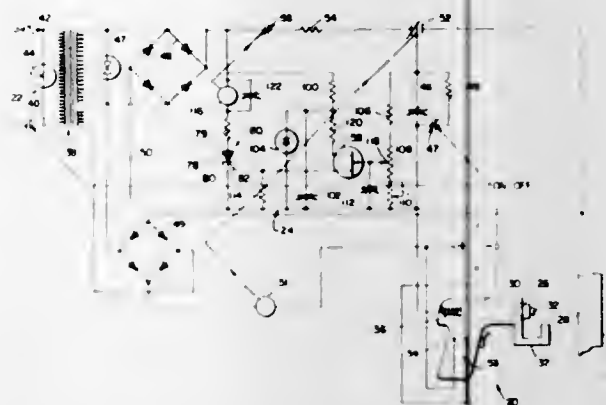
STUD WELDING SYSTEM

Charles C. Pease, Pennsauken, N.J., assignor to KSM Products, Inc., Moorestown, N.J., a corporation of New Jersey

Filed June 28, 1963, Ser. No. 291,530
5 Claims. (Cl. 219-113)

1. For use in monitoring and controlling a welding apparatus comprising a stud holder for positioning a stud with respect to a workpiece to which the stud is to be welded, a transformer for applied alternating current, a full wave rectifier energized by said transformer, a

storage capacitor and a switch operatively connected in series across said rectifier, the improved monitoring and controlling circuit comprising a resistor operatively connected in parallel with said capacitor, said resistor being associated with a timing capacitor, a unijunction transistor having a pair of bases and an emitter closer to one base than to the other, said unijunction transistor being non-conductive until greater than a predetermined voltage is applied to its emitter, said unijunction transistor generating a pulse across its terminal electrodes when greater than a predetermined voltage is applied to its emitter, said emitter being coupled to said resistor, a zener diode for maintaining a constant voltage across said bases, said zener diode being resistively coupled to one of said bases, a gating rectifier including a pair of terminal electrodes and a control electrode, said terminal electrodes being non-conductive until a voltage in excess of a predetermined value is applied to said control electrode, said control electrode being operatively connected to the other



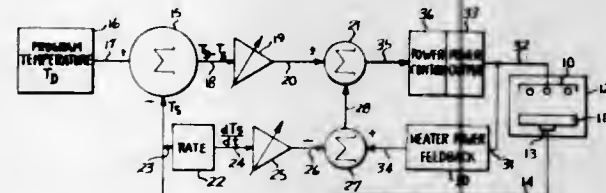
base of said unijunction transistor, and a relay operatively connected to one of the terminal electrodes of said gating rectifier for interrupting the operative connection between said full wave rectifier and said capacitor when said gating rectifier is conducting, said resistor and timing capacitor constituting a transient loop which applies said predetermined voltage to said emitter of said unijunction transistor to cause firing when said storage capacitor is predeterminedly charged, said unijunction transistor applying a pulse to said control electrode of said silicon controlled rectifier to cause firing when said unijunction transistor fires, said silicon controlled rectifier becoming conductive when fired in order to apply current to a relay for opening the circuit charging said storage capacitor, said unijunction transistor isolating said storage capacitor from the remainder of said monitoring and controlling circuit, said monitoring and controlling system permitting discharge from said storage capacitor through said stud and workpiece when said storage capacitor is fully charged.

3,315,063

TEMPERATURE CONTROL SYSTEM

Eugene T. Ihlenfeldt, Kirkland, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware

Filed May 7, 1964, Ser. No. 345,772
10 Claims. (Cl. 219-497)



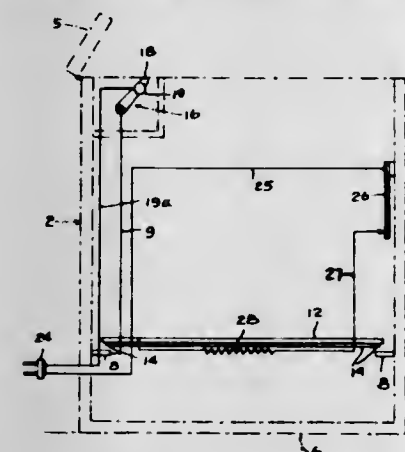
10. A temperature control system comprising in combination: electric heater means adapted when energized to apply heat to a specimen; electric power means adapted to apply electric power to said heater means; circuit

means coupled with said power means adapted to provide a power signal which is a function of the power applied to said heater means and including a signal transformer having a primary winding in parallel with said electric heater means and a secondary winding having a rectifier and a resistor connected in series thereacross; sensing means adapted to provide an information signal proportional to the temperature of said specimen; rate circuit means coupled with said sensing means adapted to provide a rate signal proportional to the rate of change of the temperature of said specimen; program means adapted to provide a program signal corresponding to the level of signal provided by said sensing means when said specimen is at a selected temperature; error signal means having said program signal and said information signal applied thereto and adapted to provide an error signal proportional to the difference between said program and information signals; and electric power control means responsive to said power, error, and rate signals to provide a control signal to said power means to thereby cause said power means to apply to said heater sufficient power to correct for heat losses in the system and to change the temperature of said specimen until said error and rate signals are reduced substantially to zero, said power means including a first summing network adapted to provide a loss compensation signal proportional to the difference between said rate signal and said power signal, and a second summing network adapted to provide a signal which is proportional to said error signal and to said loss compensation signal, said first summing network including a capacitor coupled with said resistor and connected to said rate circuit means and adapted to have said rate signal applied thereto, said second summing network including a first amplifier having a control electrode adapted to have said error signal applied thereto and having a load circuit, a second amplifier having a control electrode coupled with said capacitor and having a load circuit, said power control means further including means controlling the power applied to said heater means in accordance with the difference in current flow in said load circuits.

3,315,064

ELECTRICALLY HEATED MILK BOTTLE CHEST

Gustav W. Carlberg and Richard A. Carlberg, both of 161-01 89th Ave., Jamaica, N.Y. 11432
Filed Sept. 22, 1965, Ser. No. 489,190
4 Claims. (Cl. 219-518)



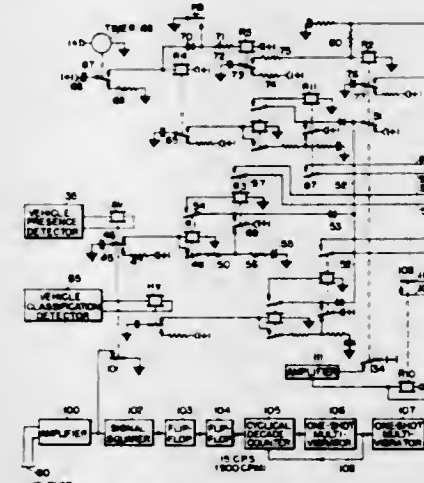
2. In a milk chest a casing having a top lid, an actuator switch mounted on the casing and having a spring pressed arm engageable with said lid, a spring supported platform disposed within the casing and supporting an electrical contact, a second contact supported by the casing and adapted to be engaged by said electrical contact, said contacts being in series connection with said actuator switch, a heating coil disposed within the casing and connected to one of said contacts and a voltage supply for said coil.

3,315,065

APPARATUS FOR MEASURING AND RECORDING VEHICULAR TRAFFIC PARAMETERS

John H. Auer, Jr., Rochester, N.Y., assignor to The General Signal Corporation, Rochester, N.Y., a corporation of New York

Filed Dec. 12, 1962, Ser. No. 244,171
17 Claims. (Cl. 235-150.24)



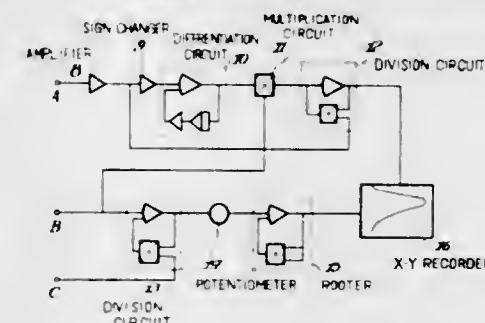
1. Apparatus for periodically recording digital representations of the volume of vehicular traffic passing a monitoring location comprising in combination means responsive to the vehicles passing said location, means for counting the vehicles detected by said vehicle responsive means, demarcating means for timing successive measuring intervals of substantially equal duration, and means governed in part by said demarcating means for graphically recording at the end of each demarcated interval the count then registered by said counting means.

3,315,066

PHOTO-SCANNING METHOD AND APPARATUS FOR DIRECT MEASUREMENT OF PARTICLE SIZE DISTRIBUTION OF POWDER

Akinori Muta, Suganami-ku, Tokyo-to, Yasuhiko Uehara, Kitatama-gun, Tokyo-to, and Masaru Kurata, Ota-ku, Tokyo-to, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan

Filed Feb. 26, 1963, Ser. No. 261,008
Claims priority, application Japan, Feb. 26, 1962, 37/6,573; Feb. 12, 1963, 38/5,797, 38/5,798
3 Claims. (Cl. 235-151.3)



2. A direct-measuring, particle size analyzer comprising a cell having transparent, mutually-parallel, planar, perpendicular side walls and containing a liquid suspension of the particles to be measured; a collimated thin light beam source disposed on one side of said cell to project said light beam perpendicularly toward said side wall and, at the same time, to scan downwardly in the depth direction of said suspension; means for generating an electrical output h which is proportional to the depth from said suspension surface corresponding to the position of said light beam in said suspension, means for generating an electrical output t which is proportional to the time elapsed from the start of the sedimentation of the particles in said liquid to the start of said light

first latch spring means affixed to said closure member adjacent said aperture and being releasably engageable with said engagement means to resiliently urge said refractor flange downwardly into engagement with the margin of said aperture, an inverted dished reflector having an outwardly extending bottom peripheral flange coextensive with said refractor flange, second latch spring means mounted on said closure member and engaging the upper surface of said refractor flange to urge said refractor flange into resilient engagement with said refractor flange, each of said latch spring means having a portion spaced from said refractor and reflector and operative upon movement outwardly therefrom to unlatch its respective latch spring means from said refractor and reflector.

3,315,073

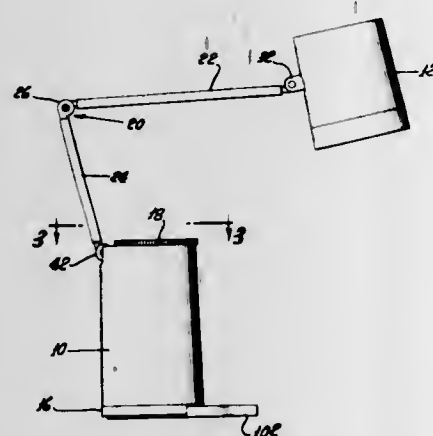
HIGH-INTENSITY LAMP

Minoru Araki, Tokyo, Japan, assignor to Z & T Importing Co., Inc., Los Angeles, Calif., a corporation of California

Filed Jan. 10, 1966, Ser. No. 537,247

Claims priority, application Japan, Apr. 19, 1965, 40/030,576

26 Claims. (Cl. 240—36)



1. In a lamp structure: a base having a lower end adapted to rest upon a supporting surface, said base having an upper end substantially equal in size to its lower end, said base having peripheral walls the cross-section of which is substantially uniform; a reflector housing having a uniform cross-sectional configuration conforming to that of said base; said base having a height substantially greater than the height of said reflector housing; said reflector housing having an open end through which a beam of light is adapted to be projected; a lamp socket in the reflector housing; and an arm structure pivotally connected at one end to the said upper end of said base and pivotally connected at its other end to said reflector housing for mounting the reflector housing on the base for movement from a normal juxtaposed position at the upper end of the base to a variety of selected positions relative to the base, said reflector housing, when in a juxtaposed position, forming an upward continuation of said base.

3,315,074

LIGHTING FIXTURE

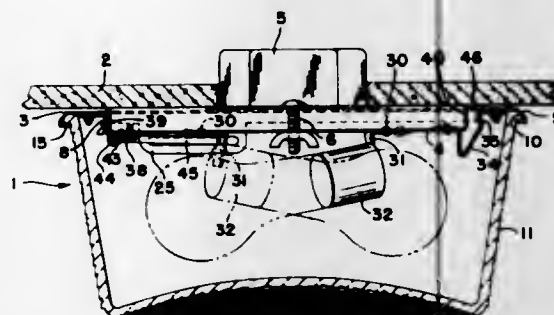
Morris M. Buzan, Westlake, and John J. Wade, Seven Hills, Ohio, assignors, by mesne assignments, to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland

Filed Mar. 24, 1964, Ser. No. 354,209

7 Claims. (Cl. 240—147)

7. A ceiling type lighting fixture comprising a frame, a glass, means securing said glass to said frame, a pan adapted to be mounted flush against a ceiling or like

surface, said frame having an inner flange which defines an opening for receipt of said pan therewithin, said pan having an outwardly extending abutment surface for supporting said frame thereon and spring means for yieldably maintaining said frame in position overlying said abutment surface, and means mounting said frame for pivotal and lateral movement with respect to said pan to



permit disengagement of said abutment surface and swinging of said frame and glass away from said pan, said last-mentioned means comprising a hinge pin mounted adjacent one edge of said pan for rotational movement and having a pair of arms extending radially outwardly therefrom, the outer end portions of said arms being bent for receipt in longitudinal slots in said frame.

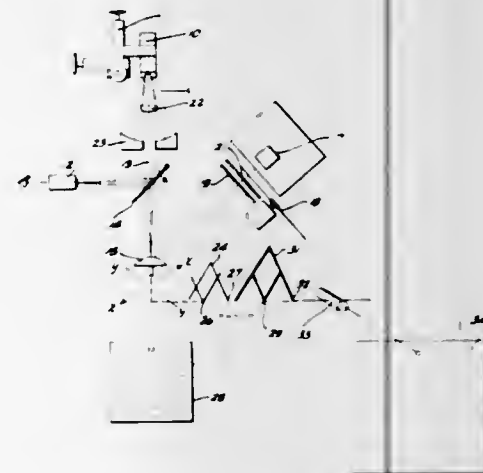
3,315,075

INFRARED DETECTOR TESTING SYSTEM COMPRISING SCANNING THE DETECTOR SURFACE WITH A POINT-SOURCE OF RADIATION

Harold K. Coulter, Philip M. Cruse, and Daryl D. Errett, Santa Barbara, Calif., assignors to Santa Barbara Research Center, Goleta, Calif., a corporation of California

Filed June 1, 1964, Ser. No. 371,488

5 Claims. (Cl. 250—83.3)



3. A system for testing the responsivity of an infrared detector which comprises an infrared source for producing an infrared image, optical demagnification means coupled with the infrared source for demagnifying the infrared image to a size relatively small compared with the active surface of an infrared detector to be tested, a pantograph scan mechanism coupled to the optical demagnification means for moving the demagnified image across the active surface of an infrared detector to be tested, means for measuring the point responsivity of the active surface of an infrared detector to be tested, and a second pantograph means coupled to the pantograph scan mechanism for contour plotting the point responsivity of an infrared detector to be tested.

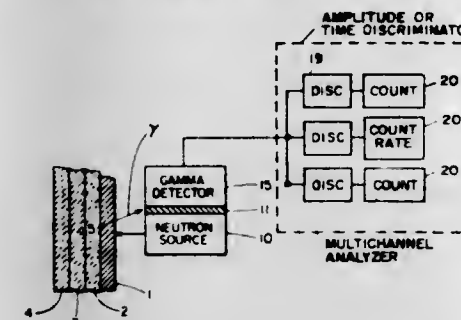
3,315,076

DETERMINING THE THICKNESS OF A FURNACE LINING BY MEANS OF NEUTRON ACTIVATION

Edward D. Jordan, Kensington, Md., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Oct. 7, 1964, Ser. No. 402,369

4 Claims. (Cl. 250—83.3)



1. The method of detecting the wear of a furnace liner comprising the steps of inserting a borated brick within said liner having a boron content of the order of 2% by weight, irradiating said furnace for producing a low level thermal neutron flux in the vicinity of said borated brick of the order of 10^4 – 10^6 neutrons $1\text{ cm}^2/\text{sec.}$, and counting the rate of emission of gamma rays from said borated brick on a count rate meter, where, in the non-eroded state the brick has an energy of .477 m.e.v. and recounting the rate of emission after erosion of a predetermined portion when a large change occurs at the count rate meter indicating needed replacement of the liner.

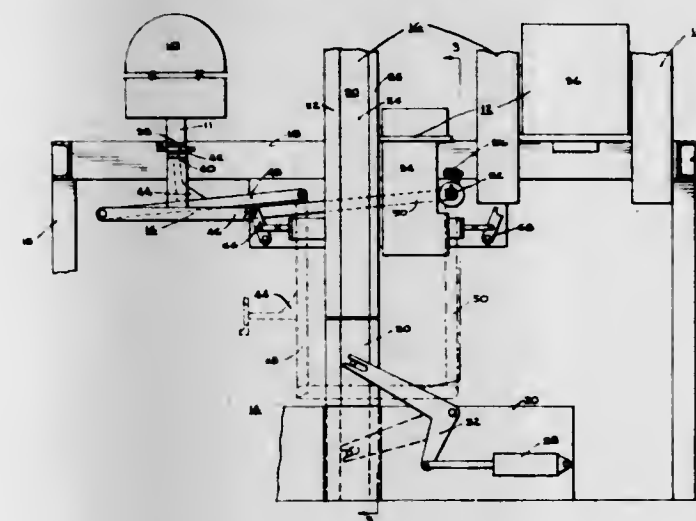
3,315,077

AUTOMATIC NEUTRON ACTIVATOR ANALYZER

Robert E. Jones, Jr., and Harold J. Price, Colorado Springs, Colo., assignors to Kaman Aircraft Corporation, Bloomfield, Conn., a corporation of Connecticut

Filed Aug. 14, 1963, Ser. No. 302,182

13 Claims. (Cl. 250—106)



1. In an activation analyzer the combination of a source of radiation, means for detecting radiation induced in a sample by said source of radiation and a transfer means mounted on a supporting means, said transfer means designed to transfer a known and an unknown sample from an exposure position in predetermined proximity to the radiation source to a detection position of predetermined proximity to said detecting means in a manner to permit uniform repeatability with respect to time and proximity, said transfer means including means for holding a known and an unknown sample to be exposed to said radiation source and to be carried by said transfer means to said detection means.

3,315,078

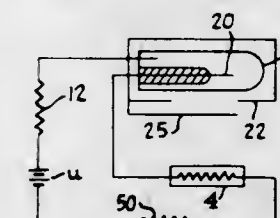
OPTICAL FEEDBACK STABILIZING CIRCUIT FOR A VOLTAGE SOURCE HAVING A HIGH INTERNAL RESISTANCE

Gerardus Jacobus Deelman and Alphonsus Maria Henricus Schellekens, both of Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Oct. 11, 1963, Ser. No. 315,606

Claims priority, application Germany, Oct. 13, 1962, N 22,208

12 Claims. (Cl. 250—205)



1. A circuit for regulating load voltage comprising, input terminals connected to a voltage source having a high internal impedance, a variable electrical load to be supplied from said voltage source, a light-radiating element, a photosensitive resistor, and means connecting said load, said light-radiating element and said photosensitive resistor in series circuit across said input terminals, said photosensitive resistor being positioned to receive light exclusively from said light-radiating element and being responsive thereto so that a given variation in the load impedance produces a change in the current flowing in said series circuit which causes the intensity of light received by said photosensitive resistor to vary in a sense and in an amount sufficient to vary the resistance thereof to maintain the voltage across said load substantially constant.

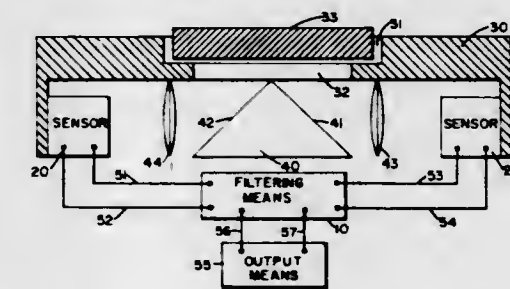
3,315,079

BACKGROUND NOISE MINIMIZER USING VIBRATING RETICLE AND PHOTOCELLS IN OPPOSITION

Floyd V. McCannless, St. Petersburg, and Glen R. Quasius, Clearwater, Fla., assignors to Honeywell Inc., a corporation of Delaware

Filed Feb. 26, 1964, Ser. No. 347,561

2 Claims. (Cl. 250—209)



1. A radiation sensor having background gradient radiation rejection characteristics for distinguishing a desired radiation source from background gradient radiation comprising:

means for modulating the radiation at a predetermined frequency; reflecting means for dividing said modulated radiation into first and second substantially equal portions; a first detecting means positioned and adapted so as to receive said first portion and generate an electrical signal indicative thereof; a second detecting means positioned and adapted so as to receive said second portion and generate an electrical signal indicative thereof; electrical filtering means connected to said detecting means so as to pass only signals of said predetermined frequency; and

means connecting said first and second detecting means in parallel phase opposition so as to cancel out signals which are detected from both portions of said radiation.

3,315,080

SOLID-STATE IMAGE INTENSIFIER WITH VARIABLE CONTRAST RATIO

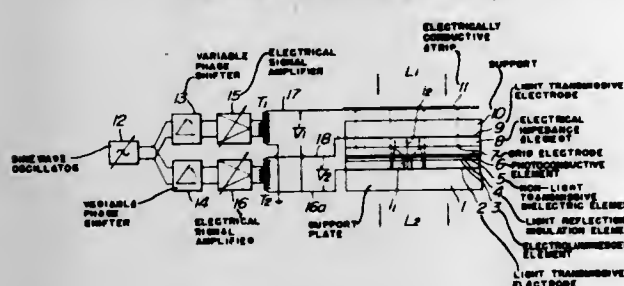
Taduo Kohashi, Yokohama, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan

Filed Nov. 18, 1963, Ser. No. 324,483

Claims priority, application Japan, Nov. 20, 1962,

37/52,254

2 Claims. (Cl. 250-213)



1. A solid-state image intensifier comprising a composite solid plate including an auxiliary element and three principal elements, said principal elements consisting of an electroluminescent element, a photoconductive element and an electrical impedance element, positioned in a sandwich relationship, each of said principal elements being insulated from each other and having electrodes connected thereto, electrical power means connected to said electrodes whereby the electroluminescent element influenced by the photoconductive and electrical impedance element exhibits a visible light signal in accordance with an incident radiation signal applied to the photoconductive element, said electrical power means providing alternating current vector voltages V_1 and V_2 having the same frequency, variable phase shifting means for feeding said alternating current vector voltages V_1 and V_2 of the same frequency at a variable phase difference across said electroluminescent and photoconductive elements and across said electroluminescent and electrical impedance elements respectively, said electrical power means providing said V_1 voltage with an absolute value in a range whereby said electroluminescent element produces a luminescence of satisfactory intensity in response to the alternating current associated with said voltage at least under the condition of maximum conductivity of said photoconductive element, said electrical power means further providing said V_2 voltage with an absolute value corresponding to a point of maximum luminescent intensity on a characteristic curve of the absolute value of V_2 versus the luminescent intensity of the electroluminescent element in which the voltage V_1 has a fixed absolute value when the phase difference between voltages V_1 and V_2 is fixed at a critical value θ_c , which corresponds to the point of minimum luminescent intensity on the characteristic curve of the phase difference θ between said voltages V_1 and V_2 versus the luminescent intensity of said electroluminescent element, as obtained with the absolute values of said voltages fixed with the photoconductor element at a minimum conductivity, whereby said variable phase shifting means provides means for varying the light transducing characteristic of said electroluminescent element, said variable phase shifting means comprising a plurality of four-terminal four-terminal phase-shifter circuits in cascade connection, each of said circuits having a pair of variable resistances arranged in one pair of opposite arms of the circuit forming a gang resistor, and a pair of capacitors arranged in the other pair of opposite arms of the circuit;

and vacuum-tube transformer load cathode followers, each having a secondary coil on the output side to which a pair of opposite terminals of said phase-shifter circuit are balance-connected, and resistor means connected in parallel with said secondary coil whereby the value of the load impedance on the secondary coil side of said vacuum-tube transformer output cathode follower is lower than the minimum impedance value of the associated four-terminal phase-shifter circuit, and the other pair of opposite terminals of each of said four-terminal phase-shifter circuits is connected out of balance to the input circuit of an associated vacuum-tube cathode follower.

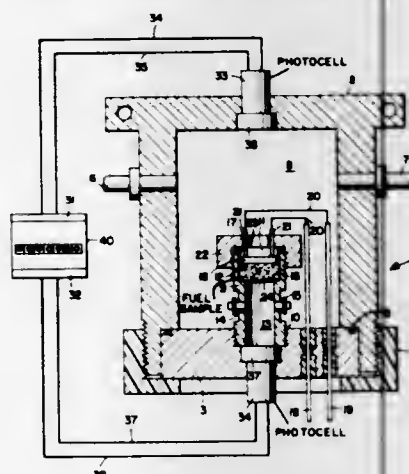
3,315,081

BURNING RATE DETECTOR

Nathan P. Williams, Jr., Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army

Filed Jan. 10, 1964, Ser. No. 337,105

10 Claims. (Cl. 250-217)



1. A burning rate cell comprising means for holding a flammable test sample, said sample having an ignition surface and a burnout surface, means for igniting said ignition surface, a timer for recording the time required for burning through the sample from the ignition surface to the burnout surface thereof, means mounted relative to said holding means, in facing relation to said ignition surface, and immediately responsive to ignition of said sample for turning on said timer, and means facing the burnout surface of said sample and responsive to a flame emerging on the burnout surface of said sample for turning off said timer.

3,315,082

TRANSMISSION LINES UTILIZING FIBER OPTICS AND AN ELECTRO-QUENCHABLE PHOSPHOR

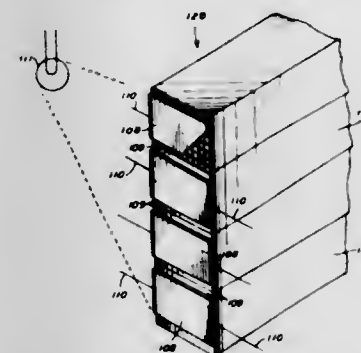
Warren E. Milroy, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Aug. 24, 1962, Ser. No. 219,821

3 Claims. (Cl. 250-227)

1. A signal transmission system for use in conjunction with high speed computer equipment comprising; a plurality of contiguous optical paths, each optically isolated for independent transmission of discrete signal information and including light guide means constructed of a light transmitting material and having ends; transducer means physically fixed to said ends of said light transmitting material, the transducer means at one of said ends being adapted for converting electrical signals to light; wherein said transducer means at said one of said ends of said light transmitting material comprises an electro-quenchable phosphor;

transducer means at the other of said ends adapted for converting light to electrical signals; and



activating means connecting to said transducer means at said one of said ends for activating said transducer means to produce light for transmission.

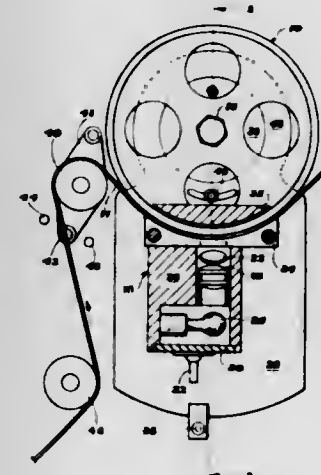
3,315,083

LIGHT-TIGHT PHOTOELECTRIC FILM READER

Clifford B. Bushnell, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Apr. 24, 1963, Ser. No. 275,401

9 Claims. (Cl. 250-239)



9. A detector for developing signal information indicative of marks on one surface of a paper web for use of downstream equipments which operate on the web, comprising:

an opaque detection station; an opaque flanged idler for conveying the paper web past said detection station with the information exposed thereto; opaque means substantially enclosing the flange of said idler throughout the region of said detection station; means for selectively illuminating the paper web in said detection station; and means for detecting the reflectance of the illuminated paper web.

3,315,084

HOUSING FOR LIGHT METER USING PHOTORESISTANCE

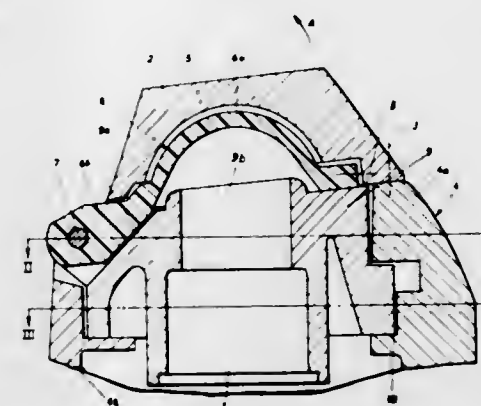
Wilhelm Bertram, 125 Plannegger Strasse, Munich-Pasing, Germany

Filed June 10, 1964, Ser. No. 374,118

6 Claims. (Cl. 250-239)

1. In a light meter having a body with a photo-resistance element therein acting as a light sensitive element for controlling the actuation of the meter and having means forming a light receptive opening for conducting light to the light sensitive element, an opaque one piece

cover adapted to prevent access of light to said opening and a diffusor lid having an externally bulged translucent portion adapted to receive light from a wider angle than the receiving angle of said opening, said meter being characterized by a first pivoted connection means between the cover and said body along one edge of said cover permitting the swinging of said cover between a closed position over said opening and an open position project-



ing from the side of said body, said cover having an interior recess adapted to receive said translucent portion when said cover and said lid are closed on said body, and a second pivoted connection means between said lid and said body along one edge of said lid permitting swinging movement of said lid between the closed position over said opening and an open position in which said lid lies outside the receiving angle of said opening.

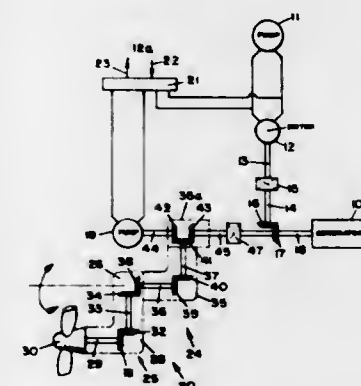
3,315,085

AUXILIARY HYDRAULIC AND ELECTRICAL POWER SUPPLY SYSTEM FOR AIRCRAFT

Joseph A. Milet and Herbert H. Kouns, Camarillo, Calif., and Gabriel V. Pesce, Wiesbaden-Biebrich, Germany, assignors to Abex Corporation, a corporation of Delaware

Filed Mar. 12, 1965, Ser. No. 439,421

6 Claims. (Cl. 290-4)



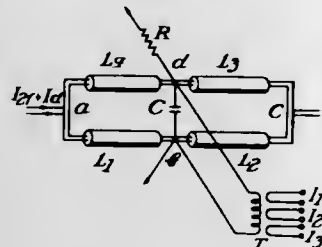
1. An electrical and hydraulic power supply system for an aircraft having an engine comprising, a generator, primary means for driving said generator including a hydraulic pump driven by said engine and a rotary hydraulic fluid motor driven by said hydraulic pump, and selectively operable auxiliary means for driving said generator comprising a turbine fan selectively movable into the airstream of said aircraft, and gear, shaft and one-way clutch means connecting said fan to said generator, said clutch means transferring rotary motion from said turbine fan to said generator but not in the reverse direction.

3,315,086

PARAMETRON ELEMENT FORMED INTO A BALANCED CIRCUIT

Shintaro Oshima, Musashino-shi, Tokyo-to, Kakuo Futami, Mitaka-shi, Tokyo-to, Takasuke Fukui, Nerima-ku, Tokyo-to, Tetsusaburo Kamibayashi, Kitaadachi-gun, Saitama-ken, and Yoshihisa Komazawa, Shibuya-ku, Tokyo-to, Japan, assignors to Kokusai Denshin Denwa Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan

Filed Sept. 4, 1962, Ser. No. 221,281
14 Claims. (Cl. 307-88)



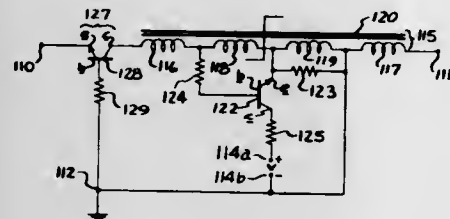
1. A parametron element comprising, a balanced circuit having four arms of non-linear inductive members connected in a ring configuration and each having a ferromagnetic substance deposited thereon as a thin film; exciting terminal means for applying exciting current and bias current provided at one of two pairs of opposed terminals of said balanced circuit and for exciting parametrically said balanced circuit; output terminal means for deriving output current provided at the other pair; tuning means in said balanced circuit for tuning said circuit of a frequency equal to one half of that of said exciting current; and input means inductively coupled with said balanced circuit for applying an odd number of input information signals into said balanced circuit, whereby an output current, having a frequency equal to one half of that of said exciting current and having one of two phases mutually having a phase difference of π in accordance with said input information signals, is generated at said output terminal means.

3,315,087

MAGNETIC PULSE COUNTER AND PULSE FORMING CIRCUIT

Michael J. Ingenito, Bronx, N.Y., assignor to General Time Corporation, New York, N.Y., a corporation of Delaware

Filed Mar. 22, 1963, Ser. No. 267,273
21 Claims. (Cl. 307-88)



1. In a magnetic counting and pulse forming circuit having an input whereat input pulses are applied and an output, the combination which comprises, a pair of saturable reactor sections constructed of materials having generally rectangular hysteresis loops and having a saturating winding and a reset winding, the ampere-turns required to establish a given flux completely around one of the sections being so proportioned relative to the corresponding parameter of the other section that said section is driven in successive steps from the negative saturation substantially to positive saturation by the input pulses before the input pulses so affect the other section, means coupled to the reset winding and rendered operative upon

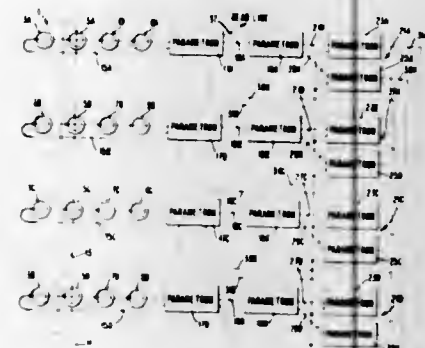
both sections attaining positive saturation states for applying a reset pulse to the reset winding to drive the sections back to their negative saturation states, and means responsive to the resetting of said sections for producing a pulse at the output indicative of a desired count.

3,315,088

READOUT OF PHASE CODED DATA

Lloyd Elwood West, Lexington, Ky., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Nov. 26, 1963, Ser. No. 326,146
7 Claims. (Cl. 307-88)



5. In combination with a matrix memory of magnetic cores having remanence, readout and shifting means comprising stages, each stage comprising input, intermediate, and shift control parametrons:

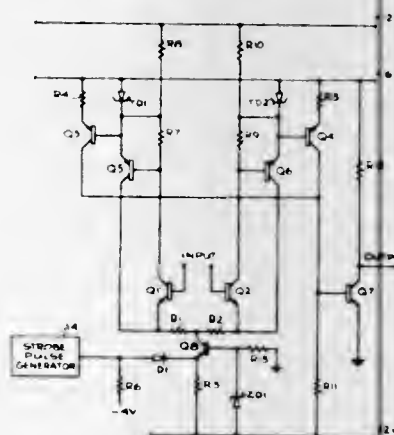
- a plurality of input parametrons with the seed circuit of each linking one row of said memory,
- a plurality of intermediate parametrons with the seed circuit of each operatively coupled to the seed circuit of one input parametron,
- a plurality of shift control parametrons, each intermediate parametron being coupled to the seed circuit of two of said shift control parametrons,
- coupling means from the shift control parametrons of one stage to the seed circuit of an input parametron of a different stage wound additively when the shift control parametrons were seeded by an intermediate parametron,
- and control means to force said shift control parametrons to oscillate such that signals appear on said coupling means in subtractive relationship.

3,315,089

SENSE AMPLIFIER

David W. Mayne, Woodland Hills, Calif., assignor to Ampex Corporation, Culver City, Calif., a corporation of California

Filed Oct. 14, 1963, Ser. No. 315,945
4 Claims. (Cl. 307-88.5)



1. A sense amplifier circuit for use with a digital memory for detecting the presence of a signal having

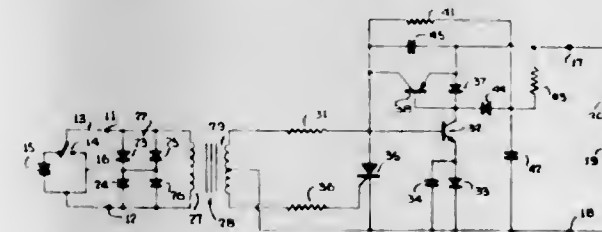
greater than a predetermined amplitude comprising a differential amplifier having first and second input terminals and including first and second transistors, each transistor having a base, a collector, and an emitter; means respectively connecting said first and second input terminals to said first and second transistor bases; means for applying said signal between said first and second input terminals; means interconnecting said first and second transistor emitters; first and second tunnel diodes; first and second amplifier means respectively connecting said first and second tunnel diodes to said first and second transistor collectors; means biasing said tunnel diodes for bistable operation; and means for sensing the states of said first and second tunnel diodes.

3,315,090

SWITCHING CIRCUITS UTILIZING OPPOSITE CONDUCTIVITY TRANSISTORS

Donald Richard Bruffey, Silver Spring, and Richard Dale Stephenson, Mount Rainier, Md., assignors to Tri-State Electronics, Inc., Falls Church, Va., a corporation of Virginia

Filed Oct. 25, 1963, Ser. No. 318,954
15 Claims. (Cl. 307-88.5)



1. A bistable circuit responsive to a signal source comprising a pair of terminals adapted to be connected to a D.C. source, a pair of opposite conductivity type, normally cut-off transistors, the emitter collector path of one of said transistors being connected in series circuit between said terminals, said series circuit further including a diode poled in the direction of current flow through the emitter and collector of said first transistor, the emitter base junction of said second transistor being connected in a D.C. shunt circuit across said diode, said junction and diode being connected to each other to be forward biased simultaneously in response to the voltage across them, a D.C. path connecting the collector of said second transistor to the base of said first transistor for coupling emitter collector current of the second transistor to the base of the first transistor, and means coupling said signal source to an electrode of one of said transistors to change the conducting state of both said transistors in a like manner in response to said source attaining a predetermined amplitude, wherein the knees of the characteristic curves of said diode and junction are at substantially the same voltage so that substantial conduction through said transistor is controlled by and occurs simultaneously with said diode being driven to the knee of its characteristic curve, the voltage of said knees being different from zero.

3,315,091

MONOSTABLE CIRCUITS

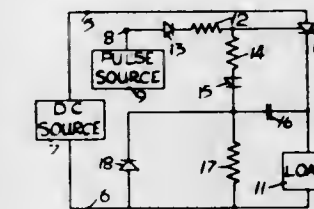
Maurice James Wright, Harborne, Birmingham, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England

Filed Dec. 16, 1963, Ser. No. 330,795
Claims priority, application Great Britain, Dec. 21, 1962, 48,290/62

4 Claims. (Cl. 307-88.5)

1. A monostable circuit comprising first and second terminals for connection to a source of direct current so as to be of relatively positive and negative polarity respec-

tively, a third terminal for connection to a source of positive triggering pulses, a switchable rectifier having an anode, a cathode and a gate, said switchable rectifier being turned on by positive current flow between its gate and cathode, and being turned off by negative current flow between its gate and cathode, means connecting the anode and gate of said switchable rectifier to the first and third terminals respectively, a load through which the cathode of said switchable rectifier is connected to the second terminal, a capacitor having a pair of plates, means connecting one of said capacitor plates to the cathode of said switchable rectifier, a circuit connecting the other plate of said capacitor to the gate of said switchable



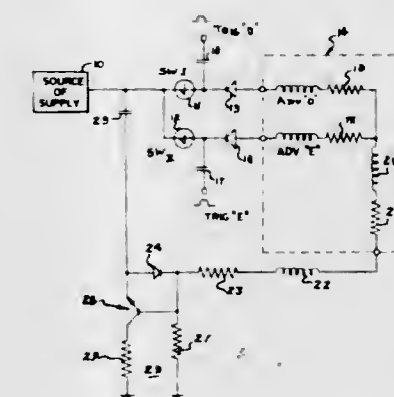
rectifier and including a four-layer diode poled to break down when said other plate of said capacitor attains a predetermined negative voltage with respect to said one plate connected to said cathode of said switchable rectifier, and a circuit connecting said other plate of said capacitor to said second terminal and including a resistor, said switchable rectifier being turned on by pulses applied to the third terminal, said capacitor being charged when said switchable rectifier conducts until said four-layer diode breaks down, and said capacitor discharging when said four-layer diode breaks down to turn said switchable rectifier off.

3,315,092

DRIVER CIRCUIT FOR MAGNETIC CORE DEVICE EMPLOYING ADDITIONAL CHARGE PATH FOR CONTROLLED YET RAPID RECYCLING THEREOF

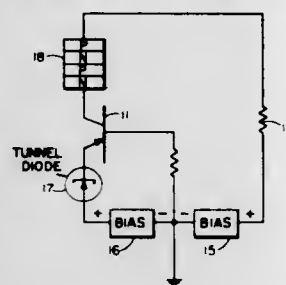
Lawrence Grebe Wiley, Camp Hill, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Filed Dec. 20, 1963, Ser. No. 331,999
15 Claims. (Cl. 307-88.5)



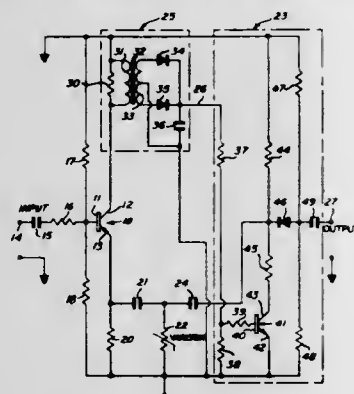
1. An electronic circuit comprising solid state switch means connected to be driven to conduction to operate load means, an input for applying a constant voltage to said switch means, means in circuit with said switch means and responsive to conduction of said switch means to produce output pulses to said load means, and means connected to said last mentioned means to provide rapid recycling of said last mentioned means at a predetermined rate including means to alter said rate to provide proper sequential conduction of said switching means.

3,315,093
MULTISTABLE CIRCUIT HAVING ONE DIRECT AND ONE INVERTED NEGATIVE RESISTANCE
 George Abraham, 3107 Westover Drive SE., Washington, D.C. 20020
 Filed Dec. 31, 1963, Ser. No. 334,947
 5 Claims. (Cl. 307—88.5)



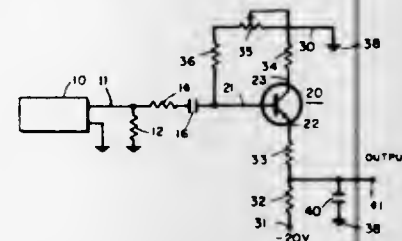
1. A multistable circuit for generating a negative resistance characteristic having at least three stable stages, comprising:
 - first means for generating an S-type negative resistance characteristic;
 - second means for generating an N-type negative resistance characteristic;
 - biasing means coupled to said first and second means for biasing said first and second means and cooperating with said first and second means to convert said S-type negative resistance characteristic to an N-type negative resistance characteristic and means to combine said N-type and said converted S-type negative resistance characteristics as a composite double N-type negative resistance characteristic.

3,315,094
GATED LIMITER CIRCUIT
 Frank Wilton Mills, Lanark County, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada
 Filed Jan. 13, 1964, Ser. No. 337,312
 2 Claims. (Cl. 307—88.5)



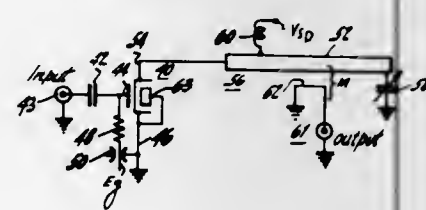
1. A gated limiter circuit comprising a pair of input terminals for connecting an input signal thereto, a pair of output terminals for connecting an output signal therefrom, a transistor having base, collector and emitter electrodes, a source of operating potential for said transistor, means for coupling the input signal from said input terminals to the base electrode, a degenerative feedback resistor connected between said emitter electrode and one terminal of said source, a direct current isolated varistor connected in shunt with said resistor, a load circuit connected between said collector electrode and the other terminal of said source, said load circuit including rectifier means for producing a direct current control voltage which is proportional to the amplitude of the input signal coupled from said transistor to said load circuit, and a gate circuit responsive to the direct current control voltage for coupling the output signal which appears across said varistor to said output terminals when said control voltage is greater than a predetermined level.

3,315,095
TRANSISTORIZED PULSE TO D.C. CONVERTER
 Martin Blumberg and Joseph A. Holly, Los Altos, Calif., assignors to the United States of America as represented by the Secretary of the Army
 Filed Jan. 23, 1964, Ser. No. 339,828
 7 Claims. (Cl. 307—88.5)



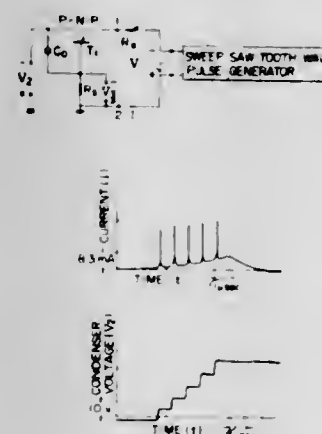
1. A pulse to D.C. converter comprising
 - a transistor having input connections and output connections, and a given Zener voltage level with respect to said input connections;
 - a load resistor;
 - a source of direct voltage;
 - a source of pulses of a given potential;
 - a first capacitor connecting said source of pulses to said input connections of said transistor;
 - said given potential of said pulses being greater than said given Zener voltage level of said transistor;
 - means for connecting said output connections of said transistor in series with said load resistor across said source of direct voltage; and
 - a second capacitor connected across said load resistor.

3,315,096
ELECTRICAL CIRCUIT INCLUDING AN INSULATED-GATE FIELD EFFECT TRANSISTOR HAVING AN EPITAXIAL LAYER OF RELATIVELY LIGHTLY DOPED SEMICONDUCTOR MATERIAL ON A BASE LAYER OF MORE HIGHLY DOPED SEMICONDUCTOR MATERIAL FOR IMPROVED OPERATION AT ULTRA-HIGH FREQUENCIES
 David John Carlson, Indianapolis, Ind., and Daniel H. Rauscher, Lebanon, N.J., assignors to Radio Corporation of America, a corporation of Delaware
 Filed Feb. 17, 1964, Ser. No. 345,365
 13 Claims. (Cl. 307—88.5)



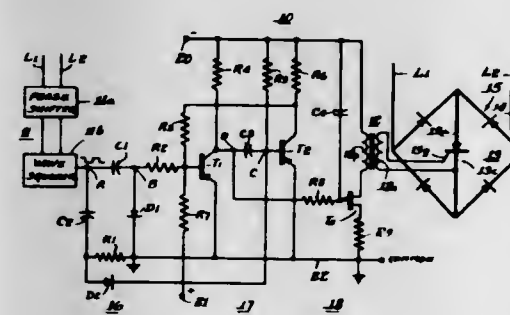
1. An electrical circuit operable at ultra-high frequencies comprising in combination:
 - an insulated-gate field-effect transistor having source and drain electrodes in an epitaxial layer of doped semiconductor material on a base layer of more highly doped semiconductor material and forming a combined substrate therewith and a gate electrode insulated from said epitaxial layer;
 - circuit means for connecting said gate, source and drain electrodes of said transistor so that said transistor operates as the active device of said electrical circuit; and
 - resonant circuit means connected between said source and drain electrodes and cooperating with said combined substrate to provide improved operation at said ultra-high frequencies.

3,315,097
PULSE-GENERATOR USING PUNCH-THROUGH-AVALANCHE TRANSISTOR PRODUCING BOTH PULSE AND STEP-WAVE OUTPUTS IN RESPONSE TO SINGLE SWEEP INPUT
 Seiji Kanai, Kitatama-gun, Tokyo, and Takeo Tomimaga, Kodaira-shi, Tokyo, Japan, assignors to Nippon Telegraph and Telephone Public Corporation, Tokyo, Japan
 Filed Apr. 15, 1964, Ser. No. 359,944
 Claims priority, application Japan, Apr. 25, 1963, 38/21,055
 8 Claims. (Cl. 307—88.5)



1. A pulse generating circuit using a transistor, having the punch-through voltage lower than the breakdown voltage of collector junction and having a carrier multiplying action in the collector junction at said punch-through voltage, comprising at least one condenser for closing the circuit between
 - emitter and base of said transistor, and an electric current source for driving the collector of said transistor; said driving electric current source being made to sweep between collector and base in blocking direction of said collector junction with a sweep voltage which increases with passage of time, whereby a fixed number of pulse waves are generated at said collector terminal in a time interval within which said sweep voltage is higher than said punch-through voltage and during the same time that a stair-case wave form with steps corresponding in number to said generated pulses is generated across said condenser.

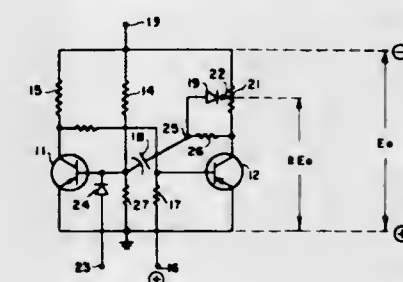
3,315,098
FIRING CIRCUIT FOR A CONTROLLED RECTIFIER
 James J. Eckl, Milwaukee, Wis., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
 Filed June 22, 1964, Ser. No. 376,724
 2 Claims. (Cl. 307—88.5)



1. A controlled rectifier means and a firing circuit therefor comprising a controlled rectifier means having gate terminal means and connected between a source

of alternating voltage of relatively low frequency and a load, a source of periodic voltage of square-wave form and of the same frequency and adjustably phase-positioned with respect to said source of alternating voltage, a one-shot multivibrator having a pair of inputs, a pulse former responsive to said periodic voltage to produce pulses of alternate polarity and of the same frequency as said source, means impressing said pulses of one polarity on one of said inputs of said multivibrator and said pulses of the opposite polarity on the other of said inputs of said multivibrator, said multivibrator including means to provide a unidirectional pulse upon reception of each input pulse, said unidirectional pulses being of longer duration than said input pulses but of shorter duration than one-half cycle of said source of alternating voltage, an oscillator responsive to said unidirectional pulses to provide, only during each unidirectional pulse, a train of a predetermined number of pulses of relatively high frequency each capable of firing said controlled rectifier means, and means for impressing each pulse of said train of pulses at said gate terminal means of said controlled rectifier means.

3,315,099
MONOSTABLE MULTIVIBRATOR
 Hideya Nishioka, Kawasaki, Japan, assignor to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
 Filed July 30, 1964, Ser. No. 386,123
 Claims priority, application Japan, July 30, 1963, 38/40,100
 5 Claims. (Cl. 307—88.5)



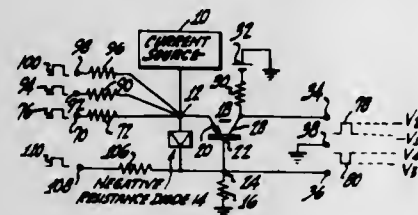
1. A monostable multivibrator circuit arrangement having an operating time which remains stable despite variations in ambient temperature and supply voltage, comprising
 - first and second electronic switching devices each adapted to be biased to operative conditions determining a stable state and an unstable state of said multivibrator circuit arrangement;
 - a source of supply voltage;
 - a time constant circuit comprising a capacitor and a first resistor and a second resistor together providing both a charging and discharging path for said capacitor with said source of supply voltage and coupling said first switching device to said second switching device in a manner whereby said capacitor is alternately charged and discharged and determines the operative condition of said first and second electronic switching devices; and
 - control means connected to said source of supply voltage providing a voltage ratio and coupled to said capacitor for stopping the charging of said capacitor when the voltage across the said capacitor equals the voltage ratio provided by said control means thereby reducing the charging current in said capacitor, the voltage across said capacitor remaining equal to said voltage ratio and the operative condition of said first and second switching devices changing said multivibrator circuit arrangement from the unstable state to the stable state due to the reduction of charging current in said capacitor, said monostable multivibrator circuit arrangement having an operating time

determined by the capacitance of said capacitor, the resistance of said first and second resistors and the ratio of the voltage provided by said control means.

3,315,100

ELECTRICAL CIRCUITS USING NEGATIVE RESISTANCE DIODE-TRANSISTOR COMBINATION
 Juan J. Amodi, Levittown, Pa., assignor to Radio Corporation of America, a corporation of Delaware
 Continuation of applications Ser. No. 50,946, Aug. 22, 1960, Ser. No. 59,919, Oct. 3, 1960, and Ser. No. 265,016, Mar. 11, 1963. This application Nov. 19, 1964, Ser. No. 414,502

35 Claims. (Cl. 307-88.5)

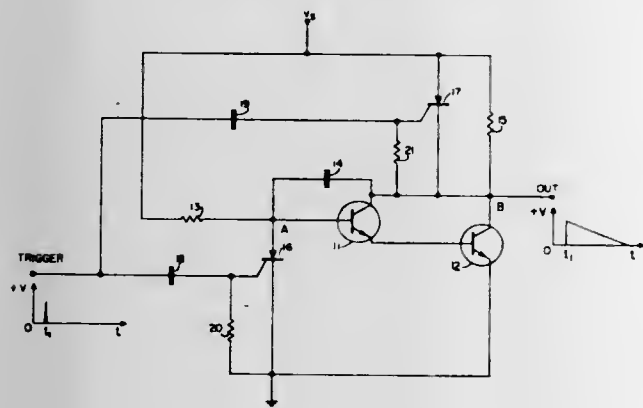


13. In combination, two branch circuits connected in parallel, one including the emitter-to-collector path of one transistor, and the other including the emitter-to-collector path of another transistor; means for applying an operating current to said two circuits; means for applying the same information pulses, in parallel, to said two branch circuits; and negative resistance means in at least one of said circuits, including one negative resistance element connected in series with the emitter-to-collector path of one transistor and one negative resistance element connected in series with the emitter-to-collector path of said one transistor, responsive to information pulses applied to said branches for steering said operating current mainly into one or the other of said branches in accordance with the number of said pulses received concurrently.

3,315,101

SAWTOOTH SWEEP GENERATOR WITH NEGLIGIBLE RECOVERY TIME
 Ronald H. Smith, Oxon Hill, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Dec. 24, 1964, Ser. No. 421,130
 8 Claims. (Cl. 307-88.5)



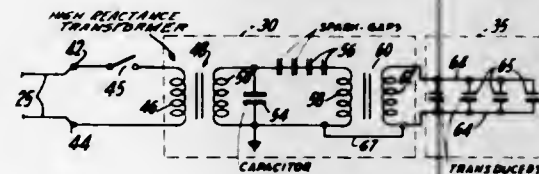
1. A sawtooth generator triggered by an external source, comprising:
 a pair of gated rectifiers;
 a capacitor intercoupling said pair of gated rectifiers;
 an amplifier having an input resistor and a load resistor;
 said capacitor being in parallel connection with said amplifier;

bias means biasing said pair of gated rectifiers and said amplifier;
 and connection means applying a trigger pulse from said external source to said pair of gated rectifiers, whereby said gated rectifiers are triggered into conduction causing said capacitor to be charged to near bias supply potential and of such polarity as to oppose further conduction of said gated rectifiers and said amplifier until the charge on said capacitor decays and a second pulse triggers said gated rectifiers.

3,315,102

PIEZOELECTRIC LIQUID CLEANING DEVICE
 Robert H. Quint, Jamaica, and Frank H. Mach, Long Island City, N.Y., assignors to Electromotion Components Corporation, Huntington Station, N.Y., a corporation of Delaware
 Continuation of application Ser. No. 216,608, Aug. 13, 1962. This application Jan. 14, 1963, Ser. No. 266,119

5 Claims. (Cl. 310-8.1)



1. In combination with a liquid bath in which articles to be cleaned are immersed and which is subject to a range of variations in work load, a plurality of vibratable means in driving contact with said liquid bath, said vibratable means having a range of resonant frequencies over said range of variations in work load, a power source of relatively low frequency alternating current, means energized from said power source to generate a spectrum of relatively high driving frequencies and comprising a tank circuit with a plurality of branches and including a plurality of series-connected spark gaps in one of said branches and including an input step-up transformer having a relatively high leakage reactance between its primary and secondary windings, the power source being connected to the primary winding of the transformer and the secondary winding being connected to said tank circuit, whereby said input transformer has a high transfer reactance at the resonant frequency of the tank circuit but has a relatively small transfer reactance to the frequency of the power source so that relatively little energy is reflected back from the tank circuit to the power source, and means applying said driving frequencies to said plurality of vibratable means, said spectrum of driving frequencies substantially corresponding to said range of resonant frequencies of said vibratable means over said range of variations in work load.

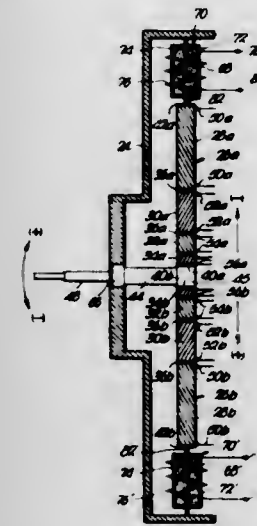
3,315,103

DIGITAL TORQUE MOTOR
 Billy E. Duff, Kellyville, and Rex D. Hughes, Tulsa, Okla., assignors to Midwestern Instruments, Inc., Tulsa, Okla., a corporation of Oklahoma
 Filed Jan. 10, 1964, Ser. No. 336,973

10 Claims. (Cl. 310-8.1)

1. In a control:
 support means;
 shiftable structure spaced from the support means and adapted for coupling with apparatus to be mechanically actuated; and
 a member coupled with said support means and said structure for moving the latter toward and away from the support means, said member comprising a series of mechanically interconnected, electrostrictive elements disposed between the structure and said support means, each of the elements being

adapted to have an electrical control signal applied thereto and being constructed and arranged to cause contraction of the member and pull the structure

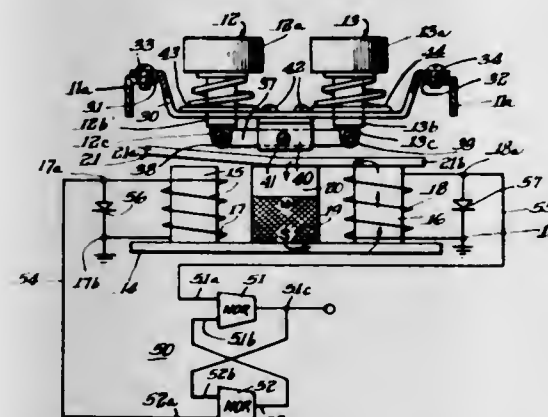


toward the support means upon application of said signal thereto, whereby said structure may be selectively shifted to any one of a plurality of desired positions.

3,315,104

MAGNETIC IMPULSE GENERATOR
 John N. Barr, Detroit, Mich., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
 Filed Apr. 16, 1964, Ser. No. 360,346

3 Claims. (Cl. 310-29)



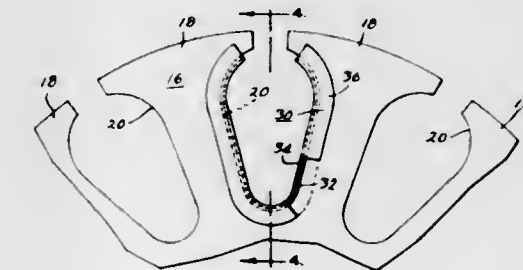
1. A magnetic impulse generator comprising a magnetizable core means having spaced protruding first and second magnetizable pole pieces, coil means surrounding said core, a permanent magnet means mounted in flux-conducting relation on said core means intermediate said pole pieces, a magnetizable armature pivotally supported intermediate its end portions on said permanent magnet means, said end portions overlying the exposed end faces of said pole pieces, respectively, with one of said end portions spaced from its associated end face while the other of said end portions is in engagement with its associated end face in one of two turned positions of said armature about its pivot and with said other end portion in engagement with its associated end face and said one end portion spaced from its associated end face in another turned position of said armature about its pivot, an operator means operable to rock said armature about its pivot to effect said engagement with said pole pieces, selectively, said operator means including a pivotally supported operating lever having push-button means attached at its opposite ends, respectively, said operating lever being spacially aligned with said armature in a manner such that selective depression of said push-button means pivots said operating lever into contact with said armature so as to impart said rocking motion thereto,

engagement of said armature with a pole piece causing the reluctance of the magnetic loop including said core means and the one of said pole pieces being engaged to be suddenly reduced thereby inducing a voltage impulse in said coil means, and said rocking motion of said armature being magnetically assisted to cause substantially uniform acceleration of said armature independently of the speed of said operator means in the region of close proximity thereof to the one of said pole pieces being engaged.

3,315,105

SPEED CONTROL MEANS FOR D.C. MOTORS AND METHOD FOR MAKING THE SAME
 James Riley Moore, Jr., Columbus, Miss., assignor to American Bosch Arma Corporation, Columbus, Miss., a corporation of New York
 Continuation of application Ser. No. 265,961, Mar. 18, 1963. This application Nov. 9, 1965, Ser. No. 510,393

2 Claims. (Cl. 310-211)



1. A balanced rotor assembly for an armature comprising a core structure including a plurality of laminations each having a plurality of spaced apart fingers, said laminations arranged in face-to-face relation with the fingers aligned to define a plurality of slots extending transversely of the laminations, a plurality of circumferentially equispaced liners mounted in said slots, said liners being of substantially the same configuration and weight and all of said liners being substantially equispaced from the axis of rotation of said rotor, at least one of said liners being a thin laminated liner consisting of a thin layer of electrically conductive material having one face in contact with a plurality of said laminations and a thin sheet of insulating material confronting and bonded to the face of said layer opposite said one face and an armature winding in said slots pressing said one liner into engagement with said laminations thereby to decrease the electrical resistivity of said core structure, said one liner having an open side aligned with the slot and being readily deformable under the pressure of the windings and said windings being tightly wound whereby the direct contact between the layer of electrically conductive material of said one liner and said laminations constitutes the sole electrical connection therebetween and said winding being exposed through said slots.

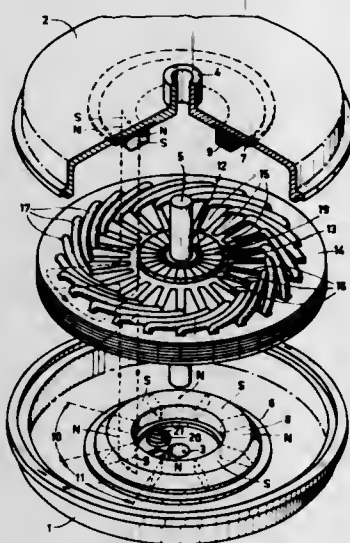
3,315,106

DISK SHAPED ELECTRIC MOTOR
 Maximilien Felix Reynst, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
 Filed Mar. 9, 1964, Ser. No. 350,408
 Claims priority, application Netherlands, Mar. 27, 1963, 290,775

4 Claims. (Cl. 310-268)

1. An electric motor comprising a disk-like rotor mounted on a shaft; two annularly arranged magnet assemblies positioned, one on either side of and substantially concentric with said rotor, the poles of said magnet assemblies being aligned with the axis of rotation of the rotor, each of said magnet assemblies being comprised of at least two sections of alternating magnet polarity,

the maximum flux on the rotor being produced by arranging said assemblies such that the poles of confronting sections have like polarity; brush means for transmitting electric current; commutator means adjacent

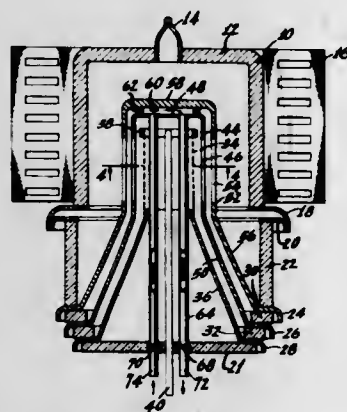


said brush means; and coil windings on the rotor faces radially outward and substantially concentric with said magnet assemblies, said coil windings being in electrical contact with said commutator means and said brush means.

3,315,107

COOLING MEANS FOR POWER TUBES

Merrald B. Shrader, Leola, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed July 21, 1964, Ser. No. 384,117
12 Claims. (Cl. 313-39)



12. An electron tube having:

- (a) an evacuated envelope,
- (b) two electrodes in said envelopes, said electrodes including adjacent regions having lead-ins extending through a wall portion of said envelope and other adjacent regions within said envelope remote from said lead-ins,
- (c) said other regions of said electrodes defining two opposite walls of a chamber at substantially atmospheric pressure, and
- (d) means for circulating a coolant through said chamber.

3,315,108

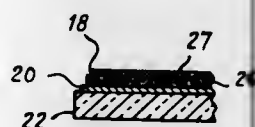
HIGH LAG, HIGH SENSITIVITY TARGET HAVING SOLID ANTIMONY OXYSULPHIDE AND POROUS ANTIMONY TRISULPHIDE LAYERS
John F. Heagy, Lancaster, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 17, 1963, Ser. No. 331,226
2 Claims. (Cl. 313-65)

1. A pickup tube having:

- (a) a glass faceplate,

- (b) a high lag, high sensitivity target on the inner surface of said faceplate, said target consisting of:

- (1) a first relatively thin transparent layer of metal,

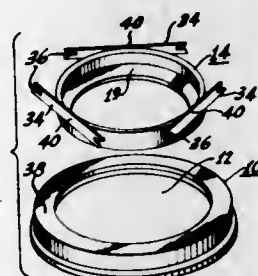


- (2) a second layer of solid antimony oxysulfide having a thickness of from 1 to 4 microns, on said first layer, and
- (3) a third layer of porous antimony trisulfide having a thickness of from about 0.1 to about 0.6 micron on said second layer.

3,315,109

TARGET SUPPORT STRUCTURE FOR PICKUP TUBES

Elvin M. Musselman, Lancaster, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Jan. 28, 1965, Ser. No. 428,685
3 Claims. (Cl. 313-45)



1. A target support structure for an image orthicon pickup tube comprising:
 - (a) a target structure including:
 - (1) a metal ring having an outer periphery of given diameter, and
 - (2) a glass target wafer and a metal mesh supported in close spaced relation on said ring,
 - (b) a metal collar having an inner periphery of larger diameter than said given diameter, and
 - (c) a plurality of elongated spring members having intermediate portions thereof fixed to said outer periphery of said ring, said spring members having end portions mechanically interlocked with said inner periphery of said collar.

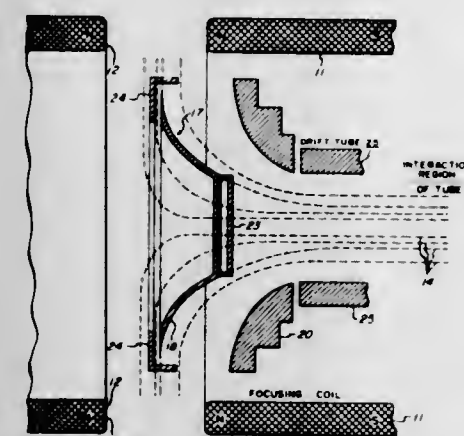
3,315,110

SHAPED-FIELD HOLLOW BEAM ELECTRON GUN HAVING HIGH BEAM PERVEANCE AND HIGH BEAM CONVERGENCE RATIO
Chao Chen Wang, Mineola, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Aug. 12, 1963, Ser. No. 301,368
15 Claims. (Cl. 313-84)

11. An electron gun for producing a hollow electron beam directed along a longitudinal axis, said apparatus comprising,

means for providing an electron beam magnetic focusing field that is characterized by having a pattern of flux lines that are substantially parallel and axially directed in the central region of said field and radially diverging with a nonlinear flare at an end region of said field,

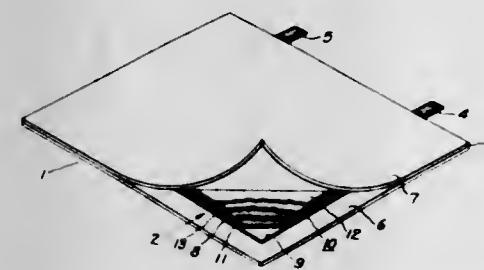
an electron emitting surface symmetrically disposed about said axis in said end region of the focusing field where the flux lines diverge radially,



said emitting surface being conformal to the contour of the magnetic field flux pattern present at its location.

3,315,111

FLEXIBLE ELECTROLUMINESCENT DEVICE AND LIGHT TRANSMISSIVE ELECTRICALLY CONDUCTIVE ELECTRODE MATERIAL THEREFOR
Mary S. Jaffe, Cleveland Heights, and Elmer G. Fridrich, South Euclid, Ohio, assignors to General Electric Company, a corporation of New York
Continuation of application Ser. No. 189,095, Apr. 20, 1962. This application June 9, 1966, Ser. No. 556,837
9 Claims. (Cl. 313-108)



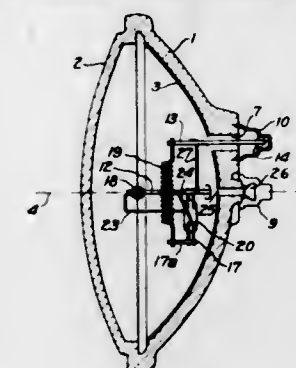
1. A light-transmitting electrically conductive lacquer consisting essentially of a substantially transparent organic plastic having uniformly dispersed therein light-transmitting electrically conductive particles of indium oxide the electrical conductivity of which is substantially insensitive to incident light radiation, said conductive indium oxide particles being present in said lacquer in an amount of at least 10% by volume and said lacquer having a light transmittance of at least 60% at a film thickness of approximately 15 microns.

3. An electroluminescent device comprising a layer of electroluminescent phosphor sandwiched between a pair of electrode layers, one of said electrode layers being light-transmissive and being constituted solely by a film of a light-transmitting electrically conductive lacquer consisting essentially of a substantially transparent organic plastic having uniformly dispersed therein light-transmitting electrically conductive particles of indium oxide the electrical conductivity of which is substantially insensitive to incident light radiation, said conductive indium oxide particles being present in said lacquer in an amount of at least 10% by volume and said lacquer having a light-transmittance of at least 60% at a film thickness of approximately 15 microns.

3,315,112

DUAL BEAM PROJECTION LAMP MOUNT CONSTRUCTION

George H. Burnett, Cleveland Heights, Ohio, assignor to General Electric Company, a corporation of New York
Filed Dec. 28, 1964, Ser. No. 421,499
10 Claims. (Cl. 313-115)



8. A dual beam projector lamp comprising a sealed glass bulb having a concave generally paraboloidal reflector section and a light-transmitting cover glass section and adapted for use with the reflector axis horizontal; said reflector section having three lead wire openings arranged about its apex to be approximately at the corners of a triangle with a first and second of said openings at opposite sides of said apex and in a horizontal plane including said reflector axis and the third opening above said horizontal plane and in a vertical plane including said reflector axis; metallic thimble members at the exterior of said reflector section having their edges fused in the glass around the margins of respective said openings; first, second and third lead wires having their outer ends anchored in respective said thimbles and projecting through the associated first, second and third openings into the interior of said reflector section; and an auxiliary fourth lead wire connected at one end to the first lead wire and extending laterally therefrom to the said vertical plane including the reflector axis at a point below said horizontal plane with its other free end in alignment with the third lead wire; a rigid insulating glass bridge member extending laterally between and secured at one end to the second lead wire and at its other end to said auxiliary fourth lead wire adjacent its said free end; a first coiled filament extending horizontally between and connected to said first and second lead wires; a second coiled filament extending vertically between and connected to said third lead wire and to the said free end of said auxiliary fourth lead wire; said first and second filaments being spaced apart longitudinally of said reflector axis.

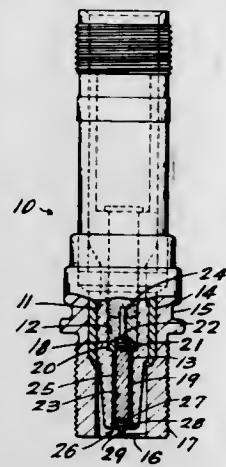
3,315,113

IRIDIUM TIP ELECTRODE AND METHOD OF MAKING THE SAME

John K. Lever, Perrysburg, Ohio, assignor to Champion Spark Plug Company, Toledo, Ohio, a corporation of Delaware
Filed Oct. 20, 1964, Ser. No. 405,154
4 Claims. (Cl. 313-136)

1. In a spark plug having an insulating core with an axial bore therethrough, a center electrode mounted in such bore, an outer shell surrounding said insulating core, a ground electrode in electrical communication with said outer shell, said center electrode having a metallic sheath surrounding a metallic core at one end, the improvement comprising, a radially inwardly directed flange on a lower end of said metallic sheath, said flange defining a circumferential seat and a tip receiving opening, an upper surface of said flange having a predetermined seat configuration, an iridium tip coaxially aligned with said center electrode having a generally cylindrically shaped and longitudinally extending firing end, a head end longitudinally spaced from and axially aligned with said firing

end, and an outwardly extending intermediate shoulder section positioned between and coaxially aligned with said firing end and said head end, said head end and said intermediate shoulder section positioned within said sheath forming a mechanical bond with said metallic

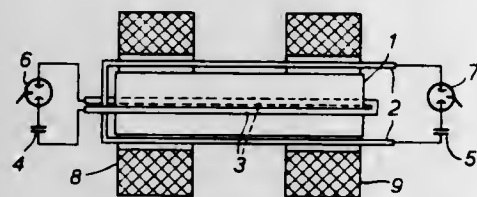


core, said intermediate shoulder section of said iridium tip having a lower surface engaging and being seated upon said upper surface of said flange, and said firing end of said iridium tip positioned in a firing relationship with said ground electrode.

3,315,114

PLASMA CONTAINMENT APPARATUS COMPRISING ROTATING AND FIXED MAGNETIC FIELDS
Peter Clive Thonemann and Philip Alan Davenport, Oxford, England, and Henry Alexander Blevin, Armidale, New South Wales, Australia, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Feb. 5, 1962, Ser. No. 171,063
Claims priority, application Great Britain, Feb. 9, 1961, 4,891/61

2 Claims. (Cl. 313-161)



1. Plasma confinement apparatus comprising
(a) a tubular vessel for containing a gas at low pressure,
(b) means for generating a radio-frequency rotating magnetic field within said vessel and normal to the length of said vessel, said rotating magnetic field being of field strength B and angular frequency ω , such that

$$\omega_{ci} \ll \omega \ll \omega_{ce}$$

whereby ω_{ci} and ω_{ce} are the ion and electron cyclotron frequencies respectively in a field of strength B , and such that

$$2 \left(\frac{n e \eta}{B} \right)^2 \ll 1$$

where n is the number of ions per unit volume of the plasma, e is the electronic charge and η is the resistivity of the plasma, and

- (c) means for producing a stationary magnetic field within said vessel parallel to the length of said vessel and normal to said rotating magnetic field, said stationary magnetic field being of strength B_0 such that

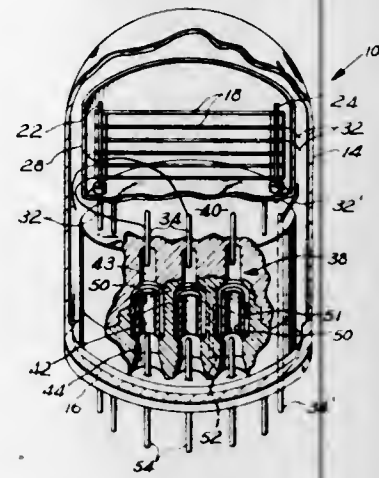
$$N_0 e \omega \ll B_0$$

where N_0 is the total number of electrons per unit length of the plasma.

3,315,115 GLOW CATHODE INDICATOR TUBE HAVING MEMORY

Thomas C. Maloney, Bernardville, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

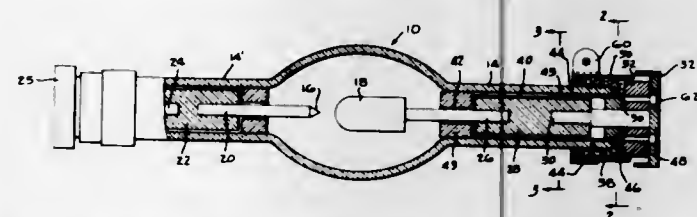
Filed July 8, 1964, Ser. No. 381,112
6 Claims. (Cl. 313-210)



1. A cold cathode gaseous glow tube comprising a gas-filled envelope, an anode electrode, a plurality of glow cathode electrodes within said envelope in operative relation with said anode, and a multiple electrode gas-filled memory cell coupled to each glow cathode electrode inside said envelope.

3,315,116

HIGH INTENSITY SHORT-ARC LAMP HAVING BI-METALLIC ELECTRODE LEADS
Norman C. Beese, Verona, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Oct. 22, 1965, Ser. No. 502,705
4 Claims. (Cl. 313-217)



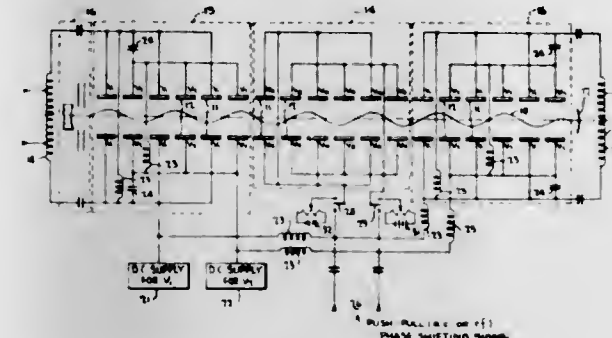
1. In a short arc gaseous discharge lamp comprising a light transmissive central gas chamber located between an open end cathode section and an open end anode section each of which has a nonconductor coupling block mounting an outer elongate conductor shaft and an inner elongate conductor shaft and wherein each inner conductor shaft has a main electrode which is disposed in the central chamber and the electrodes are in spaced relation to provide a discharge arc therebetween, the improvement which comprises,

- (a) a plurality of ribbon conductor strands extending longitudinally of the conductor block and having means securing their outer ends in conducting relation with the outer conductor and other means securing their inner ends in conducting relation with the inner conductor,
(b) said conductor strands being formed of a front portion of readily oxidizable molybdenum material and a rear portion of platinum material which is relatively less oxidizable,
(c) closure means for the open ends of the sections and
(d) means to minimize the admission of air between the closure means and the rear portion of the strands.

3,315,117 ELECTROSTATICALLY FOCUSED ELECTRON BEAM PHASE SHIFTER

Burton J. Udelson, Bethesda, Md., assignor to the United States of America as represented by the Secretary of the Army

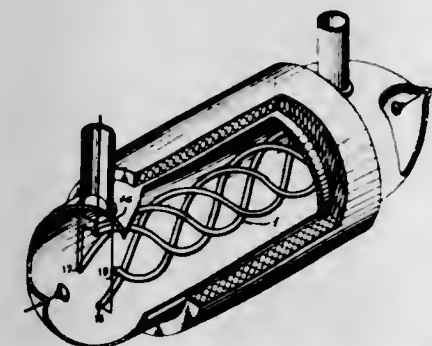
Filed July 15, 1963, Ser. No. 295,255
4 Claims. (Cl. 315-3)



1. A light weight, high power, phase shifter comprising:
(a) an electron gun and a collector longitudinally displaced therefrom,
(b) an electrostatically focused input coupler adjacent said electron gun and an electrostatically focused output coupler adjacent said collector with signal input means connected to said input coupler and signal output means connected to said output coupler,
(c) an electrostatically focused phase shift region between said input coupler and said output coupler, said electrostatically focused phase shifting region including a plurality of electrostatic focusing lenses, the strength of said lenses being such that an electron beam produced by said electron gun has a different natural resonant frequency in said input coupler and said phase shifting regions,
(d) means to vary the focusing lens strength in said phase shifting region thereby varying the transverse natural resonant frequency of said beam and varying the phase of said beam.

3,315,118

HIGH POWER TRAVELLING WAVE TUBE HAVING A NEGATIVE CIRCULARLY POLARIZED ELECTRIC FIELD COMPONENT
Rudolf Müller, Strasslach, near Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany
Filed Apr. 23, 1962, Ser. No. 189,474
Claims priority, application Germany, Apr. 27, 1961, S 73,696
3 Claims. (Cl. 315-3.6)

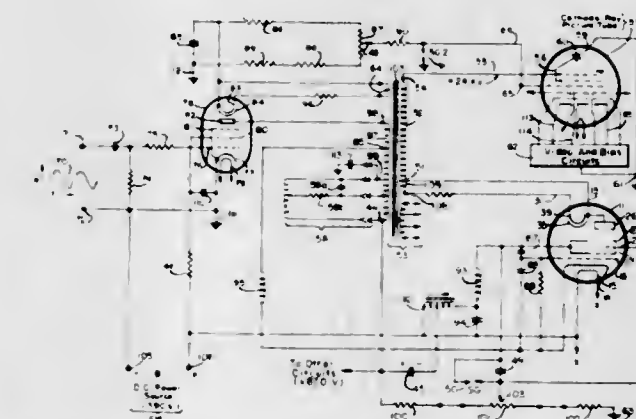


1. A travelling wave tube for producing and amplifying highest frequencies, comprising
(a) a delay line,
(b) means for transmitting an electron beam longitudinally adjacent said delay line;
(c) means for propagating an electromagnetic wave along said delay line which enters into reciprocal action with the electron beam,

- (d) means defining a longitudinal homogeneous magnetic field about said electron beam, and
(e) means for coupling a signal wave to said delay line to produce a predominantly negative circularly polarized electrical field component along said delay line, the rotation of said electrical field being in the same direction of rotation as that of said electron beam such that the phase velocity of said electrical field being equal to the velocity of the electrons.

3,315,119

CATHODE RAY TUBE CONTROL CIRCUIT HAVING MULTI-FUNCTION VACUUM TUBE
Albert W. Friend, 5903 City Line Ave., Philadelphia, Pa. 19131
Filed July 19, 1963, Ser. No. 296,867
12 Claims. (Cl. 315-19)



1. A circuit for the control of a cathode ray tube having an anode together with condenser means for storing energy at high potential and applying such high potential to said anode, comprising means to deflect the electron beam of the cathode ray tube including an electromagnetic core having coil means coupled thereto; a tube having a first cathode, a control grid and a first anode both of which are in the path of some of the electrons from said first cathode, a second cathode, said first anode receiving electrons from both of said cathodes; means including a circuit that includes said first cathode, the first anode and at least a part of said coil means for damping oscillations in said coil means; means for applying an operating potential to the anode of the cathode ray tube including a circuit that includes said anode of said cathode ray tube, at least a part of said coil means, said second cathode and said first anode; said tube having a second anode and also having a second control grid and regulating means for controlling the potential on the anode of the cathode ray tube comprising means for rendering said first anode a virtual cathode and also comprising a circuit including the path from said virtual cathode to said second anode, the coil means and the anode of the cathode ray tube; said second control grid being between the virtual cathode and the second anode, said regulating means including means with a long time constant as compared to a scanning cycle for applying control voltage to biasing said second control grid in accordance with variations in potential of said coil means.

3,315,120

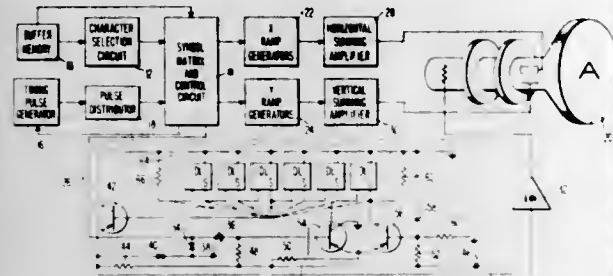
DIFFERENTIAL DELAY-LINE AMPLIFIER
Gilbert Yanishevsky, Philadelphia, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed July 2, 1964, Ser. No. 379,934
6 Claims. (Cl. 315-22)

3. In a character-symbol display system having a plurality of character generation and control matrices for generating electrical control signals for deflecting an electron beam across the face of a cathode ray tube for

drawing preselected characters and symbols and for generating a signal for controlling the intensity of the electron beam, the improvement comprising:

- a first transistor having a base electrode electrically coupled to the intensity control output terminal of said character generation and control matrices and a collector electrode electrically connected to a source of reference potential;
- a second transistor having a base electrode electrically connected to a source of reference potential, an emitter electrode electrically connected to the emitter



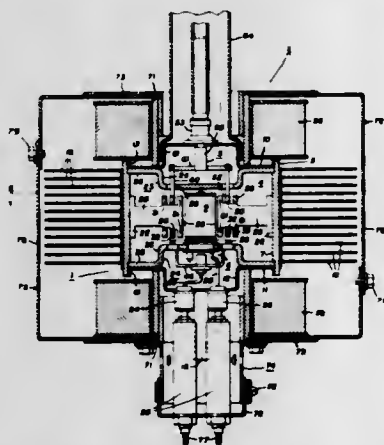
of the first transistor and to a source of reference potential through first resistance means, and a collector electrode electrically connected to a source of reference potential through second resistance means; and

a delay line having an input terminal and an output terminal;

the delay line input terminal being electrically connected to the collector electrode of the second transistor and the delay line output terminal being electrically coupled to the beam intensity control terminal of the cathode ray tube of the display system.

3,315,121 CROSSED-FIELD ELECTRIC DISCHARGE DEVICE

James E. Staats, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Continuation of application Ser. No. 105,983, Apr. 27, 1961. This application Jan. 10, 1966, Ser. No. 519,629
20 Claims. (Cl. 315-39.51)



1. A low voltage crossed-field electric discharge device comprising an anode structure defining an axially extending generally cylindrical space therein and a plurality of resonator cavities opening into said space, a generally cylindrical cathode disposed in said space, the ratio between the outer diameter of said cathode and the inner diameter of said anode structure being

$$\frac{N - (1.50 \text{ to } 2.5)}{N + (1.50 \text{ to } 2.5)}$$

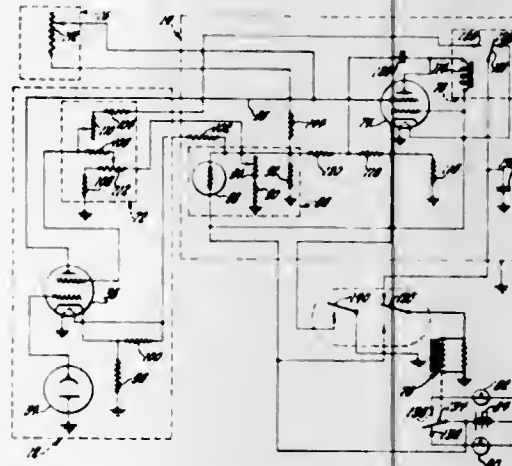
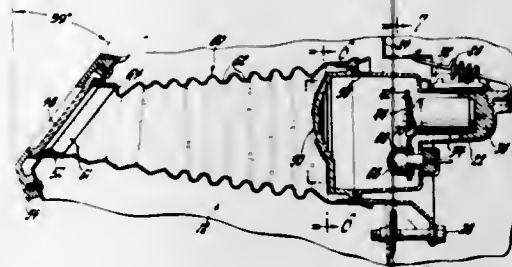
wherein N is equal to the number of resonator cavities in said anode structure and is a number between 16 and 36, and means for establishing a unidirectional magnetic field extending axially through said space, said device being characterized by stability during the operation thereof

when the applied voltage between said cathode and said anode structure is in the general range from about 400 volts D.C. to about 1,000 volts D.C.

3,315,122 AUTOMATIC HEADLAMP CONTROL SYSTEM

Robert K. Schuler, Charles W. Miller, and Eugene W. Brock, all of Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 31, 1963, Ser. No. 344,800
7 Claims. (Cl. 315-33)



3. In an automatic headlamp control system for a motor vehicle, a phototube assembly comprising a housing pivotally mounted in the left front fender of said vehicle, a photocell and a preamplifier tube mounted in said housing, an outer lens positioned in said fender to receive light from a source, an inner lens attached to said housing and adapted to receive the light passing through the outer lens and to focus the light on said photocell, a light tight and dust proof enclosure connected between said inner and outer lenses and including light baffle means for excluding light reflected from the road surface in front of said vehicle, a level assembly mounted on said housing for vertically aligning said housing, a dim and hold sensitivity control assembly mounted in said phototube assembly and electrically connected with said preamplifier tube for adjusting the sensitivity thereof to a given light intensity impinging said photocell, a sensitivity test bulb mounted in said housing for providing said given light intensity.

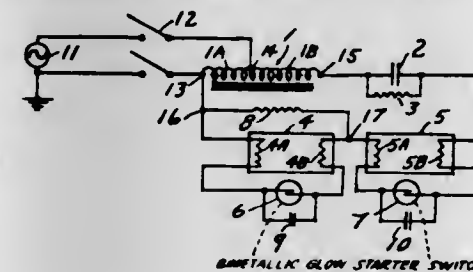
3,315,123 PLURAL FLUORESCENT LAMP STARTING CIRCUIT USING AN UNIGNITED LAMP AS BALLAST

Shungo Furui, Yokohama, Japan, assignor of fifty percent to Grace Thunberg, Garden Grove, Calif.
Filed Jan. 11, 1965, Ser. No. 424,718
Claims priority, application Japan, Jan. 18, 1964, 39/13,518

8 Claims. (Cl. 315-100)

1. In a fluorescent lamp circuit arrangement, a first fluorescent lamp; a second fluorescent lamp; each of said lamps having filamentary cathodes; means for heating

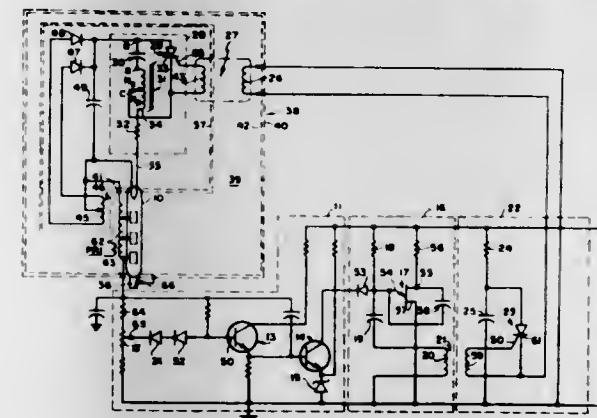
said cathode filaments; a first glow starter switch; a second glow starter switch; said first glow starter switch being connected in parallel with said first lamp; said second glow starter switch being connected in parallel with said second lamp; said glow starter switches being a normally open switch and incorporating means whereby heat from a glow discharge in said glow starter switch causes said switches to close; a first impedance element connected in parallel with said first lamp; said first lamp being connected in series with said second lamp; said first glow starter switch being connected in series with said second glow starter switch; said first impedance element being connected in series with said second glow starter switch; a voltage source; means for energizing said voltage source; a second impedance; said voltage source, said second impedance element and said first and second lamps being connected in series circuit; said first impedance ele-



ment being effective to prevent lighting of said second lamp when said voltage source is initially energized by said energizing means with said first impedance element being effective to cause a glow discharge to appear in said second glow starter switch; said second glow starter switch being closed by heat produced by glow discharge therein to connect said voltage source to said first glow starter switch to cause a glow discharge to appear in said first glow starter switch; when both contacts of said second and said first glow starter switches close, said voltage source causes a preheating current flow through said cathode filaments of said first and second lamps; when said second glow starter switch opens said voltage source acts at both cathodes of said second lamp to light the same; when said first glow starter switch opens its contacts said voltage source acts at both cathodes of said first lamp to light the same and thereafter the same remains lit together with said second lamp.

3,315,124 TRANSISTORIZED CONSTANT EMISSION CURRENT REGULATOR USING A RESONANT TRANSFORMER IN THE POWER SUPPLY

Harold T. Boeker, Brookfield, Wis., assignor to General Electric Company, a corporation of New York
Filed Aug. 14, 1964, Ser. No. 389,598
13 Claims. (Cl. 315-106)

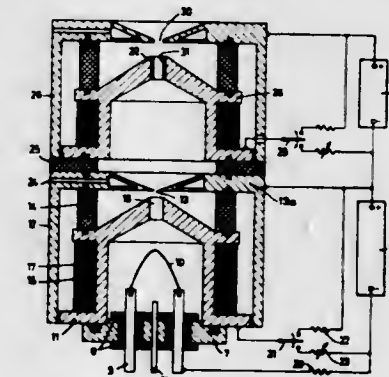


1. Apparatus for controlling the tube current of an electron tube having an emitting electrode and accelerating electrodes, said tube current being determined by the

emission characteristics of said emitting electrode and the potential on the respective accelerating electrodes comprising, a voltage applied to said emitting electrode, pulsating means for pulsating said voltage applied to said emitting electrode, means for determining the magnitude of said tube current, and frequency control means operative in response to said determining means to control the frequency of said pulsating means in accordance with the magnitude of said determined current.

3,315,125 HIGH-POWER ION AND ELECTRON SOURCES IN CASCADE ARRANGEMENT

Heinz Fröhlich, Nürnberg, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed June 14, 1963, Ser. No. 287,817
Claims priority, application Germany, Nov. 20, 1962, S 82,505
8 Claims. (Cl. 315-111)



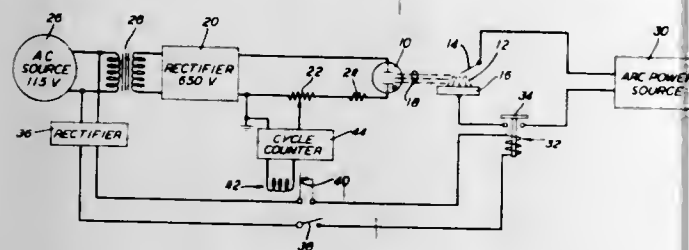
2. A high-power ion and electron source, comprising in combination, a preceding stage including an energizable anode, cathode and intermediate electrode, said intermediate electrode defining a chamber in which an ionizable gas is received, and cooperating with said anode and cathode, when respectively energized, for ionizing the gas and for discharging electrons through an aperture formed in said anode, and at least one succeeding cathode-less stage, otherwise substantially similar to the preceding stage, said preceding and succeeding stages being arranged in cascade, the electrons discharged by the preceding stage being received in the chamber defined by the intermediate electrode of the cathode-less succeeding stage and forming a virtual cathode for the same, the anode of the succeeding stage being biased with respect to the virtual cathode to attract the electrons thereof, and means for adjusting the attracting voltage of the anode of the succeeding stage so that a discharge current with a positive voltage characteristic and without cathode voltage drop is maintained, the discharge currents of said stages being increased from stage to stage through volume ionization of the gas.

3,315,126 PHOTOCELL ARC TIMER

William F. Iceland, Los Angeles, Calif., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 4, 1963, Ser. No. 306,575
1 Claim. (Cl. 315-151)

Apparatus for the working of metals by the direct application thereto of an electric arc sustained for a precise predetermined length of time between an electrode and the metal to be worked comprising a source of power for said arc, means for connecting said source of power in a circuit with said electrode and said metal to be worked to thereby enable said source of power to support said arc, timing means for timing a precise predetermined length of time, said timing means comprising a source of a train of electrical pulses regularly spaced in time and a pulse

counter, said source of a train of electrical pulses operating continuously independently of the operation of said arc and the time interval between pulses of said train being independent of the intensity of the radiant energy of said arc, photoelectric means responsive to radiation from said arc to render said timing means operative upon

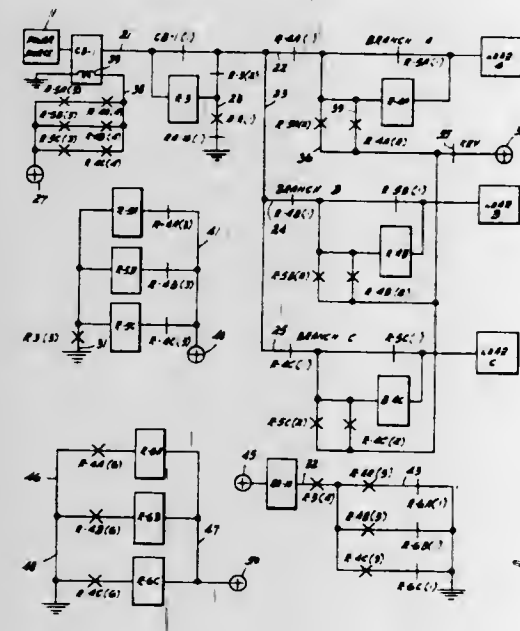


initiation of said arc and means responsive to the action of said timing means at the expiration of said predetermined time to interrupt the circuit connecting said source of power with said electrode and said metal to be worked to thereby interrupt said arc after the arc has been sustained for said predetermined time.

3,315,127

RESTORING CIRCUIT MEANS FOR ISOLATING THE DEFECTIVE BRANCH AND RECONNECTING THE REMAINING BRANCHES
Otto Lenz, Raytown, Mo., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 4, 1964, Ser. No. 349,363
2 Claims. (Cl. 317-22)

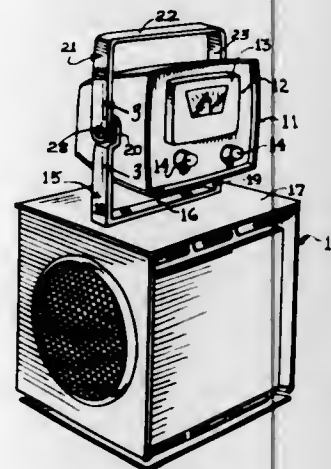


1. A power restoring circuit comprising:
 - a source of voltage,
 - a plurality of network branches connected in parallel to said source,
 - circuit breaker means electrically interposed between said source and said branches, said circuit breaker having a restoring winding for effecting the recycling thereof,
 - a plurality of loads respectively connected to said branches,
 - first actuating means connected between said source and said loads and responsive to said circuit breaker,
 - a plurality of second actuating means respectively associated with each of said branches and responsive to the operation of said first actuating means to provide a partial electrical path to the restoring winding of said circuit breaker,

- a plurality of third actuating means normally and respectively connected in shunt with said branches and responsive to a fault condition occurring in the particular load associated therewith, any of said third actuating means when operated disconnecting the load associated therewith from said voltage source, completing an electrical path to the restoring winding of said circuit breaker to effect the recycling thereof so as to restore power to all branches other than the defective one, and disabling said second actuating means associated therewith,
- a fourth actuating means common to all of said branches and operable in response to said third actuating means,
- a plurality of fifth actuating means respectively associated with said branches, said fifth actuating means being responsive to the operation of said third actuating means associated therewith, and when operated, disabling said fourth actuating means which reconnects said first actuating means into said circuit in an operable condition responsive thereafter to the actuation of said circuit breaker.

3,315,128

REMOTE INSTRUMENT AND BATTERY CHARGER CONTROL FOR STORAGE BATTERIES
Eugene B. Raymond, 5041 W. Grove St., Skokie, Ill. 60076
Filed Sept. 7, 1965, Ser. No. 485,393
3 Claims. (Cl. 317-99)



1. An instrument case carried by a portable housing for a battery charger including
 - (a) a stationary support adapted to be carried by and extending upwardly from the top wall of the battery charger housing,
 - (b) an instrument case mounted on a handle for said support,
 - (c) a handle connected to said case and said support,
 - (d) means for fixedly connecting the handle to said case and pivotally interconnecting said case and said handle to said support for unitary rotation about a horizontal axis relative to said support for displaying said instrument case at various angular positions with respect to the portable housing.

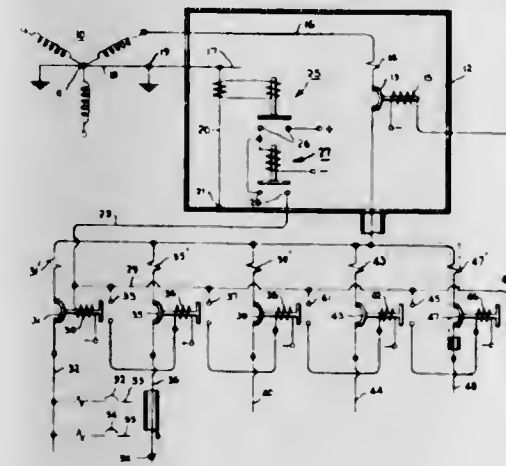
3,315,129

CIRCUIT PROTECTIVE SYSTEM
Lawrence E. Fisher, West Hartford, Conn., assignor to General Electric Company, a corporation of New York
Filed Oct. 29, 1964, Ser. No. 407,458
7 Claims. (Cl. 317-18)

1. An electrical protective system for use with an electrical distribution system of the type including a main power line, a plurality of feeder lines connected thereto and automatic circuit opening means in connection with

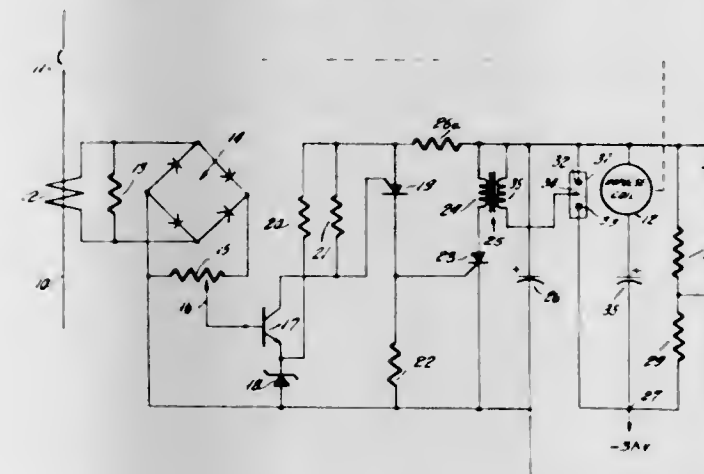
each of said main and feeder lines responsive to abnormal current conditions of a first type, said electrical protective system comprising:

- (a) fault current detecting means responsive to abnormal current conditions of a second type,
- (b) means actuated by said fault current detecting means when energized for initiating opening of a first one of said feeder automatic circuit opening means,
- (c) means actuated by said first feeder automatic circuit opening means for initiating the opening of the remainder of said feeder automatic circuit opening means in predetermined sequence,
- (d) means actuated by the last of said feeder automatic circuit opening means in said sequence to cause automatic opening of said main automatic circuit opening means, and
- (e) means for discontinuing said sequential opening of said feeder automatic circuit opening means upon de-energizing of said fault current detecting means.



3,315,130

CURRENT-SENSING CIRCUIT
William A. Carter, Devon, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 13, 1965, Ser. No. 447,636
4 Claims. (Cl. 317-33)

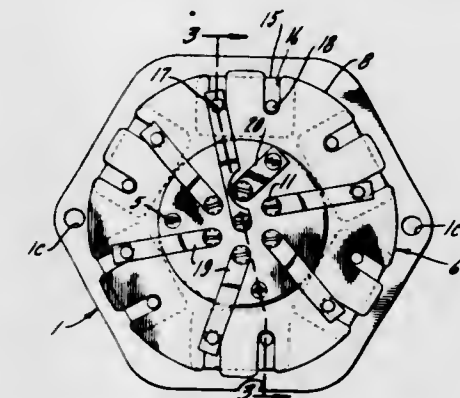


1. A current-sensing circuit for energizing a load device responsive to a predetermined current in a conductor; said current-sensing circuit including a pulse transformer having a primary and secondary winding, a first and second capacitor, a controlled rectifier, a spark gap having first and second spaced main electrodes and a trigger electrode, voltage source means connected across said first and second capacitors to charge said capacitors, first circuit means connected to said conductor having an output D.C. voltage proportional to the instantaneous current magnitude of said conductor, and second circuit

means including a zener diode; said first circuit means connected to said second circuit means with its said output D.C. voltage reverse biasing said zener diode of said second circuit means; said second circuit means connected to the gate electrode of said controlled rectifier and firing said controlled rectifier response to reverse conduction of said zener diode; said first capacitor connected in series with the cathode-anode electrodes of said controlled rectifier and said primary winding of said pulse transformer; said secondary winding connected in series with said trigger electrode and one of said main electrodes of said spark gap; said second capacitor connected in series with said main electrodes of said spark gap and said load, whereby when said current in said conductor exceeds a predetermined current, said zener diode becomes conductive to fire said controlled rectifier, thereby discharging said first capacitor through said secondary winding to cause said spark gap to fire, thereby to discharge said second capacitor through said load device.

3,315,131

PLUG RECEPTACLE WITH PLURALITY OF CIRCUIT BREAKERS HAVING TWO POSTS EACH OF WHICH PASSES INDIVIDUALLY THROUGH ONE OF THE HOUSING FLANGES
Boleslaw Klimak, Des Plaines, and Victor Mastis, Cicero, Ill., assignors to Berg Mfg. & Sales Co., Des Plaines, Ill., a corporation of Illinois
Filed Feb. 19, 1965, Ser. No. 434,000
3 Claims. (Cl. 317-99)



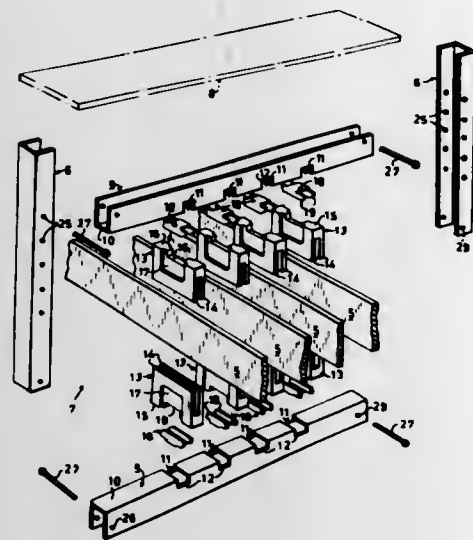
3. In combination an escutcheon plate, a chamber-forming member secured to a surface of said plate, a plurality of terminals secured to said chamber-forming member and extending into the chamber formed thereby, an annular flange on said chamber-forming member, a plurality of circumferentially spaced slots formed in said flange, a plurality of circuit breaker members circumferentially positioned about said chamber-forming member, each of said circuit breaker members having at least two posts, each extending individually through one of said slots, said circuit breaker members being positioned between and within the space defined by said flange and plate and link members securing some of said terminals to a corresponding post of said circuit breakers.

3,315,132

BUSBAR POWER DISTRIBUTION SYSTEMS
Raymond Peter Lucas, Leichhardt, New South Wales, Australia, assignor to Johnson & Phillips (Australia) Proprietary Limited, Liverpool, New South Wales, Australia, a corporation of Australia
Filed Aug. 30, 1965, Ser. No. 483,499
Claims priority, application Australia, Oct. 9, 1964, 50,320/64
9 Claims. (Cl. 317-99)

1. A busbar power distribution system, particularly of the heavy duty type, comprising a plurality of substantially flat, parallel extending strips of metal conductors for the electric power, supporting frames spaced at intervals

along the length of said conductors, a pair of confronting metal arms on each frame, pairs of confronting notches in said arms, said arms being relatively positioned to permit said conductors to extend between said arms with their transverse axes intersecting the longitudinal axis of each

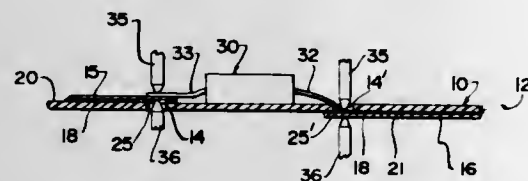


arm, a separately insertable electrical insulating element seated in each of said notches having a socket confronting a socket in the separately insertable insulating element in a notch of the other arm in which is edge mounted one of said conductors.

3,315,133

INTEGRATED CIRCUIT INTERCONNECT AND METHOD

John S. Walker, Phoenix, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Sept. 29, 1965, Ser. No. 491,342
7 Claims. (Cl. 317-101)



2. Apparatus for interconnecting components on a printed circuit board, including in combination, insulating board means having first and second sides and with a plurality of apertures extending therethrough, exposed printed circuit means on both of said sides and having portions bridging certain of said apertures, component means having a plurality of leads extending therefrom, said component means being mounted on said second side and having leads engaging and connected to selected portions of said circuit means bridging selected apertures on said first side with such engaging leads extending through said selected apertures, and means interconnecting said circuit means on said first side to circuit means on said second side.

3,315,134

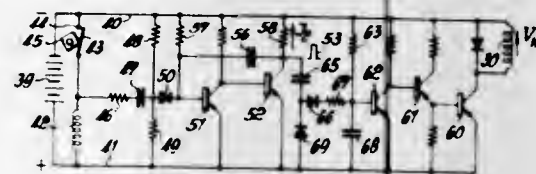
CLUTCH

Hermann Scholl, Stuttgart, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed Sept. 21, 1964, Ser. No. 397,739
Claims priority, application Germany, Sept. 27, 1963, B 73,667
5 Claims. (Cl. 317-148.5)

1. A circuit arrangement for operating an electromagnetically engageable and disengageable clutch having a magnetic winding, wherein working current pulses

of at least approximately uniform duration are fed to the magnetic winding from a source of direct current and at a pulse repetition frequency which is in synchronism with a control value, said current pulses being fed via a power transistor operating in on-off operation which is controlled by an input transistor operating in phase opposition, ahead of which input transistor there is connected a control transistor which changes between conductive and blocked states in synchronism with the beat of the control value, the improvement which comprises, in combination:

- (a) resistor means connected between the collector of said control transistor and one terminal of said source of direct current;
- (b) a series-circuit incorporating
 - (1) a first capacitor having one terminal connected to said collector of said control transistor,

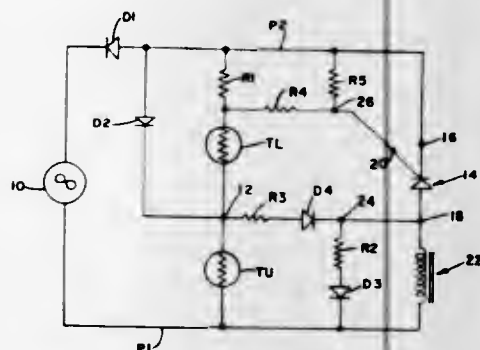


- (2) a first rectifier having one terminal connected to the other terminal of said first capacitor, and
- (3) a first resistor having one terminal connected to the other terminal of said first rectifier, the other terminal of said first resistor being connected to the base of said input transistor;
- (c) a second resistor connected between the base of said input transistor and said one terminal of said source of direct current;
- (d) a second capacitor connected between said base of said input transistor and the opposite terminal of said source of direct current; and
- (e) a second rectifier connected between said opposite terminal of said source of direct current and the juncture of said other terminal of said first capacitor and said one terminal of said first rectifier, said first and second rectifiers having dissimilar electrodes connected to each other so that both rectifiers pass current in the same direction.

3,315,135

SILICON CONTROLLED RECTIFIER ACTUATED LIQUID GAS FILLER

Alfred A. Thiele, 50 S. Munn Ave., Apt. 519, East Orange, N.J. 07018
Filed Nov. 1, 1965, Ser. No. 505,830
9 Claims. (Cl. 317-148.5)

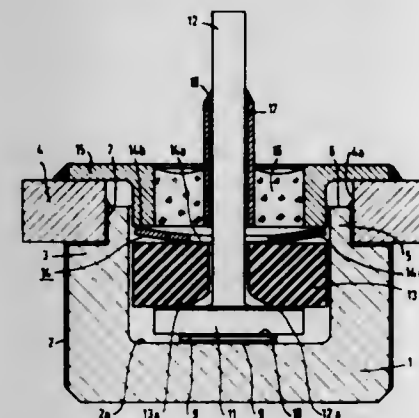


1. In a means for maintaining the level of a liquid in a container between upper and lower limits including solenoid means for selectively effecting a supply of liquid to said container, a control circuit for said solenoid means comprising a solenoid winding for said solenoid means, a power source, a first thermistor positioned at said upper

limit and a second thermistor positioned at said lower limit in said container, said thermistors being connected in series across said source, silicon controlled rectifier means controlling said solenoid means and connected in circuit with said solenoid winding across said power source, bias means controlled by and including said first and second thermistors in circuit with said power source and with said controlled rectifier means firing said controlled rectifier means when the level of said liquid is below said lower limit, and holding means including said first thermistor and said solenoid winding maintaining said controlled rectifier means on when the level of said liquid is between said upper and lower limits, subsequent to the firing of said controlled rectifier means.

3,315,136

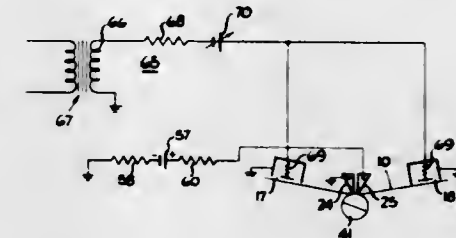
ENCAPSULATED SEMICONDUCTOR DEVICE
Udo Lob, Munich, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Oct. 30, 1964, Ser. No. 407,656
Claims priority, application Germany, Oct. 31, 1963, S 88,111
2 Claims. (Cl. 317-234)



1. A semiconductor device, comprising
 - a plate-shaped semiconductor member having spaced opposite substantially parallel surfaces and electrodes on said spaced surfaces;
 - a fluid-tight sealed capsule assembly enclosing said semiconductor member, said capsule assembly including components on each side of said semiconductor member having surfaces adjacent and substantially parallel to said spaced surfaces of said semiconductor member;
 - means for applying electrical energy to said semiconductor member comprising a connecting terminal and means for passing said connecting terminal through said fluid-tight sealed capsule to said capsule assembly;
 - a layer of solder bonding each of the electrodes of said semiconductor member to the adjacent surface of the corresponding component of said capsule assembly; and
 - spring means mounted between selected components of said capsule assembly and exerting a continuous compression pressure upon said corresponding components of said capsule assembly, and upon said solder layers and said semiconductor member positioned between the said corresponding components, said spring means comprising an arcuate spring having a plurality of radially extending legs thereby exerting a substantially uniform pressure upon said corresponding components, said spring means exerting a compression pressure in the range of 0.2 to 2.0 kiloponds per square millimeter on said solder layers.

3,315,137

METHOD OF TREATING A RECORDING MEDIUM
Donald E. Richardson, Chicago, Ill., assignor to IIT Research Institute, Chicago, Ill., a non-profit corporation of Illinois
Original application Oct. 5, 1959, Ser. No. 844,472, now Patent No. 3,159,718. Divided and this application Jan. 22, 1964, Ser. No. 339,552
5 Claims. (Cl. 317-262)

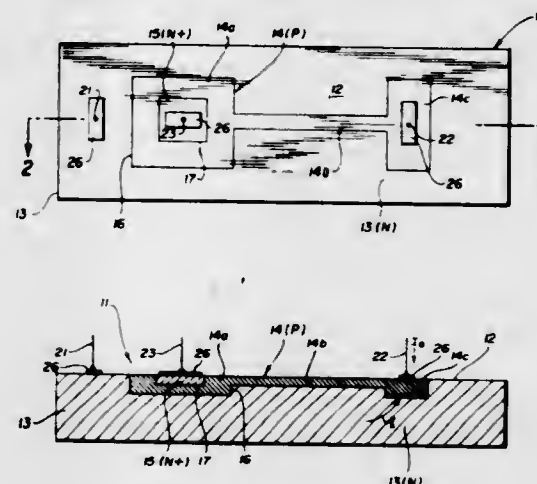


1. In the electrostatic recording art, a method of treating an electrostatic record medium of dielectric material to reduce the quantity of electrostatic charges disposed within the medium so as to thereby reduce the background noise level of the medium, said method comprising passing said electrostatic record medium through and generally perpendicularly to a first electric field which produces a voltage across the medium of a magnitude greater than a threshold value at which an abrupt rise in charge current occurs to the record medium, but less than a breakdown voltage of the medium where sparkthrough of the record medium begins, thereby injecting charges of opposite sign into opposite sides of the record medium, thereafter passing said record medium through and generally perpendicularly to a second electric field of opposite polarity to said first electric field, said second field producing a voltage across the medium which is of a magnitude greater than a threshold value of the charged medium, but less than the breakdown voltage of the medium, and proportioning the first and second electric fields to produce substantially equal and opposite charge currents to the medium.

3,315,138

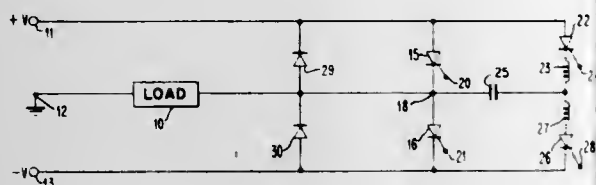
TRANSISTOR STRUCTURE WITH SMALL INVERSE GAIN

David F. Allison, Palo Alto, Calif., assignor to Signetics Corporation, Sunnyvale, Calif., a corporation of California
Continuation of application Ser. No. 335,335, Jan. 2, 1964. This application Sept. 1, 1966, Ser. No. 576,769
7 Claims. (Cl. 317-235)



1. In a semiconductor device having small inverse gain, a semiconductor body having a major surface, said body containing adjacent P and N-type regions, one of said regions being formed with an enlarged portion and an integral elongate tail-like portion which has a lateral

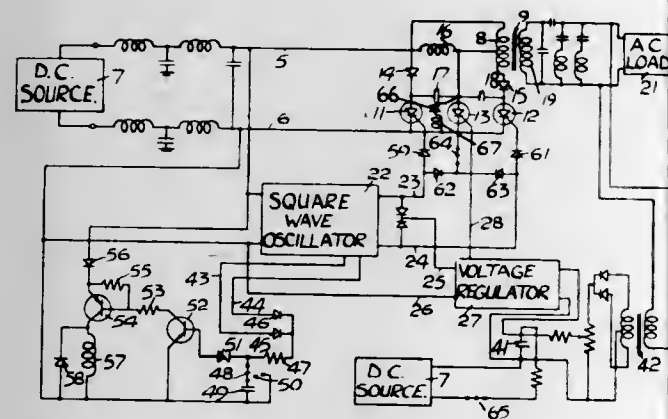
positive with respect to the potential at said second terminal and the potential at said second terminal being positive with respect to said third terminal, first and second circuit points, load means connected between said second terminal and said first circuit point, first and second controlled rectifier means connected for forward conduction from said first terminal to said first circuit point and from said first circuit point to said third terminal respectively, capacitor means connected between said first and second circuit points,



first and second commutator sections each including in series circuit relation an inductor and, respectively, a third and fourth controlled rectifier means, said first and second sections being connected for providing forward conduction from said first terminal to said second circuit point and from said second circuit point to said third terminal respectively, and means for cyclically triggering into conduction said fourth and first controlled rectifier means and said third and second controlled rectifier means for completing charge paths for said capacitor, the timing of the triggers during one cycle alternately placing the charge potential on said capacitor across said first and second controlled rectifier means for terminating conduction therethrough.

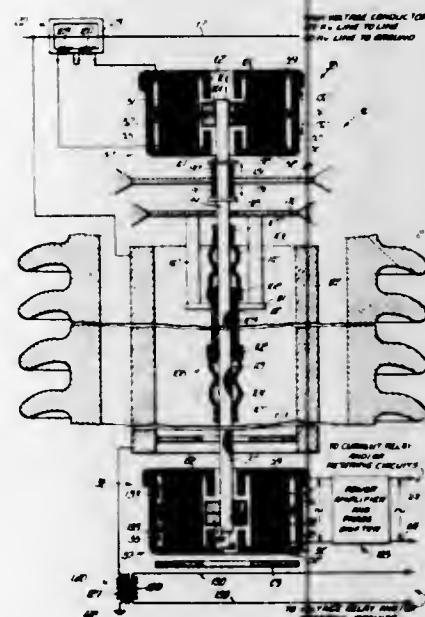
3,315,146 INVERTERS OPERATED BY CONTROLLED RECTIFIERS

Derek Albert Paice, Hemel Hempstead, England, assignor to Rotax Limited, London, England
Filed Nov. 7, 1963, Ser. No. 322,199
Claims priority, application Great Britain, Nov. 9, 1962, 42,366/62
6 Claims. (Cl. 321-45)



1. An inverter of the kind using first and second controlled rectifiers under the firing control of oscillator means to supply a load comprising in combination a relay connected to be energised only when the amplitude of the oscillator output reaches a predetermined level, and a normally closed contact operable by the relay and connected when closed to short-circuit the gates of the controlled rectifiers to prevent firing thereof.

3,315,147
ELECTROMECHANICAL CURRENT SENSING APPARATUS FOR USE WITH HIGH VOLTAGE ELECTRIC POWER TRANSMISSION CONDUCTORS
Ralph H. Cook, Royal Oak, Mich., and John S. Ferguson, Glenview, Ill., assignors to S & C Electric Company, Chicago, Ill., a corporation of Delaware
Filed Apr. 30, 1963, Ser. No. 276,900
6 Claims. (Cl. 322-3)



1. An electromechanical device for sensing alternating current flow in a high voltage conductor and reproducing it at ground potential comprising:

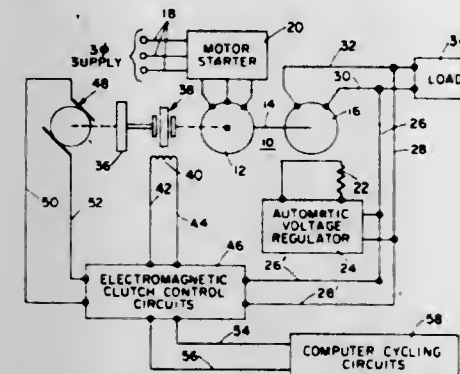
- a hollow upstanding insulator adapted to receive the high voltage conductor at its upper end while its lower end is grounded,
- a first transducer at the upper end of said insulator connected for energization in response to current flow through said conductor and for oscillatory movement in synchronism with the frequency of the alternating current with the displacements being a function of the magnitude of the current flow in succeeding half cycles,
- a second transducer at the lower end of said insulator,
- an insulating member extending through said insulator and rigidly interconnecting the moving elements of said transducers whereby said second transducer generates an alternating current the magnitude and frequency of which correspond to the magnitude and frequency of the alternating current flow in said conductor, and
- each transducer including:
 - a permanent magnet structure fast on said insulating connecting member, and
 - two coils having the respective magnet structure centrally located with respect thereto and connected in push-pull relation with respect to the magnetic field thereof.

3,315,148
A-C. GENERATOR POWER SUPPLY
Joseph Grillo, New Milford, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Oct. 31, 1963, Ser. No. 320,278
9 Claims. (Cl. 322-4)

1. In combination with a power supply system including a motor-generator set, a flywheel, and an electromagnetic clutch having an excitation circuit and a torque-transmission capability proportional to applied excitation, a control

circuit for regulating the excitation of said clutch, comprising:

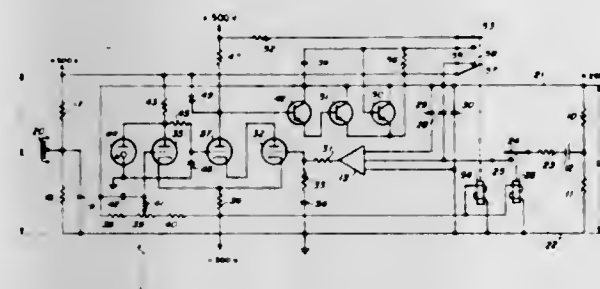
- means, operative to totally-de-energize said clutch at rotational speeds of the motor-generator set below normal operating speed;
- means, operative upon the attainment of operating speed by said motor-generator set, to supply a fixed excitation



tion to said clutch sufficient to produce gradual acceleration of the flywheel at a pre-selected rate up to a predetermined speed below said normal operating speed; and

means, effective upon the attainment of said predetermined speed to progressively increase the excitation of said clutch in accordance with increasing flywheel speed until locking of the clutch occurs.

3,315,149
HIGH STABILITY REGULATED VOLTAGE SUPPLY
Robert D. Strait and Robert W. Sanders, San Diego, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Sept. 4, 1963, Ser. No. 306,666
1 Claim. (Cl. 323-22)



A regulated voltage power supply for receiving an unregulated voltage and producing a high precision regulated voltage therefrom comprising:

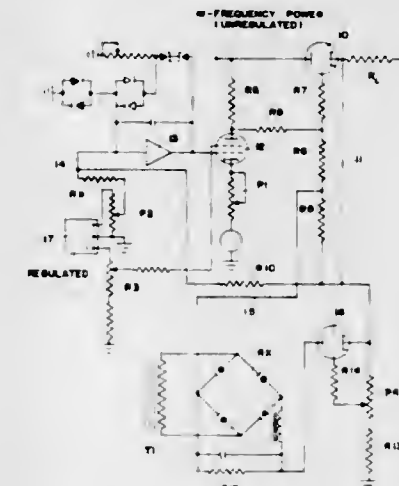
- a series regulating element having first and second inputs and an output,
- said regulating element having an internal resistance between said first input and said output and being responsive to signals at its second input to vary its said internal resistance proportionally,
- said first input of said regulating element being the input of said regulated supply and said output of said element being the output of said supply,
- a differential amplifier having first and second inputs and an output and responsive to differences in signals at its said first and second inputs for producing a signal at its output indicative of such differences,
- means for supplying said differential amplifier output to said second input of said regulating element,
- first voltage sampling means connected to said output of said supply and adapted to produce a first error signal indicative of any variance of the voltage at said supply output from a desired voltage,
- said first differential amplifier input being connected to receive said first error signal,

said first sampling means including a bypass capacitor for directly supplying transient signals from said supply output to said first differential amplifier input,

second voltage sampling means for comparing said supply output with the voltage of a standard cell and producing a second error signal indicative of any incremental difference between said output of said supply and said standard cell,

a D.C. amplifier for coupling said second error signal to said second input of said differential amplifier, whereby said supply is responsive to substantial and incremental changes in its output voltage to automatically correct therefor.

3,315,150
WIDE RANGE VOLTAGE REGULATOR
Melvin Rosnick, Brooklyn, N.Y., assignor, by mesne assignments, to The Taylor-Winfield Corporation, Warren, Ohio, a corporation of Ohio
Filed Apr. 13, 1964, Ser. No. 359,154
4 Claims. (Cl. 323-22)

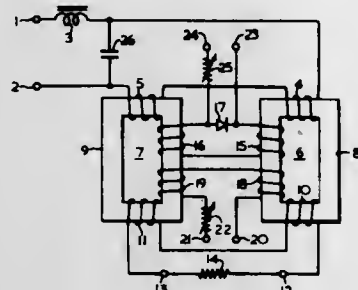


1. A circuit for wide range voltage regulation comprising in combination a grid-controlled electronic valve interconnected between an unregulated source of electrical power and a load, a biasing circuit for the grid of said valve comprising a first potential generating element and means to energize said element in accordance with the load applied voltage as related to a variable regulated voltage reference whereby the load applied voltage may be regulated within a predetermined voltage span, said biasing circuit including a second voltage generating element, and means to variably energize said second element comprising a secondary voltage source and a vacuum triode in series therewith and with said second element, said secondary source and said triode being fully insulated and selected for high voltage operation whereby a negative bias of sufficient amplitude may be applied to the grid of said valve in overriding relation to the voltage developed by said first element to drive said valve to cut-off.

3,315,151
REGULATED TRANSFORMER POWER SUPPLIES
Fitzwilliam Allan Wentworth, Mosman, New South Wales, Australia, assignor to Stabilac Pty. Limited, Kingsgrove, New South Wales, Australia, a corporation of New South Wales
Filed Jan. 25, 1966, Ser. No. 522,987
Claims priority, application Australia, Oct. 24, 1961, 10,582/61
4 Claims. (Cl. 323-56)

3. An electrical power supply comprising input terminals for connection to an alternating current source, a current limiting element, a pair of saturable transformer

cores, a primary winding on each transformer core, means for coupling said primary windings and current limiting element in series across said input terminals, a secondary winding on each transformer core, output terminals for connection to a load, means for coupling said secondary windings in series to said output terminals, control windings on said saturable transformer cores, and means for

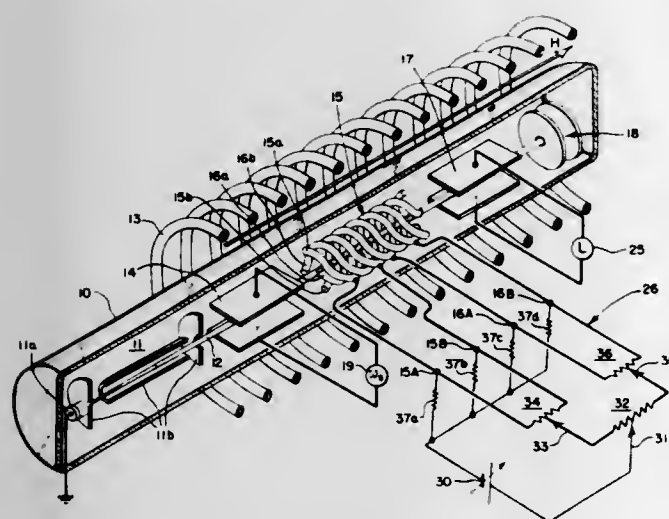


providing even-harmonic feedback in said saturable transformer cores and comprising a feedback rectifier and connections between said feedback rectifier and points on said primary windings which are at equal potentials for fundamental frequencies, said primary windings being connected in series for rectified even-harmonic frequencies.

3,315,152

ADJUSTABLE VOLTAGE DIVIDER CIRCUIT
John P. Lindley, Redwood City, Calif., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Filed Apr. 13, 1965, Ser. No. 447,613
8 Claims. (Cl. 323-74)



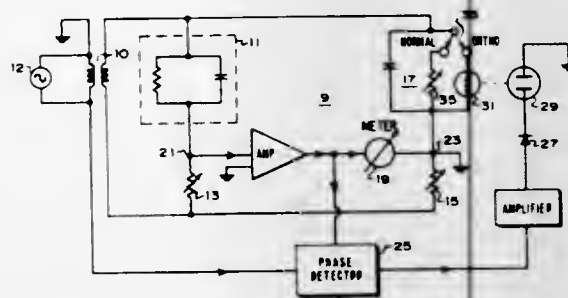
4. An adjustable-divider circuit comprising: first, second, third and fourth terminals; an adjustable source of potential; means coupled between one side of said source and two circuit points for adjustably apportioning the potential at said one side between said two points; means coupled between one of said two points and said first and third terminals for adjustably apportioning the potential at said one point between said first and third terminals; means coupled between the other of said two points and said second and fourth terminals for adjustably apportioning the potential at said other point between said second and fourth terminals; means for coupling each of said terminals individually to the other side of said source; and utilization means coupled to and responsive to changes in potentials on said terminals.

3,315,153

BRIDGE CIRCUIT EMPLOYING SELF-BALANCING CONTROL MEANS

Larry A. Whatley, Loveland, Colo., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed Jan. 21, 1965, Ser. No. 426,940
5 Claims. (Cl. 323-75)



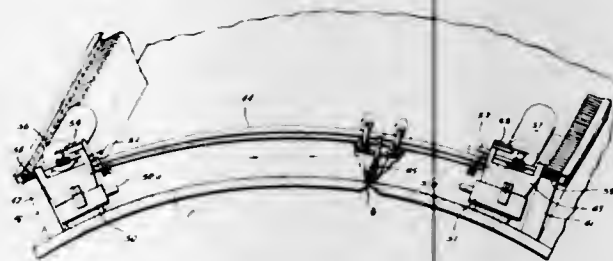
1. An electrical bridge circuit comprising:
a pair of branch circuits serially connected to receive an applied signal;
another pair of branch circuits serially connected to receive the applied signal;
at least two of said branch circuits including reactive elements and at least one of said branch circuits including an element having an impedance which varies in response to a control signal applied thereto;
a source of reference signal;
a detector responsive to the continuous variation of phase relationship between the reference signal and another signal for producing a control signal;
means connected to said detector and to said element having variable impedance for altering the impedance thereof in response to the control signal from said detector; and
means connected to the common connection of one of said pairs of branch circuit for applying the signal appearing thereon to said detector as said other signal for producing said control signal.

3,315,154

METHOD AND APPARATUS FOR DETERMINING THE WALL THICKNESS OF METALLIC ELEMENTS UTILIZING A RECIPROCAL PERMANENT MAGNET ASSEMBLY

Edwin D. Nuttall, Shreveport, La., assignor to United Gas Corporation, Shreveport, La., a corporation of Delaware

Application Oct. 7, 1959, Ser. No. 844,936, now Patent No. 3,205,435, dated Sept. 7, 1965, which is a division of application Ser. No. 610,731, Sept. 19, 1956, now Patent No. 2,963,644, dated Dec. 6, 1960. Divided and this application Jan. 18, 1965, Ser. No. 426,307
3 Claims. (Cl. 324-37)



1. An apparatus for detecting internal corrosion within a metallic wall including,
a permanent magnet assembly having first and second magnets providing spaced poles,
means for supporting said magnet assembly advancing said magnet assembly transversely with respect to the external surface of said wall to induce magnetic flux in successive paths in the wall,

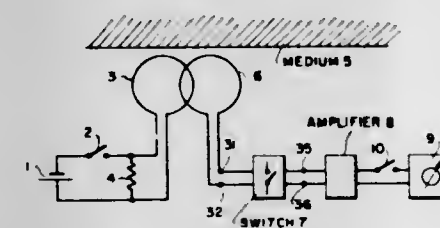
said assembly also having a third magnet providing a flux return path from the wall being surveyed, an electric coil sensitive to flux variations positioned in said flux return path, means for reciprocating said coil and third magnet in a longitudinal path between said first and second magnets, and means for measuring the effect of flux variations as caused by changes in the cross-sectional area of the wall under investigation upon said coil.

3,315,155

METHOD AND APPARATUS FOR INVESTIGATING A GENERALLY HOMOGENEOUS MEDIUM AS TO REGIONS OF ANOMALOUS ELECTRICAL CONDUCTIVITY

Claus Colani, Brehmstrasse 20, Munich, Germany

Filed Apr. 30, 1963, Ser. No. 277,417
Claims priority, application Germany, Feb. 18, 1963, C 29,188
5 Claims. (Cl. 324-40)



1. Apparatus for investigating a generally homogeneous medium as to regions of anomalous electrical conductivity, comprising square-wave current supply means, inductive circuit means connected with said current supply means to be energized therefrom and adapted to be coupled with the medium for inducing abruptly rising and decaying primary magnetic field pulses in the medium, said primary field pulses inducing secondary field pulses in said medium, said primary field pulses being chosen to have decay times substantially shorter than the decay times of said secondary field pulses, a magnetic field pulse decay time measuring network having an input circuit coupled with said inductive circuit means and having instrument means for measuring substantially the decay times of the secondary field pulses induced in the medium by the primary field pulses, said network comprising time delay periodic switch means responsive to signal intensity in said network input circuit for controlling said instrument means to commence said secondary field-pulse decay time measuring substantially upon termination of a primary pulse, whereby said instrument means respond substantially only to the decay times of said secondary field pulses.

3,315,156

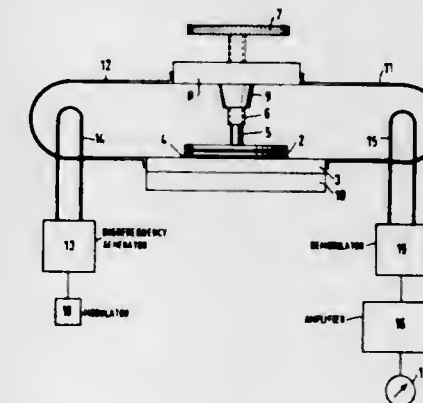
METHOD FOR DETERMINING THE ELECTRICAL RESISTANCE OF A BODY OF EXTREMELY PURE SEMICONDUCTOR MATERIAL FOR ELECTRONIC PURPOSES

Wolfgang Keller, Pretzfeld, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed Aug. 5, 1964, Ser. No. 387,608
Claims priority, application Germany, Aug. 9, 1963, S 86,651
3 Claims. (Cl. 324-60)

1. Apparatus for determining the electrical resistance at desired localities of a body of semiconductor material having substantially large flat sides spaced from and positioned opposite each other, said apparatus comprising
a resonant circuit arrangement having a resonant frequency, said resonant circuit arrangement comprising an inductance, a capacitance and a resistance, said capacitance comprising a pair of spaced capacitor

plates, a surface of one of said pair of spaced capacitor plates being wetted with a liquid having a high dielectric constant, semiconductor material to be measured supported on the wetted surface of said one of said pair of capacitor plates between said plates and forming said resistance with said one of said plates, said one of said plates having a determined surface area, said semiconductor material being positioned in capacitive relation with the other of said plates and forming a capacitive reactance with said other of said plates in series circuit arrangement with said resistance, said other of said plates



having a surface area opposing the surface area of said one of said plates which is considerably smaller than said determined surface area and considerably smaller than the area of a side of said semiconductor body;
means for exciting said resonant circuit arrangement at a frequency other than the resonant frequency of the said resonant circuit arrangement; and
control means for varying the spacing between said plates to bring said resonant circuit arrangement to resonance whereby said resistance may be determined from one of the voltage and current at resonance.

3,315,157

APPARATUS FOR IMPEDANCE MEASUREMENT THROUGH THE USE OF ELECTRON BEAM PROBES

Hiroshi Watanabe and Chusuke Munakata, Kitatama-gun, Tokyo-to, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan

Filed Nov. 13, 1963, Ser. No. 323,489
Claims priority, application Japan, July 22, 1963, 38/37,082
4 Claims. (Cl. 324-62)



1. An apparatus for measuring electrical impedances by means
of an electron beam probe, comprising a bridge circuit including four impedance arms; means for emitting a thinly constricted electron beam; means for periodically varying the intensity of said electron beam;

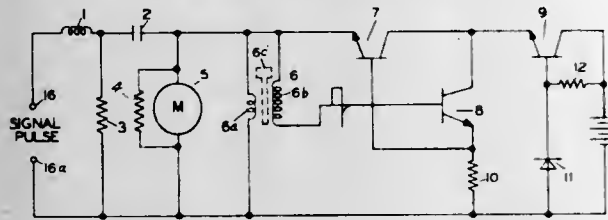
means for causing said electron beam to impinge on predetermined points of a specimen which constitutes one arm of said bridge circuit; a variable impedance for balancing the bridge which constitutes another arm of said bridge; and means for detecting the balance of said bridge circuit, whereby the impedance value between said predetermined points of the specimen is determined.

3,315,158

INSTRUMENT FOR MEASURING THE SPEED OF AN INTERNAL COMBUSTION ENGINE

Theodore Ongaro and Eugene R. Lucka, Columbus, Ohio, assignors to Ongaro Dynamic Industries, Inc., a corporation of Ohio

Filed Nov. 20, 1962, Ser. No. 238,975
5 Claims. (Cl. 324-70)



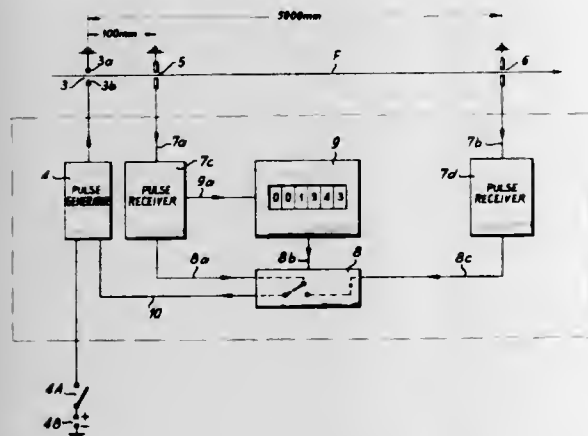
1. A frequency measuring instrument for measuring the speed of an internal combustion engine including means for deriving a series of ignition pulses having a frequency directly related to said speed comprising, a regenerative amplifier including a transformer having primary and secondary windings, a current flow circuit in a closed loop arrangement with said primary winding, and bias means for preventing current flow through said circuit; means for applying said ignition pulses across said primary winding to cause current to regeneratively flow through said closed loop for a given period of time once for each of said ignition pulses, the output of said generator comprising a train of constant area pulses, indicating means connected in parallel with said primary winding for indicating the average current of said train of pulses, means for correlating said average current with said speed of said engine, means for varying the inductance/resistance time constant of said transformer to correct the speed indicating of said indicating means.

3,315,159

METHOD AND SYSTEM FOR MEASURING THE LENGTH OF RUNNING TEXTILE FILAMENTS

Walter Gltz, Monchen-Gladbach, Germany, assignor to Walter Reiners, Monchen-Gladbach, Germany

Filed July 9, 1964, Ser. No. 381,341
Claims priority, application Germany, July 18, 1963, R 35,694
6 Claims. (Cl. 324-71)



1. The method of measuring the length of a travelling flexible textile element which comprises intermittently applying to the textile element discrete automatically fading

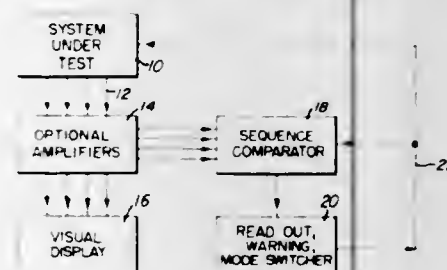
markings equidistant from each other in groups of a predetermined number of markings, sensing and simultaneously counting each immediately preceding marking before applying the next succeeding marking to the textile element, sensing the first marking of an immediately preceding group of counted markings after it has travelled a measuring distance that is a multiple of the distance between successive groups of markings and simultaneously applying in response thereto the first marking of the next succeeding group of markings to the textile element.

3,315,160

ELECTRONIC CIRCUIT TESTING METHOD AND APPARATUS EMPLOYING OPTICAL FIBER RADIATION SENSORS

David M. Goodman, 3843 Debra Court, Seaford, N.Y. 11783

Filed June 23, 1961, Ser. No. 119,221
30 Claims. (Cl. 324-73)



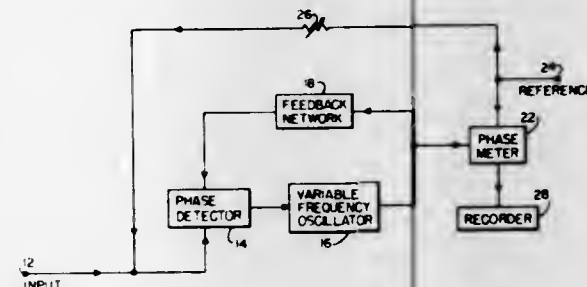
1. The method of non-destructive automatic testing of an energizable assembly of electronic components which comprises the steps of: (1) interspersing a plurality of optical fibers throughout the assembly of components, said fibers having entrance and exit terminals, (2) positioning the entrance end of selected fibers in different regions of space so as to be impinged upon by electromagnetic radiation emanating from different parts of the assembly, (3) positioning the exit terminals of the selected fibers to form a matrix of optical test points, (4) energizing the assembly of components, (5) imaging the optical signals emerging from the matrix of optical test points on to a storage target, (6) scanning the target with a beam of energy thereby to provide electrical signals, (7) comparing the electrical signals to reference signals, and (8) displaying the results of said comparison.

3,315,161

PHASE LOCKED LOOP

Maxime G. Kaufman, Camp Springs, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Jan. 27, 1965, Ser. No. 428,591
3 Claims. (Cl. 324-83)



1. Apparatus for measuring and recording the phase of an intermittent input signal of predetermined frequency comprising:

a phase detector having first and second input connections and producing an output signal which is proportional to the phase difference between signals applied to said first and second connections;

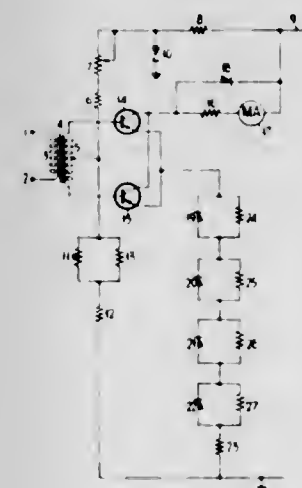
a variable frequency oscillator coupled to receive and be controlled by said phase detector output signal; feedback coupling means for coupling said variable frequency oscillator output signal to said phase detector first input connection; terminal means connected to said phase detector second input connection for applying said intermittent input signal; reference frequency signal coupling means for applying a reference frequency signal to said phase detector second input connection and measuring and recording means connected to receive said reference frequency and oscillator output signals for indicating the phase of said input signal.

3,315,162

METER CIRCUIT USING BOTH DIODES AND TRANSISTORS TO GENERATE A SQUARE LAW FUNCTION

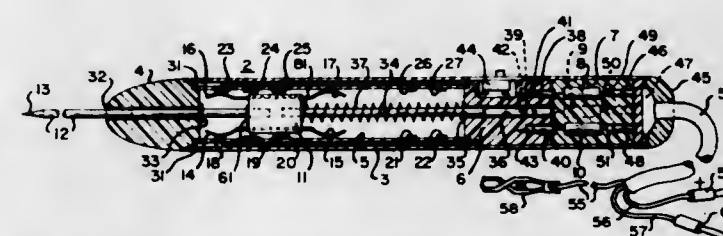
Robson Liddle, Coventry, England, assignor to The General Electric Company Limited, London, England

Filed Jan. 15, 1964, Ser. No. 337,817
Claims priority, application Great Britain, Jan. 15, 1963, 1,786/63
8 Claims. (Cl. 324-132)



1. Electric measuring apparatus comprising two junction transistors each having base, collector and emitter electrodes, two input terminals, phase-splitting circuit means connected between said input terminals and the base electrodes of the transistors so that signals supplied to the input terminals are applied in phase opposition to the base electrodes, a load impedance which has a characteristic having a portion that is substantially a linear relation for small signals applied thereto and a portion that is substantially a square law relation for larger signals, circuit means to connect said load impedance to the emitter electrodes of the two transistors as a common emitter-load for both transistors, current indicator means, circuit means to connect said current indicator means to the collector electrodes of the two transistors so as to respond to the sum of the collector electrode currents of the two transistors, and biasing means connected to the base electrodes of the two transistors to bias the transistors to non-linear portions of their characteristics when an input signal supplied to said input terminals is sufficiently small for said load impedance to be operating over the substantially linear part of its characteristic so that there is a substantially square law relation between input signals applied to said input terminals and said sum of the collector electrode currents of the transistors when said load impedance is operating over either of said portions of its characteristic.

3,315,163
METER PROBE WITH SLIDABLE CIRCUIT
CHANGING CONTACT POINT
Albert F. Lutz, 5 Harrison St.,
Pittsburgh, Pa. 15205
Filed Apr. 2, 1963, Ser. No. 269,932
6 Claims. (Cl. 324-149)



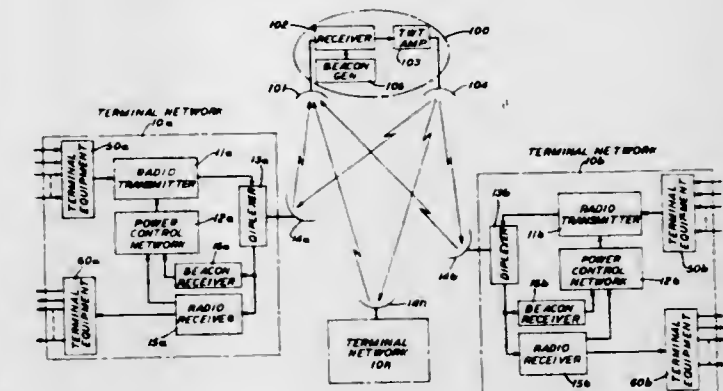
6. A probe for electrical testing comprising a casing, a contact element constituting one terminal of the probe mounted in and projecting from the casing, a conductor constituting the other terminal of the probe extending from the casing, a meter in electrical circuit with said terminals and a compression coil spring urging the contact element to projected position, the contact element being shiftable inwardly of the casing to selected positions relatively thereto by holding the casing with the contact element in contact with an element of an electrical circuit being tested and pressing the casing toward said element of the electrical circuit being tested causing the casing to advance over the contact element against the action of the spring while the contact element remains substantially stationary, the probe having a plurality of electrical connections through the contact element, the spring acting as a conductor, the other terminal and the meter in the respective positions of the contact element relatively to the casing for testing differing electrical characteristics of electrical circuits extraneous to the probe circuit.

3,315,164

CONTROL OF GROUND STATION TRANSMITTER POWER TO SUPPLY SUITABLE SIGNAL LEVEL TO SATELLITE REPEATER

Gerald A. Ferguson, Jr., and Henry I. G. Maunsell, Murray Hill, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed May 15, 1964, Ser. No. 367,791
12 Claims. (Cl. 325-4)



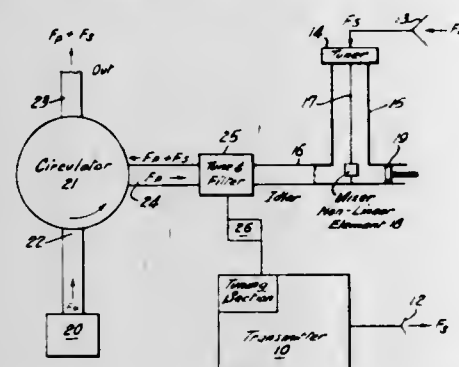
1. A communication system which includes a plurality of ground transmitter-receiver stations for communicating with one another by way of satellite repeater stations, means for individually controlling the transmitted power level of each of said ground stations in order that the power input from said transmitter to said repeater is substantially a constant which comprises: means at said satellite repeater for developing a fixed level reference signal for amplification and transmission along with message signals retransmitted by said repeater, means at each of said ground stations for comparing the level of

received fixed level reference signals and one of its own message signals received after retransmission by said satellite repeater to develop an error signal, and means for utilizing said error signal to control the transmitted power level of said ground station.

3,315,165

SINGLE TUNING PARAMETRIC AMPLIFIER
James A. Luksch, Cherry Hill, and Vitaly Stachejko, Levittown, N.J., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Aug. 21, 1963, Ser. No. 303,695
1 Claim. (Cl. 325-25)



A four frequency up-conversion parametric device for amplification of an input signal comprising:
a broadband tuned coaxial input circuit,
a waveguide idler tank circuit having therein a non-linear reactance mixing element,
said idler circuit coupled to said input circuit, adjustable matching means for impedance matching of said idler circuit including a shorting bar disposed at one end of said idler waveguide movable lengthwise of said waveguide,
a source of pump frequency,
a circulator coupling said pump source with said idler circuit and having an output circuit,
high-pass filter and tuning means disposed at the circulator end of said waveguide idler tank circuit for passing only said pump and up-converted sum frequencies and for tuning said idler circuit including a thin, plate-like dielectric slab having oppositely converging sides disposed at the other end of and crosswise of said idler waveguide, said slab being movable crosswise of said idler waveguide for tuning thereof,
a transmitter having a tunable output wherein said input signal is the received signal from said transmitter, means for moving said slab,
a coupling loop means between said transmitter and said means for moving said slab for controlling the movement of said slab in accordance with the tuning of said transmitter,
whereby said idler will be tuned automatically with said transmitter and the output of said circulator is the amplified sum frequency of said received transmitter signal and said pump.

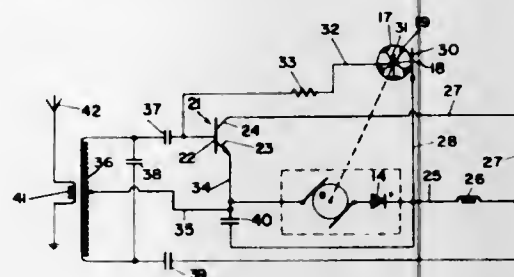
3,315,166

HAND OPERATED POCKET SIZE EMERGENCY SIGNALING DEVICE

Lloyd R. Crump, 12108 Atherton Drive, Silver Spring, Md. 20902
Filed Aug. 18, 1964, Ser. No. 390,488
1 Claim. (Cl. 325-105)

A signalling device comprising a pocket size housing enclosing in combination,
(a) an oscillator circuit including a transistor and a resonant tank circuit which is electrically connected to the base of the transistor,

- (b) a rotary shaft mounting an alternating current generator having a diode rectifier connected in series circuit therewith to provide a direct current output,
(c) a signal device comprising a coder disk mounted for rotation with said shaft and having a plurality of spaced input contacts interconnected with a common output contact,
(d) a first connector from the output side of said rectifier for supplying current to the collector of the transistor,

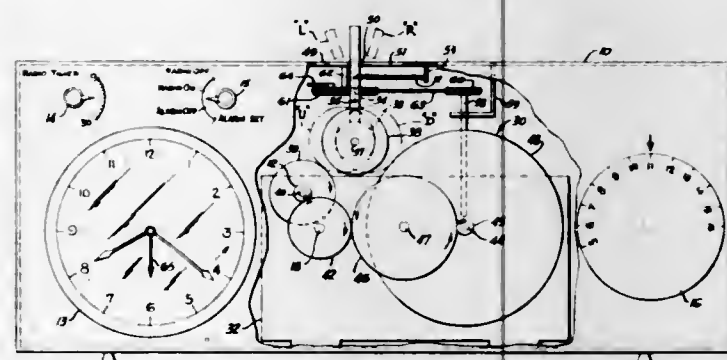


- (e) a second connector from the output side of said rectifier having a contactor arm which is operable to supply current to the input contacts of the coder disk in sequence during rotation of said shaft,
(f) a third connector including a contactor arm which is operable to pick up signals from the output contact of the coder disk and transmit the signals to the base of said transistor,
(g) an actuator pivotally mounted on an exterior wall of the housing and connections between said actuator and the rotary shaft and
(h) said actuator and said last mentioned connections permitting an operator to effect rotation of the shaft by grasping the housing in one hand and applying thumb pressure of the one hand on the actuator.

3,315,167

CLOCK-RADIO VOLUME CONTROL
Eric Goldwasser, 600 W. 239th St., Bronx, N.Y. 10463

Filed Nov. 1, 1963, Ser. No. 320,687
10 Claims. (Cl. 325-396)

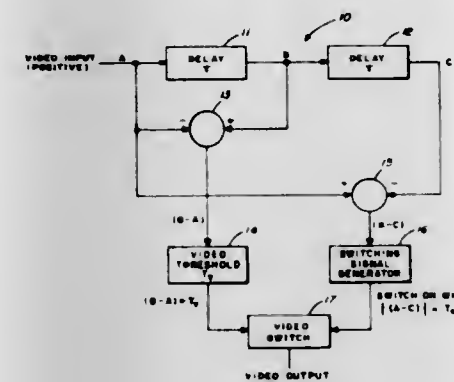


1. In a clock-radio having means setting the radio for playing for a predetermined time period, a rheostat for regulating volume output, and a volume control shaft connected with the rheostat; a device for controlling radio receiver volume comprising:
a rotary driver disc;
a motor driving said rotary driver disc at a constant speed; and
means connected with the first-mentioned means and operatively connecting said rotary driver disc with said volume control shaft during said time period for uniformly rotating said volume control shaft, and thereby varying the volume output uniformly during the course of said time period.

3,315,168

PULSE DISCRIMINATOR EMPLOYING DELAY-LINES AND THRESHOLD-CIRCUIT FOR SELECTING PULSES OF CERTAIN WIDTHS AND AMPLITUDES

Michael J. Cantella, Burlington, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Sept. 30, 1965, Ser. No. 492,364
5 Claims. (Cl. 328-112)



1. An electronic discriminator circuitry apparatus for processing the electrical output of an infrared raster scanning sensor to distinguish the location of a point target video return in an extended cloud formation comprising first delay means coupled to said video signal input means for providing a predetermined delay to the video signal,
second delay means coupled to electrically receive the output of said first delay means for further providing additional predetermined delay to the video signal,
first adder means having two input circuits, said inputs electrically coupled so as to place said adder in parallel circuitry arrangement with said first delay means,
second adder means having two input circuits, said input circuits electrically coupled to place said second adder means in parallel circuitry arrangement with said first and second delay means,
video threshold means electrically coupled to receive the output of said first adder for providing an output voltage when the difference signal is greater than a predetermined threshold value,
switching signal generator means electrically coupled to receive the output from said second adder for providing an output voltage when the difference signal is less than a predetermined value, and
video switch means electrically coupled to receive the output voltage from said video threshold means and said switching signal generator means for turning the video switch to deliver a positive pulse output only when a difference signal is above the threshold value and the amplitude of the two voltage inputs to said second adder are approximately equal.

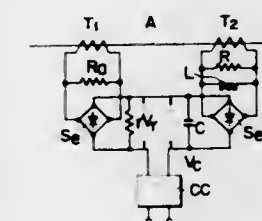
3,315,169

APPARATUS FOR DETECTING A SIGNAL ADVANCED BY A PREDETERMINED TIME INTERVAL RELATIVE TO A ZERO POINT OF AN ALTERNATING ELECTRIC CURRENT

Yoshio Nitta, Sumida-ku, Tokyo-40, Takeshi Takemura, Toshima-ku, Tokyo-40, and Kikuo Kawasaki Ota-ku, Japan, assignors to Fuji Denki Seizo Kabushiki Kaisha, Kawasaki-shi, Japan, a joint-stock company of Japan
Filed Nov. 19, 1964, Ser. No. 412,561
9 Claims. (Cl. 328-150)

1. An apparatus for detecting a signal advanced by a predetermined time interval relative to a zero point of a main circuit current having an alternating current component, comprising circuit means for producing a direct

current voltage which is in proportion to the magnitude of substantially only the alternating current component of said main circuit current, circuit means for producing a non-smoothing full wave rectified voltage which is in proportion to the instantaneous value of said main circuit



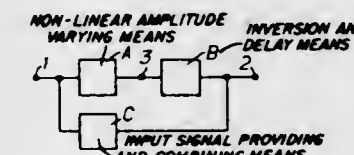
current, and comparison means for comparing said direct current voltage and said non-smoothing full wave rectified voltage to produce a detecting signal whenever said former voltage exceeds said latter voltage in every half cycle of said circuit current.

3,315,170

COLOR TRANSMISSION TRANSMITTER WITH PHASE CORRECTION MEANS

Kenneth Geoffrey Baker, Writtle, England, assignor to The Marconi Company Limited, London, England, a British company

Filed Feb. 14, 1964, Ser. No. 345,001
Claims priority, application Great Britain, June 4, 1963, 22,051/63
5 Claims. (Cl. 328-155)



1. A color television transmitter including video frequency signal means for handling a composite video signal train, said video frequency signal means including amplitude dependent phase correcting means comprising amplitude varying means responsive to signals of said signal train within a preselected amplitude range for deriving signals having amplitudes which are non-linearly related to the amplitudes of said signal train, inversion means for inverting the signals derived from said amplitude varying means, delay means for introducing a predetermined relative delay between the signals derived by said amplitude varying means and the signals from said inversion means, first combining means for combining the signals derived by said amplitude varying means with the inverted delayed signals produced by said inversion and delay means, and second combining means for combining signals from said composite video signal train with the resultant signal from said first combining means.

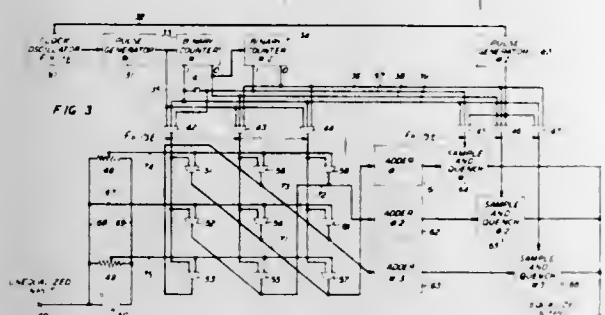
3,315,171

DIGITALIZED TRANSVERSAL FILTER

Floyd K. Becker, Colts Neck, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 24, 1963, Ser. No. 333,030
8 Claims. (Cl. 328-163)

2. A system for equalizing a time varying signal subjected to the phase distorting effects of traversing a real transmission medium comprising:
means for multiplying said distorted signal by a plurality of predetermined correcting factors to provide a plurality of time varying product signals;

a first accumulator for providing a first signal proportional to the sum of signals applied thereto;



means for sequentially applying said plurality of said product signals to said first accumulator; and means for periodically quenching said first accumulator.

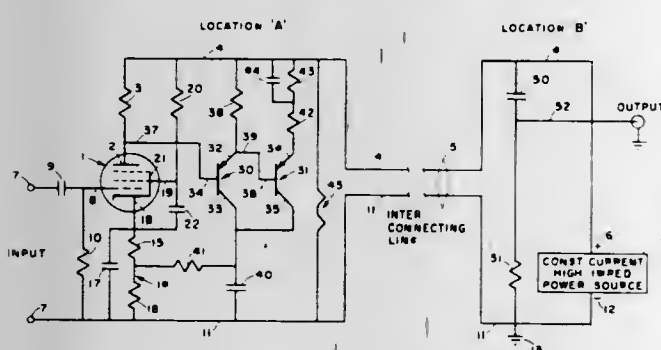
3,315,172

HIGH GAIN HYBRID AMPLIFIER

Charles B. Durgin, Pittsburgh, Pa., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Dec. 31, 1963, Ser. No. 334,956

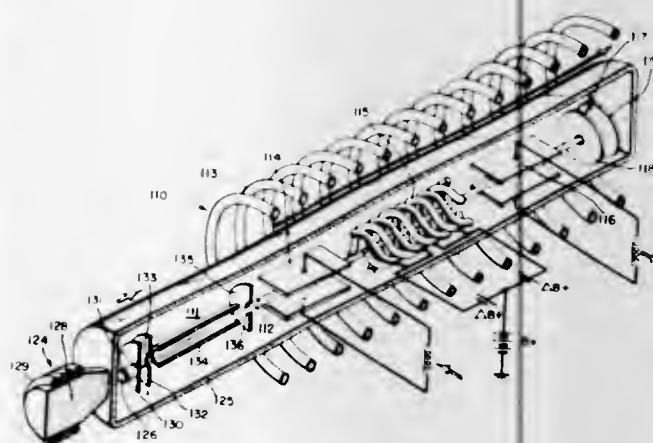
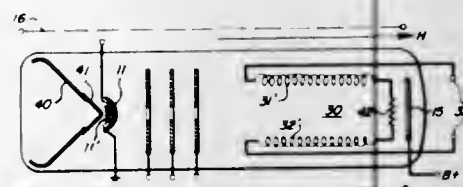
7 Claims. (Cl. 330-3)



1. A hybrid amplifier comprising, in combination, a pentode tube having a control grid, cathode and plate electrode; means for coupling input signals to the control grid of said pentode; a first resistor, one end thereof being connected to said plate electrode; a high impedance D.C. power source; a first conductor connected between the positive terminal of said D.C. power source and the other end of said first resistor; a second conductor connected between the negative terminal of said high impedance D.C. power source and the cathode of said pentode; a pair of cascaded emitter follower transistor stages connected between the plate electrode of said pentode and the other end of said resistor whereby the signals developed at the plate of said pentode in response to input signals coupled to the grid thereof are fed back with the same phase and substantially the same amplitude to the other side of said resistor thereby to effectively increase its A.C. impedance; a blocking capacitor and a second resistor being in series across said high impedance D.C. power source; and means for coupling output signals from the juncture of said blocking capacitor and said second resistor.

3,315,173 BEAM REFRIGERATION BY MEANS OF LARGE CATHODE MAGNETIC FIELDS USED IN RESISTIVE LOAD AND/OR WITH LOW NOISE AMPLIFIER

Robert Adler, Northfield, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed June 13, 1966, Ser. No. 557,218
32 Claims. (Cl. 330-4.7)



1. An electron discharge device comprising: a cathode for projecting an electron beam along a predetermined path; means creating a magnetic field along a portion of and having flux lines generally parallel to said path; a transverse-field electron coupler disposed along said path portion and effecting interaction between transverse electron waves on said stream and circuit waves on the coupler; the structure of said cathode in the environment of said device tending to establish an initial operating temperature of said beam corresponding to a normal effective noise temperature of a predetermined value; and means creating in the vicinity of said cathode a magnetic field of a strength substantially greater than that corresponding to said initial operating temperature and establishing an actual effective beam noise temperature of a value substantially lower than said predetermined value.

3,315,174

MULTIPLE RESONANT CYCLOTRON WAVE COUPLER FOR NONDEGENERATE PARAMETRIC AMPLIFIER

Robert Adler, Northfield, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Original application June 9, 1960, Ser. No. 34,961.
Divided and this application June 13, 1966, Ser. No. 563,622

5 Claims. (Cl. 330-4.7)

1. In a device in which an electron beam is projected along a predetermined path immersed in a magnetic field establishing a condition of cyclotron resonance for the electrons in said beam, a signal coupler comprising: two similar series of conductive elements facing one another on opposite sides of said path with a spatial periodicity of said elements along the path in accordance with the expression

$$\beta_1 = \pi/L$$

where β_1 is the phase constant of the fast wave on said beam and L is the distance between corresponding points on contiguous elements of each of said series;

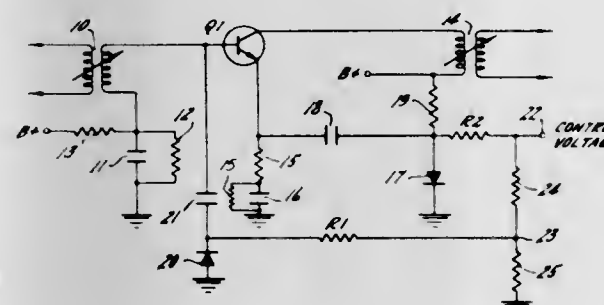


and reactance means coupled to said two series of elements to constitute therewith a structure resonant at the desired interaction signal frequency.

3,315,175

COMPENSATED DEGENERATIVE GAIN CONTROL FOR TRANSISTOR AMPLIFIERS

Samuel G. Shepherd, Jr., Severna Park, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed July 24, 1964, Ser. No. 385,096
7 Claims. (Cl. 330-29)



1. A compensated, degenerative gain control for amplifiers comprising: an amplifier including an electron emission device having a control electrode and two conduction electrodes; an input for a signal to be amplified coupled to said control electrode and an amplified signal output taken from one of said two conduction electrodes; a control voltage input; and a first unidirectional variable attenuator capacitor coupled to the other of said two conduction electrodes and a second unidirectional variable attenuator capacitor coupled to said control electrode, said attenuators being coupled to and under the control of said control voltage input to attenuate in inverse relation whereby the control of degeneration of said amplifier likewise controls the compensation of the detuning effects on the amplifier for changes in gain.

3,315,176

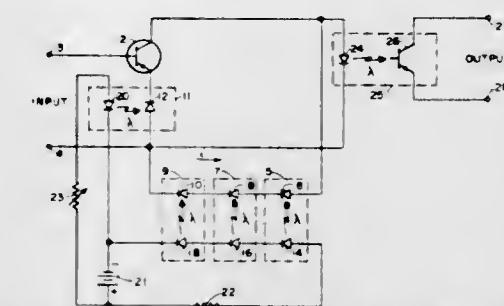
ISOLATED DIFFERENTIAL AMPLIFIER

James R. Biard, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Nov. 29, 1963, Ser. No. 327,133
9 Claims. (Cl. 330-59)

1. An electro-optical amplifier circuit arrangement, comprising:
 - (a) an active device for amplifying an electrical input signal and producing an electrical output in response thereto,
 - (b) electrical input terminals coupled to the input of said active device,
 - (c) first photosensitive means electrically coupled to and supplying electrical power to said active device in response to optical radiation incident thereon,

- (d) first light emitting means electrically isolated from but optically coupled to said first photosensitive means for generating said optical radiation,
- (e) second light emitting means electrically coupled to the output of said active device for generating optical radiation in response to said electrical output from said active device,



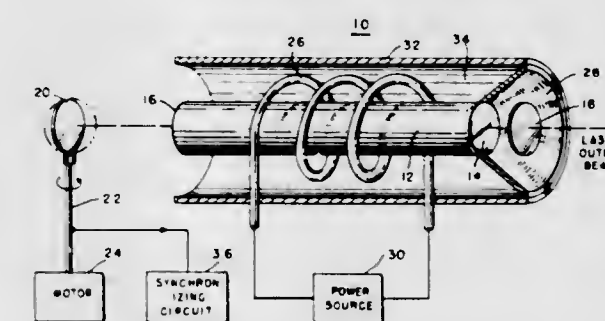
- (f) second photosensitive means electrically isolated from but optically coupled to said second light emitting means for generating an electrical signal in response to said optical radiation from said second light emitting means, and
- (g) electrical output terminals coupled to said second photosensitive means.

3,315,177

LASER GENERATOR

Robert C. Benson, Middletown, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed Apr. 5, 1962, Ser. No. 185,488
21 Claims. (Cl. 331-94.5)



1. A laser generator comprising an active laser medium with non-reflecting end surfaces, said active laser medium disposed within an optically resonant cavity, means for pumping said medium so that a population inversion is produced therein between an upper and lower energy level, said medium having a reflector affixed to one end of said medium and a movable reflector spaced from the opposite end of said medium, means for moving said movable reflector, and means for synchronizing said pumping means and said movable reflector means whereby said movable reflector is positioned parallel with said fixed reflector so as to generate oscillation in said cavity at the instant when said medium has attained maximum population inversion.

3,315,178

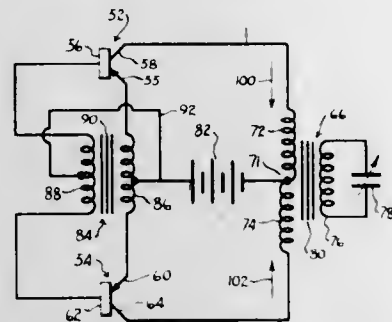
TRANSISTOR OSCILLATOR FOR EXTENDED FREQUENCY OPERATION

George C. Chernish, Escondido, Calif., assignor to DoAll Science Center, Inc., Escondido, Calif., a corporation of Illinois

Filed Nov. 16, 1964, Ser. No. 411,201
9 Claims. (Cl. 331-114)

1. An oscillator for generating a signal at a frequency 2F, comprising:
 - (A) a first transformer having a primary coil and a secondary coil, said primary coil having first and second sections wound in opposing relation to one another,

- (A') a capacitor connected across said secondary coil,
 (B) first and second switching elements each having a control input and an output,
 (C) means for connecting the outputs from said first and second switching elements to said first and second sections respectively, and

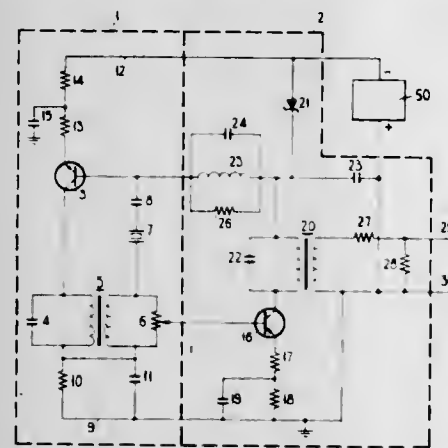


- (D) feedback means connected between the outputs of said first and second switching elements and said control inputs of said first and second switching elements for causing said switching elements to switch at frequency F.

3,315,179 AMPLITUDE-STABILIZED OSCILLATION GENERATORS

John Raymond Whitbread, Coventry, England, assignor to The General Electric Company Limited, London, England

Filed Oct. 11, 1965, Ser. No. 494,584
 Claims priority, application Great Britain, Oct. 14, 1964, 41,929/64
 9 Claims. (Cl. 331-116)

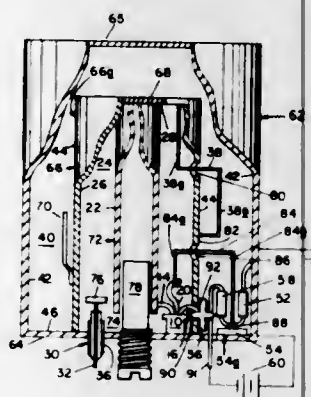


1. An electric oscillatory signal generator arrangement comprising first and second points, unidirectional voltage supply means connected between said first and second points, first and second transistors each having three electrodes, a first resistive element connecting a first electrode of said first transistor to said first point, a second resistive element connecting a second electrode of said first transistor to said second point, a third resistive element connecting a first electrode of said second transistor to said second point, a zener diode connecting a second electrode of said second transistor to said first point, a connection between the third electrode of said first transistor and the end of said zener diode remote from said first point, a connection between the third electrode of said second transistor and the end of said second resistive element remote from said second point, one of said transistors being arranged to generate an oscillatory signal which is supplied by way of the other of said transistors to first and second output terminals connected to said first and second electrodes of said other of said transistors respectively, the arrangement being such that, during use, the value of the unidirectional current flowing in said zener

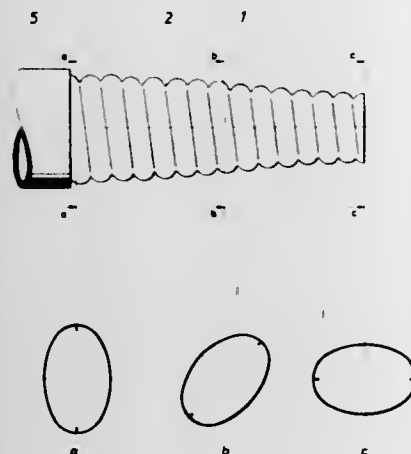
diode is maintained substantially stable and independent of the value of said unidirectional voltage supply, at least over a wide range of values of said unidirectional voltage supply, said zener diode thus operating to maintain a substantially stable potential difference between said first and third electrodes of said first transistor, the amplitude of the oscillatory signal appearing at said output terminals being thereby rendered substantially stable.

3,315,180 TRANSISTOR OSCILLATOR UTILIZING PLURAL CAVITIES WITH PARTICULAR COUPLING THERETO

Joseph E. Racy, Nashua, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
 Filed Oct. 14, 1965, Ser. No. 496,026
 16 Claims. (Cl. 331-117)



elliptical waveguide which, in its unstressed state, has a cross section which is twisted by a substantial amount longitudinally of the transmission line to transmit a polarized wave in the form of a surface wave having an electric field parallel to said plates on the central axis between the conductors.



about the longitudinal axis of said waveguide by a predetermined angle per unit of length.

3,315,186

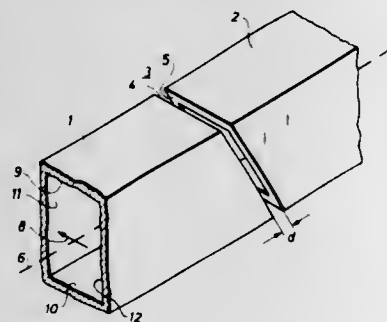
WAVE GUIDE JOINT HAVING NON-CONDUCTIVE GAP BETWEEN SECTIONS

Geert Rösler, Hamburg, and Uwe-Wolfgang Rische, Hamburg-Bergedorf, Germany, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed May 11, 1965, Ser. No. 454,943

Claims priority, application Germany, July 18, 1964, P 34,707

15 Claims. (Cl. 333-95)



1. A wave guide consisting of at least two parts which may be joined in a detachable manner by means of a quick-closing joint, characterized in that the wave guide is interrupted at least partly in a plane having a direction which coincides with the electric field vector of the wave produced in the wave guide, the direction of said plane being at an angle to the axis of the wave guide which is greater than 0° and smaller than 180°, the distance between the parts of the wave guide at the place of interruption being as small as possible and sufficiently great to avoid flash-over.

3,315,187

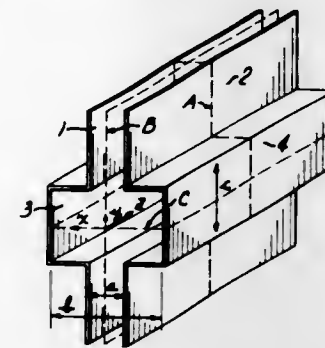
MICROWAVE TRANSMISSION LINE

Tsuneo Nakahara, Nishinomiya-shi, and Noritaka Kurachi, Suita-shi, Japan, assignors to Sumitomo Electric Industries, Ltd.

Filed Jan. 25, 1966, Ser. No. 522,966

19 Claims. (Cl. 333-95)

1. A microwave transmission line which includes two metal conductor plates insulatively mounted at a uniform distance from each other, each plate having an inwardly facing channel facing each other and extending



electric field parallel to said plates on the central axis between the conductors.

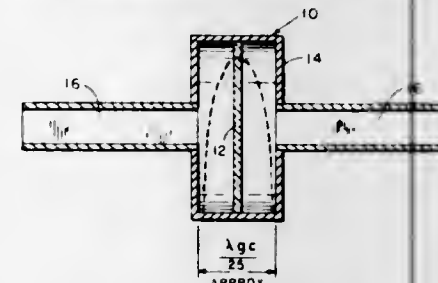
3,315,188

VERY BROADBAND HIGH POWER WAVEGUIDE WINDOW

John M. Scott, Fremont, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed June 2, 1965, Ser. No. 460,879

3 Claims. (Cl. 333-98)



1. A high frequency gas-tight permeable window assembly adapted to pass wave energy therethrough over a certain passband of frequencies comprising a first and second tubular waveguide member, a circular waveguide member intermediate said first and second tubular waveguide members and adapted to propagate the TE₁₁ mode wave energy as the dominant mode, means forming abrupt wavelength transitions connecting said first and second tubular waveguide members to said circular waveguide member substantially at the ends of said circular waveguide member, a gas-tight wave permeable member disposed transversely of and within said circular waveguide member approximately midway the length thereof, the length of said circular waveguide member being substantially 1/25 electrical wavelengths long of the cut-off wavelength of the TE₁₁ mode in said circular waveguide member.

3,315,189

CIRCUIT BREAKER ASSEMBLY

Eldon B. Heft, West Hartford, and Joseph F. Johnson, Plainville, Conn., assignors to General Electric Company, a corporation of New York

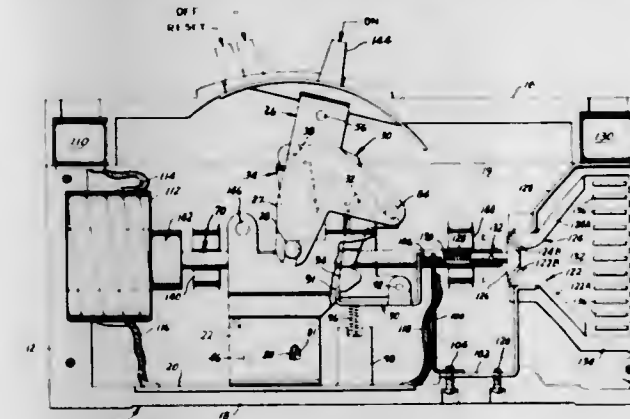
Filed Sept. 30, 1965, Ser. No. 491,840

23 Claims. (Cl. 335-16)

1. In an electrical circuit interrupter, the combination comprising:

- (a) a support;
- (b) a first contact on said support;
- (c) a contact carrying member having a second contact thereon for electrical engagement with said first contact and movable relative to said first contact for movement of said second contact into and out of electrical engagement with said first contact to provide open and closed circuit positions;
- (d) a toggle linkage mounted on said support; and

(e) current overload operating means engaged with said contact-carrying member for moving said contact-carrying member and thereby said second contact relative to said first contact to the open circuit position automatically in response to an overload current, said operating means including biasing means, said biasing means being rotatably mounted on a pivot member on said toggle linkage and oper-



able independently of said toggle linkage to open said contacts, said biasing means being engaged with said contact-carrying member for biasing said contact-carrying member relative to said pivot member on said toggle linkage, said toggle linkage being connected to said contact-carrying member for moving said biasing means and said contact-carrying member relative to said first contact between the open and closed circuit positions.

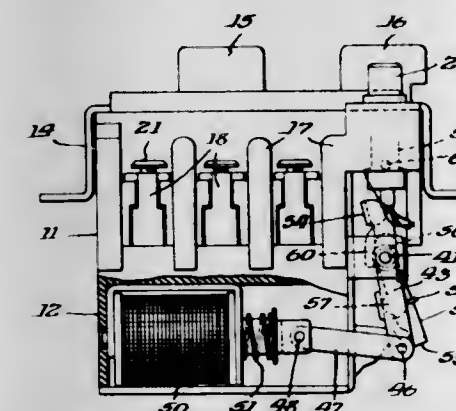
3,315,190

MANUAL CONTACTOR WITH LOW VOLTAGE RELEASE

Louis Moulis, Aurora, Ill., assignor to Furnas Electric Company, Batavia, Ill., a corporation of Delaware

Filed Dec. 1, 1965, Ser. No. 510,895

8 Claims. (Cl. 335-21)



1. In a contactor adapted to be manually actuated, the combination with a housing of insulating material, a pair of stationary contacts fixed to the housing in spaced relation, a movable contact member for engagement with the stationary contacts to close an electric circuit, a start button positioned by the housing for reciprocating movements and carrying the movable contact member, a start lever actuated by the start button and having oscillating movement as the start button is reciprocated, a latching lever pivotally supported by the housing and having a latched and a release position with the start lever, electric means having actuation when energized to move the latching lever into a latched position with the start lever, and a stop button also positioned by the housing for reciprocating movements, said stop button when reciprocated in one direction effecting release of the latching lever from its latched position and which effects release of the start lever and also the start button.

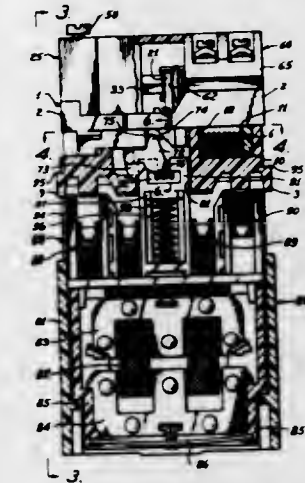
3,315,191

TIMER AND TIMER CONTROL CONTACTOR COMBINATION

Stanley H. Molter, Menomonee Falls, Wis., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed June 29, 1965, Ser. No. 467,923

4 Claims. (Cl. 335-67)



1. A timer comprising a housing, a timing mechanism carried thereby and having an operating connecting element movable to and fro along a predetermined path, a slide mounted in the housing for sliding along a path extending generally endwise of said predetermined path, resilient lost motion means interconnecting the slide and element for movement of the element by the slide in at least one direction from a starting position of the element, a switch having an operating push button in operative engagement with the element and movable to one operating position when the element is moved in said one direction along its path by the slide, means in the housing drivingly connected to the slide and accessible from the exterior for connection to a moving part of extraneous equipment, characterized in that means connect said element and push button for movement together in fixed relation to each other in said opposite direction, and a return spring is incorporated in the switch and is operative to resiliently oppose movement of the element in said one direction and to return both said push button and element in said opposite direction.

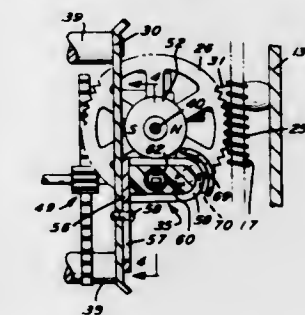
3,315,192

MAGNETICALLY ACTUATED DEMAND CONTACT DEVICE

Elmer H. Day, 24 Hillcrest Ave., Erdenheim, Pa. 19118

Filed Oct. 22, 1965, Ser. No. 500,735

6 Claims. (Cl. 335-153)



1. A demand contact device for use with a watt-hour meter having

- a back housing plate,
- a register having a frame spaced forwardly of said back housing plate,
- a current use responsive member, and
- a register actuating shaft between said plates and actuated by said responsive member for actuating said register,

said device comprising,
 a permanently magnetic member mounted on said shaft and rotated thereby,
 said magnetic member having a periphery and poles facing said periphery,
 a mounting member mounted on said frame plate,
 a reed switch carried by said mounting member and having a contact and a magnetic responsive electrical conductive reed with a free end movable toward and away from said contact, and
 a shielding member for said reed carried by said mounting member.

3,315,193

REED SWITCH ADAPTED FOR RAPID CYCLING
 John D. Santi, West Allis, Wis., assignor to Briggs & Stratton Corporation, Milwaukee, Wis., a corporation of Delaware

Filed Aug. 26, 1965, Ser. No. 482,699
 6 Claims. (Cl. 335—154)

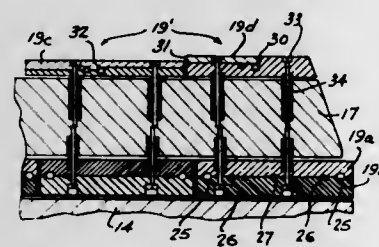


1. In a magnetically actuated switch of the type comprising a conductive reed mounted at one end and having its opposite end portion in normally spaced relationship to a cooperating conductive and magnetically permeable contact member, said reed being resiliently flexible and magnetically permeable so that it can be flexed to bring its said opposite end portion into switch closing contact with said contact member by a magnetic field threading the reed, the contact member and the space between the contact member and said opposite end portion of the reed, means for stabilizing the timing of each of a rapid succession of closures of the switch so that each closure occurs just as a cyclically varying magnetic field builds to a predetermined value, said means comprising: a post stiffer than the reed and having an end fixed to the reed near the fixed end of the reed, said post extending alongside the reed at the side thereof remote from the contact member, and the reed being normally engaged with the post under bias when the reed is at rest.

3,315,194

TEMPERATURE RESPONSIVE CONTROL MEANS FOR THE MAGNETIC FIELD OF A CYCLOTRON
 Kenneth G. Standing, Winnipeg, Manitoba, Canada, assignor to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a company

Filed Aug. 26, 1963, Ser. No. 304,550
 8 Claims. (Cl. 335—210)



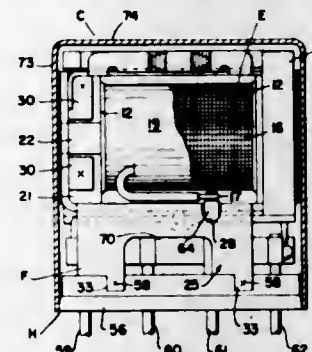
1. In the magnetic circuit of a cyclotron or like particle accelerator, a plurality of control blocks disposed as a radially extending row, each of said blocks being of a material that is ferromagnetic at ambient operating temperature and has a Curie point approximately in the range 200° to 350° C., and separate means for heating each of said blocks individually to its Curie point.

3,315,195

ELECTROMAGNETIC SWITCHING RELAY WITH PERMANENT MAGNETIC LATCH MEANS

Eric W. Bayer, Wolcott, and Werner Muller, West Hartford, Conn., assignors to Allied Control Company, Inc., New York, N.Y., a corporation of New York

Filed Nov. 2, 1964, Ser. No. 448,087
 5 Claims. (Cl. 335—229)



1. In an electromagnetic relay, support means, a magnetizing coil having a horizontally disposed longitudinal through opening, a core assembly comprising a central element extending through the coil opening and a pole piece at each end of the central element, each pole piece being positioned adjacent a corresponding end of the coil and secured to the support means, an armature unit comprising an inverted generally U-shaped armature including a pair of legs, each armature leg being positioned adjacent a corresponding pole piece, connector means connecting the armature unit to the support means and permitting rotary movement of the armature unit relative to the support means about a substantially vertical axis that is substantially normal to the longitudinal axis of the coil, and biasing means normally urging the armature unit in one direction of rotation relative to the support means and maintaining the armature legs in a position away from the pole pieces, the armature unit being adapted, upon energization of the coil, to be moved in a reverse direction against the action of the biasing means by magnetic attraction between the pole pieces and the armature legs, said biasing means comprising spring means including a first part secured to the support means and a second part connected to and adapted to be flexed relative to the first part, said second part being engageable by the support means whereby to limit flexing thereof relative to the support means in one direction, and a permanent magnet carried by the second part for normally engaging the armature and maintaining the armature legs in a position away from the pole pieces when the coil is deenergized.

3,315,196

POT TYPE MAGNETIC CORE FOR TOROIDAL COIL

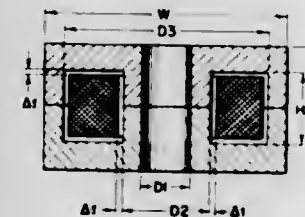
Kouji Kawahara, Kawasaki-shi, and Misao Takahashi, Tokyo, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan

Filed June 16, 1964, Ser. No. 376,303
 Claims priority, application Japan, June 20, 1963, 38/32,357

7 Claims. (Cl. 336—83)

1. A magnetic core for a substantially toroidal coil, comprising a substantially rectangular parallelepiped having spaced substantially parallel top and bottom faces, a first pair of spaced substantially parallel sides substantially perpendicular to said top and bottom faces and a second pair of spaced substantially parallel sides substantially perpendicular to said top and bottom faces and to said first pair of sides, each of said top and bottom faces having four edges of substantially equal length W mm., each of the sides of said first pair of sides and each of the sides of said second pair of sides having top and bottom edges of substantially equal length W mm. and side edges of substantially equal length H1 mm., said

magnetic core having formed therein a substantially toroidal recess for a substantially toroidal coil, said toroidal recess having substantially parallel top and bottom faces substantially parallel to the top and bottom faces of said rectangular parallelepiped and spaced a distance H2 mm. from each other, a first substantially cylindrical side substantially perpendicular to the top and bottom faces of said toroidal recess and of said rectangular parallelepiped and having a diameter D2 mm. and a second substantially cylindrical side coaxial with and spaced from the first side of said toroidal recess and sub-



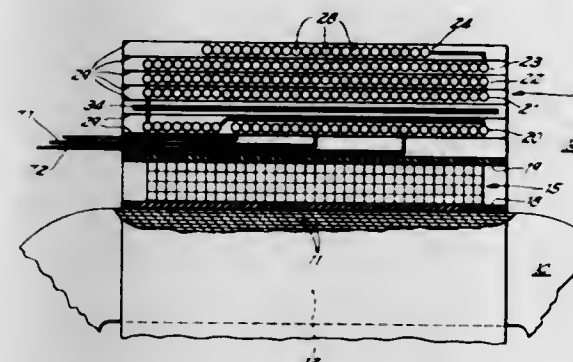
stantially perpendicular to the top and bottom faces of said toroidal recess and of said rectangular parallelepiped and having a diameter D3 mm., each of the top and bottom faces of said toroidal recess having an inner circular edge formed by the first side of said toroidal recess and an outer circular edge formed by the second side of said toroidal recess, the ratio W/D3 ranging in value from 1.00 to 1.15, the ratio W/D2 ranging in value from 1.50 to 2.40, the ratio W/H1 ranging in value from 0.90 to 1.60 and the ratio H1/H2 ranging in value from 1.20 to 1.50.

3,315,197

TRANSFORMER COIL HAVING IMPROVED SHORT CIRCUIT STRENGTH

Robert W. Russell, New Concord, Ohio, assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed Dec. 31, 1964, Ser. No. 422,793
 4 Claims. (Cl. 336—84)



1. In combination with an electrical transformer coil having concentric primary and secondary windings each of which comprises a plurality of layers of conductor turns, at least one layer of one of said windings constructed and connected to generate magnetic leakage flux having a substantial radial component, an annular conductive shield disposed within said one winding adjacent said one layer and being of sufficient radial thickness to cause the circulation of eddy currents of considerable magnitude in said shield due to said radial component of said leakage flux, the radial thickness of said shield being in excess of that required for electrostatic shielding, whereby said shield suppresses leakage flux in a radial direction through said winding and improves the ability of said coil to withstand short circuit strength.

3,315,198

COIL AND LEAD-IN WIRE CONNECTION

Louw Arjen Blesma and Jan Moerman, Drachten, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 1, 1965, Ser. No. 444,546
 Claims priority, application Netherlands, Apr. 9, 1964, 6,403,784

4 Claims. (Cl. 336—192)



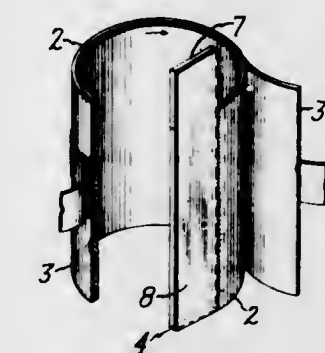
1. The combination comprising a coil of fine wire wound about a coil former having at least one flange of thermoplastic material, a free end portion of said coil wire extending from said coil, a connecting wire having an exposed core, said free end portion of said fine wire being wrapped about said exposed core, a first means for anchoring said connecting wire on said flange, a lug of thermoplastic material connected with said flange adjacent said first means, said wrapped core substantially abutting said lug, a solder joint connecting the fine wire wrapped about said core and a solidified melt of said lug connecting said solder joint with said lug.

3,315,199

ELECTRICAL TERMINAL OR TAP FOR A STRIP WOUND COIL AND METHOD OF MAKING THE SAME

Robert E. Koch, Pittsfield, and Willard F. M. Gray, Hancock, Mass., assignors to General Electric Company, a corporation of New York

Filed Aug. 13, 1965, Ser. No. 479,560
 8 Claims. (Cl. 336—192)



3. In combination, a conductive strip many times wider than it is thick and many times longer than its width for flatwise winding to form an electrical coil, a conductive tab of the same thickness as but substantially less wide than said strip having one end in flush butt contact with a side of said strip, and a conductive backing sheet substantially thinner than the thickness of said strip of a width equal to the width of said tab and of a length equal to the sum of the width of said strip and the length of said tab laid flatwise congruently in bridging relation across said tab and strip, the contacting surfaces of said strip, tab and sheet being conductively bonded to each other.

3,315,200

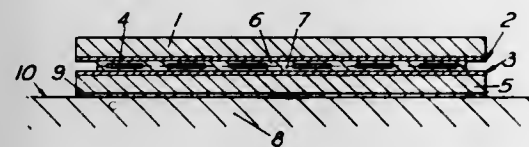
STRAIN GAUGES

Richard William Hannay, Downend, Bristol, England, assignor to British Aircraft Corporation (Operating) Limited, London, England, a British company

Filed Nov. 19, 1964, Ser. No. 412,477

Claims priority, application Great Britain, Nov. 20, 1963, 45,822/63

1 Claim. (Cl. 338—2)



A strain transducing unit for attachment by an adhesive to a member having a high fluctuating temperature, the unit comprising, in superjacent sequence, the following parts: a first aluminum foil, a first electrically insulating aluminum oxide coating, then, in substantially coplanar relationship, a cupronickel strain transducer element and portions of a resin thereon, a second electrically insulating aluminum oxide coating, and a second aluminum foil, said aluminum foils having a thickness of about 0.0005 inch, said aluminum oxide films having a thickness of about 0.0002 inch, and on the outside of one of said aluminum foils a layer of adhesive for attachment to a test specimen.

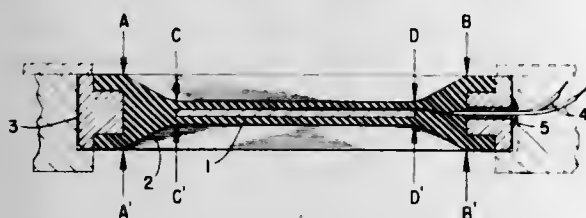
3,315,201

STRAIN TRANSDUCER

John V. Werme, Painesville, Ohio, assignor to Bailey Meter Company, a corporation of Delaware

Filed Mar. 31, 1965, Ser. No. 444,157

4 Claims. (Cl. 338—2)



1. A strain transducer comprising a diaphragm having strain sensitive portions thereon responsive to the deflection of said diaphragm, a shroud of elastomeric material having a peripheral edge and completely encapsulating said diaphragm to provide free edge support and to protect the strain sensitive portions from corrosive atmospheres and fluids and a metal retaining ring bonded to and surrounding the peripheral edge of said shroud for mounting said diaphragm.

3,315,202

LOAD SENSING DEVICE

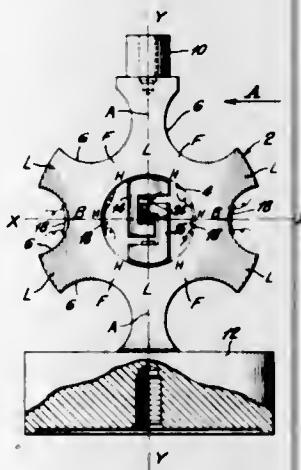
Wilford Johns and Charles F. Grabenstein, Cumberland, Md., assignors, by mesne assignments, to Toroid Corporation, Huntsville, Ala., a corporation of Alabama

Filed June 2, 1964, Ser. No. 371,911

1 Claim. (Cl. 338—5)

A load sensing device comprising a force ring formed from a plate having a central aperture formed therein and a scalloped outer periphery arranged symmetrically about a load applying axis, the scallops providing said force ring with portions of alternately thicker and thinner cross-sectional areas, low stress concentration occurring at the thicker cross-sectional areas and higher stress concentrations at the thinner cross-sectional areas, portions of thicker cross-sectional area and low stress concentration being arranged along the load applying axis, and portions of thinner cross-sectional area and higher stress concentration along an axis normal to said load applying axis and passing through the center of symmetry of

said ring, additional portions of thinner cross-sectional area being located symmetrically on each side of said load axis adjacent said portions of low stress concentrations of high stress concentration which lie along said portions of high stress concentration which lie normal to said load axis by single portions of thicker cross-sectional area, said additional portions being arranged to bend under load to transmit a bending moment through said single portions of thicker cross-sectional area to said portions of high stress concentration which lie along said axis normal to said load axis, strain sensitive means



mounted on said portions of high stress concentration which lie along said axis normal to said load applying axis to measure tension and compression strain as load is applied along said load axis, two interfitting C-shaped members secured to said force ring inside said aperture, one side of each C-shaped member being secured to said ring in said aperture along the load axis, the free ends of said C-shaped members interfitting each with the other to afford a stop in tension or compression when a load exceeds the design load of said ring, and shim means between portions of said C-shaped members along the load axis to regulate the deflection in tension or compression.

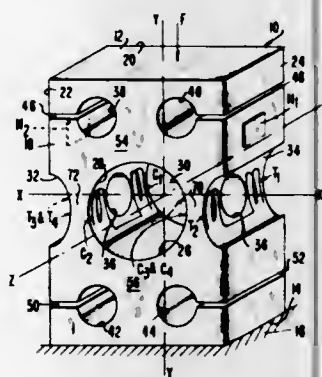
3,315,203

LOAD CELL DEVICE

Walter E. Jacobson, Meriden, Conn., assignor to Revere Corporation of America, Wallingford, Conn., a corporation of New Jersey

Filed Nov. 5, 1964, Ser. No. 409,168

7 Claims. (Cl. 338—5)



1. A load cell, comprising:

(a) a block of elastic material having:

- (1) one end upon which it is adapted to be supported;
- (2) an opposite parallel end adapted to receive an applied force to be measured;
- (3) two opposite side faces;
- (4) opposite front and rear faces;

- (5) an aperture extending from the front face to the rear face, in a direction substantially parallel to and spaced from both ends and both side faces, said aperture having at least those portions of its surface nearest the side faces of arcuate cross-section, with the axes of curvature of said arcuate cross-section portions substantially parallel to said ends and to said side faces;
- (6) recesses of arcuate cross-section extending across said side faces from the front face to the rear face, the axes of curvature of said recesses lying in the same plane as the axes of curvature of said arcuate cross-section portions of said aperture surface and the radius of the arcuate recesses being substantially equal to the radius of the arcuate cross-section portions of the aperture;
- (7) said recesses and said aperture cooperating to define two parallel columns integral with the block, each column having a narrow neck and flaring from the neck toward both ends; and
- (b) a plurality of strain sensitive elements attached to the columns on the arcuate cross-section surfaces thereof.

3,315,204

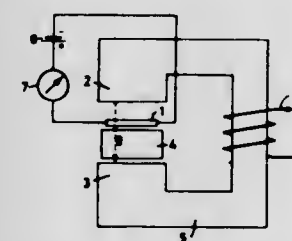
GALVANOMAGNETIC SEMICONDUCTOR DEVICE

Herbert Weiss, Nurnberg, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed Nov. 18, 1964, Ser. No. 412,078

Claims priority, application Germany, Nov. 30, 1963, S 88,506

5 Claims. (Cl. 338—32)



1. A galvanomagnetic device, comprising a magnetizable core structure having an air gap formed therein of a determined distance, said core structure having a determined saturation point, a galvanomagnetic semiconductor resistance member and a mass of oxidic ferrite jointly filling said gap in magnetic series relation, said ferrite mass filling 30 to 50% of the determined distance of said air and having a saturation point which is considerably lower than that of said core structure, said ferrite having a substantially flat magnetization characteristic.

3,315,205

HALL DEVICE WITH IMPROVED ZERO VOLTAGE TEMPERATURE CHARACTERISTIC

Hans Kuhnlein and Ingeborg Pfeilmbter, both of Nurnberg, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin, Germany, a corporation of Germany

Filed July 6, 1965, Ser. No. 469,760

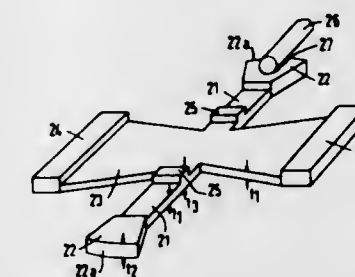
Claims priority, application Germany, July 8, 1964, S 91,931

2 Claims. (Cl. 338—32)

1. A Hall device having a zero voltage temperature characteristic and a zero voltage non-linear distortion factor K_{on} , said Hall device comprising an active semiconductor body having a substantially uniform thickness, a length, a width, length sides, spaced opposite ends of said length sides and control electrodes at said spaced opposite ends for providing

a substantially sinusoidal control current flow between said control electrodes, said control current having a non-linear distortion factor $K_n < 10^{-3}$, said semiconductor body comprising semiconductor material having a specific resistance temperature characteristic;

a pair of Hall electrodes extending in opposite directions away from the central portion of the length sides of said semiconductor body, said Hall electrodes comprising the same semiconductor material as said semiconductor body, each of said Hall electrodes having a width and a length which is at least twice its width so that each of said Hall electrodes extends from said semiconductor body to points which are beyond the sphere of influence of the control current flowing in said semiconductor body and the ends of said Hall electrodes farthest from said semiconductor body are beyond said sphere of influence, and each of said Hall electrodes having a portion of



greater thickness than the thickness of said semiconductor body in an area intermediate the ends of the corresponding Hall electrode;

a swallow-tailed extension extending from the end of each of said Hall electrodes farthest from said semiconductor body, each said swallow-tailed extension tapering outwardly from the end of the corresponding Hall electrode and having a thickness greater than that of said semiconductor body; and

electrical conducting means soldered to each of said swallow-tailed extensions so that they are in positions beyond the sphere of influence of the control current flowing in said semiconductor body so that the zero voltage temperature characteristic corresponds to the specific resistance temperature characteristic of said semiconductor material and said zero voltage non-linear distortion factor K_{on} is equal to said control current non-linear distortion factor K_n , when $n \geq 3$, n being a harmonic of the fundamental of the zero voltage of said Hall device.

3,315,206

RADIATION SUPPRESSOR FOR INTERNAL COMBUSTION ENGINE IGNITION SYSTEM

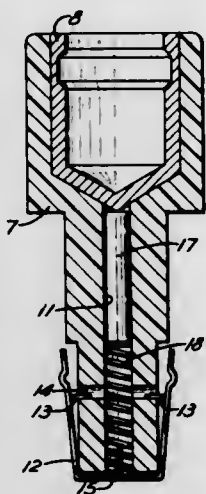
Henry M. Dressel, St. Marys, Pa., assignor to Stackpole Carbon Company, St. Marys, Pa., a corporation of Pennsylvania

Filed Oct. 19, 1965, Ser. No. 497,900

5 Claims. (Cl. 338—66)

1. A radiation suppressor for insertion between an internal combustion engine ignition cable and a distributor, comprising an insulating plug provided at one end with an axial opening, a metal socket rigidly mounted in said opening for receiving one end of an ignition cable and making electric contact therewith, the plug being provided with an axial passage extending therethrough from said opening to the opposite end of the plug, a metal electrical contact member overlying the exposed end of said passage and attached to the plug, said contact member and adjoining portion of the plug being adapted to be inserted in a distributor cap socket said member having a portion

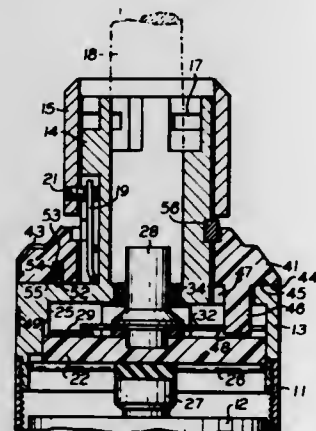
extending along the outside of the plug for making electrical contact with the side of the cap socket, and a compressed coil spring and a radiation suppressing resistor



disposed in end-to-end engagement in said passage and forming an electrical connection between said metal socket and contact member which they engage.

3,315,207

ELECTRICAL RESISTANCE BATTERY HANDLE
Irving A. Speelman, Brooklyn, N.Y., assignor to Propper Manufacturing Company, Inc., Long Island City, N.Y., a corporation of New York
Filed May 14, 1964, Ser. No. 367,478
6 Claims. (Cl. 338-68)



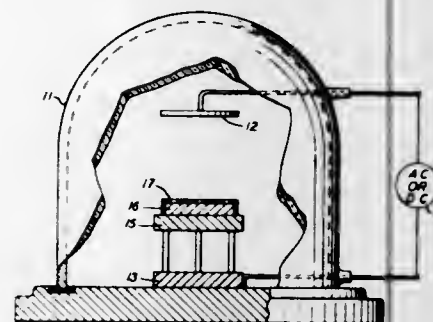
3. In a battery handle of the type having a base member, a variable resistance carried by said base member, a wiper arm rotatably mounted to traverse and engage said variable resistance and adjusting means in engagement with said wiper arm for rotating said wiper arm between a fully-off and a fully-on position, the combination including detent means cooperating between said adjusting means and said base member for yieldably holding said wiper arm in a fully-off position, a fully-on position, and a position intermediate said fully-off and fully-on positions, said wiper arm in said fully-off position being out of engagement with said variable resistance.

3,315,208

NITROGEN STABILIZED TITANIUM THIN FILM RESISTOR AND METHOD OF MAKING SAME
Dieter Gerstenberg, Morristown, N.J., assignor to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York
Filed May 9, 1966, Ser. No. 548,774
5 Claims. (Cl. 338-308)

1. The method of fabricating an opaque nitrogen saturated titanium film resistor which comprises the steps of producing a thin layer of titanium having a thickness

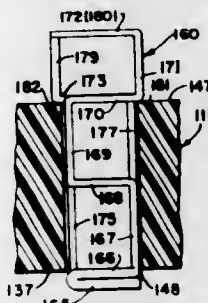
ranging from 400 Å. to 1500 Å. on a substrate by condensation and heating said layer in a gaseous atmosphere consisting essentially of nitrogen at temperatures within the range of 200° to 375° C. for a time period within the range of one to five hours, thereby saturating said layer of titanium with nitrogen.



5. A thin film resistor including a substrate member, a nitrogen saturated opaque titanium film deposited thereon and a pair of spaced electrical leads attached to said film, said film having a thickness of 400 Å. to 1500 Å.

3,315,209

ELECTRICAL CONNECTORS
Siegfried Godel, Norwalk, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Sept. 23, 1964, Ser. No. 398,650
5 Claims. (Cl. 339-18)

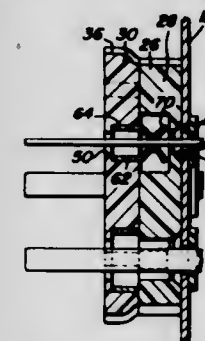


1. In an electrical connector, the combination of first and second conductive elements each having a flat surface; means supporting said conductive elements in spaced relation with said flat surfaces parallel and facing each other; a connector element engaged between said flat surfaces, said connector element comprising an elongated strip of thin resilient sheet metal bent upon a plurality of spaced transverse lines to provide a series of alternate axially extending portions and transversely extending portions, two of said transversely extending portions being located each at a different end of the connector element, adjacent ones of said axially extending portions being located at different sides of the connector element; said connector element further comprising an additional elongated strip of thin resilient sheet metal bent upon a plurality of spaced transverse lines to provide a series of alternate axially extending portions and transversely extending portions; two of said transversely extending portions of said additional strip being located each at a different end of the connector element; the transversely extending portions of both of said strips at one end of the connector element being joined together;

corresponding ones of said axially extending portions of said strips being located on opposite sides of the connector element; and each of said strips being provided with an additional transversely extending portion; said additional transversely extending portions both being located at the same end of the connector element and overlying in face-to-face relation the corresponding ones of said first-mentioned transversely extending portions.

3,315,210

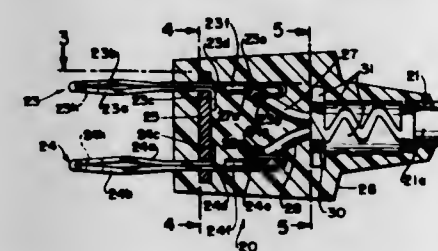
THIRTEEN TRAFFIC CONNECTOR
John V. Cull, P.O. Box 7342, Dallas, Tex. 75209
Filed June 26, 1964, Ser. No. 378,210
8 Claims. (Cl. 339-32)



1. A terminal connector comprising a dielectric body having a plurality of at least four openings extending therethrough, arranged in different angular positions with respect to each other and adapted to be received on an array of flat faced terminals, spring contact assemblies received in said housing for limited free movement and for contacting engagement with the terminals for connecting certain of each of said terminals together, said spring contact assemblies including two clips having legs terminating in outwardly flared end portions for guiding the terminals therethrough, said legs having curved central portions for line contact with the flat faced terminals, said openings and the spring contact assemblies are orientated in patterns for association with an array of terminals in different angular positions for forming different connections between terminals depending upon the positioning of the spring contact assemblies and housing in relation to the terminals.

3,315,211

ELECTRIC MALE PLUG HAVING REINFORCED BLADES
Robert Weeks, Jr., Old Greenwich, Conn., assignor to Electrolux Corporation, Old Greenwich, Conn., a corporation of Delaware
Filed Feb. 15, 1965, Ser. No. 432,485
5 Claims. (Cl. 339-63)

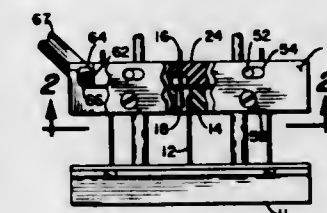


1. An electrical connector comprising a nonrigid body, an elongated contact element having one end embedded in said body and the other end protruding therefrom for engagement with an electrical receptacle, whereby said contact element may be subjected to a bending stress, the embedded end of said element having portion which is structurally weaker than the rest of the contact element,

and rigid means secured to said contact element within said body between said weakened section and the projecting end of said contact element for transmitting bending stress from the projecting end of said element to said body thereby diverting said stress away from said weakened section.

3,315,212

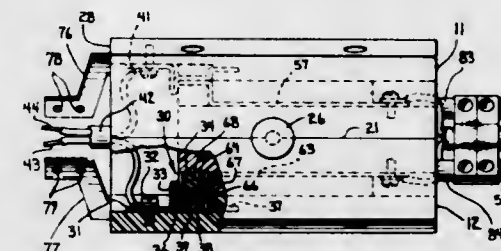
CONNECTOR ASSEMBLY
Loren W. Peterson, St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed July 20, 1964, Ser. No. 383,841
2 Claims. (Cl. 339-75)



1. A connector assembly comprising in combination: a first connector block having a plurality of flexible contact elements mounted therein, said contact elements having first and second end portions extending outwardly from said block, the portion extending from one side of said block being slightly curved, said block having a longitudinal notch guide means, a second block means having a cavity containing a plurality of channels and ribs therein adapted to receive said end portions extending from said one side including guide rail elements cooperating with said longitudinal notch guide means for providing a bearing surface for said elements and for restraining said end portions extending from said one side in transverse motion and for preventing arcing between mating contacts, third block means having contacts extending into and freely engageable within said channels and ribs of said second block means, and motion transmitting means operatively associated with said second means for moving said second means with respect to said first means whereby said flexible contact element ends are biased therein for effecting electrical engagement with said contacts of said third means while in a latched position.

3,315,213

EXTENSION CORD CONNECTOR
Ronald A. Fischer and Adolph R. Fischer, both of 5801 E. 17th St., Indianapolis, Ind. 46218
Filed June 26, 1964, Ser. No. 378,256
3 Claims. (Cl. 339-92)



2. An extension cord device comprising: an elongated casing of dielectric material, said casing having upper and lower casing members; the two members being secured together in abutting relationship, said two members, when assembled together, providing an elongated opening there-through, with each member having a wall with a recess therein;

first and second resilient electrically conductive contactors, each having a portion received in one of said recesses, and each having a portion at the surface of the wall in which its receiving recess is provided;

a pair of wires of a first extension cord, said wires being fastened to said contactors in said recesses;

an elongated core of dielectric material, said core being fittingly received in said opening in said casing, and said core having walls disposed with respect to the walls of said casing in a manner preventing rotation of said core in said casing, said core having upper and lower front recesses in the front end thereof and upper and lower openings extending from said upper and lower front recesses, respectively to rear recesses in the rear end of said core;

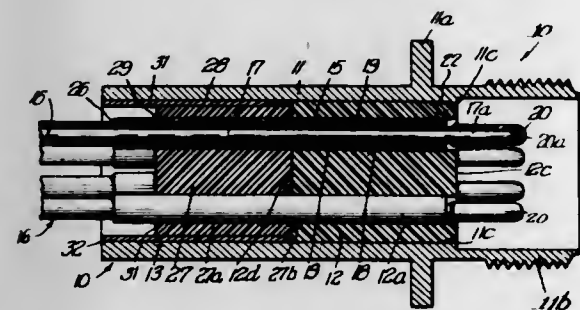
and upper and lower spring connector strips, said upper strip having a forward end disposed in the upper recess in the forward end of said core and resiliently biased against the first contactor in said casing, and said lower connector strip having a forward end disposed in the lower recess in the front end of said core and resiliently biased against said second contactor, the rear end of each of said contact strips in said core being disposed in the rear recesses of said core;

a pair of wires of a second extension cord, said wires being fastened to the rear ends of said connector strips;

a manually releasable fastener extending through said casing and into said core and preventing removal of said core from said casing, whereby an intact and tensile load withstanding electrical connection is made between the said first and second extension cords.

3,315,214 CONNECTOR ASSEMBLY

Bayard C. Davis, 425 S. Grace, Lombard, Ill. 60148
Filed Apr. 8, 1965, Ser. No. 446,619
3 Claims. (Cl. 339-94)

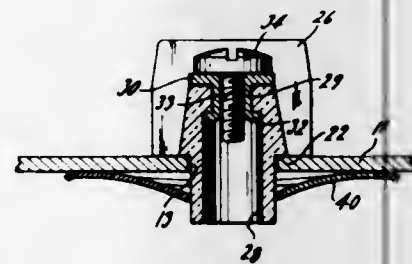


1. A hermetically sealed heat-resistant connector assembly which comprises a heat-resistant housing, a plurality of joined contact-conductor subassemblies, each of said contact-conductor subassemblies being formed by a free end of an elongated conductor and a contact element, an insert of insulating material being joined to each of said conductors and intimately surrounding the junction of each of said conductors and contact elements so as to define a hermetically sealed enclosure for each of said junctions, an elongated sleeve member of each of said subassemblies, each of said sleeve members having one end thereof joined to and surrounding a corresponding one of said inserts so that the contact element of said subassembly is exposed, said sleeve member also surrounding a substantial portion of said conductor of said subassembly to facilitate the mounting thereof within said housing, an apertured mounting member positioned in closely fitted relation within said housing, said apertured mounting member confining at least a portion

of each of said sleeve members therein so that each of said members and the portions of said subassemblies enclosed thereby are insulated from and maintained in pre-selected spaced relation to each other and said housing, and means securing and hermetically sealing said mounting member within said housing whereby said subassemblies are confined within said housing so that said contact portion of each is exposed for suitable mating with external instrumentalities.

3,315,215 MODULAR TERMINAL BLOCK ASSEMBLY

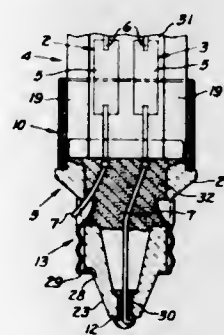
Eugene R. Kulka, 10 Tamerton St., Mount Vernon, N.Y. 10552
Filed Apr. 3, 1964, Ser. No. 337,051
8 Claims. (Cl. 339-126)



7. A connector module for use with a mounting member having a noncircular aperture therein, said connector module comprising a block of insulating material having opposite end faces provided with complementary matable aligned projections and depressions, said block comprising an upper section of greater area than said mounting member aperture and a lower section insertible through said aperture and forming a downwardly-facing shoulder with said upper section, at least a portion of said lower section being of noncircular cross-section and being located within the noncircular aperture of said mounting member when the lower section is inserted through said aperture until said shoulder is seated on said mounting member, thereby to restrain rotation of said module relative to the mounting member, the remainder of said lower section projecting a substantial distance below said mounting member, an electrical terminal located on the top surface of said upper section, and a spring clip engaging the downwardly-projecting portion of said lower section and bearing on the underface of said mounting member.

3,315,216 LAMP BASE AND TERMINAL STRUCTURE

Anton M. Krupp, Gates Mills, and Melvin L. Stone, Cleveland Heights, Ohio, assignors to General Electric Company, a corporation of New York
Filed Aug. 9, 1965, Ser. No. 478,207
4 Claims. (Cl. 339-145)

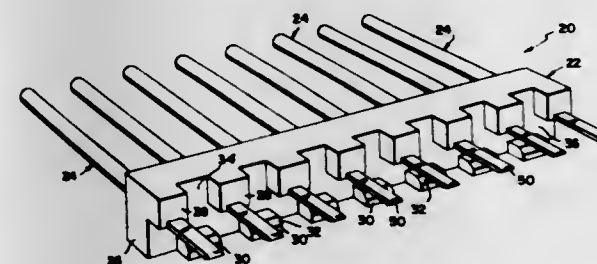


1. A base for attachment by basing cement to the outer end portion of an I-shape external pinch seal of a vitreous envelope of an electric lamp device, said base comprising an insulator and a cup-like cylindrical metal shell for accommodating the said pinch seal portion, said shell having an I-shaped slot at one end for making a

snug fit with the seal and a cylindrical side wall having an inner diameter closely approaching the width of the seal, said insulator being of generally cylindrical shape having at one end a diametral slot providing a seat for the seal, the slotted end of the insulator extending into the rim portion of said cup-like shell and defining with said shell a pinch seal and basing cement accommodating space, said insulator having an outwardly extending hollow stem communicating with said slot and being of reduced diameter and tapering at its outer end, said base comprising also a threaded metal shell contact affixed to said stem adjacent the slotted end of the insulator and a metal eyelet contact affixed to the smaller diameter end of the tapered portion of the stem, the wall of said stem having lead-in wire accommodating openings at said contacts.

3,315,217 CONNECTOR FOR THIN FILM CIRCUITS

Joseph W. Bird, King of Prussia, Pa., assignor to Elco Corporation, Willow Grove, Pa., a corporation of Pennsylvania
Filed Mar. 19, 1965, Ser. No. 441,028
7 Claims. (Cl. 339-176)



1. A connector for use with a substrate having a surface with thin film circuitry thereon adjacent a free edge of the substrate, comprising:

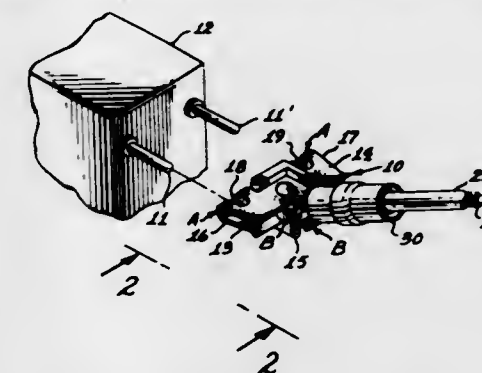
- (a) an insulator having a pair of forwardly extending projections that are spaced to define a slot adapted to receive the free edge of said substrate; and
- (b) a contact having a forward bladed portion, part of which is mounted in said insulator and part of which defines a free end of the contact that projects forwardly from said insulator beyond the free ends of said projections and that overlies said surface of said substrate when the free edge of the latter is received in said slot;
- (c) the free end of said contact being flattened and inclined toward the surface of said substrate so as to be resiliently engageable with the thin film circuitry when the free edge of the substrate is received in said slot to establish electrical contact with such circuitry and retain the connector to the substrate.

3,315,218 ELECTRICAL CONNECTOR FOR COAXIAL CABLE

John R. Aker, Minoa, N.Y., assignor to General Electric Company, a corporation of New York
Filed Jan. 22, 1965, Ser. No. 427,402
6 Claims. (Cl. 339-191)

1. An electrical connector for connecting the conductors of a coaxial cable to a pair of spaced terminals, said connector comprising a pair of metallic members adapted to be assembled into a unitary structure, each of said members having a terminal receptacle portion and a conductor attaching portion, said terminal receptacle portion comprising an elongated tab of sheet metal folded back upon itself to define a bight and a pair of legs resiliently biased toward each other extending from said bight, said conductor attaching portions of said members being positioned in an overlapping arrangement, means arranged between said overlapping conductor attaching portions of

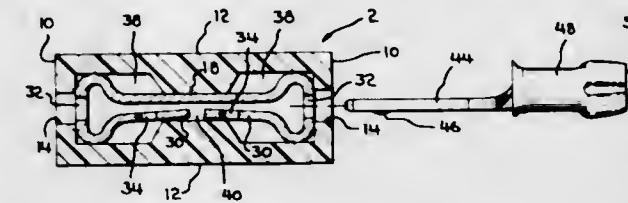
said members for interconnecting and insulating said members one from the other, and means for connecting said conductor attaching portions of said members to different electrical conductors of the coaxial cable, each of said terminal receptacle portions of said members being



arranged at opposite sides of said connector and positioned to receive between said legs a different electrical terminal, said conductor attaching portions of said members being arranged between said terminal receptacle portions of said members.

3,315,219 MODULAR TYPE TERMINAL BLOCK

Stanley Byron Brinser, Steelton, and Charles Henry Fernald, Lancaster, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed July 13, 1964, Ser. No. 382,074
3 Claims. (Cl. 339-198)



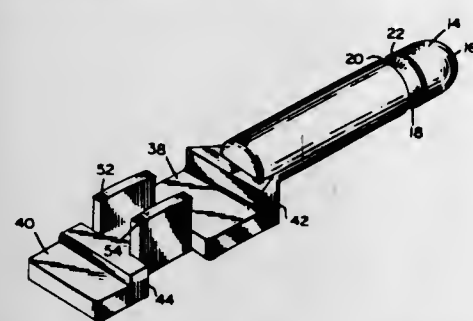
1. A terminal block comprising an insulating housing and a plurality of axially aligned stacked receptacles in said housing, said receptacles each having a generally I-shaped cross-section and comprising a relatively wide strip of conductive metal, two opposite sides of said strip being folded towards each other to form a double metal thickness web with two opposite edges of said strip being opposed to and parallel to each other on one side of said web, the flanges of said I-shaped cross-section being formed at said folds, and slots in said flanges extending in planes parallel to the plane of said web whereby, upon insertion of a terminal tab into one of said slots, the associated folded side is flexed away from the central portion of said web, an hour-glass cavity in said housing, said receptacles being stacked in said cavity with said folded sides of said strip extending into the neck portion of said cavity whereby, said folded sides are prevented from being overstressed upon insertion of said tab.

3,315,220 ELECTRICAL CONTACTS AND METHOD OF MANUFACTURING SAME

William H. Flanagan, 394 Chestnut Hill Road, Stamford, Conn. 06903
Filed Oct. 19, 1965, Ser. No. 497,773
4 Claims. (Cl. 339-275)

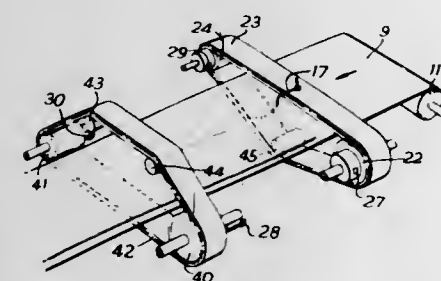
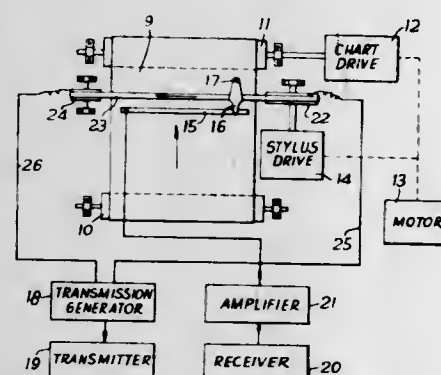
3. An electrical pin contact comprising an elongated solid tubular portion having a lead in portion at one end thereof, the other end of said contact having a flat surface with a width greater than and a thickness less than said tubular portion with forwardly facing abutments to prevent forward movement of the pin contact after assembly within a housing, a pair of imperforate

tab members adjacent said flat surface extending normal thereto and laterally spaced from each other to accom-



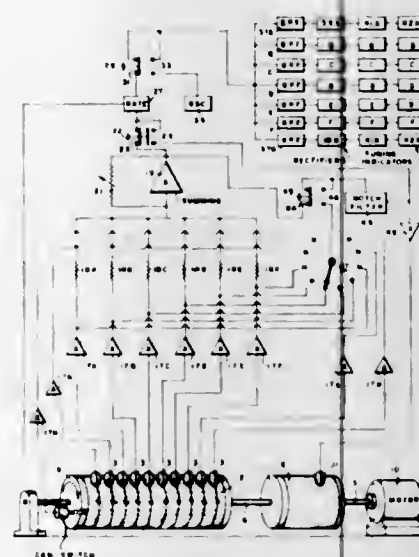
modate and receive a bare end of an electrical conductor and a second flat surface disposed between said tab members and the elongated tubular portion.

3,315,221
TRANSMISSION AND RECORDING OF SIGNALS IN ECHO-SOUNDING APPARATUS
Victor Charles Buffery and Herbert Martin Jefferys, London, England, assignors to S. Smith & Sons (England) Limited, London, England, a British company
Filed Jan. 22, 1965, Ser. No. 427,281
Claims priority, application Great Britain, Jan. 31, 1964, 4,350/64
12 Claims. (Cl. 340-3)



8. Echo-sounding apparatus having a recording medium, a recording element sweepable repeatedly across said recording medium to record echo-signals, means for driving said recording element across said recording medium, a transmission generator for the transmission of sounding pulses, a trigger circuit connected to said transmission generator to control said transmission of sounding pulses, said trigger circuit including a first rotary switch positively coupled to said driving means and a second rotary switch, each of said rotary switches being operative at a predetermined angular position during the rotary motion of said switch, means coupling said rotary switches to one another for rotation at such relative speeds that the said switches are operative simultaneously to initiate a transmission once for each sweep of said recording element across said recording medium, and means for simultaneously adjusting the said predetermined angular positions by amounts having the same ratio as the angular speeds of said two switches.

3,315,222
ELIMINATION OF UNDESIRABLE COMPONENTS OF SEISMOGRAMS
Charles W. Bogs, Houston, Tex., assignor to Esso Production Research Company, a corporation of Delaware
Filed Apr. 12, 1965, Ser. No. 447,230
3 Claims. (Cl. 340-15.5)



1. Apparatus for use in analyzing seismograms known to have strong, undesired components of unknown frequency, comprising:

first means for reproducing at least one of the traces of said seismogram in a first electrical output channel thereof as a single electrical signal, and for reproducing all of the traces of said seismogram as individual electrical signals in a plurality of second electrical output channels thereof;

gating means in the first electrical output channel of said first means for gating a predetermined portion of the signal appearing in said first electrical output channel;

a plurality of third electrical channels including a plurality of band pass filters having contiguous pass bands, each connected at its input to the output of said gating means, said filters being operative to produce in said plurality of third electrical channels a plurality of electrical signals, the amplitudes of which are proportional to the amplitudes of the frequency components of the output signal of said gating means included within the pass band thereof;

a plurality of full-wave rectifier means respectively connected to said band pass filters;

a plurality of integrating circuit means respectively connected to the outputs of said rectifier means;

a plurality of direct voltage responsive indicator means respectively connected to said integrating circuit means for respectively producing a visual indication of the output signals of said integrating circuit means;

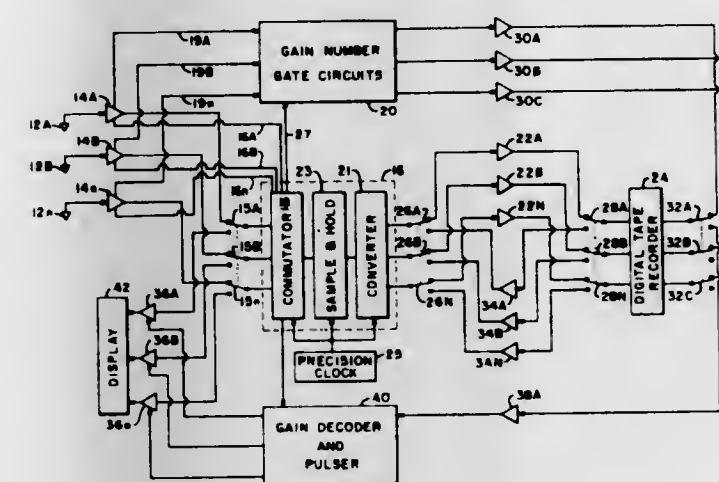
variable-frequency notch filter means;

switching means connected to said second electrical output channels of said first means for individually connecting the signals appearing in said second output channels to said notch filter means;

second means for recording the output signals of said notch filter means as a plurality of traces; and

means for selectively connecting said notch filter means between said switching means and said second means, and between the first output circuit of said first means and said gating means.

3,315,223
DIGITAL SEISMIC RECORDING
Haines C. Hibbard, Houston, and James R. Cox, Richardson, Tex., assignors, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Continuation of application Ser. No. 99,808, Mar. 31, 1961. This application June 10, 1966, Ser. No. 557,862
14 Claims. (Cl. 340-15.5)



1. A system for recording a plurality of seismic signals which comprises:

a plurality of variable gain means for changing the amplitudes of said seismic signals, the gain of each of said variable gain means being variable by steps wherein the individual steps represent changes in gain which differ from the next greater or lower gain by a factor of 2^n , where n is a whole number;

analog-to-digital converter means to convert an analog electrical signal to a first digital signal;

multiplexer means connected to said plurality of variable gain means for transmitting the output signals from said each variable gain means to said analog-to-digital converter means according to a predetermined sequence;

means connected to said each variable gain means responsive to the amplitude of the seismic signal therefrom to vary the gain of said each variable gain means in a preselected manner, only immediately after transmission from said each variable gain means to said analog-to-digital recording means;

means to generate a second digital signal indicative of the gain of said each variable gain means; and digital recording means to record each said digital signal and its corresponding said second digital signal in synchronism.

3,315,224
REMOTE CONTROL SYSTEM FOR BOREHOLE LOGGING DEVICES
Paul M. Ferguson, Tulsa, Okla., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Sept. 1, 1964, Ser. No. 393,510
10 Claims. (Cl. 340-18)

1. A recorder for use with a drill string in the drilling of boreholes in the earth which comprises:

a control signal source;

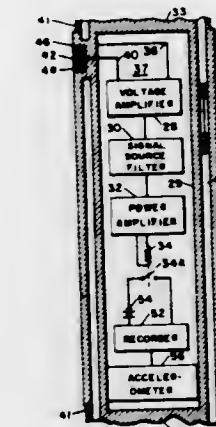
a power amplifier having a ground terminal and a second terminal;

first circuit means connecting said power amplifier to said control signal source;

second circuit means connecting the ground terminal of said power amplifier to the earth;

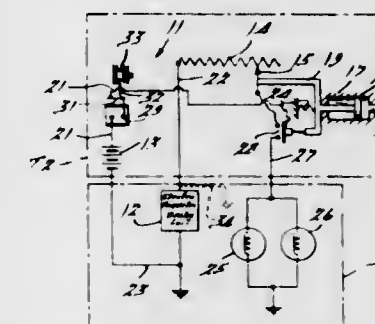
third circuit means including a switch connecting the second terminal of said power amplifier to said drill string;

a sub insertable within said drill string; a signal detecting means supported within said sub, said signal detecting means including a conducting button supported at the exterior of said sub and insulated therefrom, fourth circuit means connecting said button and said drill string and including an am-



plifier and a filter connected to the output of said amplifier and responsive to the output signal of said control signal source; a recorder mounted within said sub; and means to actuate said recorder responsive to the output of said filter.

3,315,225
SIGNAL DEVICE AND RHEOSTAT PROTECTOR FOR VEHICLE ELECTROMAGNETIC BRAKE CONTROLLERS
Renaldo M. Beltramo, Royal Oak, and Edward A. Schilling, Drayton Plains, Mich., assignors to Syncro Corporation, Oxford, Mich., a corporation of Michigan
Filed Dec. 5, 1963, Ser. No. 328,262
4 Claims. (Cl. 340-69)



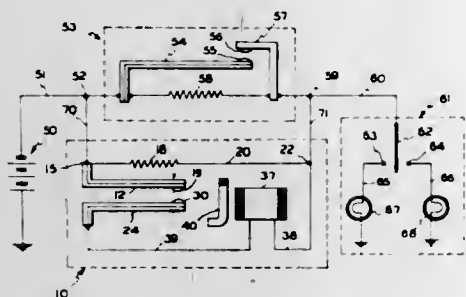
1. In combination with a tractor-mounted brake controller for an electromagnetic trailer brake coil of the type having a battery and rheostat in series with said brake coil and a movable contact for adjusting said rheostat between a brake-released position in which said rheostat offers maximum resistance to current flow and a full braking position in which said rheostat offers minimum resistance to current flow, protecting means for said circuit comprising an audibly vibrating current-sensitive relay mounted adjacent the tractor driver and having a coil connected in series between one terminal of said battery and said rheostat, one side of said rheostat being connected to one side of said brake coil, the other side of said brake coil being connected to another battery terminal and to ground, a switch forming part of said relay, resilient means urging said switch to a normally closed position, and means for adjusting the force exerted by said resilient means on said switch whereby said relay may be set to vibrate only when a predetermined current is exceeded in said relay coil.

3,315,226

ELECTRIC SOUNDER DEVICE

Roland J. Fernekas, Grosse Point, Mich., assignor to Essex Wire Corporation, Fort Wayne, Ind., a corporation of Michigan

Filed Nov. 12, 1964, Ser. No. 410,815
3 Claims. (Cl. 340—75)



1. An electrical sounder device for automotive turn signal systems including a flasher switch having first and second terminals connecting a power source to a turn signal switch operable to selectively energize turn signal lamps repetitively from said source through said flasher switch comprising:

- an electromagnet having a core, a coil on said core, an armature attracted to the core when the coil is energized, and spring means normally biasing said armature away from said core;
- a bimetal switch having a pair of normally open contacts which are closed by the heating of the bimetal switch;
- a resistance heating element positioned in heating relation to said bimetal switch for closing said switch a predetermined period of time after current is caused to flow through said heating element and thereafter maintaining said bimetal switch closed as long as current is caused to flow through said heating element;
- a base plate and a case enclosing said electromagnet, bimetal switch and heating element;
- a striker arm on said armature normally urged into engagement with said case by said spring means and arranged to strike said case each time the electromagnet coil is de-energized thereby causing at least a portion of said case to act as a sounding element;
- first and second terminal means carried by said base plate and adapted for connection to the two terminals of a flasher switch;
- first circuit means electrically connecting said heating element between said first and second terminal means to produce current flow through said heating element when said flasher switch is connected to said turn signal lamps by said turn signal switch;
- and second circuit means connecting said bimetal switch and said electromagnet coil in series between said first and second terminal means to produce repetitive energization and deenergization of said electromagnet coil after closing of said bimetal switch when said flasher switch is connected to said turn signal lamps by said turn signal switch.

3,315,227

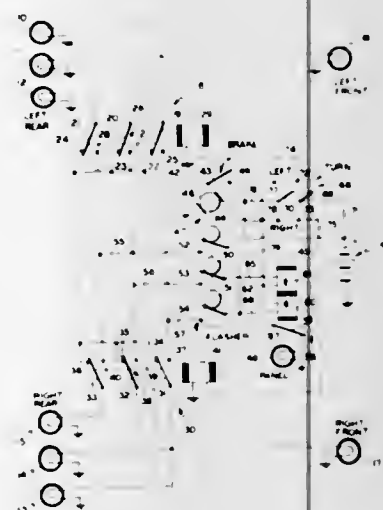
VEHICLE SIGNAL SYSTEM

Gideon A. Du Rocher, Mount Clemens, Mich., assignor to Essex Wire Corporation, Fort Wayne, Ind., a corporation of Michigan

Filed Oct. 14, 1964, Ser. No. 403,716
6 Claims. (Cl. 340—82)

1. A vehicle signal system comprising, in combination:
- a plurality of signal lamps each of equal candle power including a left front signal lamp, a right front

- signal lamp, a left rear set of three signal lamps, and a right rear set of three signal lamps;
- a source of electrical power for said lamps;
- a flasher device for effecting periodic energization of said lamps from said source, said flasher device comprising first, second and third flasher switches and operating means for repeatedly opening and closing said flasher switches, said first, second and third flasher switches being successively closed in said order and simultaneously opened by said operating means;
- a differential relay having first and second magnetically-opposed, current-responsive coils and a normally closed relay switch adapted to be opened in response to a predetermined difference in the currents flowing through said first and second coils;
- a first energizing circuit connected to said source and including said first flasher switch and said first relay coil in series;
- a second energizing circuit connected to said source and including said second flasher switch and said second relay coil in series;
- a third energizing circuit connected to said source and including said third flasher switch and said first relay coil in series;



- right and left directional signal switch means each having a normal position and an operated position, said directional signal switch means each having three normally open contact means;
- signal control means for selectively operating either of said directional signal switch means to determine the lamps to be energized;
- a first signal lamp of said left rear set being connected by a first one of said normally open contact means of said left directional signal switch means in series with said first energizing circuit; a second signal lamp of said left rear set and said left front signal lamp each being connected by a second one of said normally open contact means of said left directional signal switch means in series with said second energizing circuit; the third signal lamp of said left rear set being connected by a third one of said normally open contact means of said left directional signal switch means in series with said third energizing circuit;
- a first signal lamp of said right rear set being connected by a first one of said normally open contact means of said right directional signal switch means in series with said first energizing circuit; a second signal lamp of said right rear set and said right front signal lamp each being connected by a second one of said normally open contact means of said right

directional signal switch means in series with said second energizing circuit; the third signal lamp of said right rear set being connected by a third one of said normally open contact means of said right directional signal switch means in series with said third energizing circuit;

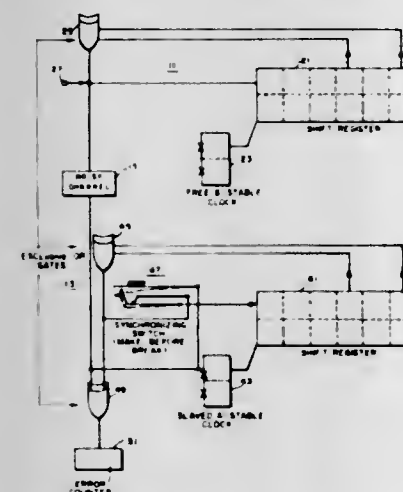
- and an indicator lamp connected by said relay switch to said third energization circuit for energization from said source.

3,315,228

SYSTEM FOR DIGITAL COMMUNICATION ERROR MEASUREMENTS INCLUDING SHIFT REGISTERS WITH IDENTICAL FEEDBACK CONNECTIONS

Jack Futerfas, New Shrewsbury, N.J., Roger F. Salava, Evanston, Ill., and Jack E. Stout, Dayton, Ohio, assignors to the United States of America as represented by the Secretary of the Army

Filed Aug. 19, 1963, Ser. No. 303,191
3 Claims. (Cl. 340—146.1)



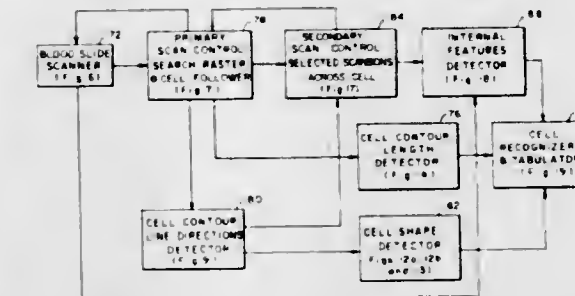
1. A system for digital communication error measurement involving
- a transmitter terminal, channel under test, and receiver terminal,
 - a first shift register at said transmitter terminal having a signal input, shift input, and stage outputs, a timing means connected to said shift input, and feedback means from certain stage outputs to said signal input, whereby a quasi-random binary function of a length determined by the number of shift register stages and the selected feedback connections is generated at the shift register input,
 - said function also being applied thru said communication channel to said receiver terminal,
 - a second shift register, timing source means, and identical feedback means at said receiver terminal, with means to synchronize said receiver timing means to the function received thru said channel,
 - and means to compare the function generated at said receiver with the function received thru said channel, wherein the input connection to said receiver shift register includes means to switch from only the function generated at said receiver feedback means to include the function generated at said transmitter terminal and applied thru said channel to said receiver terminal and then to restore connection to only said feedback means,
- whereby operation of said receiver shift register is synchronized to said transmitter shift register, and synchronized operation of said transmitter and receiver feedback registers is maintained by said timing sources.

3,315,229

BLOOD CELL RECOGNIZER

Edward T. Smithline, Lake Mohegan, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 31, 1963, Ser. No. 334,876
21 Claims. (Cl. 340—146.3)



1. In a system for recognizing and distinguishing blood cells, the combination of first means for carrying out at least one of the following functions:

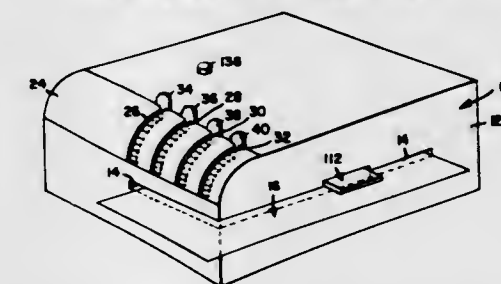
- determining the peripheral length of a blood cell;
 - classifying a blood cell as of generally circular shape or noncircular shape;
- and second means for determining the internal features of a blood cell.

3,315,230

CREDIT ACCOUNT VERIFICATION SYSTEM

Richard Isaac Newton Weingart, Nassau, Bahamas, assignor to Universal Controls, Inc., Towson, Md., a corporation of Maryland

Filed Dec. 4, 1963, Ser. No. 327,955
6 Claims. (Cl. 340—149)



1. A system for verifying the status of an account comprising a verification unit including means for receiving a sales slip, selector means for feeding an account number to be verified into said unit, printing head means connected to said selector means for printing the account number to be verified upon the sales slip, signal producing means connected to said selector means for producing a signal indicative of the account number to be verified, a memory unit containing data as to the status of said account connected to said signal producing means, said memory unit including means for producing an output signal indicative of the status of said account, and second said memory unit for printing an indication of the status printing head means responsive to the output signal from of said account upon the sales slip.

3,315,231

TWO WIRE CONTROL OF REMOTE UNITS EMPLOYING TRANSISTOR SWITCH

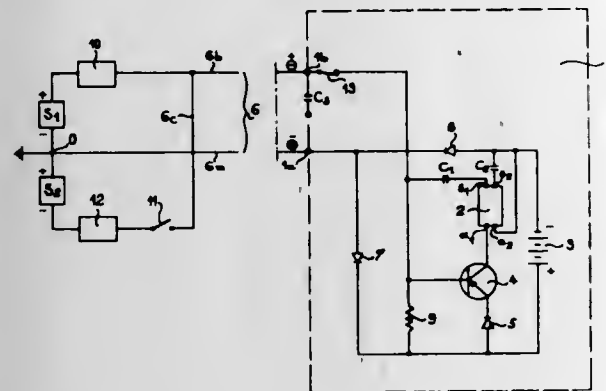
Pierre Belugou, Paris, France, assignor to Charbonnages de France, Paris, France, a public institution of France

Filed Dec. 16, 1963, Ser. No. 330,922
Claims priority, application France, Dec. 18, 1962, 919,055

11 Claims. (Cl. 340—151)

1. A remote-control device for electrical apparatus units each comprising a re-chargeable accumulator, said device comprising, in combination:
- a transistor switch connected in series in the supply circuit proper of the apparatus to be controlled;

a releasing circuit for said transistor switch;
a blocking circuit for said transistor switch;
a semi-conductor element connected in said releasing circuit in the direct sense;
a semi-conductor element connected in said blocking circuit in the reverse sense;
a semi-conductor element connected in the emitter circuit of said transistor switch;
a general supply source constituted by two direct-current sources connected in series;
and a two-wire control line between the general supply source and the apparatus to be controlled;

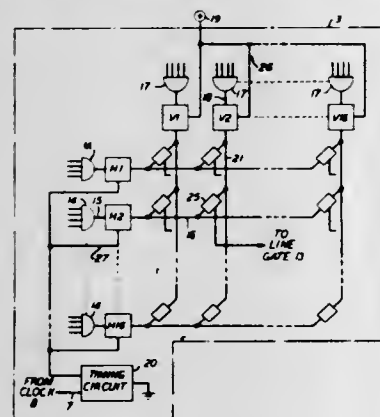


one of the two wires of said control line being directly connected to the common terminal of the two said sources of direct current;
the other wire of said control line being connected on the one hand permanently to the end terminal of one of the two sources of current through a first current-regulating device and on the other hand, intermittently to the end terminal of the other source of current through a second current-regulating device; whereby the control line is polarized; either in the direction ensuring the charging of the accumulator of the apparatus to be controlled, mounted at the extremity of the line, or in the direction ensuring the supply of said apparatus to be controlled from the general supply source.

3,315,232

RESONANT CIRCUIT TIMED TRANSLATOR MATRIX EMPLOYING TRANSISTOR GATES
Herbert S. Feder, Fanwood, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed May 16, 1962, Ser. No. 195,203
18 Claims. (Cl. 340-166)



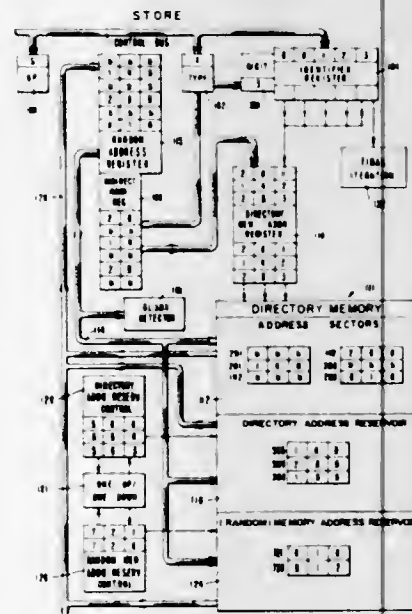
1. In a translator having a plurality of cross-point circuits connected in a matrix array defined by horizontal and vertical coordinate leads connected respectively to a first and a second plurality of drive gates, the combination comprising a current source connected to said first plurality of gates, timing means having a predetermined timing control interval and connected between ground and

said second plurality of gates, said timing means including a resonant circuit having an inductor and a capacitor connected in series, means for selectively activating one each of said first and second plurality of gates and said timing means, a current carrying path from said source to ground including said selected gates and a cross-point circuit associated with said selected gates, and means in said selected gates cooperating with said timing means resonant circuit for establishing a nonconductive condition in said gates simultaneously with the termination of said predetermined interval in said timing means.

3,315,233

SELF-ADDRESSING AND SELF-ASSIGNING MEMORY SYSTEM

Raul de Campo and John J. Fildes, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Oct. 1, 1963, Ser. No. 313,028
12 Claims. (Cl. 340-172.5)



1. In a data processing system having data storage means under control of a customer's data identifier: an addressable memory having data storage sectors therein each having a unique address associated therewith, a directory memory adapted to contain unassigned addressable memory sector addresses, a directory memory address register adapted to receive intermediate addresses, means for storing a customer's program including in said program a unique data identifier unrelated to said addresses associated with said addressable memory, means for forming a preselected plurality of intermediate addresses of selected parts of a customer's data identifier and selected parts of an address taken from said directory memory to generate a random table of intermediate addresses in said directory memory address register, and means responsive to the formation of the last of said intermediate addresses for selecting the next unassigned addressable memory address in said directory memory.

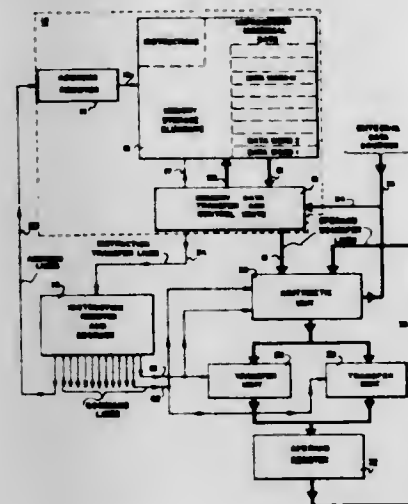
3,315,234

DATA EDITING APPARATUS

Richard L. Ruth, Scottsdale, Ariz., assignor to General Electric Company, a corporation of New York
Filed Mar. 2, 1964, Ser. No. 348,501
8 Claims. (Cl. 340-172.5)

1. Apparatus for editing data comprising: a source of data items comprising a plurality of digits, said source providing a separate representation for each of said digits, each of said digit representations being accorded a respective predetermined order of significance; a receiving means

having a plurality of receiving portions, each of said portions being adapted to receive one of said digit representations, each of said portions being accorded a respective predetermined order of significance; first transfer means having a plurality of first transfer channels, each of said first channels being coupled to said source to receive a respective one of the digit representations provided and to a respective one of said receiving portions, the order of significance of the receiving portions coupled to each of said first channels corresponding to the order of significance of the digit representations received thereby,



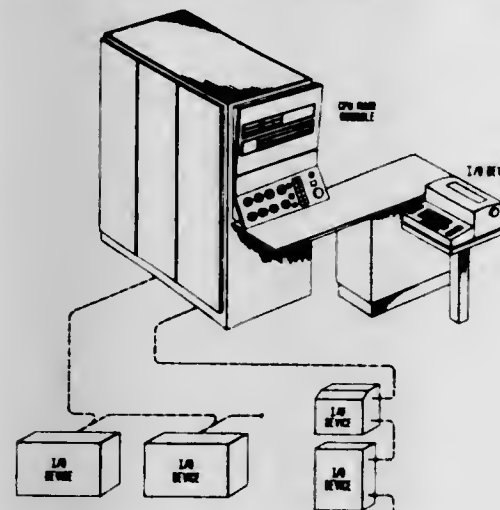
each of said first channels transferring the digit representation received thereby to the receiving portion coupled thereto; and second transfer means having a plurality of second transfer channels, each of said second channels being coupled to said source to receive a respective one of the digit representations provided and to a respective one of said receiving portions, the order of significance of the receiving portions coupled to said second channels corresponding inversely to the order of significance of the digit representations received thereby, each of said second channels transferring the digit representation received thereby to the receiving portion coupled thereto.

3,315,235

DATA PROCESSING SYSTEM

Richard J. Carnevale, Union, Arthur F. Collins and Jack E. Greene, Vestal, William P. Hanf, Endicott, Albert A. Magdall, Vestal, Charles B. Perkins, Jr., Endicott, John W. Rood, Vestal, and Anthony E. Villante, Binghamton, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Aug. 4, 1964, Ser. No. 387,443
27 Claims. (Cl. 340-172.5)



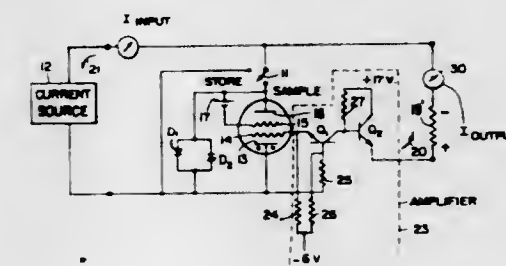
1. A data processing system comprising:
a pair of data input buses;
a data output bus;

an arithmetic unit having a pair of inputs connected respectively to said pair of data input buses, and an output connected to said output bus;
a plurality of data registers, each having an input connected to said output bus, an output connected to one of said pair of data input buses, and an input entry control;
gating means interposed intermediate each register output and the one of said pair of data input buses; and
a control means for applying entry control signals and gating signals respectively to said input entry controls and said gating means for effecting the transmission of data through said system.

3,315,236

ELECTROLYTIC SYSTEM FOR SAMPLING AND STORING INFORMATION

Clarence W. Hewlett, Jr., Hampton, N.H., assignor to General Electric Company, a corporation of New York
Filed Nov. 14, 1963, Ser. No. 323,795
8 Claims. (Cl. 340-173)



1. In combination with a source of input current which varies in magnitude, current integrating means having input, output, and common terminals,
said current integrating means providing an output current at said output terminal, the magnitude of which is directly proportional to the integral of the current which has been passed between said input and common terminals, said output current increasing in magnitude as long as said common terminal is positive with respect to said input terminal,
a load circuit, means for connecting one side of said load circuit to said output terminal,
said source of input current being connected between said common terminal and the other side of said load circuit, and
switching means for selectively connecting the point common to said source and said load circuit to either said input terminal or said common terminal, said input and output currents flowing in directions such that the difference between these currents will traverse said input terminal when said selective connecting means connects said common point to said input terminal,
said input source being polarized so that its positive terminal is connected to said common terminal.

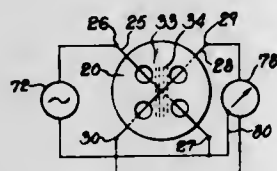
3,315,237

FERRITE MEMORY CELLS AND MATRICES
Heinz E. Kallmann, New York, N.Y., assignor to Gulton Industries, Inc., Metuchen, N.J., a corporation of New Jersey

Filed Mar. 18, 1957, Ser. No. 646,919
22 Claims. (Cl. 340-174)

1. A cell for a magnetic memory matrix comprising: a body of saturable magnetic material having a first and second pair of contiguous holes located along respective lines which intersect at a point located within the space bounded by said pairs of holes, writing means for selectively providing two different magnetic flux path configurations in said body of magnetic material to provide

a non-varying or constant magnetic flux therein in either of two transverse directions, one of said flux path configurations comprising a first pair of closed magnetic flux paths having a common reinforcing path portion extending between said pairs of holes in a first direction at an angle of 45° to said lines and the other of which comprises a second pair of closed magnetic flux paths having a common reinforcing path portion extending between said pairs of holes in a direction at right angles to said first direction, said writing means including a first conductor threading through said first pair of holes, a second conductor threading through said second pair of holes, energizing current means for simultaneously feeding current through both of said conductors and includ-

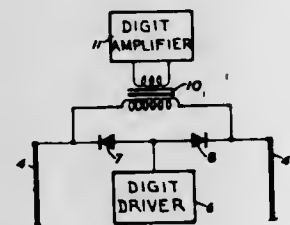


ing means for selectivity reversing the direction of flow of current through one of said conductors without disturbing the direction of flow in the other conductor, and reading means selectively responsive to said two magnetic flux path configurations, said reading means including a source of pulsating current to be connected to one of said conductors which current is of insufficient magnitude to disturb the magnetic flux path configuration in said body of magnetic material, and voltage responsive means to be connected to the other conductor, and means for selectively simultaneously switching said conductors between said energizing current means on the one hand and said source of pulsating current and voltage responsive means on the other hand.

3,315,238

MATRIX DRIVING ARRANGEMENT

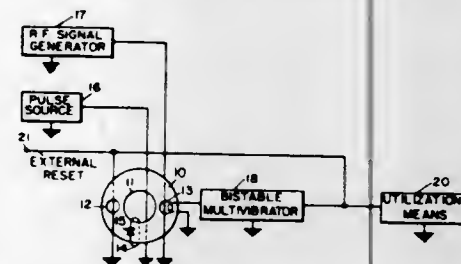
John Bernard James, Stevenage, England, assignor to International Computers and Tabulators Limited
Filed Jan. 21, 1963, Ser. No. 252,957
Claims priority, application Great Britain, Feb. 8, 1962, 4,857/62
6 Claims. (Cl. 340-174)



1. An information storage device including storage elements arranged in two groups; a first drive conductor coupled to all the elements of one group; a second drive conductor coupled to all the elements of the other group; a source of driving current; a first diode connected between said source and one end of said first conductor; a second diode forming a matched pair with said first diode and connected between said source and one end of said second conductor, said first and second diodes passing current from said source through both said first and second conductors simultaneously for each energization of said source, and having a low impedance to voltages appearing across said conductors due to changes in said current; and a common output circuit connected between said one end of said first conductor and said one end of said second conductor such that said voltages are in opposition in said output circuit.

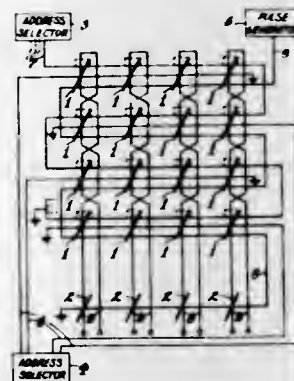
3,315,239
MULTIAPERTURE CORE INCREMENTAL PULSE COUNTER
Willis R. Smith, Rochester, N.Y., assignor to General Signal Corporation, Rochester, N.Y., a corporation of New York

Filed May 24, 1963, Ser. No. 283,080
6 Claims. (Cl. 340-174)



1. Means for counting a predetermined number of pulses comprising a multiaperture magnetic core, means coupling a set signal to the core, winding means threading the major aperture of the core, unidirectional conducting means shunting the winding means, means coupling said pulses through the major aperture of the core to constitute clearing pulses, said winding means permitting each clearing pulse to change the magnetization of each core only incrementally to require a predetermined number of pulses to fully clear said core, means coupling an output signal from the core upon full clearing thereof, and additional means coupling an output signal from the core upon full clearing thereof to the means coupling a set signal to the core.

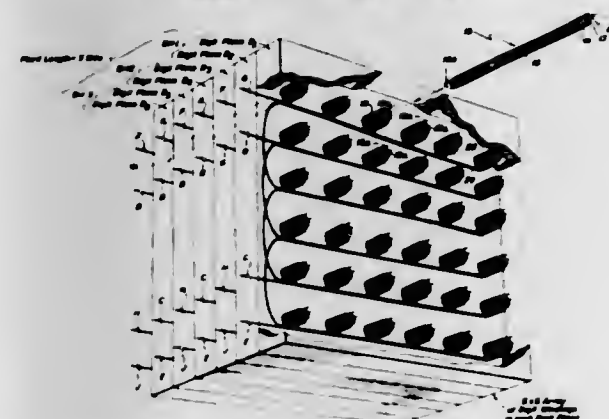
3,315,240
FIXED WORD MAGNETIC MATRIX HAVING NOISE CANCELLATION CORES
John Alfred Ashton, London, England, assignor to Decca Limited, London, England, a British company
Filed Jan. 24, 1964, Ser. No. 339,993
Claims priority, application Great Britain, Jan. 31, 1963, 4,074/63
5 Claims. (Cl. 340-174)



1. A digital data fixed word store comprising $p \cdot n$ square loop magnetic cores; k word wires each coupled to at least some of the cores, each word wire coupling those cores which are to produce, for the respective words associated with said word wire, one of the two binary digital values, and not coupling those cores which are to produce, for said respective words, the other binary digit value; p , k and n being integers greater than unity; p separate addressing wires each coupled to a set of n cores used to produce an output word of n binary digits; pulse applying means for applying partial pulses simultaneously to one selected word wire and to one addressing wire, said two partial pulses being sufficient, when simultaneously applied, to switch to the same state all the cores coupled by both the selected word wire and the selected addressing wire, but being insufficient to switch to said same state cores coupled to only one of these wires; n sense wires, corresponding to the number of digits in a word,

and coupled to the respective cores corresponding to these various digits; a read out and reset wire coupled to all the cores said pulse applying means applying a pulse to said read-out and reset wire restore all the cores to the same initial condition and to simultaneously read out said output word; and n cancellation cores, each coupled by the read-out and reset wire and each coupled by p turns of a respective sense wire.

3,315,241
TWO MAGNETIC ELEMENT PER BIT MEMORY
Donal A. Meier, Inglewood, Calif., assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Feb. 25, 1964, Ser. No. 347,184
15 Claims. (Cl. 340-174)



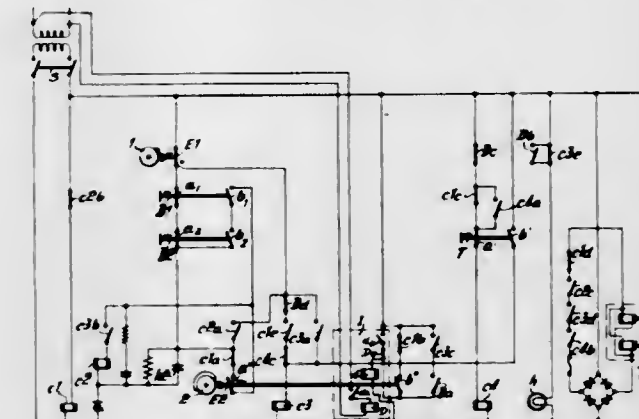
1. In a two magnetic element per bit memory matrix, a plurality of rod elements each comprised of an inner substrate and a thin film of bistable magnetic material uniformly deposited thereon, a plurality of pairs of adjacent groups of concentric solenoids disposed on each rod element, each group including an output winding, the bistable thin film portion associated with each group being individually switchable and the two bistable thin film portions of each pair representing a binary digit, sense amplifier coupling means, and means connecting the two output windings of each pair to said sense amplifier coupling means in an opposite polarity sense.

3,315,242
MODULATION AND TRANSFER OF INFORMATION ACHIEVED BY SPEED DIFFERENTIAL
Jerrier A. Haddad, Briarcliff Manor, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Apr. 24, 1963, Ser. No. 275,341
15 Claims. (Cl. 340-174.1)



1. A magnetic transfer modulation system comprising: magnetic record means, copying means not in contact with and magnetically coupled, at a transfer station location, to said record means, transfer transducer means located so as to direct a transfer-enhancing flux normal to said record means and said copying means at said station, means for establishing a first speed difference between said record means and said transducer means, and means for establishing a second speed difference between said copying means and said transducer means, said first and second differences being substantially different.

3,315,243
ELECTRICAL SAFETY CONTROL FOR MACHINE TOOLS
Heinrich Welberg, Solingen-Wald, Germany, assignor to Th. Kieserling & Albrecht, Solingen, Germany
Filed Feb. 19, 1964, Ser. No. 346,024
Claims priority, application Germany, Feb. 20, 1963, K 49,014
16 Claims. (Cl. 340-220)

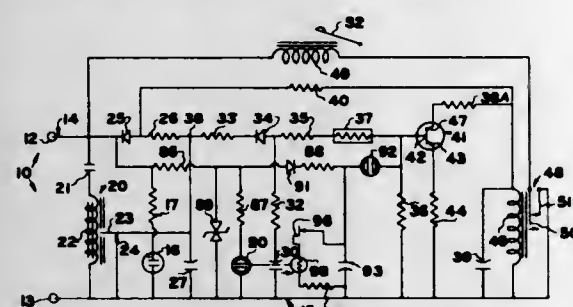


1. In a machine tool having at least one movable operating member, in combination, a source of electric energy; electrically operable control means for starting and terminating the operation of the movable machine member and changeable by electrical energization from an idle position to an operation starting position and by deenergization back to said idle position whereby machine operation is terminated; first circuit means connected between said source and said electrically operable control means and including a plurality of relay switch means connected in series with each other so that said control means can be energized only when all said relay switch means are in conductive condition, and that said control means are caused to be in said idle position when at least one of said relay switch means is in non-conductive condition; second circuit means connected to said source and comprising a plurality of parallel circuits, each of said parallel circuits containing a relay coil means respectively associated with a different one of said relay switch means for operating the latter, and each parallel circuit containing a relay contact associated with and operable by a relay coil means located in a respectively different one of said parallel circuits; pilot switch means operatively connected with said movable machine member for being actuated depending upon a predetermined amount of movement of said machine member; delayed action relay means energizable by actuation of said pilot switch means and interrupting after a predetermined delay one of said parallel circuits containing one of said relay coils so as to cause deenergization of said electrically operable control means; and primary control switch means connected to said source and to at least one of said relay coils and cooperating with all of said series-connected relay switch means in said first circuit means for causing the same to be in conductive condition so as to start operation of the machine.

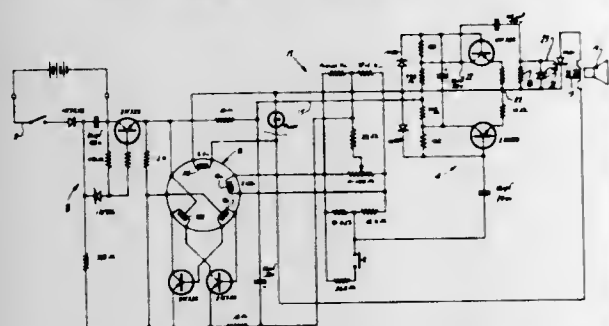
3,315,244
ALARM DEVICES
Robert H. Voigt and Jack D. Osborne, Milford, Mich., assignors to ASECO, Incorporated, Milford, Mich., a corporation of Michigan
Filed Jan. 13, 1964, Ser. No. 337,444
33 Claims. (Cl. 340-227)

1. In an alarm circuit having a source of electrical power and means selectively imposing a predetermined actuation signal thereon, a multiple alarm device comprising:
(a) first detector means responsive only to said predetermined actuation signal,

- (b) time delay means connected with said first detector means,
 (c) a control circuit responsive to said time delay means,
 (d) an alarm producing means operably connected with said control circuit, and
 (e) second detector means including a constant light source and means adjacent said light source for sensing changes in the light intensity thereof,

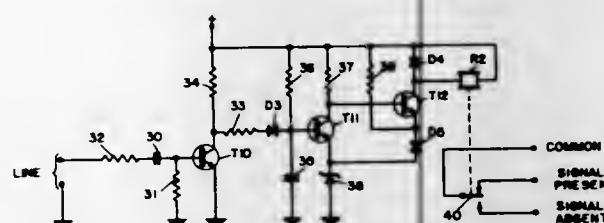


3,315,245
GAS DETECTION APPARATUS
 Kenneth W. Johnson, Palo Alto, Calif., assignor to Johnson-Williams, Inc., Mountain View, Calif., a corporation of California
 Filed Jan. 10, 1964, Ser. No. 336,986
 1 Claim. (Cl. 340-237)



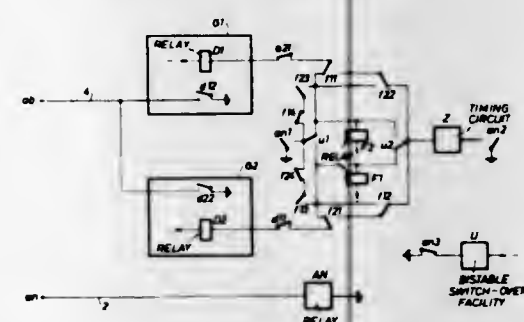
In gas detection apparatus for providing an alarm in response to sampling a predetermined concentration of gas wherein the detection apparatus is adapted to be operatively coupled to a direct current supply voltage, apparatus comprising a Wheatstone bridge gas detection circuit including input and output connections and a gas detection filament disposed in one arm of said bridge, converter means serving to convert a direct current supply potential to an audio frequency signal, said signal being operatively coupled to said Wheatstone bridge via the input connections thereto to provide A.C. power to said filament, said Wheatstone bridge being coupled to receive said audio frequency via said input connections and to provide said audio frequency at said output connections thereof, said Wheatstone bridge being adapted to vary the amplitude of said audio frequency signal at the output connections thereof responsive to varying concentrations of sampled gases, transducer means including a loudspeaker coupled to directly receive said audio frequency signals from said converter for providing an alarm signal, amplitude threshold sensing means serving to sense a predetermined minimum output of said audio frequency signals from said bridge and responsive to sensing said minimum output to gate the output audio frequency signals to said loudspeaker to operate same in response thereto.

3,315,246
SIGNAL ABSENCE DETECTION CIRCUIT
 Jerry P. Huffman, Rochester, and John H. Auer, Jr., Fairport, N.Y., assignors to The General Signal Corporation, Rochester, N.Y., a corporation of New York
 Filed Jan. 20, 1964, Ser. No. 338,848
 2 Claims. (Cl. 340-248)



1. A signal absence detection circuit comprising impedance means, capacitance means coupled to the impedance means, means continuously coupling energy to the junction of the impedance and capacitance means, means responsive to incoming pulses for completing a discharge path across the capacitance means upon occurrence of each pulse, and switching means responsive to the amplitude of voltage across the capacitance means for providing an output signal when the amplitude exceeds a predetermined value, said switching means comprising a zener diode, first and second transistors each having a base, an emitter and a collector, means coupling the zener diode to the emitter of the first transistor for providing constant bias thereto, means coupling the base of the first transistor to the junction of the impedance and capacitance means, means coupling the collector of the first transistor to the base of the second transistor, means coupling the emitter of the first transistor to the emitter of the second transistor for biasing the emitter of the second transistor at a voltage in excess of the bias on the emitter of the first transistor, and relay means controlling energization of an alarm circuit, said relay means being coupled to the collector of the second transistor and responsive to voltage appearing thereon.

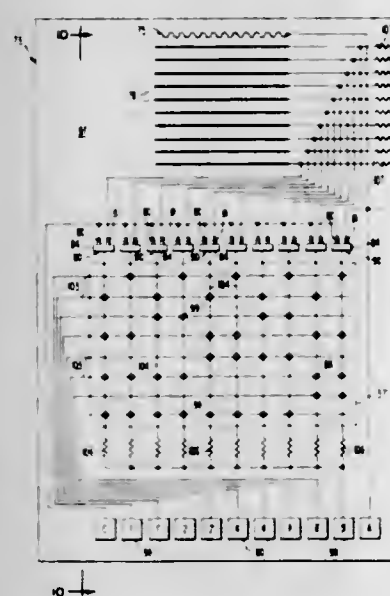
3,315,247
MEANS FOR CONNECTING TWO CENTRALLY LOCATED SWITCHING MEANS HAVING THE SAME FUNCTION
 Walter Hackenberg, Hirschlanden, and Volker Schmidt, Kornthal, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
 Filed Dec. 29, 1964, Ser. No. 421,879
 Claims priority, application Germany, Jan. 9, 1964, St 21,530
 8 Claims. (Cl. 340-292)



1. Switching means for connecting centrally located transmitting-receiving station equipment to a line, comprising:
 a start terminal for receiving a requesting signal,
 a line terminal,
 a first switch responsive to a requesting signal on said start terminal to complete portions of a plurality of circuits,

each of said plurality of circuits including contacts under control of an additional switch,
 a first additional switch operating without delay upon completion of a first circuit to provide a ground to said line terminal,
 a timing circuit to provide a time delay,
 a second additional switch connecting through a second circuit and said timing circuit to operate after a time delay, and
 means responsive to operation of said first additional switch for preventing response of the second additional switch when the first connection is completed.

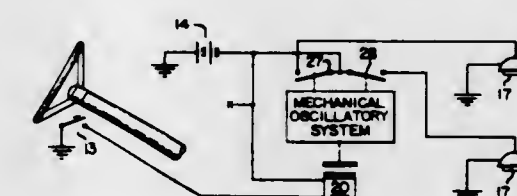
3,315,248
DISPLAY TUBE HAVING AN ENCAPSULATED DIODE SWITCHING MATRIX
 Robert E. Benn, Broomall, and Frederick F. Ohntrup, Plymouth Meeting, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
 Filed Dec. 9, 1963, Ser. No. 329,198
 14 Claims. (Cl. 340-324)



7. An information presentation device comprising, in combination,
 a base member of electrically insulating material having on a surface thereof a plurality of electrically conducting paths,
 said conducting paths being electrically insulated from one another,
 a plurality of rows of diodes, each row having a common conductor, the rows being arrayed across said conducting paths,
 the diodes of each row being electrically connected to different ones of said conducting paths, with each conducting path comprising the output for the diodes to which it is connected,
 signal input means conductively connected to each row of diodes,
 the positioning of the diodes with respect to said conducting paths being such that, when a group of signals is applied by said signal input means to said rows of diodes, only one conducting path receives a signal useful for purposes of information presentation,
 transistors having input and output means, each conducting path being connected to the input of an individual transistor,
 a plurality of information presentation means supported by the base member and electrically connected to the outputs of said transistors,
 and an envelope enclosing said base member, said rows of diodes, said transistors and said information presentation means,

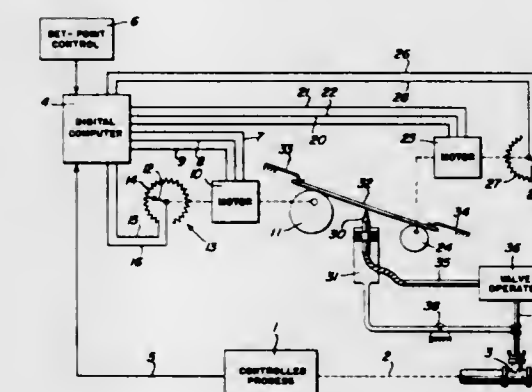
said envelope including conductive pins coupled to said signal input means for applying input signals selectively to said rows of diodes to thereby cause a visible energization of one of said plurality of information presentation means.

3,315,249
PROGRAMMED SIGNALLING SYSTEM
 Warner W. Clements, Los Angeles, Calif.
 (13435 Java Drive, Beverly Hills, Calif. 90210)
 Filed Dec. 30, 1963, Ser. No. 334,245
 4 Claims. (Cl. 340-329)



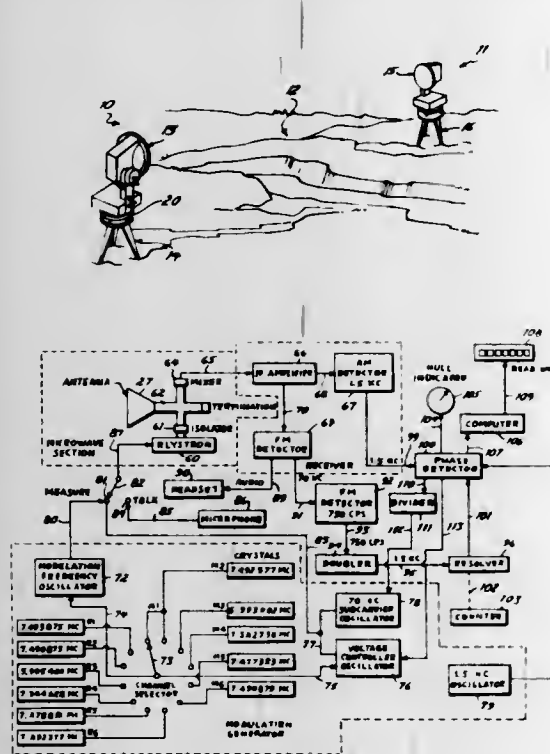
1. A signalling system for a vehicle provided with an electrical power source, said system comprising:
 a manually actuatable horn control contactor;
 two horns;
 two sets of electrical switch contacts;
 electrically powered means for opening and closing the two sets of switch contacts in part or all of a programmed sequence according to which the respective sets are first closed intermittently and alternately and then continuously and together;
 connections for placing each of the sets of switch contacts in series with a respective one of the two horns and the power source at least at such times as the horn control contactor is in actuated condition;
 and connections for energizing the aforesaid electrically powered means from the electrical power source whenever and so long as the horn control contactor is in actuated condition.

3,315,250
ELECTRICAL APPARATUS
 Stephen P. Higgins, Jr., Fairview Village, Pa., assignor to Honeywell Inc., a corporation of Delaware
 Filed Mar. 29, 1963, Ser. No. 269,004
 3 Claims. (Cl. 340-347)



1. A digital to analog transducer comprising a positionable analog element,
 an element operator operative to position said element in response to a fluid energizing signal applied to said operator,
 a coarse setting means,
 a fine setting means,

mounted for movement with said telescope and in substantial axial alignment therewith, a carrier-frequency generator connected in transmitting relation with the antenna, the carrier frequencies of said generators being of a selected difference, a modulation-frequency oscillator for modulating each generated carrier frequency, a mixer connected in receiving relation with each generator and antenna for mixing the modulated carrier frequencies of both instruments to produce a data signal in each instru-



ment, and a receiver connected to the mixer for receiving the data signal, connection means for connecting the receiver of one instrument to the generator thereof for transmitting the data signal of said one instrument to the other instrument, detector means connected to the receiver of said other instrument to detect the transmitted data signal, and phase-shift indicator means connected to said receiver and detector means of said other instrument to indicate the phase shift between the data signal of said one instrument and the transmitted data signal.

3,315,258 METHOD AND MEANS FOR SEQUENTIAL SIGNAL DETECTION IN MULTIPLE-RESOLUTION-ELEMENT DATA

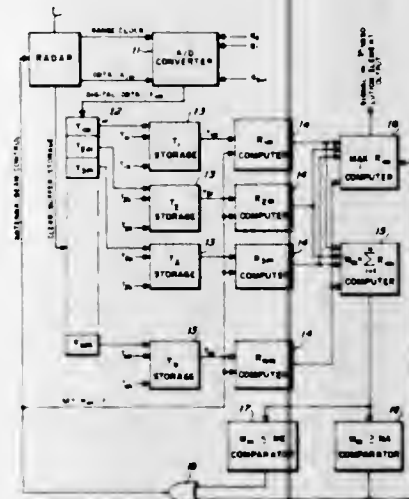
George M. Dillard, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Apr. 23, 1965, Ser. No. 450,550

11 Claims. (Cl. 343-17.1)

1. An apparatus for the sequential detection of signal in multiple-resolution-element data comprising:
means for receiving and separating said data into its discrete multiple resolution elements;
means responsive to at least one resolution characteristic of said discrete multiple-resolution data elements for quantizing each said discrete data element as a function of the ratio of the probability that the data are signal-plus-noise to the probability that the data are noise-only data, such ratio reflecting the operative capabilities of the source of said multiple-resolution-element data;
means for receiving and separately storing quantized data elements of like resolution character;
means for cumulatively combining successive quantized data elements of like resolution character;
means for summing said combined successive quantized data elements;

first and second comparator means arranged to receive said sum of combined successive quantized data elements for comparing said sum with first and second quantized references, respectively, said first comparator means being operably responsive when said sum exceeds said first quantized reference to produce an output indicative of the presence of signal in said received data, and said second comparator



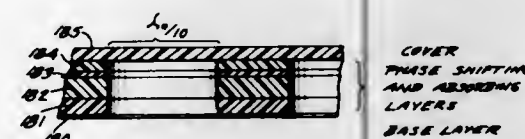
means being operably responsive when said second quantized reference exceeds said sum to produce an output indicative of the absence of signal in said received data; and
means responsive to the output of said first comparator for selecting the maximum of said combined successive quantized data elements of like resolution character.

3,315,259 CAMOUFLAGING NET INCLUDING A RESONANCE ABSORBER FOR ELECTROMAGNETIC WAVES

Ludwig Wesch, Heidelberg, Germany, assignor to Eltro GmbH & Company, Gesellschaft für Strahlungstechnik, Heidelberg, Germany

Filed Feb. 2, 1961, Ser. No. 86,823

7 Claims. (Cl. 343-18)



1. A camouflaging net for absorbing impinging electromagnetic waves having wavelengths in free space between about 1 cm. and 20 cm., comprising a flexible laminated sheet defining apertures, the apertures occupying up to 40% of the sheet area and the average width of the apertures being one-fifth to one-tenth of the wavelength of the waves to be absorbed, the sheet including (1) a wave reflecting base layer and (2) an absorber wall superimposed on the base layer, the absorber wall having a partially reflective outer surface whereon the electromagnetic waves are to be impinged and whereon one part of the impinging waves is reflected, the other part of the impinging waves penetrating into the absorber wall and being reflected by the base layer, the absorber wall consisting of a plurality of absorptive films and having a thickness h of less than $\lambda_0/7$ and defined by equation

$$h = \frac{(2n-1)\lambda_0}{4\sqrt{k'k_m'}} \quad (I)$$

wherein n is any positive integer, λ_0 is the wavelength, k' is the relative dielectric constant of the absorber wall material and k_m' is the relative magnetic permeability of the absorber wall material, and $k'k_m'$ is greater than 3,

each absorptive film consisting of a dielectric binder containing at least one granular filler controlling the high frequency characteristics k' , k_m' , $\tan \delta_d$ and $\tan \delta_m$, $\tan \delta_d$ and $\tan \delta_m$ being the dielectric and magnetic loss tangents, respectively, the filler being present in each film in such an amount and having such a grain size and form that their high frequency characteristics vary in dependence on the wavelength and the entire absorber wall satisfies the equation

$$\sqrt{k'k_m'} = \text{const } \lambda_0^x \quad (II)$$

wherein const is a constant equal to $(1/4h)^2$ and the exponent x is a dimensionless correction factor compensating for tolerable deviations from full wave absorption, the amount and composition of the filler in each film being such that the high frequency characteristics of the absorber wall are determined by the equation

$$\tan \delta_d f_y(\lambda) + \tan \delta_m f_y(\lambda) = \frac{4}{\pi} \coth^{-1} \sqrt{\frac{k' f_y(\lambda)}{k_m' f_y(\lambda)}} \quad (III)$$

wherein $f_y(\lambda)$ is a function of the dependency of the high frequency characteristics on the wavelength so as to satisfy the latter equations for all of said wavelengths, and \coth^{-1} is the inverse hyperbolic cotangent.

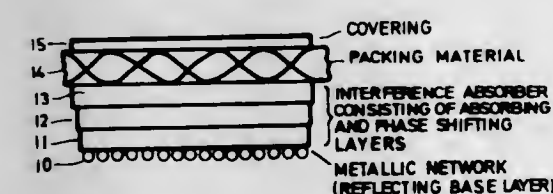
3,315,260 NON-METALLIC PACKAGING MATERIAL WITH RESONANCE ABSORPTION FOR ELECTROMAGNETIC WAVES

Ludwig Wesch, Schloss Wolfsbrunnweg 10, Heidelberg, Germany

Filed Dec. 19, 1961, Ser. No. 161,337

Claims priority, application Germany, Jan. 15, 1957, D 24,707

6 Claims. (Cl. 343-18)



1. A package comprising (1) an object reflecting impinging electromagnetic waves having a wavelength between 0.1 and 50 cm., and (2) a packaging material enclosing the object whereby none of said waves may impinge thereon, said packaging material comprising (a) an absorber for said waves consisting of a wave reflecting base layer next to the object and an absorber layer superimposed on the reflecting base layer, the absorber layer having an outer boundary surface spaced from the base layer by at least approximately

$$(2n-1)\lambda/4\sqrt{k'k_m'}$$

wherein λ is the wavelength of the impinging waves in the absorber, n is any positive integer, k' is the relative dielectric constant and k_m' is the relative permeability, the apparent dielectric constant of the absorber layer at the boundary surface being above 10, and (b) a cardboard sheet having a relative dielectric constant below 10, the cardboard sheet being a surface impedance matching layer of the absorber and having a surface impedance between the impedance of free space and the surface impedance of said absorber boundary surface, and the refractive index r of the cardboard sheet is given by the formula

$$r = \sqrt{r_1 r_2}$$

wherein r_1 is the refractive index of a material adjacent the outer surface of the sheet and r_2 is the refractive index of the material at the absorber layer boundary surface.

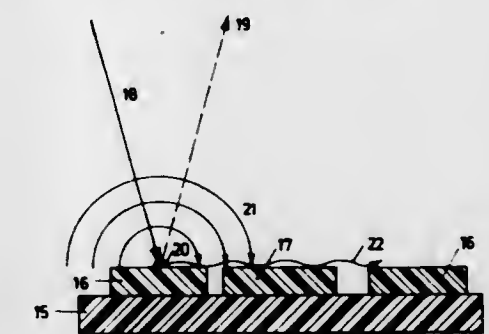
3,315,261 WIDE-BAND RADIO WAVE ABSORBER

Ludwig Wesch, Heidelberg, Germany, assignor to Eltro G.m.b.H. & Co. Gesellschaft für Strahlungstechnik, Heidelberg, Germany

Filed Dec. 19, 1961, Ser. No. 161,338

Claims priority, application Germany, Dec. 13, 1957, E 15,090; Apr. 21, 1961, E 20,973

6 Claims. (Cl. 343-18)



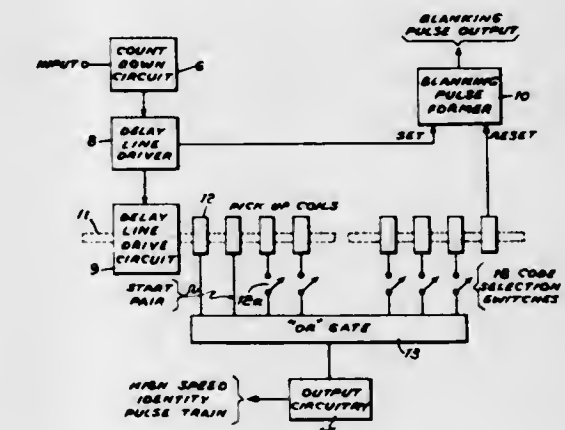
1. An electromagnetic wave absorber wall effective in a very wide frequency band in the range of centimeter wavelengths, comprising at least two sets of absorbers, the resonance of the absorbers of each set being tuned to a different wavelength and the resonance of the absorbers of at least one set being tuned to a wavelength within said frequency band, the absorbers being arranged in a mosaic pattern to form said absorber wall and adjacent surface areas formed by said sets of absorbers being tuned to different wavelengths, the surface areas having the same resonance being spaced apart by $\lambda_0/8$ to $5\lambda_0$, λ_0 being the wavelength in free space to which said surface areas are tuned.

3,315,262 BEACON IDENTITY DISPLAY

John F. Sullivan, Wellesley, Mass., and John B. Kennedy, Montville, N.J., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed May 18, 1964, Ser. No. 368,240

12 Claims. (Cl. 343-106)



2. In a navigation system including a beacon transmitting pulse signals and a reference signal burst and cooperating apparatus carried by aircraft responsive to the signals transmitted by the beacon comprising at the beacon: means responsive to the termination of the reference signal burst to generate a blanking pulse and a trigger pulse, delay means responsive to the trigger pulse to produce recognition pulses and character information pulses for the identification of said beacon to the aircraft, means to transmit said recognition and information pulses, and comprising on the aircraft: means to detect the reference signal burst, means to detect the recognition pulses and the information pulses, a start recognition circuit,

means coupling said received recognition and information pulses to said start recognition circuit, a sequencer circuit, means to couple said start recognition circuit to said sequencer circuit, a shift register, means coupling said sequencer and said start recognition circuit to said shift register to store identity information pulses in said shift register, a comparison circuit, a comparison logic circuit, means coupling the output of said shift register and said sequencer to said comparison circuit whereby on the coincidence of two consecutive messages the information in the shift register is transmitted to said comparison logic circuit, an identity indicator having a visual display indication for each character of said beacon identification, a plurality of indicator driver circuits equal to the number of character display indicators, means coupling the output of said comparison logic circuit to said indicator driver circuits, means coupling the output of each said indicator driver circuit to a corresponding one of said visual display indicators, means coupling a signal output indicative of each character of the identity indicators to said comparison logic whereby the information in the shift register is compared with the information displayed by the identity indicators, an error circuit, means coupling the output of said comparison circuit to said error circuit whereby on the appearance of an error in any of said character pulses said error circuit produces an inhibiting signal to inhibit the identity indicator and means responsive to a memory circuit to erase unrequired information from said identity indicators.

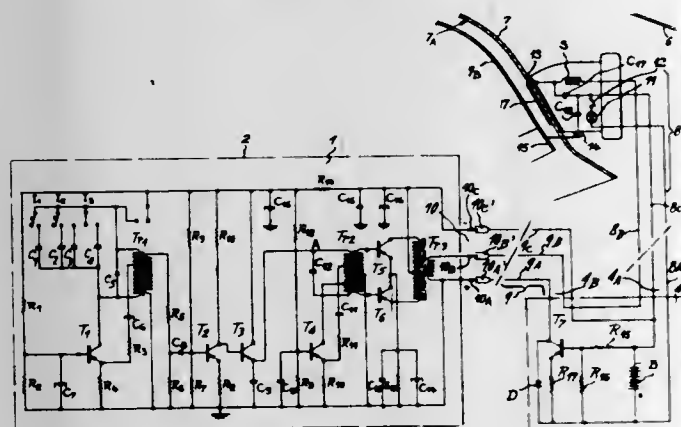
3,315,263

REMOTE-CONTROL DEVICE

Albert Emile Lefevre, Verneuil-en-Halatte, France, assignor to Charbonnages de France, Paris, France, a public institution of France

Filed Nov. 15, 1963, Ser. No. 324,909
Claims priority, application France, Nov. 16, 1962, 915,713

3 Claims. (Cl. 343—225)



1. A system for the remote control of electric relay circuit means through capacitive coupling to an insulated conductor extending at least adjacent to the point of transmission comprising

- a portable, low-power, high-frequency transmitting means,
- a separately encased battery having current-limiting circuit means,

operating means adapted to modulate the carrier-wave of said transmitting means in amplitude by a certain number of frequencies, each corresponding to a function of the electric relay circuit means being remotely controlled,

a coupler for capacitive coupling with said insulated conductor including a helmet for wear by an operator, said helmet having

at least one metallized surface insulated from said operator when worn thereby by an insulated cap,

a metallic element adapted to contact said operator's forehead and thereby provide an earth return through said operator's body, a helmet lamp head provided with a suspension hook and a return contact stud, said hook being connected to said metallized surface of said helmet and said contact stud being connected to said metallic element adapted to contact said operator's forehead, and electric connecting means to connect said battery to each of said operating means, said transmitting means, and said coupler including a first cable connected between said battery and said helmet lamp head, and a second cable provided with a plug-in coupling to said transmitting means, connected between said battery and said transmitting means.

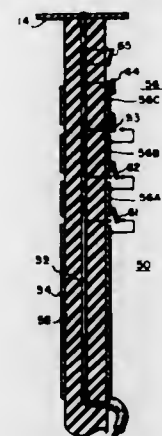
3,315,264

MONOPOLE ANTENNA INCLUDING ELECTRICAL SWITCHING MEANS FOR VARYING THE LENGTH OF THE OUTER COAXIAL CONDUCTOR WITH RESPECT TO THE CENTER CONDUCTOR

Helmut Brueckmann, Little Silver, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed July 8, 1965, Ser. No. 470,645

3 Claims. (Cl. 343—791)



1. In combination with a monopole antenna mounted on a base plate and having a center conductor projecting substantially above said base plate; an outer coaxial, shielding conductor surrounding said center conductor adjacent to said base plate and extending along a portion of said center conductor; said coaxial, shielding conductor comprising a first portion of coaxial, shielding conductor adjacent to said base plate; at least one secondary portion of coaxial, shielding conductor adjacent to said first portion in the direction away from said base plate; electrical switching means for connecting said first portion of coaxial, shielding conductor to said secondary portion of coaxial, shielding conductor to vary said length of said outer, coaxial, shielding conductor with respect to said center conductor; and a coaxial feed line having an inner conductor connected to said center conductor and an outer shield connected to said outer, coaxial, shielding conductor.

3,315,265

INSTRUMENT AND METHOD FOR PROFILE GENERATION

Bruce S. Bonino, Marlton, N.J., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey

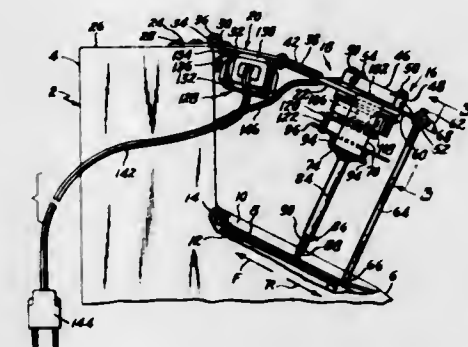
Filed July 26, 1963, Ser. No. 297,836

4 Claims. (Cl. 346—1)

1. An instrument for recording the profile generated by a tooth of a first mating member when the pitch circles of two mating members are rolled relative to one another by pure rolling action, comprising: means for simulating the pitch circles of said mating members comprising first and second elements adapted for pure rolling movement relative to one another; means for performing said rolling movement; a form on one of said elements comprising an opaque member having a transparent region corresponding to the profile of said tooth; and a sheet of film on the other of said elements in alignment with said form, said film being sensitive to exposing medium transmitted through said transparent region and adapted to record by exposure said generated profile during the relative rolling of said elements.

3,315,267
TIME INDICATING RECORDER FOR CASH REGISTERS

Donald E. Bodin, 653a Congress St., Portland, Maine 04101
Filed Sept. 15, 1964, Ser. No. 396,643
20 Claims. (Cl. 346—61)



1. In an apparatus including a recording tape, means for printing on said tape, means for incrementally moving said tape longitudinally thereof each time that printing is placed thereon, and frame means within which said tape is progressively exposed, a device for placing a time-related inscription on the recording tape of said apparatus to indicate the times when printing is placed on said tape, comprising: a base adapted to be mounted on said apparatus; a constant speed motor mounted on said base; a stylus; and means carried by said base and arranged to support said stylus for writing engagement with the portion of said recording tape exposed within said frame means, said stylus supporting means being operable to move said stylus along a fixed path transversely of said recording tape, and being connected with said constant speed motor so that upon operation of said motor said stylus will be continuously driven and moved by said motor along said fixed path to place a time-related inscription on said tape, said stylus also placing a longitudinal mark on the tape as the tape is incrementally advanced.

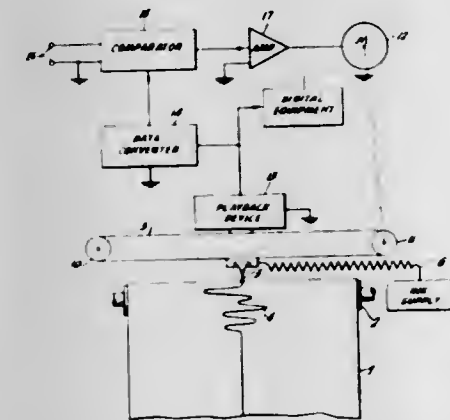
3,315,266

RECORD DRIVE SYSTEM INCLUDING FEEDBACK MEANS

Francis A. Lapinski, Ambler, Pa., assignor to Honeywell Inc., a corporation of Delaware

Filed Nov. 25, 1964, Ser. No. 413,727

9 Claims. (Cl. 346—32)



1. A recorder for recording an input signal comprising, a recording element, an endless tape loop supporting said recording element, a prerecorded signal upon said tape loop characteristically arranged to uniquely represent each tape increment, a playback device arranged to sense said characterized signals on said tape and to produce a reference signal therefrom, signal comparing means operative to compare said reference signal and said input signal to produce an output signal, and tape loop drive means arranged to drive said tape loop in response to said output signal, whereby a substantial equality is achieved between said reference signal and said input signal.

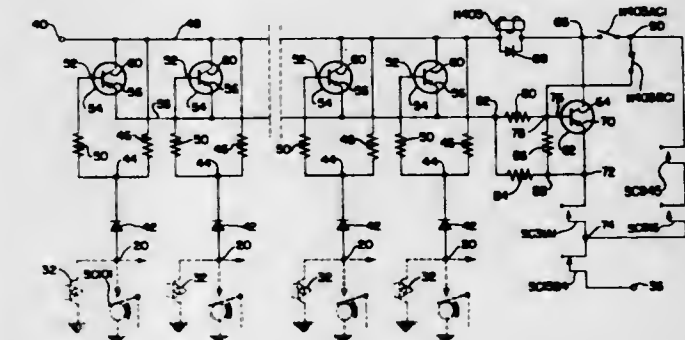
3,315,268

INFORMATION STORAGE CHECKING MEANS

Alfred G. Eddé, Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed Apr. 5, 1963, Ser. No. 270,846

10 Claims. (Cl. 346—74)



5. In a device capable of altering the condition of a plurality of information storage areas on a record member, the combination comprising a plurality of operating circuits for altering the condition of a plurality of information storage areas on a record member, each circuit including an operating element and at least one control element; a plurality of checking means connected in parallel, one checking means associated with each operating circuit, being rendered non-conducting when current

passes through its operating circuit, and conducting in case of a failure in the operating circuit which interrupts the conduction thereof;

signal-translating means controlled by the parallel combination of checking means and being non-conducting when none of said checking means are conducting, said signal-translating means being adapted to conduct when one or more of said checking means is conducting; and

control means capable of controlling further operation of said device, and controlled by said signal-translating means in accordance with the condition of the plurality of checking means.

3,315,269 RECORDER

Donald L. Burdorf, Arcadia, Calif., and George A. Bouvier, deceased, late of Sierra Madre, Calif., by Erdine Bouvier, special administratrix, Sierra Madre, Calif.; said Burdorf assignor, by mesne assignments, to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

Filed June 29, 1965, Ser. No. 477,061
15 Claims. (Cl. 346—112)



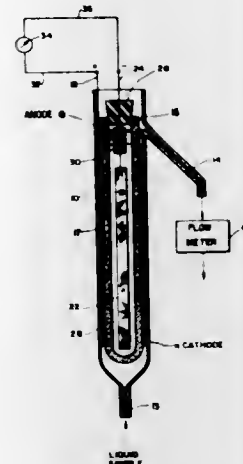
1. A recorder for recording data on a continuous chart having a dimension of thickness, said recorder comprising: a helical element having a central axis and a radially outermost helical surface whose locus lies on a coaxial cylinder; a rotatably mounted marking element having a central axis and an axially extending cylindrical marking surface, said axes being parallel, and said surfaces being spaced apart by a distance not greater than the thickness of the chart; chart drive means for moving the chart between said surfaces; marking element drive means for rotating the marking surface at a surface speed different than the tangential speed of the chart; and signal-responsive helical element positioning means drivingly connected to the helical element adapted to rotate the helical element to a position representative of a signal, whereby the tangent point of the said helical surface and the chart occupies a position along the axes which is determined by the angular position of the helical element, and whereby the marking surface makes a mark on the chart at said tangent position on the opposite side of the chart from the tangent point, the marking surface and the helical simultaneously bearing against opposite sides of the chart at said tangent position to make a mark at said point representative of the signal.

3,315,270 DISSOLVED OXIDANT ANALYSIS

Paul A. Hersch, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Apr. 16, 1964, Ser. No. 363,661
14 Claims. (Cl. 204—1)

1. In a galvanic monitoring process for a liquid sample containing a dissolved oxidant, the steps comprising: providing a cell containing a cathode of an inert conductive material and an anode of active carbon with said cell being free of an electrolyte; conveying said liquid sample to said anode and cathode to electrically join said anode and cathode where-

by said oxidant contained in said liquid sample is reduced at the cathode and the anode forms a surface oxide; and

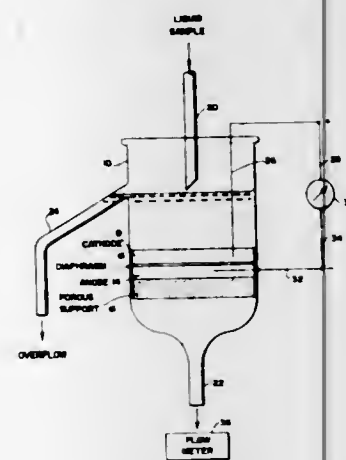


measuring the current across said electrode without driving a current through said electrode from an external electrical power source.

3,315,271 CELL FOR DISSOLVED OXIDANT ANALYSIS

Paul A. Hersch, Fullerton, and Rudolf Deuringer, Garden Grove, Calif., assignors to Beckman Instruments, Inc., a corporation of California

Filed Apr. 16, 1964, Ser. No. 360,339
13 Claims. (Cl. 204—195)



1. A galvanic cell adapted to monitor a liquid sample stream containing a dissolved oxidant comprising: a cell having an inlet and an outlet defining therebetween a sample flow path; a cathode and an anode spaced apart in said cell with said cathode being adjacent to said inlet but remote from said outlet and said anode being adjacent to said outlet but remote from said inlet; said cathode extending substantially completely across said cell transverse to said sample flow path with the thickness of said cathode in the direction of said sample flow path being substantially less than the thickness of said cathode in the direction transverse to said flow path; said cathode being formed of an inert conductive material and said anode having at least a portion thereof selected from the group consisting of silver and active carbon, and said cathode being porous whereby said liquid sample stream may pass through said cathode to said anode; and means for connecting said anode and said cathode to a current measuring means.

DESIGNS

APRIL 18, 1967

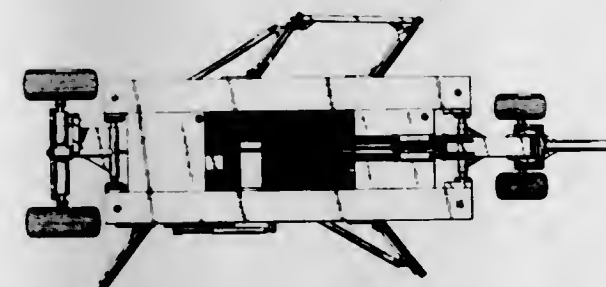
207,442
TIGER PAW MITTEN
Lucille T. Faccl, 119 Forest Road,
Valley Stream, N.Y. 11581
Filed Aug. 25, 1965, Ser. No. 86,716
Term of patent 3½ years
(Cl. D2—367)



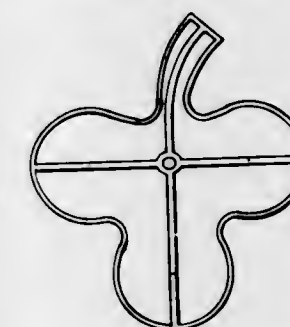
207,443
SUCTION CLEANER
Carroll M. Gantz, North Canton, Ohio, and Robert H. Hose, Mountlake, N.J., assignors to The Hoover Company, North Canton, Ohio, a corporation of Delaware
Filed Feb. 24, 1966, Ser. No. 1,164
Term of patent 14 years
(Cl. D9—2)



207,444
PRECISION ROAD GRADER
Noel S. Iverson, New Ulm, Minn., assignor to New Ulm Manufacturing Company, New Ulm, Minn., a corporation of Minnesota
Filed July 11, 1966, Ser. No. 3,038
Term of patent 14 years
(Cl. D14—3)



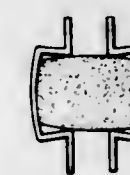
207,445
WATER DOWNSPOUT SPLASH PLATE
Donald E. Treake, 3515 Bryant Ave. S.,
Minneapolis, Minn. 55408
Filed Feb. 2, 1966, Ser. No. 886
Term of patent 7 years
(Cl. D18—2)



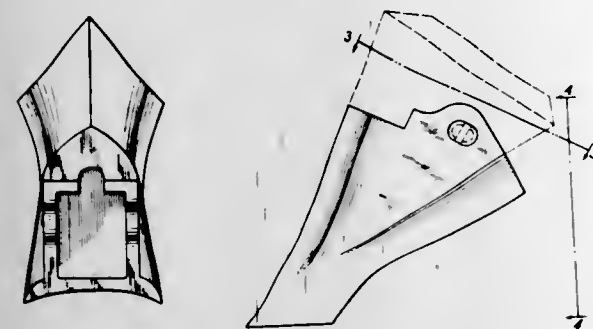
207,446
ANIMAL FIGURE TOY
Irvin J. Gershen, Springfield, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed Feb. 9, 1966, Ser. No. 970
Term of patent 14 years
(Cl. D34—15)



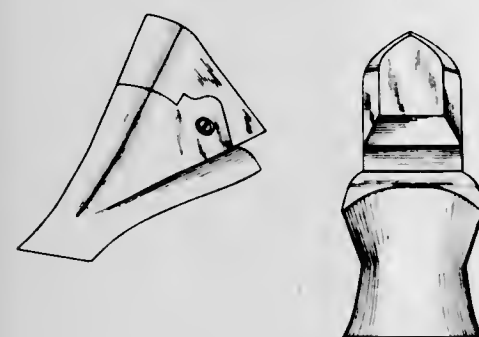
207,447
SHARPENER FOR SHARPENING THE BLADES OF
ICE SKATES AND LIKE ARTICLES
Robert L. Topping, Littleton, N.H., assignor to Norton Company, Troy, N.Y., a corporation of Massachusetts
Filed June 7, 1966, Ser. No. 2,596
Term of patent 14 years
(Cl. D37—1)



207,448
RIPPER TOOTH
 William W. Wilson, 6204 W. Canal Blvd.,
 Shreveport, La. 71108
 Filed July 1, 1966, Ser. No. 2,894
 Term of patent 14 years
 (Cl. D39—1)



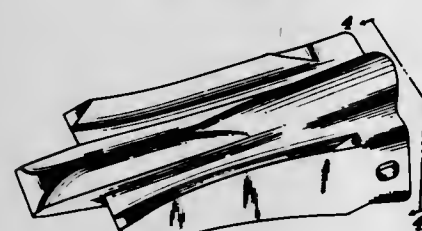
207,449
DIGGER TOOTH UNIT
 William W. Wilson, 6204 W. Canal Blvd.,
 Shreveport, La. 71108
 Filed July 1, 1966, Ser. No. 2,904
 Term of patent 14 years
 (Cl. D39—1)



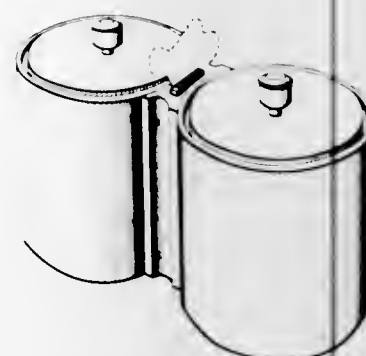
207,450
SUPPORT ADAPTER FOR A DIGGER TOOTH
 William W. Wilson, 6204 W. Canal Blvd.,
 Shreveport, La. 71108
 Filed July 1, 1966, Ser. No. 2,906
 Term of patent 14 years
 (Cl. D39—1)



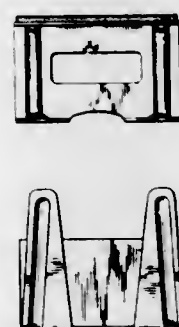
207,451
DIGGER TOOTH
 William W. Wilson, 6204 W. Canal Blvd.,
 Shreveport, La. 71108
 Filed Aug. 3, 1966, Ser. No. 3,327
 Term of patent 14 years
 (Cl. D39—1)



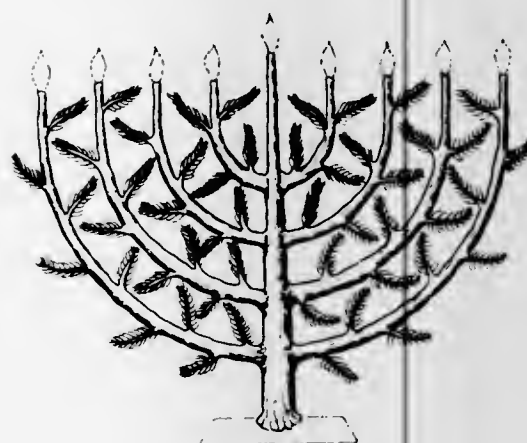
207,452
ICE BUCKET
 Bennett H. Stayman, West Newton, Mass., assignor to
 Morgan & Company, Inc., Boston, Mass., a corporation
 of Massachusetts
 Filed Feb. 2, 1966, Ser. No. 891
 Term of patent 14 years
 (Cl. D44—15)



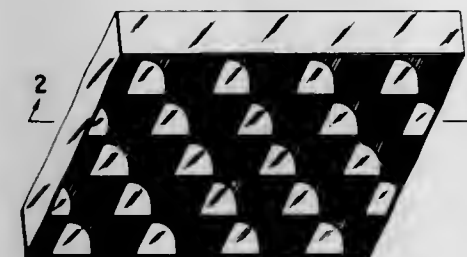
207,453
POT COVER HOLDER
 Louis Hoffman, 11 Palkin Drive,
 Spring Valley, N.Y. 10977
 Filed Mar. 7, 1966, Ser. No. 1,313
 Term of patent 14 years
 (Cl. D44—29)



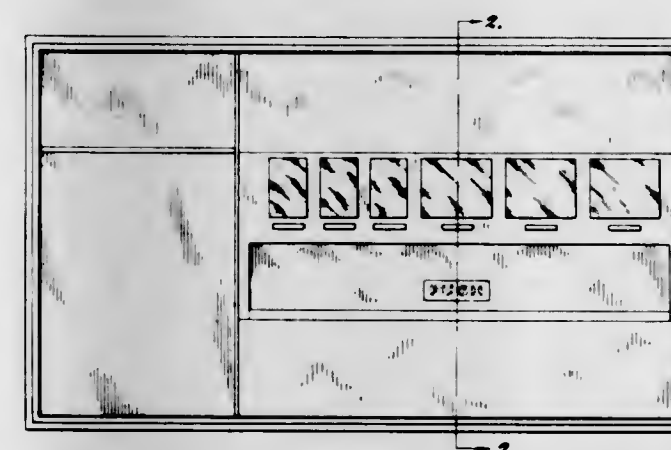
207,454
CANDELABRUM
 Stuart M. Speiser, Westover Lane,
 Stamford, Conn. 06902
 Filed Dec. 1, 1965, Ser. No. 14
 Term of patent 3½ years
 (Cl. D48—2)



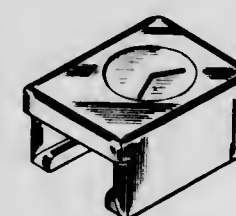
207,455
LIGHT DIFFUSING GRILLE
 Morrison John Broun, Flushing, N.Y., and Albert T.
 C. Peters, Chatham, N.J., assignors to Otis Elevator
 Company, New York, N.Y., a corporation of New
 Jersey
 Continuation of design applications Ser. No. 404, Ser.
 No. 409, and Ser. No. 410, Jan. 3, 1966. This appli-
 cation Aug. 12, 1966, Ser. No. 4,075
 Term of patent 14 years
 (Cl. D48—16)



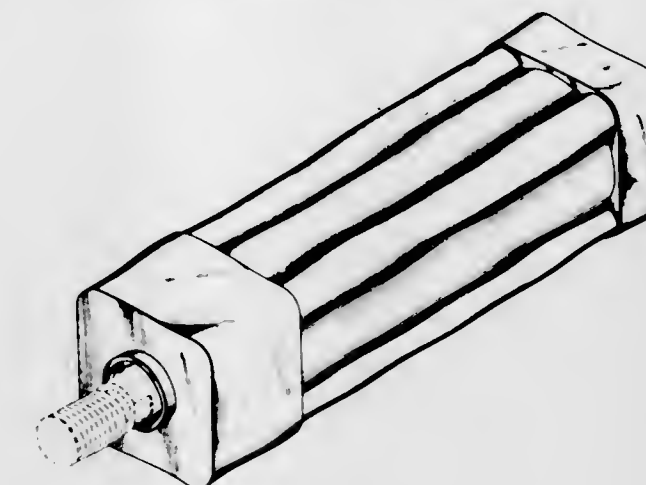
207,456
FRONT PANEL FOR VENDING MACHINE
FOR POSTAL SUPPLIES
 William A. Gran, Independence, Mo., assignor to The
 Vendo Company, Kansas City, Mo., a corporation of
 Missouri
 Filed May 11, 1966, Ser. No. 2,260
 Term of patent 14 years
 (Cl. D52—3)



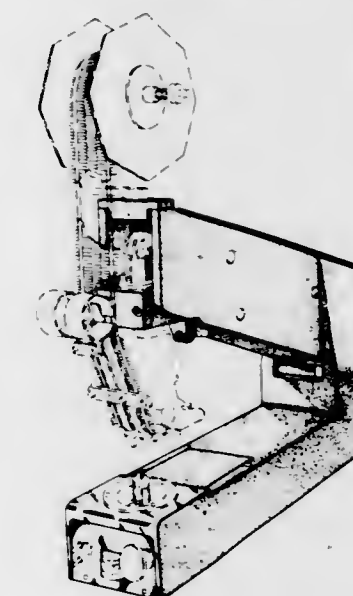
207,457
PLIER ATTACHMENT
 Clifford E. Cressy, 311 Duluth,
 Highland, Ind. 46322
 Filed May 6, 1965, Ser. No. 85,147
 Term of patent 14 years
 (Cl. D54—13)



207,458
FLUID POWER CYLINDER
 Charles Doolittle, Lexington, Ky., assignor to Westing-
 house Air Brake Company, Wilmerding, Pa., a corpo-
 ration of Pennsylvania
 Filed Mar. 14, 1966, Ser. No. 1,449
 Term of patent 14 years
 (Cl. D55—1)



207,459
**MACHINE FOR MOUNTING A COMPONENT CON-
 VEYOR AND PROCESSING UNIT FOR USE IN
 ELECTRONIC ASSEMBLING**
 Norman P. Flanders, North Andover, Donald J. T.
 Hamm, Ipswich, and Vincent P. Romeo, Danvers,
 Mass., assignors to United Shoe Machinery Corpora-
 tion, Boston, Mass., a corporation of New Jersey
 Filed Mar. 30, 1966, Ser. No. 1,703
 Term of patent 14 years
 (Cl. D55—1)



207,460
SUNGLASS FRONT
 Louis De Migastis, Providence, and John Paliotta, Cran-
 ston, R.I., assignors to Loupal Originals, Inc., Provi-
 dence, R.I., a corporation of Rhode Island
 Filed May 23, 1966, Ser. No. 2,386
 Term of patent 14 years
 (Cl. D57—1)



207,461

BOTTLE OR SIMILAR ARTICLE

Ronald W. Argenta, Stafford Springs, Conn., assignor to Vypak Corporation, New York, N.Y., a corporation of New York

Filed Dec. 2, 1965, Ser. No. 26
Term of patent 14 years
(Cl. D58—6)

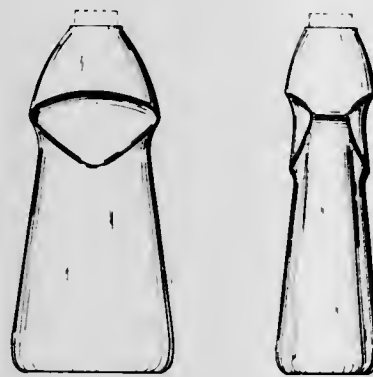


207,462

BOTTLE

James A. Shepler, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio

Filed May 23, 1966, Ser. No. 2,377
Term of patent 14 years
(Cl. D58—6)



207,463

BOTTLE

James A. Shepler, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio

Filed May 23, 1966, Ser. No. 2,390
Term of patent 14 years
(Cl. D58—6)



207,464

BOTTLE

Robert J. Donoghue, 900 Windsor Ave., Windsor, Conn. 06095

Filed June 28, 1965, Ser. No. 85,917
Term of patent 14 years
(Cl. D58—8)

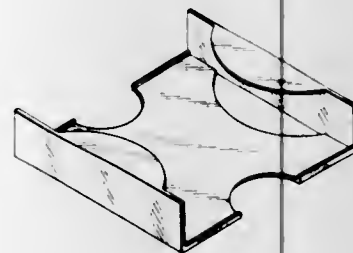


207,465

MAGNETIC TISSUE BOX HOLDER

Robert E. Dudley, Golden, Colo. (1765 Sherman St., Denver Colo. 80203), and Walter L. McDaniel, 940 Clarkson St., Denver, Colo. 80218

Filed Oct. 27, 1965, Ser. No. 87,945
Term of patent 3½ years
(Cl. D58—13)

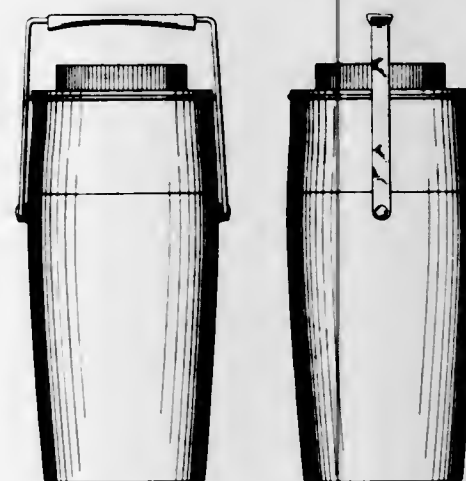


207,466

INSULATED JUG

Howard W. Phillips, Nashville, Tenn., assignor to Aladdin Industries, Incorporated, Chicago, Ill., a corporation of Illinois

Filed Aug. 13, 1965, Ser. No. 86,576
Term of patent 14 years
(Cl. D58—17)



207,467

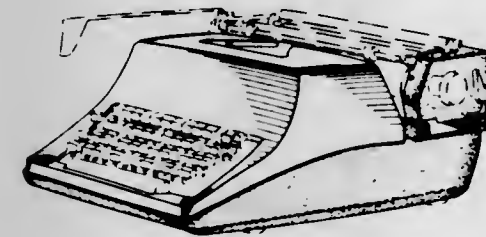
TYPEWRITER OR THE LIKE

Anton Demmel, deceased, late of Wilhelmshaven, Germany, by Elisabeth Demmel, nee Mensel, heir, Wilhelmshaven, Germany, and Alfons Boothby, Wilhelmshaven, and Peter Sieber, Frankfurt am Main, Germany, assignors to Olympia Werke A.G., Wilhelmshaven, Germany

Filed Sept. 9, 1963, Ser. No. 76,563

The portion of the term of the patent subsequent to Oct. 5, 1979, has been disclaimed

Claims priority, application Germany Mar. 8, 1963
Term of patent 14 years
(Cl. D64—11)

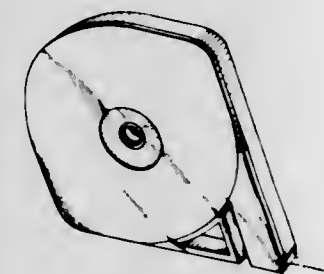


207,468

TAPE DISPENSER

Edwin C. Addis, Florence, Mass., assignor to Chart-Pak, Incorporated, Leeds, Mass., a corporation of Connecticut

Filed Aug. 18, 1966, Ser. No. 3,513
Term of patent 14 years
(Cl. D74—1)

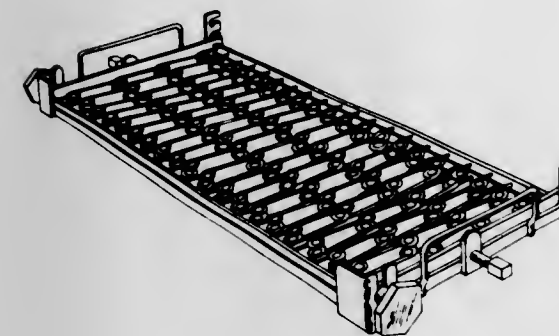


207,469

GRILL

Leon C. Bixby, Fairgrounds Road, Wellington, Ohio 44090

Filed Nov. 1, 1965, Ser. No. 87,961
Term of patent 14 years
(Cl. D81—25)

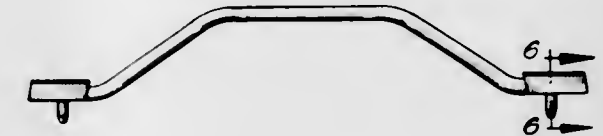


207,470

LUGGAGE HANDLE AND ATTACHING STUDS THEREFOR

Robert K. Unter, Roscoe, Ill., assignor to National Lock Co., Rockford, Ill., a corporation of Delaware

Filed Oct. 21, 1965, Ser. No. 87,705
Term of patent 14 years
(Cl. D87—2)

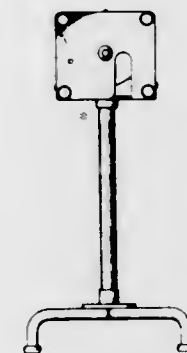


207,471

VEGETABLE CUTTER OR THE LIKE

George H. Cooke, 18521 Prairie St., and William J. Carl, 8601 Oak Park Ave., both of Northridge, Calif. 91324

Filed Feb. 9, 1966, Ser. No. 968
Term of patent 14 years
(Cl. D89—1)

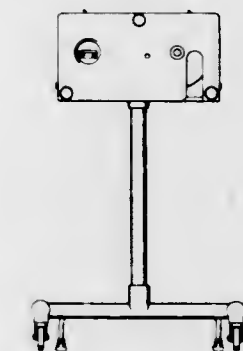


207,472

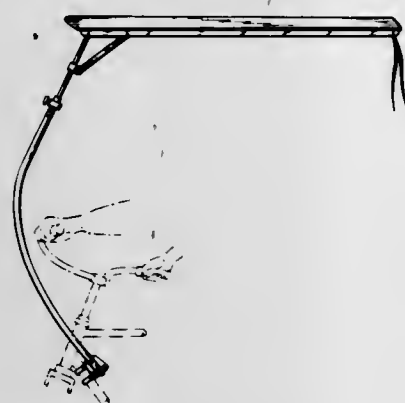
VEGETABLE TRIMMER OR THE LIKE

George H. Cooke, 18521 Prairie St., and William J. Carl, 8601 Oak Park Ave., both of Northridge, Calif. 91324

Filed Feb. 9, 1966, Ser. No. 969
Term of patent 14 years
(Cl. D89—1)



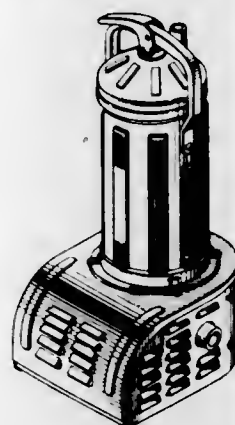
207,473
CANOPY COVER FOR BICYCLES
 Donn C. Blanchard, 510 NE. 1st Ave.,
 Hallandale, Fla. 33009
 Filed Jan. 12, 1966, Ser. No. 585
 Term of patent 14 years
 (Cl. D90—1)



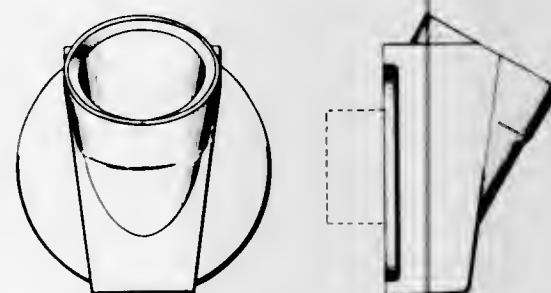
207,474
TIRE PATCH
 Virgil G. Erickson, Sunland, Calif., assignor to Tru-Flex
 Rubber Products Company, Los Angeles, Calif., a cor-
 poration of California
 Filed July 25, 1966, Ser. No. 3,205
 Term of patent 14 years
 (Cl. D90—20)



207,475
FILTER FOR SWIMMING POOL
 Salvatore E. Barrera, Mountaintop, Pa., assignor to
 Muskin Manufacturing Company, Inc., Wilkes-Barre,
 Pa., a corporation of Pennsylvania
 Filed Mar. 31, 1966, Ser. No. 1,721
 Term of patent 14 years
 (Cl. D91—1)



207,476
FLUID SYSTEM INLET
 Eugene L. Kilbourn, Marshall, Mich., assignor to
 Progressive Dynamics, Inc., Marshall, Mich.
 Filed Apr. 7, 1966, Ser. No. 1,802
 Term of patent 14 years
 (Cl. D91—3)



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PATENTS WERE ISSUED ON THE 18TH DAY OF APRIL, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

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 Mercier, Jean. Hydraulic servo-system. Re. 26,195, 4-18-67, Cl. 60—54.5.
 Michigan Tube Benders, Inc.: See—
 McDowell, William B. Re. 26,191.
 Semple, Robert M.: See—
 Alsop, Charles R., and Semple. Re. 26,194.
 Simon-Carves Ltd.: See—
 Alsop, Charles R., and Semple. Re. 26,194.
 Societe Franco-Hispano-Americaine Francisjam: See—
 Labat, Antoine. Re. 26,193.
 Alsop, Charles R., and R. M. Semple, to Simon-Carves Ltd. Apparatus for the aeration of liquids. Re. 26,194, 4-18-67, Cl. 259—107.
 Cleveland Crane & Engineering Co., The: See—
 Dehn, Roy F. Re. 26,189.
 Dehn, Roy F., to The Cleveland Crane & Engineering Co. Trolley conductor. Re. 26,189, 4-18-67, Cl. 191—22.
 Labat, Antoine, to Societe Franco-Hispano-Americaine Francisjam. Filling arrangement for a liquefied gas lighter. Re. 26,193, 4-18-67, Cl. 141—295.
 Martin, Merrill D. Die rule and method of forming and mounting the same. Re. 26,192, 4-18-67, Cl. 83—665.
 McDonnell, Thomas M. Swivel bracket. Re. 26,190, 4-18-67, Cl. 248—240.

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 Aladdin Industries, Inc.: See—
 Phillips, Howard W. 207,466.
 Argenta, Ronald W., to Vypak Corp. Bottle or similar article. 207,461, 4-18-67, Cl. D58—6.
 Barrera, Salvatore E., to Muskin Mfg. Co., Inc. Filter for swimming pool. 207,475, 4-18-67, Cl. D81—1.
 Bixby, Leon C. Grill. 207,469, 4-18-67, Cl. D81—25.
 Blanchard, Donn C. Canopy cover for bicycles. 207,473, 4-18-67, Cl. D90—1.
 Boothby, Alfons: See—
 Demmel, Anton E., Boothby, and Sieber. 207,467.
 Broun, Morris J., and A. T. C. Peters, to Otis Elevator Co. Light diffusing grille. 207,455, 4-18-67, Cl. D48—16.
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 Cooke, George H., and Carl. 207,472.
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 Cooke, George H., and W. J. Carl. Vegetable trimmer or the like. 207,472, 4-18-67, Cl. D89—1.
 Cressy, Clifford E. Plier attachment. 207,457, 4-18-67, Cl. D54—13.
 De Migastris, Louis, and J. Pallotta, to Loupal Originals, Inc. Sunglass front. 207,460, 4-18-67, Cl. D57—1.
 Demmel, Anton, deceased (by E. Demmel, nee Neusel), A. Boothby, and P. Sieber, to Olympia Werke AG. Type-writer or the like. 207,467, 4-18-67, Cl. D64—11.
 Demmel, Elisabeth: See—
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 Doolittle, Charles, to Westinghouse Air Brake Co. Fluid power cylinder. 207,458, 4-18-67, Cl. D55—1.
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 Erickson, Virgil G., to Tru-Flex Rubber Products Co. Tire patch. 207,474, 4-18-67, Cl. D90—20.
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 Flanders, Norman P., D. J. T. Hamm, and V. P. Romeo, to United Shoe Machinery Corp. Machine for mounting a component conveyor and processing unit for use in electronic assembling. 207,459, 4-18-67, Cl. D55—1.
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 Gran, William A., to The Vendo Co. Front panel for vending machine for postal supplies. 207,456, 4-18-67, Cl. D52—3.
 Hamm, Donald J. T.: See—
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 Hose, Robert H.: See—
 Gantz, Carroll M., and Hose. 207,443.
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 McDaniel, Walter L.: See—
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 Morgan & Co., Inc.: See—
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 Shepler, James A., to Owens-Illinois, Inc. Bottle. 207,463, 4-18-67, Cl. D58—6.
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 Demmel, Anton, Boothby, and Sieber. 207,467.
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 Stayman, Bennett H., to Morgan & Co., Inc. Ice bucket. 207,452, 4-18-67, Cl. D44—15.
 Topping, Robert L., to Norton Co. Sharpener for sharpening the blades of ice skates and like articles. 207,447, 4-18-67, Cl. D37—1.
 Treagle, Donald E. Water downspout splash plate. 207,445, 4-18-67, Cl. D18—2.
 Tru-Flex Rubber Products Co.: See—
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 United Shoe Machinery Corp.: See—
 Flanders, Norman P., Hamm, and Romeo. 207,459.
 Unter, Robert K., to National Lock Co. Luggage handle and attaching studs therefor. 207,470, 4-18-67, Cl. D87—2.
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 Gran, William A. 207,456.
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 Argenta, Ronald W. 207,461.
 Westinghouse Air Brake Co.: See—
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 Wilson, William W. Ripper tooth. 207,448, 4-18-67, Cl. D39—1.
 Wilson, William W. Digger tooth unit. 207,449, 4-18-67, Cl. D39—1.
 Wilson, William W. Support adapter for a digger tooth. 207,450, 4-18-67, Cl. D39—1.
 Wilson, William W. Digger tooth. 207,451, 4-18-67, Cl. D39—1.

LIST OF PATENTEEES

TO WHOM

PATENTS WERE ISSUED ON THE 18TH DAY OF APRIL, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AB Purac: See—
Rubin, Ernst A. 3,314,880.
AB Tetra Pak Lund: See—
Jarund, Harry S. V. 3,314,210.
AMP Inc.: See—
Brinser, Stanley B., and Fernald. 3,315,219.
Wiley, Lawrence G. 3,315,092.
A.P.V. Co. Ltd., The: See—
Cooper, Harry C., and Okada. 3,314,471.
Dummett, George A. 3,314,664.
Abbott Laboratories: See—
Nelson, Anne J., and Hughes. 3,314,799.
Robinson, Ralph M. 3,314,952.
Abell, Joseph B., Jr., L. W. Fannin, and J. F. Roth, to Monsanto Co. Dehydrogenation of saturated hydrocarbons over noble-metal catalyst. 3,315,007, 4-18-67, Cl. 260-883.3.
Abell, Joseph B., Jr., L. W. Fannin, and J. F. Roth, to Monsanto Co. Dehydrogenation of saturated hydrocarbons over noble-metal catalyst. 3,315,008, 4-18-67, Cl. 260-883.3.
Abercrombie, Wava M., and E. C. Wurst, Jr., to Texas Instruments Inc. Semiconductor contact alloy. 3,314,830, 4-18-67, Cl. 148-33.
Abex Corp.: See—
Miledi, Joseph A., Kouns, and Pesce. 3,315,085.
Abraham, George. Multistable circuit having one direct and one inverted negative resistance. 3,315,093, 4-18-67, Cl. 307-88.5.
Abson, James W., and D. Broadhurst, to Silmon Handling Engineers Ltd. Bacteriological digesters for conversion or organic waste. 3,314,765, 4-18-67, Cl. 23-259.1.
Active Mobile Homes Corp.: See—
Hill, Delmar J., and Harding. 3,314,203.
Acuff, Donald R., and A. C. Hunter, to Towmotor Corp. Method of making universal bearings. 3,314,127, 4-18-67, Cl. 29-149.5.
Adams, William J., Jr.: See—
Oldenkamp, Henry A., and Adams. 3,314,462.
Addison, Edward: See—
Chester-Browne, Christopher V., Addison, and McCandlish. 3,314,488.
Adler, Robert, to Zenith Radio Corp. Beam refrigeration by means of large cathode magnetic fields used in resistive load and/or with low noise amplifier. 3,315,173, 4-18-67, Cl. 330-4.7.
Adler, Robert, to Zenith Radio Corp. Multiple resonant cyclotron wave coupler for nondegenerate parametric amplifier. 3,315,174, 4-18-67, Cl. 330-4.7.
Ador Corp.: See—
Riegelman, Harry M. 3,314,201.
Agency of Industrial Science and Technology: See—
Kawal, Nobuo, and Nomura. 3,314,759.
Agfa Aktiengesellschaft: See—
Gotze, Johannes, Randolph, and Rlester. 3,314,796.
Kremp, Rudolf, and Kiper. 3,314,346.
Kremp, Rudolf, and Kiper. 3,314,347.
Ahlman, Sven R., to The Torrington Co. Retainer. 3,314,737, 4-18-67, Cl. 308-217.
Air Preheater Co., Inc. The: See—
Krumm, Eugene D., and Casagrande. 3,314,472.
Air Reduction Co., Inc.: See—
Iceland, William F. 3,315,126.
Ajem Laboratories, Inc.: See—
Fitzpatrick, Richard T., and Moore. 3,314,283.
Millhiser, Robert G. 3,314,684.
Aker, John R., to General Electric Co. Electrical connector for coaxial cable. 3,315,218, 4-18-67, Cl. 339-191.
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Wallin, Sten O. 3,314,332.
Albright, Merritt W. Method of making a surface joint. 3,314,140, 4-18-67, Cl. 29-473.1.
Alexander, Douglas S., and J. Firko, to Polymer Corp. Ltd. Dehydrogenation process. 3,315,006, 4-18-67, Cl. 260-680.
Alexander, Wm. G.: See—
Forbes, John W. 3,314,221.
Alfred, Stuart B., to The Pillsbury Co. Method and apparatus for varying package volume during fabrication. 3,314,215, 4-18-67, Cl. 53-182.
Allais, Andre, and J. Meier, to Roussel-UCLAF. Hexahydrobenzyl carbonate ester of testosterone. 3,314,856, 4-18-67, Cl. 167-74.
Allais, Andre, and P. Girault, to Roussel-UCLAF. Novel benzamides. 3,314,979, 4-18-67, Cl. 260-397.7.
Allen, Duff S., Jr.: See—
Littell, Ruddy, and Allen. 3,314,941.
Allen, Joseph C.: See—
Staples, Dallas R., and Allen. 3,314,476.
Allen Products Corp.: See—
Bauer, Norman C. 3,314,181.
Alley, Ralph D., and D. S. Sheridan, to Brunswick Corp. Sump drain catheter. 3,314,430, 4-18-67, Cl. 128-350.
Allgood, Robert F. Color analyzing apparatus. 3,314,167, 4-18-67, Cl. 35-28.3.

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LIST OF PATENTEEES

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Anthony, Russel W.: See—
Motz, Carl H., and Anthony. 3,314,157.
Anwyl, Robert D., and A. G. Stinson, to Eastman Kodak Co. Filter compensation mechanism. 3,314,344, 4-18-67, Cl. 95-10.
Apparels et Evaporateurs Kestner: See—
Myon, Rene. 3,314,756.
Myon, Rene. 3,314,757.
Appel, Arne: See—
Lounzil, Friedrich, Appel, and Podest. 3,314,624.
Applegath, Douglas D., and W. A. Henson, to The Dow Chemical Co. Transparent mixed epoxy resin composition and safety laminated articles made therefrom. 3,315,035, 4-18-67, Cl. 178-782.
Applied Sciences, Inc.: See—
Finke, Arthur A. 3,314,330.
Aquariums Inc.: See—
Willinger, Allan H. 3,314,396.
Araki, Minoru, to Z & T Importing Co., Inc. High-intensity lamp. 3,315,073, 4-18-67, Cl. 240-36.
Arbiter, William, to Atlantic Research Corp. Mixer. 3,314,660, 4-18-67, Cl. 259-102.
Arnaud, Eric, to Anstalt fur Technische Entwicklung und Verwertung. Refining agent for steel works. 3,314,782, 4-18-67, Cl. 75-57.
Arndt, Heinz-Herbert, J. Schadel, and H. Uebel, to Siemens-Schuckertwerke Aktiengesellschaft. Process of open-type diffusion in semiconductor by gaseous phase. 3,314,833, 4-18-67, Cl. 148-169.
Aronson, David, to Worthington Corp. Integral preheater and subcooling for generator of absorption refrigeration systems or equivalent component of another system. 3,314,247, 4-18-67, Cl. 62-101.
Aseco, Inc.: See—
Voigt, Robert H., and Osborne. 3,315,244.
Ashley, James M. Wrench. 3,314,317, 4-18-67, Cl. 81-68.
Ashton, John A., to Decca Ltd. Fixed word magnetic matrix having noise cancellation cores. 3,315,240, 4-18-67, Cl. 840-174.
Astro Optics Inc.: See—
Saylor, Richardson W., and Bailey. 3,314,178.
Aszalos, Adorjan: See—
Fancy, Felix E., Aszalos, and Robison. 3,314,853.
Atkins, Carl E., and R. L. Ziolkowski, to Tung-Sol Electric Inc. Capacity operated automatic flushing system. 3,314,081, 4-18-67, Cl. 4-100.
Atlantic Research Corp.: See—
Arbiter, William. 3,314,660.
Atomic Energy of Canada, Ltd.: See—
Whittaker, Stanley J., and Segel. 3,314,139.
Auer, John H., Jr., to The General Signal Corp. Apparatus for measuring and recording vehicular traffic parameters. 3,315,065, 4-18-67, Cl. 235-150.24.
Auer, John H., Jr.: See—
Huffman, Jerry P., and Auer. 3,315,246.
Austin, Anderson. Automatic gas regulating valve. 3,314,446, 4-18-67, Cl. 251-321.
Austin, Glenn M.: See—
Seiferth, Oscar E., and Austin. 3,314,569.
Automated Building Components, Inc.: See—
Otis, Fred. 3,314,271.
Avco Corp.: See—
Lagasse, Normand L., and Park. 3,314,680.
Aviation Products Co.: See—
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Avon Products, Inc.: See—
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Ayala, Carl, to H. Fiblove & Co. Novelty and amusement brush member. 3,314,677, 4-18-67, Cl. 272-8.
Ax, Anton: See—
Hundhausen, Hugo, and Ax. 3,314,514.
Azzarito, Rocco. Shoe sling. 3,314,090, 4-18-67, Cl. 12-1.
Bacrolis, Marcel A., to Centre de Recherches de Pont-A-Mousson. Method and device for manufacturing metal tubes by helically coiling a sheet metal strip. 3,314,141, 4-18-67, Cl. 29-477.3.
Bacskal, Robert, to Chevron Research Co. Copolymers of 1-alkenes and 1-alkenes having an N-substituent. 3,314,928, 4-18-67, Cl. 260-87.5.
Badische Anilin- & Soda-Fabrik Aktiengesellschaft: See—
Daumiller, Guenther, Wilhelm, and Wegner. 3,314,901.
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Bagley, George E., and W. F. Goodyear, Jr. Vinyl asbestos composition stabilized with melamine and rosin. 3,314,906, 4-18-67, Cl. 260-27.
Bailey Meter Co.: See—
Werme, John V. 3,315,201.
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Saylor, Richardson W., and Bailey. 3,314,178.
Baker, James, F. Bould, and C. A. Schurr, to Square D Co. Overholst limit switch. 3,315,045, 4-18-67, Cl. 200-47.
Baker, Kenneth G., to The Marconi Co. Ltd. Color transmission transmitter with phase correction means. 3,315,170, 4-18-67, Cl. 328-150.
Baker, Marshall W., and P. K. Beatenbough, to General Motors Corp. Air conditioning evaporator control for automobiles. 3,314,248, 4-18-67, Cl. 62-217.
Baker Perkins Inc.: See—
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Baker, Thomas R., and T. B. Brickson, to Kilklok Corp. Article transfer devices. 3,314,555, 4-18-67, Cl. 214-1.
Balaguer, Rodolfo R., to Patent Holding Corp. Battery pack. 3,314,823, 4-18-67, Cl. 136-166.
Baldwin-Lima-Hamilton Corp.: See—
Kent, Francis J., and Klaverkamp. 3,314,267.
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Ball, Ralph, to The Thomas & Betts Co. Grounding sheath connector. 3,315,024, 4-18-67, Cl. 174-75.
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Knauer, Arthur R., and Stinson. 3,314,410.
Bapseres, Pierre, and M. Blensan, to Societe Nationale des Petroles d'Aquitaine. Process for the preparation of organic disulphides. 3,314,999, 4-18-67, Cl. 260-608.
Barclae, Anthony L., to Falcon Industries, Inc. Air vent device for sealed housings. 3,314,306, 4-18-67, Cl. 74-606.
Bardgett, John J., to Esso Production Research Co. Method and apparatus for use in forming foundations. 3,314,240, 4-18-67, Cl. 61-53.5.
Bardouski, William T.: See—
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Estabrook, Mark R. 3,314,474.
Barnett, Louis H., to Loma Industries, Inc. Mold for rotatable casting. 3,314,639, 4-18-67, Cl. 249-58.
Baron, Guy A., J. Berne, and A. Y. Ghradi, to Institut Francais du Petrole, des Carburants & Lubrifiants. Method and apparatus for forming underwater structures. 3,314,239, 4-18-67, Cl. 61-48.
Barr, John N., to Square D Co. Magnetic impulse generator. 3,315,104, 4-18-67, Cl. 310-29.
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- Mayes, Nathan, and R. Michaels, to Thiokol Chemical Corp. Synthesis of halogen-containing nitrites. 3,314,984, 4-18-67, Cl. 260-467.
- Mayhall, George E., to Esso Production and Research Co. Method and apparatus for use in driving piles. 3,314,241, 4-18-67, Cl. 61-53.5.
- Mayne, David W., to Ampex Corp. Sense amplifier. 3,315,089, 4-18-67, Cl. 307-88.5.
- Maytag Co., The: See—
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- McCabe, Charles P.: See—
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- McCallum, Douglas W.: See—
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- McCandlish, David: See—
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- McCanless, Floyd V., and G. R. Quasius, to Honeywell Inc. Background noise minimizer using vibrating reedle and photocells in opposition. 3,315,079, 4-18-67, Cl. 250-209.
- McCartney, Daniel E., and H. A. Hauser, to Universal Oil Products Co. Hydrogen producing system. 3,314,761, 4-18-67, Cl. 23-212.
- McCartney, James S., and R. V. De Leo, to Rosemount Engineering Co. Spray nozzle. 3,314,611, 4-18-67, Cl. 239-424.
- McClelland, Anderson, Inc.: See—
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- McClelland, William G., to McClelland-Anderson, Inc. Mechanism for driving and centering a mandrel. 3,314,622, 4-18-67, Cl. 242-46.21.

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McDonough, Henry W., to Elgin Elmac Enterprises, Inc. Force gauging system. 3,314,284, 4-18-67, Cl. 73-141.

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McGill, William C.: See—
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McGregor, Donald T., to Carlogue Corp. Automatic brake adjustment means. 3,314,508, 4-18-67, Cl. 188-196.

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Mendelson, Hans, to Radio Corp. of America. Carrying case. 3,314,739, 4-18-67, Cl. 312-8.

Mendoza, Fausto C. Dough bread baking belts. 3,314,528, 4-18-67, Cl. 198-195.

Mennekes, Werner, to Gewerkschaft Eisenhutte Westphalia. Sidelwall miner with vertical swingable rotary cutter and T-shaped conveyor. 3,314,723, 4-18-67, Cl. 299-43.

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Miller, Rutherford Y. Sanitary door knob and the like. 3,314,746, 4-18-67, Cl. 21-102.

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Kagan, George M., and Miller. 3,314,908.

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Miller, Norman K. 3,315,050.

Miller, Charles W.: See—
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Miller, Norman K., to Miller Bros. Safety door-edge construction. 3,315,050, 4-18-67, Cl. 200-6143.

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Minogue, Roland E. Clips with dual clamping devices. 3,314,120, 4-18-67, Cl. 24-137.

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NOTE.—First number, class; second number, subclass; third number, patent number

2- 3 : 3.314.077	29- 432.2 : 3.314.138	58- 38 : 3.314.228	74- 752 : 3.314.309	103- 148 : 3.314.371	137- 246.12 : 3.314.442
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7- 7 : 3.314.085	60.5 : 3.314.146	67 : 3.314.235	200 : 3.314.786	376 : 3.314.379	146 : 3.314.450
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204 : 3.314.128	60 : 3.314.188	92- 29 : 3.314.277	114 : 3.314.349	141 : 3.314.846	146 : 3.314.852
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218 : 3.314.130	62 : 3.314.190	94- 29 : 3.314.279	116 : 3.314.351	143 : 3.314.848	148 : 3.314.854
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6.6	3.315.031	77	3.314.540	67.1	3.314.627	209	3.314.936	272-8	3.314.677	39.51	3.315.121
6.8	3.315.032	90	3.314.541	244-17.17	3.314.628	211.5	3.314.937	273-43	3.314.678	83	3.315.122
7.1	3.315.033	130	3.314.542	35	3.314.629		3.314.938	182	3.314.679	100	3.315.123
7.2	3.315.034	169	3.314.543	153	3.314.630	214	3.314.939	277-41	3.314.680	106	3.315.124
7.82	3.315.035	172	3.314.544	248-18	3.314.631	215	3.314.940	42	3.314.681	111	3.315.125
179-15	3.315.036	242	3.314.545	68	Re.26.191	239.3	3.314.941	76	3.314.682	151	3.315.126
3.315.037		457	3.314.546	101	3.314.632		3.314.942	188	3.314.683	317-18	3.315.129
3.315.038		520	3.314.547	119	3.314.633	239.55	3.314.943	236	3.314.684	22	3.315.127
18	3.315.039	211-13	3.314.548	206	3.314.634		3.314.944	280-6	3.314.685	33	3.315.130
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3.314.498			3.314.555	83	3.314.640		3.314.951	475	3.314.692	234	3.315.136
24	3.314.499	11	3.314.556	250-83.3	3.315.075	247	3.314.952	283-49	3.314.693	235	3.315.138
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3.314.503		514	3.314.561	209	3.315.079	256.4	3.314.956	263	3.314.697	59	3.315.141
24	3.314.504	650	3.314.562	213	3.315.080	258	3.314.958	312	3.314.698	321-2	3.315.142
59	3.314.505		3.314.563	217	3.315.081	268	3.314.957	287-54	3.314.699	7	3.315.143
73	3.314.506	215-6	3.314.564	227	3.315.082		3.314.959	189.36	3.314.700	18	3.315.144
78	3.314.507	7	3.314.564	239	3.315.083	281	3.314.960		3.314.701	44	3.315.145
196	3.314.508	46	3.314.565		3.315.084	285.5	3.314.961	290-4	3.315.085	45	3.315.146
218	3.314.509	219-10.69	3.315.061	251-148	3.314.641	286	3.314.962	292-21	3.314.703	322-3	3.315.147
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68	3.314.511	220-2.1	3.314.566	317	3.314.645	289	3.314.966	196	3.314.706	56	3.315.151
84	3.314.512	15	3.314.567	321	3.314.646	294	3.314.967	251.5	3.314.707	74	3.315.152
91	3.314.513	21	3.314.568	252-8.5	3.314.883	309.6	3.314.968	336.5	3.314.708	75	3.315.153
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195-6	3.314.861	135	3.314.571	32.7	3.314.886	326.5	3.314.970	78	3.314.711	60	3.315.156
197-188	3.314.516	136	3.314.572	42.7	3.314.887		3.314.971	87.2	3.314.712	62	3.315.157
198-16	3.314.517	146	3.314.573	48.6	3.314.888	326.9	3.314.972	87.28	3.314.713	70	3.315.158
20	3.314.518		3.314.574	49.6	3.314.889	332.2	3.314.974	93	3.314.714	71	3.315.159
22	3.314.519	330	3.314.575	79.3	3.314.890	345.2	3.314.975	296-23	3.314.715	73	3.315.160
31	3.314.520	402.13	3.314.576	89	3.314.891	397.3	3.314.976	65	3.314.716	83	3.315.161
32	3.314.521	402.14	3.314.577	153	3.314.892	397.4	3.314.977	100	3.314.717	132	3.315.162
33	3.314.522	402.25	3.314.578	301.1	3.314.893	397.5	3.314.978	297-239	3.314.718	149	3.315.163
	3.314.523	223-95	3.314.579	301.2	3.314.894	397.7	3.314.979	385	3.314.719	325-4	3.315.164
34	3.314.524	227-136	3.314.580	455	3.314.895	429	3.314.980	389	3.314.720	25	3.315.165
36	3.314.525	142	3.314.581	253-16.5	3.314.647	448	3.314.981	445	3.314.721	105	3.315.166
137	3.314.526	228-1	3.314.582	39.1	3.314.648	448.2	3.314.982	299-31	3.314.722	396	3.315.167
175	3.314.527	2	3.314.583	39.15	3.314.649	454	3.314.983	43	3.314.723	328-112	3.315.168
195	3.314.528	229-14	3.314.584		3.314.650	467	3.314.984	62	3.314.724	150	3.315.169
200-11	3.315.043	16	3.314.585	77	3.314.651	473	3.314.985		3.314.725	155	3.315.170
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47	3.315.045	27	3.314.587	78	3.314.653	484	3.314.987	12	3.314.727	330-3	3.315.172
48	3.315.046	29	3.314.588		3.314.654	486	3.314.988	41	3.314.728	4.7	3.315.173
61.18	3.315.047	31	3.314.589	254-92	3.314.655	518	3.314.989	302-2	3.314.729		3.315.174
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61.42	3.315.049	53	3.314.591	189	3.314.657	553	3.314.991	26	3.314.731	59	3.315.176
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67	3.315.052	21	3.314.594	102	3.314.660	566	3.314.994	64	3.314.734	116	3.315.179
83	3.315.053	114	3.314.595	107	Re.26.194	570	3.314.995	307-88	3.315.086	117	3.315.180
116	3.315.054	127	3.314.596	165	3.314.661	582	3.314.996		3.315.087	332-9	3.315.181
141	3.315.055	138	3.314.597	260-2	3.314.896	583	3.314.997		3.315.088	333-10	3.315.182
148	3.315.056	143	3.314.598		3.314.897	600	3.314.998	88.5	3.315.089	11	3.315.183
153	3.315.057	153	3.314.599		3.314.898	608	3.314.999		3.315.090	95	3.315.184
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167	3.315.060	61	3.314.602	2.5	3.314.901	652	3.315.001		3.315.093		3.315.187
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	3.315.270		3.315.068	8	3.314.905	680	3.315.006		3.315.097	67	3.315.191
1.5	3.314.865	164	3.315.069	27	3.314.906	683.15	3.315.009		3.315.098	153	3.315.192
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	3.314.798		3.314.942		3.315.010		3.315.102		3.314.460		3.314.085
	3.314.866		3.314.954		3.315.015		3.315.110		3.314.524		3.314.086
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	3.314.191		3.314.236		3.314.430		3.314.566		3.314.906		3.314.338
	3.314.203		3.314.242		3.314.436		3.314.595		3.314.949		3.314.405
	3.314.232		3.314.247		3.314.439		3.314.600		3.314.950		3.314.408
	3.314.235		3.314.259		3.314.469		3.314.648		3.314.951		3.314.412
	3.314.254		3.314.286		3.314.472		3.314.649		3.314.953		3.314.454
	3.314.255		3.314.289		3.314.475		3.314.688		3.314.956		3.314.492
	3.314.260		3.314.324		3.314.494		3.314.692		3.314.958		3.314.545
	3.314.262		3.314.325		3.314.499		3.314.732		3.314.960		3.314.553
	3.314.283		3.314.354		3.314.501		3.314.742		3.314.968		3.314.569
	3.314.306		3.314.361		3.314.515		3.314.760		3.314.972		3.314.622
	3.314.307		3.314.390		3.314.572		3.314.775		3.314.980		3.314.719
	3.314.311		3.314.399		3.314.576		3.314.817		3.315.011		3.315.051
	3.314.313		3.314.421		3.314.584		3.314.824		3.315.003		3.315.066
	3.314.353		3.314.452		3.314.589		3.314.831		3.315.011		3.315.072
	3.314.368		3.314.505		3.314.601		3.314.875		3.315.017		3.315.098
	3.314.377		3.314.509		3.314.617		3.314.889		3.315.050		3.315.124
	3.314.379		3.314.521		3.314.646		3.314.893		3.315.058		3.315.191
	3.314.380		3.314.537		3.314.658		3.314.899		3.315.070		3.315.193
	3.314.404		3.314.565		3.314.662		3.314.910		3.315.071		3.315.195
	3.314.407		3.314.578							56	: 3.314.121

DESIGN PATENTS

6 : 207,471	9 : 207,464	22 : 207,449	26 : 207,476	36 : 207,442	39 : 207,462
207,472	12 : 207,473	207,450	27 : 207,444	207,458	207,463
207,474	17 : 207,470	207,451	207,445	207,455	207,469
8 : 207,465	18 : 207,457	25 : 207,452	29 : 207,456	37 : 207,453	44 : 207,460
9 : 207,454	21 : 207,458	207,459	33 : 207,447	39 : 207,443	47 : 207,466
207,461	22 : 207,448	207,468	34 : 207,446		

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

April 18, 1967

Volume 837

Number 3

TRADEMARKS

NOTICES

Withdrawal of Attorney

To expedite the handling of requests for permission to withdraw as attorney, under Rule 36, the request should be submitted in triplicate (original and two copies) and indicate thereon the present mailing address of the attorney who is withdrawing.

JOSEPH SCHIMMEL,

Seltolter.

Apr. 18, 1967.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 356,701 (COLORED TAB DESIGN), Levi Strauss & Company, Men's, women's, and children's overalls of the patch pocket type; Reg. No. 518,561 (LEVI'S), same, Men's, women's, and children's overalls and jackets; Reg. No. 577,490 (T.M. DESIGN), same, Overalls; Reg. No. 730,376 (SMALL

WHITE MARKER OR TAB), same, Juvenile overalls; Reg. No. 774,825 (TAB DESIGN), same, Garments, particularly trousers; Reg. No. 775,412 (LEVI'S AND DESIGN), same, filed Mar. 7, 1967, D.C., N.D. Calif. (San Francisco), Doc. 40664, *Levi Strauss & Co. v. Catalina Inc.*

Reg. No. 518,561. (See Reg. No. 356,701.)

Reg. No. 577,470. (See Reg. No. 356,701.)

Reg. No. 615,013 (AVIS RENT A CAR SYSTEM AND DESIGN), Warren E. Avis, assor. to Avis Rent A Car System, Inc., Leasing of automobiles and trucks; Reg. No. 703,700 (AVIS), Avis, Inc., Vehicle rental and leasing service, filed Mar. 7, 1967, D.C., E.D. Mich. (Detroit), Doc. 29656, *Avis Rent A Car System Inc. v. Avis Man-Avis Girl, Inc.*

Reg. No. 703,700. (See Reg. No. 615,013.)

Reg. No. 720,376. (See Reg. No. 356,701.)

Reg. No. 774,825. (See Reg. No. 356,701.)

Reg. No. 775,412. (See Reg. No. 356,701.)

CONDITION OF TRADEMARK APPLICATIONS AS OF FEBRUARY 28, 1967

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]..... 17,447
 Date of oldest new application..... Jan. 13, 1966
 Date of oldest amended application (filing date)..... May 13, 1963

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 4, 8, 11, 12, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 41, 42, 43, 44.....	1-21-66	7-30-64
(II) F. H. WETHERBEE, Classes 1, 3, 6, 7, 9, 10, 18, 22, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B.....	1-13-66	5-12-63
Renewals (All Classes).....	1-24-67	
Sec. 12 (c) Publications (All Classes).....	1-31-67	

Applications filed during the month of February 1967—2,064

Registration Issued 296—No. 827,415 to No. 827,710
 Renewals Issued 99

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, \$12.00 per annum, foreign mailing \$4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 799. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105. A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 218,393. Components Specialties, Inc., Freeport, N.Y. Filed May 10, 1965.

Speco

Class 21—Electrical Apparatus, Machines, and Supplies

For Microphones, Telephone Pickup Coil, Transistor Radio Earphones, Wireless Microphones, Condensers, Transformers, Capacitors, Jacks and Plugs, Speakers, and Speaker Kits, Earphones and Earphone Kits, Volume Controls and Volume Control Kits, Resistors and Resistor Kits, Transistor Intercoms, Fader Controls, Telegraph Key, and Switches.

Class 36—Musical Instruments and Supplies

For Phonograph Replacement Arms, Phonograph Spindles, Magnetic Tape Recorders, Magnetic Tape Decks, Combination Guitar and Amplifier.

First use March 1960.

SN 222,354. Fisherman's Wharf Marina, Inc., d.b.a. Fishermen's Wharf Marina, Philadelphia, Pa. Filed June 30, 1965.



The mark consists of the letters "FWM" and the representation of a fish jumping from water.

Class 100—Miscellaneous

For Furnishing of Food, Beverages, and Hotel Services.

Class 103—Construction and Repair

For Providing of Maintenance and Repair Services for Boats.

Class 105—Transportation and Storage

For Furnishing of Docking and Storage Facilities for Boats.

Class 107—Education and Entertainment

For Furnishing of Bathing Beach Facilities.
First use at least as early as June of 1963.

TM 106

SN 223,044. Firma Richard Reuter, Dusseldorf-Reisholz, Germany. Filed July 9, 1965.

SINECARBON

Owner of German Reg. No. 758,791, dated July 22, 1961.

Class 11—Inks and Inking Materials

For Printing Inks for Graphic Purposes, Inks and Ink Ribbons, and Carbon Paper.

Class 37—Paper and Stationery

For Transfer Papers, Hectographic Mimeograph Papers, Sets of Forms, Endless Forms, Teletype Rolls, Wax Papers, Writing Papers With Transfer Coating, Papers (or Sheets) With Script-Assuming Preparation and Papers Composed of Such Sets, Draft Papers, Registration Papers, Reusable Matrices, and Like Transfer Materials.

SN 234,831. MBF Products, Inc., Wilton, Conn. Filed Dec. 17, 1965.



M.B.F.

Class 18—Medicines and Pharmaceutical Preparations

For Medicated Cream for Use on Dogs and Cats and Multivitamin, Multimineral Dietary Food Supplements for Animal Use.

First use June 1, 1957, on medicated cream.

Class 52—Detergents and Soaps

For Shampoo for Animals.
First use June 1, 1957.

SN 235,474. The Fuller Brush Company, d.b.a. Charter Products, East Hartford, Conn. Filed Dec. 29, 1965.



Applicant disclaims "Products" apart from the mark as shown. Owner of Reg. No. 270,201.

Class 4—Abrasives and Polishing Materials

For Furniture Cleaner and Waxer.

APRIL 18, 1967

U. S. PATENT OFFICE

TM 107

Class 6—Chemicals and Chemical Compositions

For Spray Preparation for Dust Mops, and Mothproofing Preparation.

Class 52—Detergents and Soaps

For Bowl Cleaner and Spot Remover.
First use on or about Nov. 3, 1965.

SN 235,475. The Fuller Brush Company, d.b.a. Charter Products, East Hartford, Conn. Filed Dec. 29, 1965.

CHARTER PRODUCTS

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For Spray Preparation for Dust Mops, and Mothproofing Preparation.

Class 52—Detergents and Soaps

For Bowl Cleaner and Spot Remover.
First use on or about Nov. 3, 1965.

SN 235,594. SW Industries, Inc., Newton, Mass. Filed Dec. 30, 1965.



Owner of Reg. No. 751,631.

Class 22—Games, Toys, and Sporting Goods

For Bowling Equipment—Namely, Bowling Balls, Bowling Bags, and Bowling Shoes.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Machinery and Components Thereof—Namely, Rolls for Machinery; Materials Handling Equipment—Namely, Conveyor Belts and Machinery.

First use October 1965.

SN 235,814. C. A. Zoes Manufacturing Co., Chicago, Ill. Filed Jan. 5, 1966.

ZOES

Class 4—Abrasives and Polishing Materials

For Shoe Dressings—Namely, Wax Polish, White Dressing, Sole and Heel Edge Enamel, White Buck and Suede Dressing, Gold Refinish, and Silver Refinish.

Class 6—Chemicals and Chemical Compositions

For Suede Dye and Dressing, Leather Dye and Suede Spray.

Class 52—Detergents and Soaps

For Shoe Cleaning Preparation—Namely, Cleaning Powder, Dry Cleaning Fluid, Special Leather Cleaner, Spot Remover, and Nylon Mesh Cleaner.

First use at least 1905.

SN 239,270. H. D. Hudson Manufacturing Company, Chicago, Ill. Filed Feb. 21, 1966.

PROFI-MATIC

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Silo Unloaders and Feed Conveyors.
First use Nov. 1, 1961.

Class 50—Merchandise Not Otherwise Classified

For Feeders, Feeding Systems and Waterers (Detached From Plumbing) for Livestock; Pig and Poultry Brooders; Poultry Nests, Feeders and Feeding Systems.
First use Mar. 25, 1964.

SN 239,567. Stadel Co., Temple City, Calif. Filed Feb. 25, 1966.



The stippled background in the drawing is for contrast only and does not reflect a claim to any color.

Class 21—Electrical Apparatus, Machines, and Supplies

For Amplifiers.
First use July 1964.

Class 36—Musical Instruments and Supplies

For Electrical Guitars.
First use Jan. 3, 1966.

SN 239,854. Auto Pak Company, Washington, D.C. Filed Mar. 1, 1966.

DUALPAK

Class 2—Receptacles

For Containers Used With Waste Material Compaction Apparatus.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Compaction Apparatus for Waste Material.
First use on or about Dec. 1, 1964.

SN 241,889. Gaco Manufacturing Division of Gaddis Petroleum Corporation, Bartlesville, Okla. Filed Mar. 25, 1966.

Gaco

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105. A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 218,393. Components Specialties, Inc., Freeport, N.Y. SN 223,044. Firma Richard Reuter, Dusseldorf-Reisholz, Germany. Filed July 9, 1965.

Speco

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For Phonograph Replacement Arms, Phonograph Spindles, Magnetic Tape Recorders, Magnetic Tape Decks, Combination Guitar and Amplifier.

First use March 1960.

SN 222,354. Fisherman's Wharf Marina, Inc., d.b.a. Fishermen's Wharf Marina, Philadelphia, Pa. Filed June 30, 1965.



The mark consists of the letters "FWM" and the representation of a fish jumping from water.

Class 100—Miscellaneous

For Furnishing of Food, Beverages, and Hotel Services.

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For Providing of Maintenance and Repair Services for Boats.

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For Furnishing of Docking and Storage Facilities for Boats.

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For Furnishing of Bathing Beach Facilities.
First use at least as early as June of 1963.

TM 106

SINECARBON

Owner of German Reg. No. 758,791, dated July 22, 1961.

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For Printing Inks for Graphic Purposes, Inks and Ink Ribbons, and Carbon Paper.

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For Transfer Papers, Hectographic Mimeograph Papers, Sets of Forms, Endless Forms, Teletype Rolls, Wax Papers, Writing Papers With Transfer Coating, Papers (or Sheets) With Script-Assuming Preparation and Papers Composed of Such Sets, Draft Papers, Registration Papers, Reusable Matrices, and Like Transfer Materials.

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For Medicated Cream for Use on Dogs and Cats and Multivitamin, Multimineral Dietary Food Supplements for Animal Use.

First use June 1, 1957, on medicated cream.

Class 52—Detergents and Soaps

For Shampoo for Animals.
First use June 1, 1957.

SN 235,474. The Fuller Brush Company, d.b.a. Charter Products, East Hartford, Conn. Filed Dec. 29, 1965.



Applicant disclaims "Products" apart from the mark as shown. Owner of Reg. No. 270,201.

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For Furniture Cleaner and Waxer.

APRIL 18, 1967

U. S. PATENT OFFICE

TM 107

Class 6—Chemicals and Chemical Compositions

For Spray Preparation for Dust Mops, and Mothproofing Preparation.

Class 52—Detergents and Soaps

For Bowl Cleaner and Spot Remover.

First use on or about Nov. 3, 1965.

SN 285,475. The Fuller Brush Company, d.b.a. Charter Products, East Hartford, Conn. Filed Dec. 29, 1965.

CHARTER PRODUCTS

Applicant disclaims "Products" apart from the mark as shown. Owner of Reg. No. 270,201.

Class 4—Abrasives and Polishing Materials

For Furniture Cleaner and Waxer.

Class 6—Chemicals and Chemical Compositions

For Spray Preparation for Dust Mops, and Mothproofing Preparation.

Class 52—Detergents and Soaps

For Bowl Cleaner and Spot Remover.

First use on or about Nov. 3, 1965.

SN 235,594. SW Industries, Inc., Newton, Mass. Filed Dec. 30, 1965.



Owner of Reg. No. 751,631.

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For Bowling Equipment—Namely, Bowling Balls, Bowling Bags, and Bowling Shoes.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Machinery and Components Thereof—Namely, Rolls for Machinery; Materials Handling Equipment—Namely, Conveyor Belts and Machinery.

First use October 1965.

SN 235,814. C. A. Zoes Manufacturing Co., Chicago, Ill. Filed Jan. 5, 1966.

ZOES

Class 4—Abrasives and Polishing Materials

For Shoe Dressings—Namely, Wax Polish, White Dressing, Sole and Heel Edge Enamel, White Buck and Suede Dressing, Gold Refinish, and Silver Refinish.

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For Suede Dye and Dressing, Leather Dye and Suede Spray.

Class 52—Detergents and Soaps

For Shoe Cleaning Preparation—Namely, Cleaning Powder, Dry Cleaning Fluid, Special Leather Cleaner, Spot Remover, and Nylon Mesh Cleaner.

First use at least 1905.

SN 239,270. H. D. Hudson Manufacturing Company, Chicago, Ill. Filed Feb. 21, 1966.

PROFI-MATIC

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Class 50—Merchandise Not Otherwise Classified

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First use Mar. 25, 1954.

SN 239,567. Stadel Co., Temple City, Calif. Filed Feb. 25, 1966.



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For Amplifiers.
First use July 1964.

Class 36—Musical Instruments and Supplies

For Electrical Guitars.
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For Containers Used With Waste Material Compaction Apparatus.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Compaction Apparatus for Waste Material.
First use on or about Dec. 1, 1964.

SN 241,889. Gaco Manufacturing Division of Gaddis Petroleum Corporation, Bartlesville, Okla. Filed Mar. 25, 1966.

Gaco

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Dry Chemical Feeding Apparatus, Consisting of Pumping, Metering, Recording, and Filtering Equipment, Sold as a Unit, and Replacement Parts Therefor.

Class 26—Measuring and Scientific Appliances

For Proportioning Pumping Equipment Measuring Material According to Requirements.

First use as early as July 15, 1962.

SN 242,817. Gustav F. Gerdtz KG., Bremen, Germany. Filed Apr. 6, 1966.



Owner of German Reg. No. 813,373, dated Dec. 9, 1965; and U.S. Reg. Nos. 724,114 and 728,425.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Sildes, Faucets, and Valves.

Class 14—Metals and Metal Castings and Forgings

For Metal Parts, Rolled or Cast Constructional Parts, and Machine Castings.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Dirt Collectors.

Class 26—Measuring and Scientific Appliances

For Devices for Signalling, Supervising and Actuation, Water Level Indicators, Measuring Devices, Thermostats and Regulating Devices for Continuous De-Salting and Similar Units.

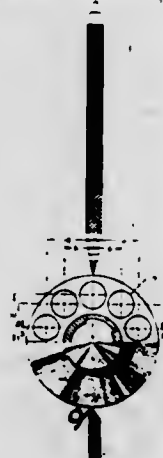
Class 31—Filters and Refrigerators

For Filters.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Apparatus and Utensils for Central and Remote Heating, Industrial Apparatus and Utensils for Cooking, Cooling, Drying and Ventilation, Cleaners of Steam and Condensed Water, Devices for Regulating the Flow of Steam in Heating and Cooking, Devices for Utilizing Heat Contained in Steam and Dividers for Condensation Water.

SN 244,713. J. & A. Keller Machine Co., Inc., Tonawanda, N.Y. Filed May 2, 1966.

**Class 100—Miscellaneous**

For Designing and Engineering of Special Custom-Built Machinery.

Class 103—Construction and Repair

For Manufacturing of Special Custom-Built Machinery.
First use Mar. 25, 1966.

SN 246,516. Decca Limited, London, England. Filed May 11, 1966.

SEAFIX**Class 21—Electrical Apparatus, Machines, and Supplies**

For Radio Transmitters, Radio Receivers, Radio Antennae, and Recording Tapes for Use in Ships and Aircraft; and Power Supply, Testing and Maintenance Equipment Therefor.

Class 26—Measuring and Scientific Appliances

For Scientific Instruments and Apparatus for Use in Ships and Aircraft—Namely, Surveying, Navigating, Signalling, Recording (Including Photographic Recording), Display, Indicating and Mapping Instruments and Apparatus; Computers; Charts, Maps and Map-Making Instruments; and Power Supply, Testing and Maintenance Equipment Therefor.

First use July 14, 1965; in commerce July 14, 1965.

SN 249,906. Holiday Magic, San Rafael, Calif. Filed July 11, 1966.

HOLIDAY MAGIC**Class 51—Cosmetics and Toilet Preparations**

For Skin Cleanser, Skin Toner, Skin Cream, Skin Mask, Cosmetic Oil, Body Lotion, Personal Deodorant, Make-Up Base, Face Powder, Rouge, Nail Polish, Nail Polish Remover, Eye Liner, Eyebrow Pencil, Eye Shadow, Mascara, Lipstick, Wave Set, Hair Spray, and Hair Rinse.

Class 52—Detergents and Soaps

For Hair Shampoo.

First use Dec. 1, 1964.

SN 255,496. Wrecks Inc., Whitestown, Ind. Filed Sept. 30, 1966.

"WE MEET BY ACCIDENT"**Class 19—Vehicles**

For Automobile Parts—Namely, Bodies, Frames, Wheels, Body Panels, Fenders, Bumpers, Brakes, Front and Rear Suspension Systems, Seats, Steering Mechanisms and Systems, Canvas Tops, Sunvisors and Mirrors.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Automobile Parts—Namely, Engines, Transmissions, Overdrives, Fluid Couplings, Torque Convertors, Clutches, Drive Shafts, Exhaust Systems, Differentials, and Universal Joints.

First use Jan. 2, 1951.

SN 257,810. Thompson and Sons, Inc., Lyons, Ill. Filed Nov. 3, 1966.

SILVER-KING

Owner of Reg. No. 509,846.

Class 21—Electrical Apparatus, Machines, and Supplies

For Carpet Scrubbers for Domestic Use.
First use Dec. 4, 1956.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Wall Washers and Floor Polishers for Commercial and Industrial Use.
First use Dec. 28, 1956.

Class 52—Detergents and Soaps

For Rug Shampoo, Upholstery Shampoo, and Wall and Tile Cleaner.
First use June 24, 1955.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 233,214. Curtiss Breeding Services, Inc., Cary, Ill. Filed Nov. 22, 1965.

CURTISS

For Cattle Semen for Artificial Insemination.
First use 1941.

SN 250,122. Allied Kid Company, Boston, Mass. Filed July 13, 1966.



Owner of Reg. Nos. 55,688, 75,035, and 75,036.
For Leather.
First use Dec. 22, 1905.

SN 250,199. Winfield Industries, Inc., Buffalo, N.Y. Filed July 13, 1966.

WINTHANE

For Polyurethane.
First use June 22, 1966.

SN 251,365. American Colloid Company, Skokie, Ill. Filed Aug. 1, 1966.

REDI-MOLD

Owner of Reg. No. 747,370.
For Prepared Sand Molding Mixture for Use in Foundries, Said Mixture Containing Sand, Bond, Carbon (If Required), Cellulose (If Required), and Water.
First use July 12, 1961.

SN 251,426. Hi-Life Packing Company, Chicago, Ill. Filed Aug. 1, 1966.

KITTYLAND

For Absorbent Cat Litter.
First use May 5, 1966.

SN 251,469. Shaver Poultry Breeding Farms, Limited, Galt, Ontario, Canada. Filed Aug. 1, 1966.

SHAVER STARBRO

Owner of Reg. Nos. 705,728 and 705,724.
For Live Poultry Breeding Stock.
First use Dec. 28, 1964; in commerce Dec. 28, 1964.

SN 251,470. Shaver Poultry Breeding Farms, Limited, Galt, Ontario, Canada. Filed Aug. 1, 1966.



Owner of Reg. Nos. 705,723 and 705,724.
For Live Poultry Breeding Stock.
First use Dec. 28, 1964; in commerce Dec. 28, 1964.

SN 251,540. International Latex & Chemical Corporation, Dover, Del. Filed Aug. 2, 1966.

RIB-BAK

Owner of Reg. No. 804,916.
For Natural or Synthetic Latex, or Blends of the Two, for Use in Textile and Rug Backing, Coating and Impregnating Compositions.
First use Jan. 14, 1965.

SN 251,727. Ideal Tape, Inc., Lowell, Mass. Filed Aug. 4, 1966.

REALSTAY

For Sheet-Form Reinforcing Materials for Use in Manufacturing, Especially in Manufacturing Shoes.
First use June 24, 1966.

SN 252,947. B. L. Cobia, Inc., Winter Garden, Fla. Filed Aug. 23, 1966.

HINDU ROPE

For Tropical House Plants.
First use on or about Feb. 25, 1965.

Class 2 — Receptacles

SN 228,703. Louls and Dorothy S. Nagy, d.b.a. D'Ln Designs, Sacramento, Calif. Filed July 19, 1965.

DIAPER DEW-ETTE

The word "Diaper" is disclaimed apart from the mark as a whole.

For Portable Container for Infants' Accessories—Namely, Diaper Bags.

First use May 20, 1965.

SN 229,276. Nooter Corporation, St. Louis, Mo. Filed Oct. 4, 1965.

NOOTER

Owner of Reg. No. 591,824.

For Tanks, Bins, Vats, Hoppers, Pressure Vessels, Cryogenic Vessels, Used in Industry for Storage, Processing, and Shipping Purposes.

First use in or about 1896.

SN 229,861. Nooter Corporation, St. Louis, Mo. Filed Oct. 11, 1965.

ARCLAD

Owner of Reg. Nos. 591,824 and 784,214.

For Vessels for High Pressure Processes and Storage Purposes Used in Industry.

First use Aug. 18, 1965.

SN 230,714. Societe Anonyme des Etablissements Rouzaud "A la Marquise de Sevigne" Chocolat de Royat, Royat-les-Bains, France. Filed Oct. 20, 1965.

A LA MARQUISE DE SEVIGNE

Owner of French Reg. No. 4,009, dated July 5, 1965 (Clermont-Ferrand); Natl. Inst. No. 256,625.

For Confectionery Boxes.

First use in or about 1905; in commerce in or about 1935.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 250,769. Reliable Luggage, Inc., West Pittsburg, Pa. Filed July 21, 1966.

TORONADO

For Suitcases, Valises, and Travelling Bags.

First use Feb. 1, 1966.

SN 252,634. Atlantic Products Corporation, Trenton, N.J. Filed Aug. 18, 1966.

SPACE-MATE

For Hand Luggage.

First use July 1966.

Class 4 — Abrasives and Polishing Materials

SN 231,457. Morton International, Inc., Chicago, Ill. Filed Oct. 23, 1965.



For Preparation Used To Clean, Preserve, Polish and Beautify Finished Surfaces, Furniture Polishes and Waxes, Floor Polishes and Waxes, Automobile Polishes and Waxes, Combination Cleaners and Polishes, and Cleaner-Wax and Cleaner-Polish Combinations for Household, Automotive, Institutional and Industrial Use.

First use on or about Sept. 29, 1965.

Class 5 — Adhesives

SN 229,626. Aquariums Incorporated, Maywood, N.J. Filed Oct. 8, 1965.

Liqua-Seal

Applicant disclaims the representation of a tube, as found in the drawing, separate and apart from the mark.

For Aquarium Cement.

First use in or about June 1958.

SN 229,630. Aquariums Incorporated, Maywood, N.J. Filed Oct. 8, 1965.

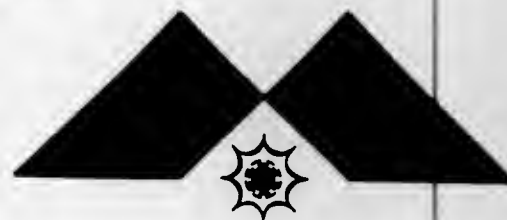
SEAL·WEL

For Aquarium Cement.

First use in or about June 1958.

Class 6 — Chemicals and Chemical Compositions

SN 237,578. Morton International, Inc., Chicago, Ill. Filed Jan. 28, 1966.



For Alkali and Alkaline Earth Metal Compounds.

First use on or about Nov. 16, 1965.

SN 245,057. The Bendix Corporation, Detroit, Mich. Filed May 6, 1966.

MICROHM

For Electrocardiograph Jelly.

First use Dec. 31, 1937.

SN 251,756. Talsol Corp., Cincinnati, Ohio. Filed Aug. 4, 1966.

WRIN-KIL

For Spray for Eliminating Wrinkles in Clothes and Fabrics.

First use July 15, 1966.

SN 256,169. Xerox Corporation, Rochester, N.Y. Filed Oct. 10, 1966.

XEROX

Owner of Reg. Nos. 525,717, 596,380, and others.
For Photographic Chemicals—Namely, Developer, Stabilizer, and Stop Bath.

First use Dec. 17, 1964; Nov. 29, 1957, in a different form.

SN 256,227. Morningstar-Paisley, Inc., New York, N.Y. Filed Oct. 11, 1966.

HAMACO

For Modified Starches.

First use Jan. 5, 1944.

SN 256,656. Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. Filed Oct. 18, 1966.

BAYCHROM

Owner of German Reg. No. 807,657, dated Nov. 13, 1964.
For Synthetic Tanning Agents.

SN 256,722. Colgate-Palmolive Company, New York, N.Y. Filed Oct. 19, 1966.

PRUF

Owner of Reg. Nos. 565,459, 621,560, and 768,577.
For Starch.

First use Oct. 10, 1966.

SN 256,965. Organon Inc., West Orange, N.J. Filed Oct. 21, 1966.

PLANOSTICON

Owner of Reg. Nos. 721,497 and 807,999.
For Laboratory Test for the Detection of Pregnancy.

First use Oct. 12, 1966.

Class 7 — Cordage

SN 236,720. CF & I Steel Corporation, Denver, Colo., by change of name from The Colorado Fuel and Iron Corporation, Denver, Colo. Filed Jan. 18, 1966.

DURACORE

Owner of Reg. No. 627,209.
For Plastic Cores or Centers Forming a Part of Wire Rope.

First use on or about Jan. 15, 1962.

Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 249,316. Exotic Pipes, Mountain View, Calif. Filed June 30, 1966.

EXOTIC

For Smoking Pipes.

First use Feb. 15, 1963.

SN 261,909. Butane Products Corporation, Baldwin, N.Y. Filed Jan. 4, 1967.

FLAMEX

For Cigar and Cigarette Lighters.

First use Oct. 30, 1966.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 229,496. Cascade Cartridge, Inc., Lewiston, Idaho. Filed Oct. 7, 1965.

CCI

For Rifle Ammunition and Primers.

First use on or about July 3, 1957.

SN 262,459. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Jan. 13, 1967.

TOVITE

For Nitro-Carbo Nitrate Blasting Agent.

First use Dec. 4, 1966.

Class 10 — Fertilizers

SN 252,156. Anderson Peat Company, Imlay City, Mich. Filed Aug. 11, 1966.

VITA-HUME

For Peat for Use as a Soil Conditioner.

First use February 1962.

SN 252,158. Anderson Peat Company, Imlay City, Mich. Filed Aug. 11, 1966.



For Peat for Use as a Soil Conditioner.

First use February 1962.

SN 252,727. Collier Carbon & Chemical Corporation, Los Angeles, Calif. Filed Aug. 19, 1966.

GREEN TOUCH

Owner of Reg. Nos. 804,851 and 805,334.
For Fertilizers.

First use Mar. 3, 1964.

Class 12 — Construction Materials

SN 212,519. Finestone Corporation, Detroit, Mich. Filed Feb. 23, 1965.

FINESTONE

For Cement Surface Finishing Material for Brick, Concrete, Plasters, Asbestos, and Similar Materials.

First use July 9, 1964.

SN 227,828. The Flintkote Company, New York, N.Y. Filed Sept. 15, 1965.

FLINTFINISH

Owner of Reg. Nos. 73,612, 787,011, and others.
For Gypsum Plasters and Additives, Gypsum Wallboard and Joint Treatment Materials.
First use Mar. 3, 1964.

SN 238,289. Koppers Company, Inc., Pittsburgh, Pa. Filed Feb. 7, 1966.

MARKAY

For Seamless Stone-Filled, Polyester-Based Flooring Compositions, Including Component Parts Therefor.
First use November 1965.

SN 248,064. Superior Plastics Inc., Chicago, Ill. Filed June 14, 1966.



The word "Siding" is disclaimed apart from the mark.
For Solid Vinyl Building Products—Namely, House Siding, Channels, and Corners.
First use Mar. 31, 1966.

SN 259,204. Pittsburgh Corning Corporation, Pittsburgh, Pa. Filed Nov. 22, 1966.

CELRAMIC

For Cellular Vitreous Material and Cellular Vitreous Bonded Crystalline Materials Used for Insulation Purposes.
First use October 1966.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 244,181. Barton Products Corporation, West Bend, Wis. Filed Apr. 25, 1966.



The drawing is lined for the colors red and gray, but color is not claimed as a feature of the mark.
For Screw Machine Products.
First use Aug. 19, 1964.

Class 15—Oils and Greases

SN 247,734. Stauffer Chemical Company, New York, N.Y. Filed June 9, 1966.

SI-O-GEL

For Lubricants—Namely, General Purpose Silicone Grease.
First use May 24, 1966.

SN 249,982. A. Gross Candle Co., Inc., Linden, N.J. Filed July 11, 1966.

Even-Glo

Owner of Reg. No. 878,875.
For Candles.
First use about Jan. 1936.

Class 16—Protective and Decorative Coatings

SN 230,060. Lilly Industrial Coatings, Inc., Indianapolis, Ind. Filed Oct. 18, 1965.

LILLY

The drawing is lined for the color red.
For Industrial Finishes, Sold to All Types of Industrial Users for Application Upon Manufactured Products, Including Varnishes, Paints, Paint Pigments, Lacquers, Japans, Stains, and Enamels.
First use May 15, 1965; since 1876 as to "Lilly."

SN 230,607. Blair Art Products, Inc., Memphis, Tenn. Filed Oct. 20, 1965.



For Clear Gloss Finish and Clear Matte Finish for Artists' Paintings Rendered With Acrylic and Vinyl Resins, Lacquers and Oils for Eliminating Glossy and Flat Spots and for Giving Them a Uniform Finish.
First use Aug. 23, 1965.

SN 244,474. Essex Chemical Corporation, Clifton, N.J. Filed Apr. 28, 1966.

BETACOTE

The lining shown in the drawing is intended as shading only and does not represent any particular color. The term "Cote" is disclaimed apart from the mark as shown.
For Coating for Cement and Terrazzo Floors.
First use Sept. 4, 1964.

SN 262,658. United States Steel Corporation, Pittsburgh, Pa. Filed Jan. 17, 1967.



Owner of Reg. No. 558,443.
For Protective Coating Products—Namely, Coal Tar Pitch-Epoxy Resin Coatings, Epoxy Resin Coatings, Zinc Rich Coatings, and Coal Tar Coatings.
First use at least as early as July 20, 1966, on coal tar pitch-epoxy resin coatings.

Class 17—Tobacco Products

SN 232,407. P. Lorillard Company, New York, N.Y. Filed Nov. 9, 1965.

DUNCAN

For Cigarettes.
First use June 4, 1965.

SN 248,004. The American Tobacco Company, New York, N.Y. Filed June 14, 1966.

BULL DURHAM

Owner of Reg. No. 186,304.
For Smoking Tobacco and Cigarettes.
First use 1948.

Class 18—Medicines and Pharmaceutical Preparations

SN 236,557. Beecham Group Limited, d.b.a. Beecham Research Laboratories, Brentford, Middlesex, England. Filed Jan. 17, 1966.

NALPEN

Priority claimed under Sec. 44(d) on British Reg. No. 882,746, dated Aug. 5, 1965.
For Antibiotic Preparations.

SN 236,937. H. Trommsdorff, Aachen, Germany. Filed Jan. 20, 1966.

TROMCARDIN

Owner of German Reg. No. 742,614, dated Nov. 17, 1960.
For Drugs—Namely, Cardiac Drugs.

SN 238,540. The Kendall Company, Walpole, Mass. Filed Feb. 10, 1966.

PIL-DIGIS

For Digitalis.
First use Oct. 14, 1965.

SN 252,699. Ellis Viers, d.b.a. Zo-Ro Medicine Company, Grundy, Va. Filed Aug. 18, 1966.

ZO-RO

For Iron Tonic and Aspirin.
First use at least as early as December 1964.

SN 261,563. Smith, Miller & Patch, Inc., New York, N.Y. Filed Dec. 28, 1966.

QUADRA-SED

For Sedative.
First use Nov. 17, 1954.

Class 19—Vehicles

SN 231,229. R.F.D. Incorporated, Richwood, W. Va. Filed Oct. 22, 1965.



For Liferafts and Inflatable Boats.
First use June 16, 1965.

SN 233,422. Waggonfabrik Uerdlingen A.G. Werk Düsseldorf, Dusseldorf, Germany. Filed Nov. 26, 1965.



Owner of German Reg. No. 648,055, dated Aug. 24, 1953.
For Motor-Driven Railroad Cars and Parts Thereof.

SN 237,945. Du-Fold, Inc., Cleveland, Ohio. Filed Feb. 3, 1966.

WHEELAWAY

For Utility Hand Cart.
First use Oct. 11, 1965.

SN 238,826. Alfa Romeo S.p.A., Milan, Italy. Filed Feb. 15, 1966.



Priority claimed under Sec. 44(d) on Italian application filed Sept. 8, 1965; Reg. No. 173,700, dated Dec. 6, 1965. Owner of U.S. Reg. No. 228,220.
For Motor-Cars and Spare Parts Thereof.

SN 239,853. Rolls-Royce Limited, Derby, England. Filed Jan. 3, 1966.

SILVER SHADOW

Priority claimed under Sec. 44(d) on British Reg. No. 896,388, dated Nov. 3, 1965.
For Automobiles.

SN 245,241. Royal Craft Marine, Inc., Kansas City, Mo. Filed May 9, 1966.



The word "Craft" is disclaimed apart from the mark as shown.
For Pontoon Boats.
First use Apr. 14, 1966.

SN 245,762. Strick Corporation, Fairless Hills, Pa. Filed May 16, 1966.

SEA TRAILER

For Truck Trailer Bodies Demountable From Over-the-Road Wheeled Chassis and Transferable as Such Intermodally to Railroad Cars, Ships, and Aircraft.
First use Apr. 4, 1966.

SN 247,222. Gerring Industries, Inc., Shippensburg, Ind. Filed June 3, 1966.

FOREST PARK

For Mobile Homes, Travel Trailers, Campers, and Pickup Campers.
First use May 6, 1966.

SN 247,408. Raybestos-Manhattan, Inc., Passaic, N.J. Filed June 6, 1966.

**RAYMOLD
RIVETED**

Applicant disclaims the term "Riveted" apart from the mark. Owner of Reg. No. 652,058.
For Lining That Is Sold as a Component of Lined Brake Shoes.
First use May 18, 1966.

SN 259,628. Yankee Motor Corporation, Schenectady, N.Y. Filed Nov. 29, 1966.

YANKEE

For Motorcycles.
First use Nov. 16, 1966.

Class 20 — Linoleum and Oiled Cloth

SN 248,184. Wallpaper Mills, Inc., Pennell, Pa. Filed June 15, 1966.



For Synthetic Plastic Wall Covering.
First use June 9, 1965.

Class 21 — Electrical Apparatus, Machines, and Supplies

SN 124,304. Sunbeam Corporation, Chicago, Ill. Filed July 19, 1961.

SPRAY MIST

For Electric Pressing Irons.
First use July 7, 1961.

SN 133,440. Anderson Electric Corporation, Leeds, Ala. Filed Dec. 6, 1961.



For Electrical Clamps, Electrical Connectors, and Electrical Fittings.
First use July 1, 1956.

SN 208,633. Signal Oil and Gas Company, Los Angeles, Calif. Filed Dec. 21, 1964.

SUPER-TEST

For Batteries.
First use Sept. 24, 1964.

SN 216,612. Northern Electric Company Limited, Montreal, Quebec, Canada. Filed Apr. 15, 1965.

Northern Electric

Priority claimed under Sec. 44(d) on Canadian application filed Jan. 11, 1965; Reg. No. 141,255, dated July 23, 1965.
For Audio Frequency Apparatus and Equipment; Voice Frequency Telegraph Equipment; Carrier and Multiplex Equipment; and Radio and Microwave Equipment.

SN 224,190. Globe Illumination Company, Gardena, Calif. Filed July 26, 1965.

LINEA

For Non-Display Space Lighting Fixtures.
First use Feb. 3, 1965.

SN 227,170. Murata Manufacturing Co., Ltd., Nagaoka-cho, Otokuni-gun, Kyoto-fu, Japan. Filed Sept. 3, 1965.



For Electrical Apparatus, Machines, and Supplies, Including Rectifiers, Transformers, Induction Voltage Regulators, Switchboards, Relays, Switches, Resistors, Circuit Breakers, Static Condensers, Reactors, Fuses, Connectors; Electric Batteries Including Dry Cells, Wet Cells; Storage Batteries; Electrical Materials Including Insulators, Electrodes, Armature Brushes, Magnetic Cores; Electron Tubes Including Braun Tubes, Rectifier Tubes, Discharge Tubes; and Semiconductor Devices Including Diodes, Transistors, and Thermistors.
First use Dec. 16, 1964; in commerce Dec. 28, 1964.

SN 227,831. Electronic Tube Sales Inc., New York, N.Y. Filed Sept. 15, 1965.



Owner of Reg. No. 684,719.
For Electronic Tubes and Semiconductor Diodes and Semiconductor Transistors.
First use June 4, 1966.

SN 228,791. The Louis Allis Company, Milwaukee, Wis. Filed Sept. 27, 1965.



For Electric Motors.
First use May 4, 1964.

SN 228,993. Compagnie Francaise Thomson Houston-Hotchkiss Brandt, Paris, France, by change of name from Compagnie Francaise Thomson-Houston, Paris, France. Filed Sept. 30, 1965.



Priority claimed under Sec. 44(d) on French Reg. No. 530,593, dated Apr. 26, 1965. The mark is in the shape of a boomerang having a single pointed upper end and a lower end which is bifurcated to provide two distinct points.

For Electronic and Electromagnetic Apparatus for Measuring or Physically Analyzing Bodies—Namely, Apparatus for Testing Neutron Chains; Oscillographs; Mass Spectrometers; Electronic Tubes; Cathode Tubes; Electronic or Nuclear Paramagnetic Resonance Detectors and Vacuum Pumps.

SN 229,403. Basic Products Corporation, Milwaukee, Wis. Filed Oct. 6, 1965.

ANCHOR

For Electric Wiring Devices for Electric Service Entrance Equipment, Electric Meter Sockets, Switch Boxes, and Electric Equipment Cabinets.
First use January 1937.

SN 229,450. Pittsburgh Standard Conduit Company, Verona, Pa. Filed Oct. 6, 1965.

PLASTI-CON

For Rigid Plastic Electrical Conduit.
First use Apr. 18, 1964.

SN 229,528. Interlab, Inc., Harmon-on-Hudson, N.Y. Filed Oct. 7, 1965.

MICRO-RINSE

For Equipment for use in the Electronics Industry To Clean Parts With Water Which May Be Ultrasonically Energized.
First use June 14, 1965.

SN 231,594. Rama Corporation, San Jacinto, Calif. Filed Oct. 24, 1965.



The lining on the mark as it appears on the drawing indicates color contrast only. Color as an integral portion of the mark is disclaimed.

For Electric Resistance Heating Elements for Industrial Use.
First use September 1963.

SN 239,300. The New York Air Brake Company, New York, N.Y. Filed Feb. 21, 1966.



For Electric Motor Controllers.
First use Nov. 3, 1965.

SN 240,600. Electronized Chemicals Corporation, Burlington, Mass. Filed Mar. 10, 1966.



For Heat-Shrinkable Insulation—Namely, Tubing and Tape Having Selected Dielectric Strengths, Dielectric Constants and Volume Resistivities Which Are Used for Insulatively Encapsulating Electrical Products.
First use Mar. 23, 1965.

SN 241,694. Stackpole Carbon Company, St. Marys, Pa. Filed Mar. 23, 1966.

TRI-POWER

For Dynamo-Electric Machine Brushes.
First use Oct. 25, 1965.

SN 241,830. H. W. Tuttle & Company, Tecumseh, Mich. Filed Mar. 24, 1966.

INTIMATE FINGERS OF WARMTH

For Electrical Resistance Contact Heaters.
First use January 1965.

SN 262,552. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Jan. 16, 1967.



For Electric Heating Panel.
First use Dec. 10, 1964.

Class 22—Games, Toys, and Sporting Goods

SN 228,591. Hickory & Tweed, Inc., Armonk, N.Y. Filed Sept. 27, 1965.



Without waiving any of its common law rights therein, applicant disclaims the date "1961" apart from the mark as shown.

For Skis, Ski Poles, Ski Boots, Ice Skates, and Snow Shoes.
First use at least as early as 1961.

SN 233,414. Storm Manufacturing Co., Norman, Okla. Filed Nov. 26, 1965.

THIN FIN

For Fishing Lures.
First use June 28, 1965.

SN 241,833. The Van Dam Rubber Co., Inc., Bronx, N.Y. Filed Mar. 24, 1966.

MERRY MASK

No claim of exclusive right is made to "Mask," for the goods recited.

For Plastic Masquerade Masks.
First use Mar. 14, 1966.

SN 242,876. Alvin G. Ames, Arlington, Va. Filed Apr. 7, 1966.

NIMBLE

For Educational and Toy Device Having a Pendulum Which Swings Over and Around Various Obstacles for Teaching and for Developing Agility.
First use March 1964.

SN 243,263. Pop's Sporting Goods Supplies, Sierraville, Calif. Filed Apr. 12, 1966.

POP'S

For Casting Sinkers.
First use May 14, 1965.

SN 243,592. Robert P. Smith, Evergreen, Colo. Filed Apr. 15, 1966.



For Ski Goggles.
First use on or about Feb. 1, 1966.

SN 244,237. North American Golf, Inc., Los Angeles, Calif. Filed Apr. 25, 1966.



For Golf Balls.
First use July 15, 1965.

SN 246,362. Protecto Plastics, Inc., Wind Gap, Pa. Filed May 23, 1966.



No claim is made to the word "Kaddy" apart from the mark as shown.

For Plastic Carrying Cases—Namely, Billiard, Tennis Racquet, and Bow and Arrow Cases.
First use January 1964 on billiard and tennis racquet cases.

SN 246,456. Defender, Inc., Philadelphia, Pa. Filed May 24, 1966.

CLINIC

For Athletic Protective Accessories—Namely, Athletic Supporters, Combination Cup Supporters With Protective Plastic and Fiber Cups, Wrestling Knee Pads, Basketball Knee Pads, Tennis Wristlets, Tank Suits, Ankle Supporters, Wrist Supporters, Thigh Supporters, Football Hand Guards, Gymnasts' Palm Guards, and Forearm Guards.
First use on or about Apr. 25, 1966.

SN 246,530. Alice L. Beach, Palo Alto, Calif. Filed May 25, 1966.

POLYCHECK

For Equipment Sold as a Unit for Playing a Three-Dimensional Checker Game.
First use Apr. 4, 1966.

SN 246,596. Parisi Industries, Inc., Brooklyn, N.Y. Filed May 25, 1966.

CLASS OF '69

For Stuffed Toys.
First use May 19, 1966.

SN 246,598. Parisi Industries, Inc., Brooklyn, N.Y. Filed May 25, 1966.

CLASS OF '66

For Stuffed Toys.
First use Jan. 14, 1966.

SN 262,255. Judson E. Cornish, Los Angeles, Calif. Filed Jan. 10, 1967.

CRAWLIGATOR

For Infants' Riding Toy.
First use Dec. 5, 1962.

SN 263,730. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Feb. 1, 1967.

WIN, PLACE & SHOW

For Apparatus Sold as a Unit for Playing a Board Game.
First use Sept. 20, 1966.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 223,163. Rotavol Etablissement, Vaduz, Liechtenstein. Filed July 12, 1965.



ROTAVOL

Priority claimed under Sec. 44(d) on Liechtenstein Reg. No. 1,853, dated Jan. 11, 1965.

For Rotary Piston Pumps, Internal Combustion Engines, Compressors for Vehicles, and Vacuum Air Pumps.

SN 223,909. Rheem Manufacturing Company, New York, N.Y. Filed July 21, 1965.

TIPPER CLIPPER

No claim is made to the word "Clipper" apart from the mark as shown. Owner of Reg. Nos. 665,973 and 667,999.

For Machines for Applying Closure Fasteners for Meat and Other Product-Containing Enclosures.
First use Aug. 6, 1957.

SN 224,682. T.H.M. Societe des Turbines Hispano-Suiza et S.N. Marep, Bois-Colombes, Seine, France. Filed May 12, 1965.



The word "Turbines" is disclaimed apart from the mark as shown. Owner of French Reg. No. 522,585, dated June 5, 1964.

For Gas Turbines for Stationary Plants and for Vehicles of Every Kind.

SN 229,307. Sundstrand Corporation, Rockford, Ill. Filed Oct. 4, 1965.

SUNDYNE

Owner of Reg. Nos. 703,909 and 803,011.
For Compressors and Gear Boxes.
First use June 21, 1965.

SN 231,475. Panther Pump & Equipment Co., Inc., Chicago, Ill. Filed Oct. 23, 1965.

HERO

For Paint Spray Pumps.
First use Aug. 1, 1964.

SN 232,221. Manton Gaulin Manufacturing Company, Inc., Everett, Mass. Filed Nov. 5, 1965.



TRI-D

For Reciprocating Plunger Pumps.
First use Aug. 19, 1965.

SN 232,466. Little Giant Corporation, d.b.a. Little Giant Pump Co., and Little Giant Pump Company, Oklahoma City, Okla. Filed Nov. 10, 1965.

TALL JOHN

Owner of Reg. No. 787,762.
For Electrically Driven Sump and Recirculating Pumps.
First use June 21, 1965.

SN 233,090. Fairfield Manufacturing Company, Inc., Lafayette, Ind. Filed Nov. 22, 1965.



For Gears, Shafts, Differentials of All Types, and Components Thereof.
First use in or about 1932.

SN 233,323. Chemetron Corporation, Chicago, Ill. Filed Nov. 26, 1965.

HIDE-AWAY

For Packing House Equipment—Namely, Hide Removing Apparatus.
First use Mar. 19, 1965.

SN 241,849. Baldwin-Lima-Hamilton, Philadelphia, Pa. Filed Mar. 25, 1966.

AUSTIN-WESTERN

For Industrial and Construction Equipment and Vehicles.
First use on or prior to Dec. 31, 1936.

SN 242,512. Sperry Rand Corporation, d.b.a. Tulsa Products Division of Vickers Incorporated Division, Tulsa, Okla. Filed Apr. 1, 1966.



Owner of Reg. No. 512,755.
For Winches, Power Take-Offs, Power Transmission Mechanisms, and Ratio Speed Changers.
First use on or about Dec. 13, 1962.

SN 243,409. Chicago Bridge & Iron Company, Oak Brook, Ill. Filed Apr. 14, 1966.

THERMAPRILL

For Prilling Apparatus Comprised of Holding Tanks, Pumps, Nozzles, Hot Chamber, Prilling Tower, and Prill Handling Mechanisms.
First use Mar. 24, 1966.

SN 244,214. Grob & Co. Limited, Horgen, Zurich, Switzerland. Filed Apr. 25, 1966.

GROBEXTRA

Owner of Swiss Reg. No. 199,707, dated Sept. 6, 1963.
For Loom Components—Namely, Weaving Heddles, Heddle Frames, Weaving Harnesses, Drop Wires, and Warp Stop Motions.

SN 244,587. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Apr. 29, 1966.

IMPERIAL PRINCESS

Owner of Reg. Nos. 539,856, 764,621, and others.
For Kitchen Cutlery Including Knife Holders and Steak Knives, Utility Knives, Kitchen Knives, Fish Knives, Paring Knives, Bread Knives, Pocket Knives, Carving Knives, Fruit Knives, Penknives, Hunting Knives, Pruning Knives, Table Knives, Bar Knives, Butcher Knives, Chefs' Knives and French Cooks' Knives.
First use Apr. 14, 1966.

SN 246,787. Houdaille Industries, Inc., Buffalo, N.Y. Filed May 27, 1966.



Owner of Reg. No. 599,941.
For Machine Tools—Namely, Turret Drills, Turret Drill Heads, and Accessories Therefor.
First use at least as early as Apr. 27, 1959; June 1948 as to "Burgmaster."

SN 247,268. Studebaker Corporation, South Bend, Ind. Filed June 8, 1966.



FASTEP

For Mechanical Driving Systems—Namely, Clutches and Mechanical Brakes and Electromechanical Clutches.
First use June 6, 1966.

SN 251,596. Avco Corporation, Williamsport, Pa. Filed Aug. 3, 1966.



For Tractors and Parts Thereof, and Tractor Attachments Including Lawn Mowers.
First use Mar. 25, 1966.

SN 247,477. Avco Corporation, Coldwater, Ohio. Filed June 7, 1966.



Owner of Reg. Nos. 437,363, 443,746, and others.
For Internal Combustion Engines and Components.
First use July 11, 1966.

Class 26—Measuring and Scientific Appliances

SN 232,921. Libby's Northton Camera Co., Chicago, Ill. Filed Nov. 18, 1965.

INSTAPAC

For Combined Package Containing Carrying Case, Camera, Flash Bulbs, Film, and Lenses.
First use July 15, 1965.

SN 235,598. Tesa S.A., Renens, Switzerland. Filed Dec. 30, 1965.

TESAMASTER

Owner of Swiss Reg. No. 151,367, dated May 19, 1954; and U.S. Reg. Nos. 622,195 and 623,005.
For Precision Measuring Instruments—Namely, Micrometers.

SN 238,337. Bucky X-Ray International Inc., New York, N.Y. Filed Feb. 8, 1966.



For Portable X-Ray Apparatus.
First use November 1965.

SN 245,248. Signaltron Corporation, East Elmhurst, N.Y. Filed May 9, 1966.

DISPLAYMATIC

For Display Instruments—Namely, Scoreboards for Sport and Industry, Timetable Boards for the Transportation Industry, and Statistical Boards.
First use Apr. 29, 1966.

NU-CASE

For Case and/or Carton Washer.
First use Dec. 13, 1965.

SN 247,561. American Bottlers Equipment Company, Baltimore, Md. Filed June 8, 1966.

NU-CASE

For Case and/or Carton Washer.
First use Dec. 13, 1965.

SN 247,588. Everywhere Specialties, Inc., Bronx, N.Y. Filed June 8, 1966.

EARLY AMERICAN

For Bagel Slicer.
First use Mar. 1, 1966.

SN 247,697. Houdaille Industries, Inc., Buffalo, N.Y. Filed June 9, 1966.

TRU-FORM

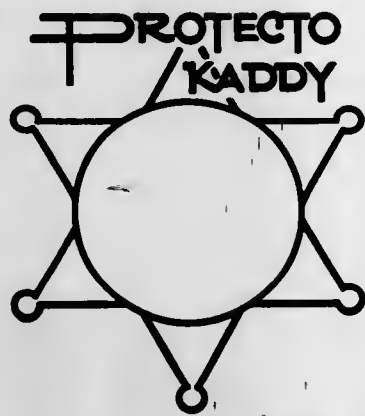
Owner of Reg. No. 714,531.
For Bending Dies.
First use March 1964.

SN 247,698. Houdaille Industries, Inc., Buffalo, N.Y. Filed June 9, 1966.

SNAP-FORM

Owner of Reg. No. 714,531.
For Bending Dies.
First use March 1964.

SN 246,363. Protecto Plastics, Inc., Wind Gap, Pa. Filed May 23, 1966.



No claim is made to the word "Kaddy" apart from the mark as shown.
For Plastic Carrying Cases—Namely, Scope and Camera Cases.
First use January 1965.

SN 252,624. Ries Distributors, Inc. (of which Riesco Manufacturing Co. is a division), Chicago, Ill. Filed Aug. 18, 1966.

RIESCO

For Sun Glasses.
First use January 1959.

Class 27—Horological Instruments

SN 241,950. Watch Import Corporation, New York, N.Y. Filed Mar. 25, 1966.

GERMINAL VOLTAIRE

For Watches and Watch Components.
First use Feb. 10, 1965.

Class 28—Jewelry and Precious-Metal Ware

SN 233,420. Tessuflex International Inc., New York, N.Y., assignee of 3b Bracelets Boites Bijoux, Vicenza, Italy. Filed Nov. 26, 1965.

Tessuflex

For Extensible Metallic Bracelets in Gold and Other Metals.
First use Jan. 1, 1965; in commerce Sept. 13, 1965.

Class 29—Brooms, Brushes, and Dusters

SN 243,142. Ted J. Kubit and William S. Stanton (joint owners), Farmington, Mich. Filed Apr. 11, 1966.

**DISPOSE
a.
BRUSH**

For Disposable Paint Applicators.
First use Mar. 15, 1966.

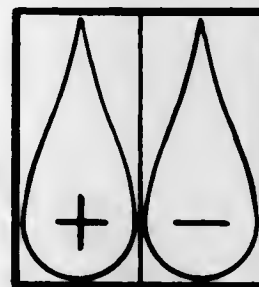
Class 31—Filters and Refrigerators

SN 233,009. Sears, Roebuck and Co., Chicago, Ill. Filed Nov. 19, 1965.

TWINDOR CUPBOARD

The word "Twindor" is disclaimed apart from the mark as shown, without prejudice to applicant's common law rights.
For Electric Refrigerators and Refrigerator-Freezers.
First use on or about Oct. 8, 1965.

SN 247,584. Continental Water Conditioning Corporation, El Paso, Tex. Filed June 8, 1966.



For Water Conditioning Apparatus.
First use on or about Apr. 1, 1966.

Class 32—Furniture and Upholstery

SN 240,418. United States Plywood Corporation, New York, N.Y., assignee of Del-Mar Industries, Inc., Fulton, Ga. Filed Mar. 8, 1966.

COUNTRY CASUAL

For Kitchen Cabinets.
First use Dec. 20, 1965.

SN 246,380. Sleepy Lagoon Limited, Lower Broughton, Salford, England. Filed May 23, 1966.

SLEEPY LAGOON

Owner of British Reg. No. 756,889, dated Aug. 23, 1956.
For Divans and Headboards.

SN 250,770. Restonic Corporation, Chicago, Ill. Filed July 21, 1966.

FASHIONSET

For Mattresses and Springs.
First use May 31, 1966.

SN 251,934. Norman B. Levine, d.b.a. All-Brite Mirror Works, Detroit, Mich. Filed Aug. 8, 1966.

ANTIGUA

For Framed Mirrors.
First use Feb. 6, 1966.

SN 252,810. Breneman, Inc., Cincinnati, Ohio. Filed Aug. 22, 1966.

**thermo
ban**

For Window Shades.
First use Aug. 15, 1966.

SN 252,943. Banner Bedding Company, Inc., Jackson, Miss. Filed Aug. 23, 1966.



For Mattresses.
First use Mar. 7, 1966.

SN 253,646. E. H. & A. C. Friedrichs Co., New York, N.Y. Filed Sept. 1, 1966.

FREDRIX

Owner of Reg. Nos. 188,623, 258,845, and 822,522.
For Easels.
First use May 1925.

SN 254,404. Southwestern Drug Corporation, d.b.a. Medallion Fixture and Equipment Company, Dallas, Tex. Filed Sept. 13, 1966.

MEDALLION

For Store Fixtures—Namely, Display Stands, Display Racks, and Display Cabinets.
First use July 2, 1962.

SN 255,992. Lawrence A. Loeb and Allan L. Loeb (joint owners), New Haven, Conn. Filed Oct. 7, 1966.

SKIPPER'S SADDLE

For Adjustable Seat and Back Rest.
First use Sept. 16, 1966.

Class 34—Heating, Lighting, and Ventilating Apparatus

SN 243,653. Eutectic Welding Alloys Corporation, Flushing, N.Y. Filed Apr. 18, 1966.

EUTALLITE

For Metallic Powders for Use Particularly as a Consumable in a Variety of Welding Processes, for Example, Flame Spraying.
First use Oct. 19, 1965.

SN 245,886. Colt Ventilation and Heating Limited, Surbiton, Surrey, England. Filed May 16, 1966.

SPITFIRE

Owner of British Reg. No. 888,604, dated Dec. 28, 1965.
For Ventilating Apparatus for Roof Installation.

SN 246,267. Charmglow Products, Inc., Antioch, Ill. Filed May 23, 1966.

CHARMGLOW

Owner of Reg. No. 704,310.
For Lamp Posts, Torch Lights, and Outdoor Grills.
First use not later than April 1962 on lamp posts and outdoor grills.

SN 246,803. Plastic & Metal Fabricators, Inc., West Haven, Conn. Filed May 25, 1966.

HYDRO-HOOD

For Fume and Air Scrubbing and Washing Apparatus.
First use Dec. 15, 1962.

SN 262,774. The Dow Chemical Company, Midland, Mich. Filed Jan. 18, 1967.



Owner of Reg. Nos. 140,588, 779,839, and others.
For Torch Handles, Torch Tips, High Pressure Hose and Flow Check Valves, Sold as a Unit and as Separate Parts.
First use Nov. 16, 1962, on tips for torches; prior to 1895 as to "Dow"; at least as early as 1910 as to "Dow" within a diamond design.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 229,799. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Oct. 11, 1965.

AERO-EM

For Tread Rubber Used in the Manufacture of Tires.
First use Oct. 24, 1962.

SN 240,392. O.K. Tire and Rubber Co., Inc., Wilmington, Del., assignee of O.K. Tire and Rubber Co., Littleton, Ohio. Filed Mar. 7, 1966.

STARLEADER

For Vehicle Tires.
First use on or about Jan. 3, 1966.

SN 240,761. Moore Manufacturing Inc., San Francisco, Calif. Filed Mar. 11, 1966.

SIGNATURE

Owner of Reg. No. 581,358.
For Plastic and Rubber Garden Hose and Air Hose, and Conveyor Belting.
First use Oct. 12, 1948.

SN 240,764. Moore Manufacturing Inc., San Francisco, Calif. Filed Mar. 11, 1966.

CABLE CAR

For Garden Hose.
First use Oct. 15, 1964.

SN 240,768. Moore Manufacturing Inc., San Francisco, Calif. Filed Mar. 11, 1966.

RAINKIST

Owner of Reg. No. 579,840.
For Garden Hose.
First use Nov. 3, 1951.

Class 36 — Musical Instruments and Supplies

SN 190,176. Hammond Organ Company, Chicago, Ill. Filed Apr. 2, 1964.

HAMMOND

Owner of Reg. No. 551,574.
For Pianos.
First use Aug. 7, 1963.

SN 226,797. Walter E. Smith, Caldwell, Idaho. Filed Aug. 30, 1965.

MEL-O-BAR

For Guitars.
First use May 10, 1965.

SN 230,046. Government Services, Inc., d.b.a. Fontana Village Resort, Washington, D.C. Filed Oct. 18, 1965.



For Phonograph Records.
First use July 11, 1965.

SN 231,121. The Fred. Gretsch Mfg. Co., Brooklyn, N.Y. Filed Oct. 22, 1965.

BACON

For Banjos, Banjo Strings, Banjo Picks, and Banjo Accessories.
First use Feb. 2, 1925.

SN 237,361. London Records, Inc., New York, N.Y. Filed Jan. 26, 1966.

phase **4** stereo

Exclusive right to the use of the word "Stereo" is disclaimed apart from the mark as shown. Owner of Reg. No. 791,415.

For Phonograph Records and Pre-recorded Tapes.
First use May 1962; July 26, 1961, in a different form of display.

SN 238,548. London Press Exchange Limited, London, England. Filed Feb. 10, 1966.

TELPEX

Owner of British Reg. No. 874,001, dated Jan. 8, 1965.
For Taped Recordings.

SN 240,095. Grossman Music Corporation, Cleveland, Ohio. Filed Mar. 3, 1966.

DUPLEX

For Drums, Tom-Toms, Timbales, Tympani, Chimes, Marimbas, Vibraphones, Xylophones, Bell Lyras, Bongos, Congos, Gourds, Cymbals, Gongs, Temple Blocks, Wood Blocks, Triangles, Cowbells, Foot Pedals, Sock Pedals, Drum Heads, Drum Stands, Drum Thrones, Drum Cradles, Drum Sticks, Jazz Brushes, Drum Beaters, Tympani Beaters, Drum Mufflers, Drum Silings, Leg Rests, Tom-Tom Holders, Cymbal Holders, Cymbal Stands, Cymbal Pads, Drum Snares, Stick Trays, Drum Strainers, Drum Covers, Drum Cases, Tambourines, Drum Practice Pads, Drum Major Whistles, Bell Lyra Carriers, Bell Lyra Mallets, Batons, Banjo Heads, Guitars, Banjos, Mandolins, Ukuleles, Harmonicas, Trumpets, Bugles, Trombones, Clarinets, Saxophones, Recorders (Block Flutes), Violins, Violas, Basses and Saxophone and Clarinet Reeds.
First use on or about Feb. 1, 1937.

SN 240,705. C. Bruno & Son, Incorporated, New York, N.Y. Filed Mar. 11, 1966.

MAXITONE

For Guitars, Ukuleles, Drums, Cymbals, Strings, Electric Guitars, and Electric Bases.
First use Sept. 10, 1961.

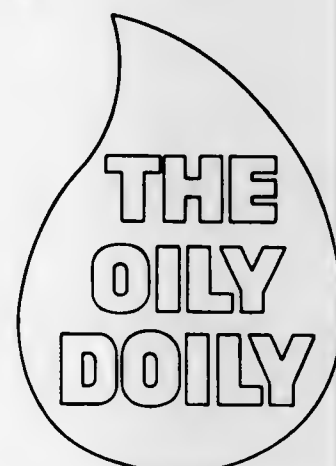
SN 240,977. Strike Records Limited, London, England. Filed Mar. 14, 1966.

STRIKE

Priority claimed under Sec. 44(d) on British Reg. No. 888,362, dated Dec. 17, 1965.
For Gramophone Records and Sound Records.

Class 37 — Paper and Stationery

SN 235,401. Federal-Mogul Corporation, Detroit, Mich. Filed Dec. 28, 1965.



For Treated Paper for Absorbing Oil, Grease, Brake Fluids, and the Like Which Drip From Automotive Vehicles.
First use Sept. 24, 1964.

SN 236,926. Scripto, Inc., Atlanta, Ga. Filed Jan. 20, 1966.

ACCENTER

For Fiber Tip Pens.
First use Jan. 4, 1966.

SN 242,513. J. S. Staedtler, Nuernberg, Germany. Filed Apr. 1, 1966.

NYLOPEN

For Stationery—Namely, Pencils, Pencil Slips, Slate Pencils, Pointers, Pencil Protectors, Pencil Cases (Not of Precious Metals), Mechanical Pencils and Refill Leads Therefor, Lead Holders and Refill Leads Therefor, Penholders, Erasers, Ball Point Pens, Ball Point Pencils and Refills for Ball Point Pens and Ball Point Pencils, Fountain Pens and Parts Thereof, Liquid Lead and Dry Ink Pens; and Drawing Materials—Namely, Chalk, Crayons, Pastels, and Felt Markers.
First use June 21, 1965; in commerce June 21, 1965.

SN 246,499. Textron Inc., Fort Madison, Iowa. Filed May 24, 1966.

STYLIST

For Fountain Pens, Ball Point Pens, and Mechanical Pencils.
First use Apr. 22, 1960.

SN 252,462. Bro-Dart Industries, Inc., Newark, N.J. Filed Aug. 16, 1966.

DUPLEX

Owner of Reg. No. 714,533.
For Protective Covers for Paper Book Jackets and Books, Adjustable to Book Size and Consisting of Two Elements Adhesively Joinable.
First use March 1952.

SN 255,528. Carl G. Gilmore, d.b.a. Airdraulics Company, Pasadena, Calif. Filed Sept. 30, 1966.

BEAM

For Ball Point Pens.
First use May 13, 1966.

Class 38 — Prints and Publications

SN 229,880. Louis E. Schwartz, New York, N.Y. Filed Oct. 11, 1965.

SEE HEAR

For Teaching Equipment Consisting of Tape Recordings and Books, Leaflets, Pictorial Illustrations and Charts Associated With Said Tape Recordings.
First use Sept. 8, 1965.

SN 233,867. The Billboard Publishing Company, Cincinnati, Ohio. Filed Dec. 3, 1965.

HOT 100

For Record Popularity Chart, Issued Periodically.
First use on or about Nov. 16, 1963.

SN 233,868. The Billboard Publishing Company, Cincinnati, Ohio. Filed Dec. 3, 1965.

TOP LP'S

For Record Popularity Chart, Issued Periodically.
First use on or about May 25, 1969.

SN 238,059. Dorland Publishing Company, West Chester, Pa. Filed Feb. 4, 1966.

DORLAND'S MEDICAL DIRECTORY

No claim is made to the words "Medical Directory" apart from the mark as shown.
For Periodic Directory.
First use February 1957.

SN 238,643. Lancet Publications, Inc., Minneapolis, Minn. Filed Feb. 11, 1966.

GERIATRICS

For Periodical Publication in the Form of a Magazine, Published and Issued Monthly.
First use prior to Feb. 28, 1946.

SN 238,653. Modern Medicine Publications, Inc., Minneapolis, Minn. Filed Feb. 11, 1966.

REVIEW OF MODERN MEDICINE

Owner of Reg. No. 537,187.
For Semiannual Book (Reprinting and Indexing the Clinical Articles and Certain Other Material That Appeared in the Preceding Half Year in Modern Medicine).
First use prior to Dec. 31, 1958.

SN 238,754. Lancet Publications, Inc., Minneapolis, Minn. Filed Feb. 14, 1966.

NEUROLOGY

For Periodical Publication in the Form of a Magazine, Published and Issued Monthly.
First use prior to Feb. 28, 1951.

SN 243,307. Robert F. Casper, d.b.a. Sarbo Photography, Albuquerque, N. Mex. Filed Apr. 13, 1966.

SARBO

For Photographs, Transparencies, Pictorial Postcards, and Booklets, and Illustration Brochures.
First use July 29, 1962.

SN 243,776. Council on Foreign Relations, Inc., New York, N.Y. Filed Apr. 19, 1966.

FOREIGN AFFAIRS

AN AMERICAN QUARTERLY REVIEW



The Latin word "Ubique," appearing in the design, is translated, into English, as "everywhere." No claim is made to the words "An American Quarterly Review" apart from the mark shown.

For Magazine Issued Quarterly.
First use Sept. 12, 1922.

SN 245,170. The Denver Post, Inc., Denver, Colo. Filed May 9, 1966. SN 246,940. Press-Tech, Inc., Evanston, Ill. Filed May 31, 1966.

BONUS

For Monthly Supplement to a Daily Newspaper.
First use Aug. 10, 1965.

SN 245,392. Dot Zero, Incorporated, New York, N.Y. Filed May 11, 1966. SN 247,117. Gospel Light Publications, Glendale, Calif. Filed June 2, 1966.

dot zero

For Quarterly Magazine.
First use April 1966.

SN 245,845. News Express, Inc., Bowie, Md. Filed May 17, 1966.

Belair News Express

For Newspaper.
First use Dec. 15, 1966.

SN 245,988. Standard International Corporation, Andover, Mass. Filed May 18, 1966.



The mark consists of the letter "S" and design.
For Semi-Annual Brochures and Reports.
First use Oct. 7, 1965.

SN 246,455. Columbia Pictures Corporation, New York, N.Y. Filed May 24, 1966.

COLUMBIA PICTURES

Owner of Reg. No. 344,799.
For News Bulletins Issued From Time to Time Throughout the Year.
First use Apr. 28, 1966.

SN 246,740. Affiliated Personnel Service, Inc., Madison, Wis. Filed May 27, 1966.

THE HIRING LINE

For Newsletter Issued From Time to Time.
First use Apr. 14, 1966.

SN 246,808. National Publishing Company, Philadelphia, Pa. Filed May 27, 1966.

CRYSTALYNE

For Bibles.
First use Mar. 18, 1966.

VERTICAL WORLD

For Magazine.
First use May 20, 1966.



The word "Books" is disclaimed apart from the mark as shown.

For Books.
First use Oct. 6, 1965.

SN 247,636. Smith Kline & French Laboratories, Philadelphia, Pa. Filed June 8, 1966.

**W H O L E S A L E R**

The word "Wholesaler" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 673,891, 808,529, and others.
For Newsletter to Wholesalers Containing Company and Industry News Published Approximately Four Times a Year.
First use Apr. 22, 1966.

SN 247,976. Singspiration, Inc., Grand Rapids, Mich. Filed June 13, 1966.

SINGSPIRATION

For Hymns, Collections of Songs, and Sheet Music.
First use May 15, 1962.

SN 248,056. Scott Aviation Corporation, Lancaster, N.Y. Filed June 14, 1966.

NEWS-PAK

For House Organ Published Monthly.
First use March 1963.

SN 248,133. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes, New York, N.Y. Filed June 15, 1966.

News-line

Owner of Reg. No. 523,855.
For House Newspaper, Printed and Distributed to the Applicant's Employees.
First use in or about April 1966.

SN 248,448. The Economist Publishing Co., Chicago, Ill. Filed June 20, 1966. SN 259,060. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Nov. 21, 1966.

THE ECONOMIST

For Periodical Magazine.
First use 1912.

SN 248,462. General Features Corporation, New York, N.Y. Filed June 20, 1966.

ALL ABOUT PETS

For Newspaper Feature.
First use Aug. 1, 1965.

SN 248,463. General Features Corporation, New York, N.Y. Filed June 20, 1966.

ALADDIN'S LAMP

For Newspaper Feature.
First use Nov. 25, 1949.

SN 248,464. General Features Corporation, New York, N.Y. Filed June 20, 1966.

MUSIC BEAT

For Weekly Newspaper Column.
First use Jan. 16, 1966.

SN 254,485. Roger Preuss, d.b.a. Wildlife of America, Minneapolis, Minn. Filed Sept. 15, 1966.

WILDLIFE OF AMERICA

Owner of Reg. No. 721,451.
For Calendars, Prints, and Reproductions of Original Paintings.
First use Nov. 15, 1956.

SN 256,432. The Dow Chemical Company, Midland, Mich. Filed Oct. 14, 1966.



Owner of Reg. Nos. 787,578, 807,016, and others.
For Trade Magazines, Trade News Bulletins, and House Organs.
First use October 1937, on house organ; prior to 1895 as to the name "Dow"; at least as early as 1910 as to "Dow" within a diamond design.

SN 258,455. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Nov. 14, 1966.

ALPHY'S

For Educational Books.
First use Sept. 12, 1966.



The mark is a picture of a fictitious person.
For Educational Books.
First use Sept. 12, 1966.

SN 260,871. The Miller Publishing Company, Minneapolis, Minn. Filed Dec. 15, 1966.

THE MILK DEALER

For Monthly Trade Magazine.
First use Dec. 1, 1911.

Class 39 - Clothing

SN 222,253. Blue Bell, Inc., Greensboro, N.C. Filed June 29, 1965.

BOLD VAQUERO

The word "Vaquero" is Spanish for "cowboy."
For Men's and Boys' Shirts, Pants, and Shorts.
First use June 25, 1965.

SN 222,866. Puritan Fashions Corporation, New York, N.Y. Filed July 7, 1965.

JUNIOR PLACE

Applicant disclaims the word "Place," apart from the mark as a whole, while reserving all common law rights therein.
For Women's Dresses, Slacks, Pants, Tops, Jackets, Skirts, Pant Suits, and Raincoats.
First use June 3, 1965.

SN 225,261. Atlas Shirt Company, Inc., New York, N.Y. Filed Aug. 9, 1965.

MARK 550

For Men's, Boys', Girls', and Ladies' Outer Shirts.
First use June 21, 1965.

SN 227,151. Johnny Jones, Jr., Pittsburgh, Pa. Filed Sept. 8, 1965.

Lynn Sue

For Ladies' Skating Skirts and Tights.
First use Jan. 25, 1965.

SN 229,539. Edward F. McCarthy, d.b.a. McBern, Ltd., Ridgewood, N.J. Filed Oct. 7, 1965.

SANS

For Topless Footwear.
First use Sept. 8, 1958.

SN 234,995. Canoe Underwear Co., Pine Grove, Pa. Filed Dec. 21, 1965.



The drawing is lined for yellow or gold. The lining on the boy's jacket reproduces the design of that portion of the mark, and does not represent a color.
For Boys' Trousers.
First use July 1, 1964.

SN 236,915. Newman Cloak & Suit Company, St. Paul, Minn. Filed Jan. 20, 1966.

The
TIFFANDIPTTY
SHOP

For Women's and Children's Clothes and Accessories—Namely, Coats, Suits, Dresses, Skirts, Waists, Waistbands, Blouses, Underwear, Sweaters, Hats, Hosiery, Shoes, Belts, Scarves, Shawls, Pajamas, Nightgowns, Gloves, Robes, Shirts, and Jackets.
First use July 15, 1965.

SN 237,814. Camouflage Manufacturing Company, Jacksonville, Fla. Filed Feb. 2, 1966.

SAF-T-FLAGE

For Hunting Clothing—Namely, Jackets and Trousers of Camouflage Material.
First use Aug. 12, 1965.

SN 242,478. Oxford Manufacturing Company, Inc., Atlanta, Ga. Filed Apr. 1, 1966.

MACTAGGART

For Articles of Clothing—Namely, Men's and Boys' Woven and Knitted Shirts, Jackets, Sweaters, Blouses, Sport Shirts, Hosiery, Mufflers, Gloves, Caps, Trousers, All of These Made for Ordinary Use as Well as Designed Especially for Skiers; Bathing Suits, Raincoats, Hats, Slacks, Slack Suits and Sportcoats.
First use Mar. 6, 1944.

SN 242,989. I. B. Kleinert Rubber Company, New York, N.Y. Filed Apr. 8, 1966.

SANI-BRIEF

Owner of Reg. No. 326,158.
For Women's Underpants.
First use September 1965.

SN 243,326. Maidenform, Inc., New York, N.Y. Filed Apr. 13, 1966.

STITCH-IN-TIME

Owner of Reg. No. 687,997.
For Foundation Garments.
First use Oct. 22, 1957.

SN 245,725. Lisabella, Inc., Los Angeles, Calif. Filed May 16, 1966.

LISABELLA

For Knitwear for Women and Children, Two and Three Piece Suits for Women, One Piece Dresses, and Skirts, Slacks, and Jackets.
First use Dec. 13, 1965.

SN 246,675. Freimuth, Söhne K.G., Neustadt, am Rubenberge, Germany. Filed May 26, 1966.

HYGITEX

Owner of German Reg. No. 778,656, dated Sept. 25, 1962.
For Socks and Stockings, Underwear, and Gloves.

SN 248,060. Stahl-Urban Company, Brookhaven, Miss. Filed June 14, 1966.

SIR RAIN

For Men's and Boys' Raincoats and All-Weather Coats.
First use May 25, 1966.

SN 248,422. Catalina, Inc., Los Angeles, Calif. Filed June 20, 1966.

OFF THE PEG

For Ladies' Jackets, Skirts, Shorts, Shirts, Blouses, Sweaters, Slacks, Dresses, Jumpers, and Suits.
First use Feb. 10, 1966.

SN 249,213. Bear Brand Hosiery Co., Chicago, Ill. Filed June 29, 1966.

TEL-TRIM

For Ladies' Hosiery.
First use February 1950.

SN 250,838. Barbara Gayle, Inc., New York, N.Y. Filed July 22, 1966.

JERICOH CIRCLE

For Ladies' Dresses.
First use May 27, 1966.

SN 251,640. McGregor-Doniger Inc., New York, N.Y. Filed Aug. 3, 1966.

BLAZER LEGS

For Men's and Women's Slacks.
First use July 18, 1966.

SN 251,818. Hanes Corporation, Winston-Salem, N.C. Filed Aug. 5, 1966.



For Hosiery, Particularly Support Stockings.
First use January 1966.

SN 252,371. Findlay Fashions, Inc., New York, N.Y. Filed Aug. 15, 1966.

GREG

For Women's Ready To Wear Coats, Suits, and Costumes.
First use July 1, 1963.

SN 253,844. Billy Budd, Inc., New York, N.Y. Filed Sept. 6, 1966.

BILLY BUDD

The name "Billy Budd" is fanciful.
For Women's Sportswear—Namely, Dresses, Slacks, Jackets, Skirts, Sweaters, Shorts, Blouses, and Shells.
First use at least as early as Apr. 13, 1966.

SN 254,046. Gerson & Gerson, New York, N.Y. Filed Sept. 8, 1966.

BONNIE JEAN

For Children's and Infants' Dresses.
First use on or about June 2, 1966.

Class 40—Fancy Goods, Furnishings, and Notions

SN 239,577. American Greetings Corporation, Cleveland, Ohio. Filed Feb. 25, 1966.

POM POM

For Ribbon Bows for Gift Wrapping Purposes.
First use at least as early as 1961.

SN 251,904. Fashion Tress, Inc., Miami Beach, Fla. Filed Aug. 8, 1966.

PROFESSIONETTE

For Ladies' Wigs and Hair Pieces.
First use on or about July 1, 1966.

SN 252,358. Danal Jewelry Company, Providence, R.I. Filed Aug. 15, 1966.



For Hair Ornaments—Namely, Ornamental Head-Bands, Ornamental Bobby Pins, Ornamental Hair Clips, Ornamental Hair Combs, Ornamental Barrettes, and Ornamental Tiaras.
First use on or about July 27, 1966.

SN 262,573. Fashion Tress, Inc., Miami Beach, Fla. Filed Jan. 16, 1967.

PARISIENNETTE

Owner of Reg. No. 804,836.
For Ladies' Wigs and Hair Pieces.
First use on or about Dec. 19, 1966.

SN 262,995. Stratford, Inc., Minneapolis, Minn. Filed Jan. 23, 1967.

FASHION-ETTE

For Wigs.
First use July 1, 1966.
Subj. to Intf. with SN 255,309.

SN 264,137. Fashion Tress, Inc., Miami Beach, Fla. Filed Feb. 7, 1967.

CROWN

For Ladies' Wigs and Hair Pieces.
First use on or about Jan. 1, 1967.

Class 41—Canes, Parasols, and Umbrellas

SN 254,466. Polan, Katz & Company, Incorporated, Baltimore, Md. Filed Sept. 14, 1966.

GluvBrella

For Umbrellas.
First use Sept. 7, 1966.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 237,920. Barlo of New England, Inc., d.b.a. Barlo, Inc., Cambridge, Mass. Filed Feb. 3, 1966.

RESPONDE

For Stretchable Shoe Upper Fabrics.
First use June 4, 1965.

SN 240,128. United Merchants and Manufacturers, Inc., New York, N.Y. Filed Mar. 8, 1966.

DRAPEEN

For Natural and/or Synthetic and/or Man-Made Fiber Fabrics Adapted To Be Made Up Into Articles of Apparel for Men, Women, and Children.
First use on or about June 27, 1925.

SN 242,154. Union Carbide Corporation, New York, N.Y. Filed Mar. 29, 1966.

UCAR

For Electrically Conductive Fabrics.
First use on or about Aug. 12, 1965.

SN 251,238. Registered Fabrics Corp., New York, N.Y. Filed July 28, 1966.

CREPE MEMOIR

The word "Crepe" is disclaimed separate and apart from the rest of the mark shown.
For Fabrics Made of Rayon, Nylon, and Polyester Fibres.
First use June 24, 1966.

SN 253,558. Riegel Textile Corporation, New York, N.Y. Filed Aug. 31, 1966.

TOUCH OF LUXURY

For Textile Piece Goods To Be Used in the Manufacture of Wearing Apparel, Particularly for Women's and Children's Night Wear.
First use Jan. 14, 1964.

SN 254,032. Berkshire Hathaway, Inc., New Bedford, Mass. Filed Sept. 8, 1966.

FIRE-AWAY

For Flame-Retardant Acetate Yarn Fabrics.
First use Oct. 13, 1965.

SN 254,284. House of Fabrics, Inc., North Hollywood, Calif. Filed Sept. 12, 1966.

SO-FRO

For Fabrics in the Piece Made of Cotton, Silk, Wool, Synthetic Materials, or Combinations Thereof.
First use on or about July 11, 1966.

SN 254,316. Peoples Jute Mills Limited, Khallsapur, Khulna, East Pakistan. Filed Sept. 12, 1966.

PEPJUTE

For Jute Carpet Backing Cloth and Burlap.
First use Oct. 25, 1964; in commerce Oct. 25, 1964.

SN 254,578. Anciens Etablissements Libeert & Cie, Societe Anonyme, Meulebeke, Belgium. Filed Sept. 16, 1966.



Owner of Belgian Reg. No. 3,389, dated Nov. 14, 1961.
For Linen and Half-linen Cloth for Following Uses: Tablecloths, Mats, Napkins, Embroidery Clothing, Drapery Upholstery, Painting and Decoration, Printing, and Technical Uses.

SN 254,887. William F. Niemi Co., d.b.a. Eddie Bauer, Seattle, Wash. Filed Sept. 21, 1966.

EXPEDITION

For Textile Fabric Piece Goods of Cotton and Synthetic Fibers.
First use on or about Aug. 1, 1966.

SN 254,888. William F. Niemi Co., d.b.a. Eddie Bauer, Seattle, Wash. Filed Sept. 21, 1966.



The word "Cloth" is disclaimed apart from the mark as shown.
For Textile Fabric Piece Goods of Cotton and Synthetic Fibers.
First use on or about Mar. 1, 1966.

SN 262,839. Stony Brook Casuals, Inc., New York, N.Y. Filed Jan. 19, 1967.

CELLINO

For Piece Goods of Rayon, Acetate, Man-Made Fibers, and/or Combinations Thereof for Women's Apparel.
First use Jan. 5, 1967.

SN 263,509. Fiberfill, Incorporated, Oceanside, N.Y. Filed Jan. 30, 1967.

"INTERFILL"

For Polyester Fabric Used as an Interliner in the Manufacture of Outer Garments.
First use Feb. 9, 1966.

SN 263,510. Fiberfill, Incorporated, Oceanside, N.Y. Filed Jan. 30, 1967.

"LINA-FILL"

For Polyester Fabric Used as Sleeve Liners in the Manufacture of Outer Garments.
First use Aug. 31, 1966.

Class 43—Thread and Yarn

SN 235,161. Celanese Corporation, New York, N.Y., by change of name from Celanese Corporation of America, New York, N.Y. Filed Dec. 23, 1965.



Owner of Reg. Nos. 178,422, 389,206, and 786,477.
For Synthetic Fibrous Material—Namely, Yarn.
First use Dec. 13, 1965.

SN 235,165. Celanese Corporation, New York, N.Y., by change of name from Celanese Corporation of America, New York, N.Y. Filed Dec. 23, 1965.



For Synthetic Fibrous Material—Namely, Yarn.
First use Dec. 13, 1965.

SN 253,930. Grover B. Turner Co., Inc., Indianapolis, Ind. Filed Sept. 6, 1966.

SMOOTH-SEAM

For Spools of Cotton Thread.
First use Aug. 27, 1958.

SN 253,957. Compagnie Francaise de Bonneterie, Paris, France. Filed Sept. 7, 1966.

FANETTE

Owner of French Reg. No. 496,995, dated June 15, 1961 (Seine); Natl. Inst. No. 166,436.
For Yarns and Threads.

SN 254,207. The American Thread Company, New York, N.Y. Filed Sept. 7, 1966.

STAR DEE

For Thread and Yarn.
First use April 1955.

SN 254,895. Textured Yarn Co., Inc., Philadelphia, Pa. Filed Sept. 21, 1966.

COLOR-AURA

For Yarn.
First use Sept. 15, 1966.

SN 255,065. Columbia-Minerva Corporation, New York, N.Y. Filed Sept. 26, 1966.

LUSTRA-SPARKLESTONE

For Yarn.
First use at least as early as 1952.

Class 44—Dental, Medical, and Surgical Appliances

SN 236,651. Bitter Pfaudler Corporation, Rochester, N.Y. Filed Jan. 17, 1966.

RITTERGLIDE

Owner of Reg. Nos. 544,533 and 562,782.
For Dental Chairs.
First use Jan. 15, 1965.

SN 238,557. The Pelton & Crane Company, Charlotte, N.C. Filed Feb. 10, 1966.

MULTI-SPOT

For Dental Welding Apparatus.
First use Dec. 30, 1965.

SN 245,813. Convertors Incorporated, Newark, N.J. Filed May 17, 1966.

SHIELD

For Paper Garments—Namely, Gowns, Aprons, Coats, Suits, and Dresses and Paper Surgical Drapes and Covers, Specially Treated To Insure That They Are Sterile.
First use on or before Mar. 21, 1966.

SN 246,365. Nick di Ross, d.b.a. Soundex Hearing Aids, Phoenix, Ariz. Filed May 23, 1966.

Soundex Hearing Aids

Applicant disclaims the words "Hearing Aids" apart from the mark as shown.
For Hearing Aid Devices.
First use Oct. 9, 1965.

SN 246,670. Flents Products Co., Inc., New York, N.Y. Filed May 26, 1966.

QUIET-DOWN

For Ear Plugs.
First use May 18, 1966.

SN 247,839. Standard X-Ray Company, Chicago, Ill. Filed June 10, 1966.



For X-Ray Equipment for Medical and Surgical Use, Diagnostic and Therapeutic X-Ray Apparatus, and Accessories Therefor.
First use 1916.

SN 247,841. Standard X-Ray Company, Chicago, Ill. Filed June 10, 1966.

STANDARD

For X-Ray Equipment for Medical and Surgical Use, Diagnostic and Therapeutic X-Ray Apparatus, and Accessories Therefor.
First use in or about July 1948; 1916 in a different form.

SN 247,842. Standard X-Ray Company, Chicago, Ill. Filed June 10, 1966.



For X-Ray Equipment for Medical and Surgical Use, Diagnostic and Therapeutic X-Ray Apparatus, and Accessories Therefor.
First use in or about February 1937.

SN 248,272. S. S. White Company, Philadelphia, Pa. Filed June 16, 1966.

A.I.C.

For Dental Impression Compound.
First use Nov. 15, 1962.

SN 248,750. Whaledent, Inc., Brooklyn, N.Y. Filed June 22, 1966.



Owner of Reg. No. 793,445.
For Components for Pin Splinting Techniques for Splinting Teeth.
First use Jan. 24, 1966.

SN 248,906. Beatrice Freilich, Philadelphia, Pa. Filed June 24, 1966.

SARAH

For Fluid Absorbing Poultice To Be Applied to the Skin for Preventing Scars After Carbuncles, Ulcerated Feet, or Any Surgical Infections.
First use June 17, 1966.

SN 248,951. Affiliated Hospital Products, Inc., St. Louis, Mo. Filed June 27, 1966.

SELECT-A-MATIC

Owner of Reg. Nos. 637,514 and 674,676.
For Operating Tables.
First use Oct. 19, 1965.

SN 249,273. Rochelle Orthopedic Specialties, Inc., New Rochelle, N.Y. Filed June 13, 1966.

HAPPY HEELS

For Adhesive Pads and Moleskin for Application to the Body.
First use Jan. 15, 1960.

SN 249,710. The Akwell Corporation, Akron, Ohio. Filed July 7, 1966.

CONTURE

For Prophylactic Rubber Articles for the Prevention of Contagious Diseases.
First use May 18, 1966.

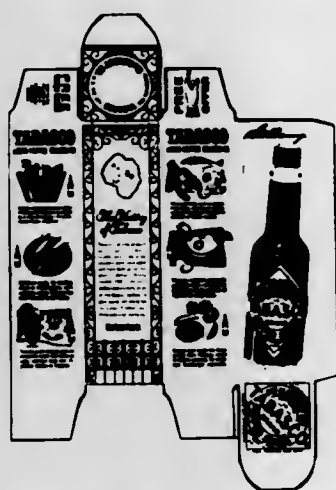
SN 250,871. Neisler Laboratories, Inc., Decatur, Ill. Filed July 20, 1966.

NEIMOTEC

For Molybdenum Technetium Generator for Pharmaceutical Uses.
First use on or about July 1, 1966.

Class 46—Foods and Ingredients of Foods

SN 191,306. McIlhenny Company, Avery Island, La. Filed Apr. 16, 1964.



The mark consists of the words "Tabasco" and "McIlhenny" as well as a representation of a capped bottle having an associated neck band and body panel displayed in combination with other pictorial features and wording printed on a carton. Without waiving any common law rights, no claim is made to the representation of a carton or the wording appearing thereon with the exception of the words "Tabasco" and "McIlhenny" which are specifically claimed. Owner of Reg. Nos. 280,758, 805,670, and others.
For Condiment—Namely, Pepper Sauce.
First use Mar. 12, 1927.

SN 218,571. Huhtamaki-yhtymä Oy, Helsinki, Finland, assignee of Oy Finnfoods Ltd., Helsinki, Finland. Filed May 11, 1965.

FINNFOODS

Owner of U.S. Reg. No. 745,548.
For Crisp Bread, Preserved Berries, and Candy in the Form of Strips, Twists, Pipes, and Other Shapes, Solid and Filled Chocolates, and Billed Candies.
First use about the summer of 1959; in commerce about the summer of 1959.

SN 226,554. W. R. Grace & Co., New York, N.Y., assignee of Nalley's, Inc., Tacoma, Wash. Filed Aug. 26, 1965.

MERRY MIX

Applicant disclaims the word "Mix" except when used as a part of the mark as shown.
For Party Snack Mixture Comprising Prepared Cereals, Pretzels, Nuts, Cheese Crackers, Salt, and Spices.
First use Sept. 22, 1961.

SN 231,394. The Creamette Company, Minneapolis, Minn. Filed Oct. 23, 1965.

CREAMETTE

Owner of Reg. Nos. 90,907, 576,129, and others.
For Frozen Foods—Namely, Frozen Macaroni and Cheese, Frozen Macaroni and Tuna, Frozen Egg Noodles in Butter Sauce, and Frozen Spaghetti With Meatless Sauce.
First use February 1965.

SN 232,825. Enrique Bernat Fontlladosa, Barcelona, Spain. Filed Nov. 17, 1965.

CHUPA CHUPS

No claim is made to the word "Chupa" apart from the rest of the mark as shown. The word "Chupa" comes from the Spanish verb meaning "to suck." Owner of Spanish Reg. No. 396,807, dated Sept. 18, 1962.
For Hard Candy—Namely, Pop on a Safety Stick.

SN 232,949. United States Baking Company, Inc., New York, N.Y. Filed Nov. 18, 1965.



Applicant disclaims the representation of the outline map of the United States and the words "Cookies" and "Crackers," apart from the mark as shown.
For Bakery Products—Namely, Cookies and Crackers.
First use Oct. 28, 1965.

SN 233,369. Mathew Mathison, Rapid City, S. Dak. Filed Nov. 26, 1965.

Daisy Dell

The name "Daisy Dell" is fanciful.
For Batter Mix for French Fried Foods Including Chicken, Fish, Shrimp, Meat, Turkey, Scallops, and Onion Rings.
First use July 1961.

SN 233,903. H. J. Heins Company, Pittsburgh, Pa. Filed Dec. 3, 1965.



For Soups.
First use Sept. 16, 1965.

SN 235,120. The Pillsbury Company, Minneapolis, Minn. Filed Dec. 22, 1965.

MOO JUICE

For Flavored Powders for Preparing Dairy Drinks.
First use Oct. 14, 1965.

SN 235,978. Henri's Food Products Company, Inc., d.b.a. Henri's Food Products, Milwaukee, Wis. Filed Jan. 7, 1966.



Owner of Reg. Nos. 719,730, 755,632, and 793,736.
For French Salad Dressing.
First use Feb. 13, 1965.

SN 237,686. The Fleming Co. Incorporated, d.b.a. Interstate Grocer Co., Topeka, Kans. Filed Feb. 1, 1966.

DAIRY RITE

For Natural and Processed Cheese and Cottage Cheese.
First use Aug. 8, 1965.

SN 239,342. Trebor Limited, Woodford Green, Essex, England. Filed Feb. 21, 1966.

TREBOR BITTER'N SWEET

Priority claimed under Sec. 44(d) on British Reg. No. 883,550, dated Aug. 25, 1965. Owner of U.S. Reg. No. 548,284. Reserving all common law rights, applicant disclaims the words "Bitter 'n Sweet" apart from the mark as shown.
For Candy.
First use Dec. 6, 1965; in commerce Dec. 6, 1965.

SN 239,836. United Biscuit Company of America, Melrose Park, Ill. Filed Feb. 28, 1966.

TISKIT TASKET

For Cookies.
First use Jan. 10, 1966.

SN 241,201. Universal Foods Corporation, Milwaukee, Wis. Filed Mar. 16, 1966.

STELLA

The word "Stella" is the Italian equivalent for the word "star." Owner of Reg. No. 711,300.
For Cheese.
First use May 1939.

SN 241,202. Universal Foods Corporation, Milwaukee, Wis. Filed Mar. 16, 1966.



Applicant disclaims the word "Brand" apart from the mark as shown. "Stella" is the Italian word for "star." Owner of Reg. No. 711,300.
For Cheese.
First use February 1965.

SN 241,510. The Pillsbury Company, Minneapolis, Minn. Filed Mar. 21, 1966.



The lining shown in the drawing is an actual part of the mark and does not represent color.
For Flavored Powders for Preparing Dairy Drinks.
First use Oct. 14, 1965.

SN 241,716. Whirlpool Corporation, St. Joseph, Mich. Filed Mar. 23, 1966.

TECTROL

For Fresh Fruits and Vegetables, Fresh Meat and Poultry, and Fresh Fish and Shellfish.
First use July 14, 1964.

SN 242,264. Mars, Incorporated, d.b.a. M & M Candies, Wilmington, Del. Filed Mar. 30, 1966.

COMBO

For Chocolate Wafer Bar.
First use Mar. 21, 1966.

SN 242,341. El Taco, Inc., Los Angeles, Calif. Filed Mar. 31, 1966. SN 249,738. Decatur Foods, Inc., Decatur, Ark. Filed July 7, 1966.



The lining shown in the drawing is an actual part of the mark and does not represent color. The words "El Taco" are disclaimed apart from the mark as shown.

For Takeout Foods—Namely, Hot Dog Sandwiches, Hamburger Sandwiches, Fried Beans, Hot Sauce, Red Chili Sauce, Seasoning for Meats, Burrito Seasoning (Seasoning of a Vegetable and Spice Nature), and Tostadas.
First use June 20, 1958.

SN 242,867. Western Family Foods, Inc., San Francisco, Calif. Filed Apr. 6, 1966.

WESTERN SEA

For Canned Fish.
First use Dec. 6, 1965.

SN 245,793. Rohm and Haas Company, Philadelphia, Pa. Filed May 16, 1966.



Owner of Reg. No. 797,392.
For Food Grade Enzymes.
First use on or about Dec. 30, 1965.

SN 246,070. General Foods Corporation, White Plains, N.Y. Filed May 19, 1966.

ELECTRA-PERK

For Coffee.
First use Mar. 18, 1966.

SN 247,971. J. M. Rodriguez & Co., Inc., New York, N.Y. Filed June 13, 1966.

PEPITO

The word "Pepito" is the Spanish diminutive for the name "Joseph."
For Popcorn.
First use Dec. 17, 1965.

CRYSTAL SPRINGS

Owner of Reg. No. 789,776.
For Frozen and Fresh Dressed Poultry, and Parts Thereof.
First use June 24, 1966.

SN 249,739. Decatur Foods, Inc., Decatur, Ark. Filed July 7, 1966.

CRYSTAL FARMS

Owner of Reg. No. 789,776.
For Frozen and Fresh Dressed Poultry, and Parts Thereof.
First use June 24, 1966.

SN 261,420. C. J. Webb, Inc., d.b.a. Bowers Candles, Moorestown, N.J. Filed Dec. 27, 1966.



The representation of candy is disclaimed apart from the mark as shown. Owner of Reg. No. 822,047.
For Candy.
First use Dec. 13, 1966.

SN 261,437. Rice Growers Association of California, Sacramento, Calif. Filed Dec. 27, 1966.



The word "Hinode" may be translated to mean "rising sun." Owner of Reg. Nos. 646,581 and 813,526.
For Rice.
First use Oct. 1, 1966; July 21, 1964, as to "Hinode."

SN 264,482. Mead Johnson & Company, Evansville, Ind. Filed Feb. 13, 1967.

FULFIL

Owner of Reg. No. 791,933.
For Dietary in Powdered Form To Be Mixed With Milk.
First use on or prior to Jan. 26, 1967.

SN 264,483. Mead Johnson & Company, Evansville, Ind. Filed Feb. 13, 1967.

SHAPE

Owner of Reg. Nos. 820,868, 820,872, and others.
For Dietary in Powdered Form Containing Minerals and Vitamins, Designed To Become a Complete Nutritional Meal When Mixed With Milk.
First use on or prior to Jan. 26, 1967.

Class 47—Wines

SN 202,696. Fontana-Hollywood Corporation, New York, N.Y. Filed Sept. 25, 1964.

VALLE VERMIGLIA

The Italian words "Valle Vermiglia" are translated as "red valley."
For Wine.
First use July 22, 1963.

SN 248,893. Calgrape Wineries, Inc., Delano, Calif. Filed June 24, 1966.

H. O. LANZA

For Wines.
First use 1943.

Class 50—Merchandise Not Otherwise Classified

SN 227,749. Jane W. Blair and Benton Blair (joint owners), d.b.a. Songbirds, East Woodstock, Conn. Filed Sept. 14, 1965.

HONEYCOMB

For Bird Feeders.
First use July 20, 1965.

SN 231,354. Allen Electronics, Inc., Bethlehem, Pa. Filed Oct. 23, 1965.

SNACK-BAR

Owner of Reg. No. 793,770.
For Kit Consisting of an Electric Water Heating and Dispensing Unit, Cups, Stirrers, and Packages of Dry Powdered Food Products Such as Coffee, Tea, Chocolate, and Soups.
First use Feb. 24, 1963.

SN 237,019. Puckett Supply Company, Inc., Greensboro, N.C. Filed Jan. 21, 1966.

ROYAL CHENILLE

For Grave Site Artificial Grass Carpeting.
First use Sept. 20, 1965.

SN 238,969. Ivan C. Quackenbush, d.b.a. Quackenbush Company, Arlington Heights, Ill. Filed Feb. 16, 1966.

CERAMEDIA

For Beads, Glass-Like Spheres, and Media for Ball-Mills Used for Dispersion.
First use on or about Apr. 3, 1963.

SN 252,171. Glaxtex Manufacturing Corporation, Chamblee, Ga. Filed Aug. 11, 1966.



For Chair Mats Which Permit Easier Movement for Casted Chairs on Carpeted Floors.
First use Feb. 5, 1965.

SN 256,841. International Assemblx Corporation, Toledo, Ohio. Filed Oct. 20, 1966.

REFLECT-A-GLOSS

For Three-Dimensional Objects for Display and Advertising, Such as Letters, Signs, Symbols, Monograms, Crests, and Enlargements of Three-Dimensional Physical Things Such as Flowers, Animals, Bottles, Cans, and the Like.
First use Sept. 16, 1966.

Class 51—Cosmetics and Toilet Preparations

SN 200,302. Universal Oil Products Company, Des Plaines, Ill. Filed Aug. 20, 1964.



For Essential Oils, Perfume Oils, and Perfume Bases.
First use Mar. 1, 1946.

SN 232,775. Eversharp, Inc., Milford, Conn. Filed Nov. 16, 1965.

SCHICK HOT LATHER

Applicant disclaims the term "Hot Lather" apart from the mark as shown. Owner of Reg. Nos. 224,639, 816,255, and others.
For Shaving Cream.
First use Oct. 8, 1964; Dec. 16, 1963, as to "Schick."

SN 243,784. Invincible Products Corporation, Chicago, Ill. Filed Apr. 19, 1966.



The mark is a fanciful design.
For Hair Sprays.
First use at least as early as December 1962.

SN 247,118. W. T. Grant Company, New York, N.Y. Filed June 2, 1966.

FASHION LOOK

For Hair Spray.
First use Apr. 24, 1966.

SN 247,321. Bristol-Myers Company, New York, N.Y. Filed June 6, 1966.

FORCE

For Cosmetics and Toilet Preparations—Namely, a Hair Groom.
First use Apr. 22, 1966.

SN 247,368. La Maur, Inc., Minneapolis, Minn. Filed June 6, 1966.

STYLE BRIGHT

Owner of Reg. Nos. 753,422, 774,262, and others.
For Hair Conditioner.
First use Dec. 15, 1964.

SN 247,430. Viviane Woodard Corporation, Panorama City, Calif. Filed June 6, 1966.

EDWARDIAN

For Skin Conditioner and Body Rub.
First use May 20, 1966.

SN 247,736. Sybil Ives Incorporated, White Plains, N.Y. Filed June 9, 1966.

HOLD THAT LINE

For Cosmetics and Toilet Preparations—Namely, a Hair Setting Lotion.
First use Dec. 17, 1965.

SN 248,053. Regency Cosmetics, Inc., New York, N.Y. Filed June 14, 1966.

BAL DE BAIN

For Bath Powder, Cologne, and Bath Oil Products.
First use Apr. 22, 1966.

SN 248,075. Yardley of London, Inc., Totowa, N.J. Filed June 14, 1966.

LONDON LOOK

Owner of Reg. No. 816,258.
For Cosmetics—Namely, Lipstick, Fluid Film Foundation, Rouge, and Eye Make-Up.
First use Dec. 16, 1964.

SN 248,955. Anita d'Foged, Inc., Beverly Hills, Calif. Filed June 27, 1966.

ANITA of DENMARK

The word "Denmark" is disclaimed apart from the mark as shown.
For Cosmetics, viz, Lipstick and Lip Gloss.
First use Apr. 28, 1966.

SN 250,927. John H. Breck, Inc., Springfield, Mass. Filed July 25, 1966.

BRECK

Owner of Reg. Nos. 521,473 and 529,328.
For Skin Cream.
First use Feb. 3, 1966.

SN 251,272. Avon Products, Inc., New York, N.Y. Filed July 29, 1966.

WISHING

Owner of Reg. No. 424,752.
For Beauty Dust, Cologne Mist, Cologne, Cream Sachet, Powder Sachet, Perfume Oil, Perfume, Including Solid Perfume.
First use on or about Oct. 25, 1945.

SN 252,070. John H. Breck, Inc., Springfield, Mass. Filed Aug. 10, 1966.

SUNBRELLA

For Hair Conditioner and Hair Dressing.
First use July 27, 1966.

SN 253,619. Beauty Counselors, Inc., Grosse Pointe, Mich. Filed Sept. 1, 1966.

CLEAR-STA

For Hair Cream.
First use June 27, 1966.

SN 254,234. Certified Extracts, Inc., New York, N.Y. Filed Sept. 12, 1966.

TEEN TALK

For Suntan Lotion.
First use June 1, 1966.

SN 259,436. Kimberly-Clark Corporation, Neenah, Wis. Filed Nov. 25, 1966.

KOTEX

For Personal Deodorants.
First use Nov. 3, 1966.

SN 261,007. Daggett and Ramsdell International Corporation, New York, N.Y. Filed Dec. 19, 1966.

NUIT DE VERSAILLES

Owner of Reg. No. 738,349.
For Perfume Sprays.
First use October 1964.
Subj. to Intf. with SN 263,637.

SN 262,548. The Gillette Company, Boston, Mass. Filed Jan. 16, 1967.

NO TRACE

Owner of Reg. No. 703,095.
For Deodorants for Personal Use.
First use Mar. 29, 1966.

SN 262,904. The Thomed Corp., New York, N.Y. Filed Jan. 20, 1967.

SOURCE

For Cosmetic Cream Specifically To Be Used as Night Cream and Undermakeup.
First use Jan. 3, 1967.

SN 262,910. Holland-Rantos Company, Inc., New York, N.Y. Filed Jan. 20, 1967.



Owner of Reg. No. 796,114 and others.
For Sanitary Napkin Deodorant Spray.
First use Jan. 6, 1964.

SN 263,637. World Wide Fragrances, Inc., New York, N.Y. Filed Jan. 30, 1967.

NUIT DE VERSAILLES

The French words "Nuit de Versailles" translated into English means "night of Versailles."
For Perfumes, Colognes, and Body Powders.
First use August 1965.
Subj. to Intf. with SN 261,007.

Class 52 — Detergents and Soaps

SN 237,943. Denison Laboratories Inc., Providence, R.I. Filed Feb. 3, 1966.



For Liquid Cleaning, Disinfecting, and Deodorizing Soap for General Household Use.
First use at least as early as Jan. 31, 1956.

SN 244,878. Beardmore, Inc., Hasbrouck Heights, N.J. Filed May 4, 1966.

EXCEL-DERM FORMULA 'B'

Applicant disclaims the term "Formula 'B'" apart from the mark as shown.
For Skin Cleaning and Conditioning Preparation.
First use before Apr. 15, 1966.

SN 248,205. Atlas Supply Company, Springfield, N.J. Filed June 16, 1966.



Owner of Reg. Nos. 382,088, 773,356, and others.
For Positive Crankcase Ventilating System Cleaner for Use With Internal Combustion Engines.
First use May 9, 1966.

SN 248,361. Odle T. Pipkin, d.b.a. Calla Chemical Company, Fullerton, Calif. Filed June 17, 1966.

CALLA 301

Owner of Reg. No. 784,159.
For All Purpose Cleaning and Degreasing Compound.
First use Apr. 1, 1962.

SN 249,516. Dura Corporation (New York corporation), Oak Park, Mich., assignee of Dura Corporation (Michigan corporation), Oak Park, Mich. Filed July 5, 1966.

ELECTRO-MAGIC

For Acid Base and Phosphate Base Cleaning Compounds.
First use Jan. 15, 1966.

SN 250,005. Magic American Chemical Corporation, Cleveland, Ohio. Filed July 11, 1966.



The word "Panel" is disclaimed apart from the mark as shown.
For Liquid Cleaner for Wood Paneling and Woodwork.
First use on or about Oct. 30, 1964.

SN 253,005. Bristol-Myers Company, New York, N.Y. Filed Aug. 24, 1966.

VITALIS

Owner of Reg. No. 271,624 and others.
For Detergents and Soaps—Namely, a Shampoo for the Hair.
First use June 24, 1966.

SN 255,047. King Research, Inc., Brooklyn, N.Y. Filed Sept. 26, 1966.

DANDRICIDE

Owner of Reg. No. 541,175.
For Shampoo for the Hair.
First use Sept. 13, 1966.

SN 262,550. The Procter & Gamble Company, Cincinnati, Ohio. Filed Jan. 16, 1967.

SOFT & CERTAIN

For Hair Shampoo.
First use Oct. 6, 1966.

SN 263,644. Lever Brothers Company, New York, N.Y. Filed Jan. 31, 1967.

BREEZE

Owner of Reg. No. 332,021.
For Detergent for General Washing and Cleansing, and Detergent Toilet Bar.
First use Sept. 9, 1935.

SN 263,990. Diamond Alkali Company, Cleveland, Ohio. Filed Feb. 6, 1967.

NOVALIN

For Laundry Detergent for Industrial Use.
First use Jan. 20, 1967.

SERVICE MARKS

Class 100—Miscellaneous

SN 189,411. William Zirkel, d.b.a. William X. Le Kriz, Evanston, Ill. Filed Mar. 23, 1964.



For Promoting Indo-European Culture and Unity.
First use Mar. 16, 1964.

SN 242,343. El Taco, Inc., Los Angeles, Calif. Filed Mar. 31, 1966.



The lining on the drawing is an actual part of the mark and does not represent color. The words "El Taco" are disclaimed apart from the mark as shown.
For Drive-In Restaurant Services.
First use June 20, 1958.

SN 244,325. Hotelmen's Agency, Inc., New York, N.Y. Filed Apr. 26, 1966.

★hotelmen's

For Executive Search and Employment Placement Service.
First use Mar. 23, 1961.

SN 245,249. Nevele Country Club, Ellenville, N.Y. Filed May 9, 1966.

NEVELE

For Providing Food and Lodging.
First use in or about 1901.

TM 136

SN 246,789. International Furniture Rentals, Inc., Philadelphia, Pa. Filed May 27, 1966.



For Furniture Rental Service.
First use in or about July 1962.

SN 247,499. Gold Label, Inc., Bloomington, Ill. Filed June 7, 1966.



For Collecting, Freezing, Storing, and Shipping Semen for Livestock.
First use Aug. 9, 1965.

SN 258,783. Char-Steak House, Inc., Washington, D.C. Filed Nov. 16, 1966.



Owner of Reg. No. 813,183.
For Restaurant Services.
First use January 1965.

Class 101—Advertising and Business

SN 208,792. The Western Union Telegraph Company, New York, N.Y. Filed Dec. 23, 1964.

dolly gram

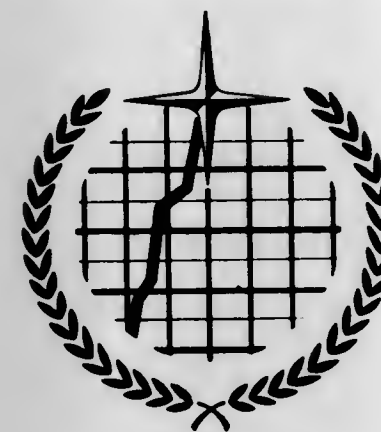
For Forwarding and Delivering Humorous Doll-Like Figures Bearing a Designated Greeting Thereon, Such as "Happy Birthday."
First use Dec. 1, 1964.

APRIL 18, 1967

U. S. PATENT OFFICE

TM 137

SN 232,154. Arthur Salm Inc., Chicago, Ill. Filed Nov. 4, 1965. SN 237,478. Poppy Productions, Inc., Tulsa, Okla. Filed Jan. 27, 1966.



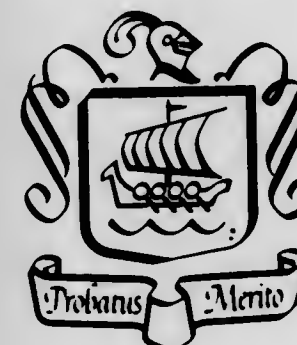
For Operating an Incentive Award Program for Others.
First use August 1965.

SN 232,155. Arthur Salm Inc., Chicago, Ill. Filed Nov. 4, 1965.

MEG

For Gift Selection Service for Others.
First use 1961.

SN 232,156. Arthur Salm Inc., Chicago, Ill. Filed Nov. 4, 1965.



For Gift Selection Service for Others.
First use 1961.

SN 235,857. LPE-Robert Otto, Inc., New York, N.Y., by change of name from Robert Otto-Intam Inc., New York, N.Y. Filed Jan. 5, 1966.



The mark consists of a fanciful showing of the letters "LPE."

For Advertising and Marketing Services Consisting of the Designing of Packaging and Point of Sale Material, Devising Distributive Patterns, Analyzing Competitive Situations, Consumer Research, and Advising Clients as to Systems, Plans and Methods for Selling and Promoting the Sale of Various Products.
First use Apr. 22, 1965.

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BOWL IT RICH WITH TENPINS

For Promoting the Sale of Goods of Retail Merchants Through the Conduct of Contests.
First use Dec. 22, 1965.

SN 246,258. Berger & Plate Company of San Francisco, d.b.a. Berger & Plate Company, San Francisco, Calif. Filed May 23, 1966.



The mark consists of the monogram "BP" in a circle.
For Marketing Service for Others in the Field of Processed and Unprocessed Agricultural Products—Namely, Vegetable Seeds, Grain Seeds, Grass Seeds, Beans, Peas, Lentils, Grain and Animal Feed.
First use Jan. 1, 1964.

SN 256,901. S. C. Johnson & Son, Inc., Racine, Wis. Filed Oct. 21, 1966.

30/30

For Promoting the Sale of Goods and Services of Others Through the Issuance and Redemption of Trading Stamps.
First use Apr. 19, 1966.

Class 102—Insurance and Financial

SN 237,455. Kinder, Laue & Day, Los Angeles, Calif. Filed Jan. 27, 1966.



For Insurance Brokerage Services.
First use Jan. 1, 1966.

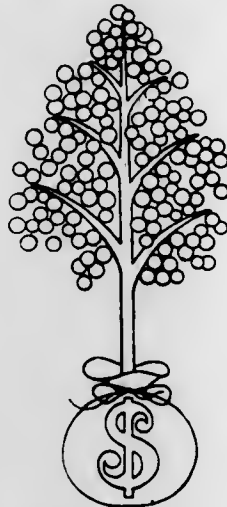
SN 239,188. Hodes-Daniel Company, Inc., Mount Vernon, N.Y. Filed Dec. 22, 1965.



TELE-MONEY-PLAN

For Consumer Finance Services.
First use on or about Oct. 25, 1965.

SN 240,974. State Farm Mutual Automobile Insurance Company, Bloomington, Ill. Filed Mar. 14, 1966.



For Underwriting Insurance.
First use Feb. 7, 1966.

SN 243,194. Transamerica Corporation, San Francisco, Calif. Filed Apr. 11, 1966.

TRANSAMERICA

Owner of Reg. Nos. 718,353, 718,358, and 741,404.
For Underwriting of Insurance—Namely, Life, Including Accident and Health; Multiple Line, Including Property, Casualty and Fidelity; and Title Insurance and Related Coverages; Installment Sales Financing, Direct Consumer Loans, and Industrial and Commercial Financing.
First use July 18, 1959.

SN 243,195. Transamerica Corporation, San Francisco, Calif. Filed Apr. 11, 1966.



Owner of Reg. No. 741,404.
For Underwriting of Insurance—Namely, Life, Including Accident and Health; Multiple Line, Including Property, Casualty and Fidelity; and Title Insurance and Related Coverages; Installment Sales Financing, Direct Consumer Loans, and Industrial and Commercial Financing.
First use Apr. 7, 1961.

SN 258,930. The Pat Riley Corporation, d.b.a. Pat Riley, Normandy, Mo. Filed Nov. 17, 1966.

PAT RILEY

The name "Pat Riley" does not identify any particular living individual.
For Arranging Personal Loans and Consumer Credit Loans.
First use Mar. 7, 1966.

Class 103—Construction and Repair

SN 249,330. JBC Associates, Inc., Jamaica, N.Y. Filed June 30, 1966.

MISTY SPRAY

For Car Washing Services.
First use in or about May 1965.

SN 256,631. Method Master, Inc., Lincolnwood, Ill. Filed Oct. 18, 1966.

MEDI-CAR

For Automotive Diagnostic Services and Repairs.
First use Aug. 24, 1966.

Class 104—Communication

SN 262,254. Commonwealth Telephone Company, Dallas, Pa. Filed Jan. 10, 1967.

CT

For Telephone Communication Services.
First use at least as early as March 1963.

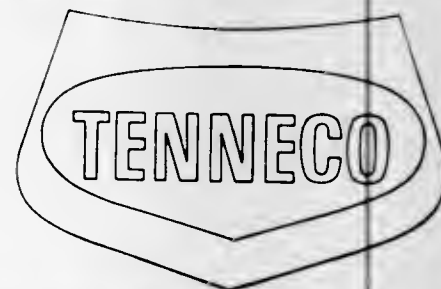
Class 105—Transportation and Storage

SN 236,933. Tenneco Inc., Houston, Tex., by change of name from Tennessee Gas Transmission Company, Houston, Tex. Filed Jan. 20, 1966.



For Transportation and Storage of Natural Gas and Petroleum, and Refined Products Thereof.
First use June 23, 1961.

SN 236,934. Tenneco Inc., Houston, Tex., by change of name from Tennessee Gas Transmission Company, Houston, Tex. Filed Jan. 20, 1966.



For Transportation and Storage of Natural Gas and Petroleum, and Refined Products Thereof.
First use June 23, 1961.

SN 246,146. Atlantic Garage, Inc., Washington, D.C. Filed May 20, 1966.

AG

For Parking and Storing Motor Vehicles.
First use Oct. 10, 1961.

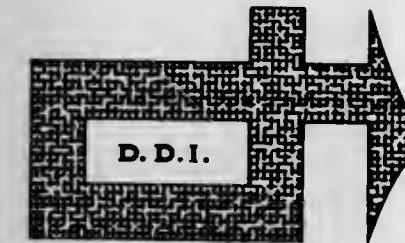
Class 106—Material Treatment

SN 241,878. Document Disintegration, Inc., Gardena, Calif. Filed Mar. 25, 1966.

D.D.I.

For Document Destruction Services.
First use October 1962.

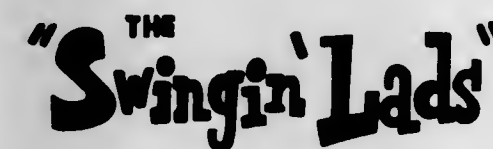
SN 241,879. Document Disintegration, Inc., Gardena, Calif. Filed Mar. 25, 1966.



The drawing is lined for yellow.
For Document Destruction Services.
First use October 1962.

Class 107—Education and Entertainment

SN 227,153. Donald R. Kelley, Las Vegas, Nev. Filed Sept. 3, 1965.



For Entertainment Services Rendered by an Instrumental Vocal Group, Primarily by Means of Personal Appearances.
First use June 1963.

SN 234,061. Benjamin Ortega, Miami, Fla. Filed Dec. 6, 1965.

BENFEL SCHOOLS

The word "Schools" is disclaimed apart from the mark as shown.
For Teaching a Nursing Course by Correspondence.
First use July 1954.

SN 234,079. The Seeburg Corporation, Chicago, Ill. Filed Dec. 6, 1965.



Owner of Reg. Nos. 804,685 and 822,780.
For Staging Teenage Dances.
First use July 8, 1965.

SN 258,696. Invest-in-America National Council, Inc., Philadelphia, Pa. Filed Nov. 15, 1966.



For Educating the General Public as to the Role of Voluntary Savings Invested for Individual and National Economic Growth and Freedom.
First use since at least as early as Apr. 12, 1954.

CERTIFICATION MARKS

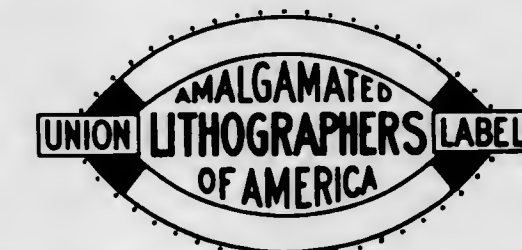
Class A—Goods

SN 245,919. Department of Agriculture of the State of Florida, Tallahassee, Fla. Filed May 17, 1966.



The mark certifies quality of Florida produced agricultural commodities.
For Agricultural Commodities.
First use Mar. 19, 1964.

SN 246,185. Lithographers & Photoengravers International Union, New York, N.Y. Filed May 20, 1966.



The mark certifies that the work or labor on the goods was performed by members of applicant.
For All Printed Material Either on Paper, Metal, Cloth, or Any Other Material Produced by Offset and Direct Lithographic Printing and Photoengraving.
First use August 1916.

SN 246,186. Lithographers & Photoengravers International Union, New York, N.Y. Filed May 20, 1966.



The mark certifies that the work or labor on the goods was performed by members of applicant.
For All Printed Material Either on Paper, Metal, Cloth, or Any Other Material Produced by Offset and Direct Lithographic Printing and Photoengraving.
First use December 1905.

TRADEMARK REGISTRATIONS ISSUED PRINCIPAL REGISTER

Class 1—Raw or Partly Prepared Materials

- 827,415. LEATHER FROM THE SEA. Ocean Leather Corp. SN 240,642. Pub. 1-31-67. Filed 3-10-66.
827,416. M MCNAIR AND DESIGN. McNair Seed Company. SN 243,157. Pub. 1-31-67. Filed 4-11-66.
827,417. PAUL BUNYAN. Husky Briquetting, Inc., assignee of Rum River Charcoal Co. SN 243,170. Pub. 1-10-67. Filed 4-11-66.
827,418. MULTIVAR. Northrup, King & Co. SN 243,705. Pub. 1-31-67. Filed 4-18-66.
827,419. KAISER. Kaiser Aluminum & Chemical Corporation. SN 244,991. Pub. 1-31-67. Filed 5-5-66.
827,420. NEOBRITE. St. Regis Paper Company. SN 246,954. Pub. 1-31-67. Filed 5-31-66.
827,421. RAPID-AIRE FLOWERS. Paul's Wholesale Florist Co., Inc. SN 247,828. Pub. 1-31-67. Filed 6-10-66.
827,422. DELTA AND DESIGN. Sterno Industries, Inc. SN 248,062. Pub. 1-31-67. Filed 6-14-66.
827,423. CELESTIAL. Armour and Company. SN 248,098. Pub. 1-31-67. Filed 6-15-66.
827,424. TANESS. Armour and Company. SN 248,099. Pub. 1-31-67. Filed 6-15-66.
827,425. ZEUS. Armour and Company. SN 248,102. Pub. 1-31-67. Filed 6-15-66.
827,426. FUSILEER. Armour and Company. SN 248,103. Pub. 1-31-67. Filed 6-15-66.
827,427. CREOLE. Armour and Company. SN 248,104. Pub. 1-31-67. Filed 6-15-66.
827,428. DURA-LUX. Cone Mills Corporation. SN 255,400. Pub. 1-31-67. Filed 9-29-66.
827,429. LARCO. E. J. Lavino and Company. SN 255,804. Pub. 1-31-67. Filed 10-5-66.

Class 2—Receptacles

- 827,430. ITI AND DESIGN. Thermoplastic Industries, Inc. SN 211,480. Pub. 1-31-67. Filed 2-5-65.
827,431. PICTURE-PAK. Columbia Corrugated Container Corp. SN 214,955. Pub. 1-24-67. Filed 3-25-65.
827,432. VALVESPOUT. Continental Arms Corporation. SN 221,023. Pub. 1-31-67. Filed 6-14-65.
827,433. MAGICOW. Bathurst Containers Limited. SN 231,022. Pub. 1-31-67. Filed 10-22-65.
827,434. FLORALWARE. Floralware Corporation. SN 282,779. Pub. 1-31-67. Filed 11-16-65.
827,435. TENNECO. Tenneco Inc., by change of name from Tennessee Gas Transmission Company. SN 241,706. Pub. 1-31-67. Filed 3-23-66.
827,436. TENNECO AND DESIGN. Tenneco Inc., by change of name from Tennessee Gas Transmission Company. SN 241,707. Pub. 1-31-67. Filed 3-23-66.
827,437. SHIELD (DESIGN). Tenneco Inc., by change of name from Tennessee Gas Transmission Company. SN 241,708. Pub. 1-31-67. Filed 3-23-66.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

- 827,438. CABINCRAFT. The Behrwood Foundation, Inc. SN 240,244. Pub. 12-6-66. Filed 3-7-66.

Class 4—Abrasives and Polishing Materials

- 827,439. SIGMA. Society of Independent Gasoline Marketers of America. MULTIPLE CLASS (Classes 4, 8, 15, and 52). SN 179,817. Pub. 12-6-66. Filed 10-25-63.

Class 6—Chemicals and Chemical Compositions

- 827,439. (See Class 4 for this trademark.)
827,440. GASPAK. B-D Laboratories, Inc. SN 207,556. Pub. 1-31-67. Filed 12-7-64.
827,441. EXCELSIOR. Archer-Daniels-Midland Company. SN 231,532. 1-31-67. Filed 10-24-65.
827,442. 12-S. Universal Oil Products Company. SN 241,714. Pub. 1-31-67. Filed 3-23-66.
827,443. TERRACLORE SUPER X. Olin Mathieson Chemical Corporation. SN 244,134. Pub. 11-8-66. Filed 4-22-66.
827,444. DRY-O. The Viscal Company. SN 244,280. Pub. 1-31-67. Filed 4-25-66.
827,445. MICROPLATE. Chas. Pfizer & Co., Inc. SN 245,746. Pub. 1-31-67. Filed 5-16-66.
827,446. MA. Microbiological Associates, Inc. SN 246,806. Pub. 1-31-67. Filed 5-27-66.
827,447. M AND DESIGN. Microbiological Associates, Inc. SN 247,241. Pub. 1-31-67. Filed 6-3-66.
827,448. YAWNING BOY WITH CANDLE (DESIGN). United States Rubber Company. MULTIPLE CLASS (Classes 6 and 21). SN 247,436. Pub. 1-31-67. Filed 6-7-66.
827,449. DESCO. Drilling Specialties Company. SN 249,849. Pub. 1-31-67. Filed 7-8-66.
827,450. CHEMSCREEN. Rhodia Inc. SN 250,029. Pub. 1-31-67. Filed 7-11-66.
827,451. WEL-BRAND. Wellman Industries, Inc., by change of name from Wellman Industries, Inc. SN 250,112. Pub. 1-31-67. Filed 7-12-66.
827,452. LUFAX. Rohm and Haas Company. SN 252,682. Pub. 1-31-67. Filed 8-18-66.

Class 9—Explosives, Firearms, Equipments, and Projectiles

- 827,453. COLT AR-15. Colt's Inc. SN 253,091. Pub. 1-31-67. Filed 8-25-66.
827,454. ITHACA. Ithaca Gun Company, Incorporated. SN 257,738. Pub. 1-31-67. Filed 11-2-66.

Class 12—Construction Materials

- 827,455. GLAMOUR POOLS. Glamour Pools Co. SN 243,863. Pub. 1-31-67. Filed 4-20-66.

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Class 13—Hardware and Plumbing and Steam-Fitting Supplies

- 827,456. GEERPRES. Geerpres Wringer Incorporated. MULTIPLE CLASS (Classes 13, 23, and 29). SN 213,965. Pub. 1-31-67. Filed 3-12-65.
827,457. AC AND DESIGN. Al-Craft Manufacturing Company. MULTIPLE CLASS (Classes 13, 14, and 25). SN 234,516. Pub. 1-31-67. Filed 12-13-65.
827,458. CUT-LOK. Townsend Company. SN 239,463. Pub. 1-31-67. Filed 2-23-66.

Class 14—Metals and Metal Castings and Forgings

- 827,457. (See Class 13 for this trademark.)
827,459. SMI LIMESTRE AND DESIGN. Societa Metallurgica Italiana. SN 230,937. Pub. 1-31-67. Filed 10-21-65.

Class 15—Oils and Greases

- 827,439. (See Class 4 for this trademark.)

Class 16—Protective and Decorative Coatings

- 827,460. JUNIOR'S AND DESIGN. Tobias Paint Manufacturing Co. SN 235,732. Pub. 1-31-67. Filed 1-3-66.
827,461. COROTONE. Cook Paint & Varnish Company. SN 242,567. Pub. 1-31-67. Filed 4-4-66.

Class 18—Medicines and Pharmaceutical Preparations

- 827,462. REDUTYME. Kassar Company. SN 237,566. Pub. 11-8-66. Filed 1-28-66.
827,463. ARCORET. Arco Pharmaceuticals, Inc. SN 240,833. Pub. 1-31-67. Filed 3-14-66.
827,464. BITRATE. Arco Pharmaceuticals, Inc. SN 240,835. Pub. 1-31-67. Filed 3-14-66.
827,465. LUFYLLIN. Mallinckrodt Chemical Works. SN 242,465. Pub. 1-31-67. Filed 4-1-66.
827,466. STYLIZED "L" AND SYMBOL. Colgate-Palmolive Company. SN 243,637. Pub. 1-31-67. Filed 4-18-66.
827,467. MEDIBANE. American Home Products Corporation. SN 243,761. Pub. 1-31-67. Filed 4-19-66.
827,468. BOVITROL. E. R. Squibb & Sons, Inc. SN 244,433. Pub. 1-31-67. Filed 4-27-66.
827,469. MEDULCA. British Chemotheutic Products Limited. SN 245,904. Pub. 1-31-67. Filed 5-18-66.
827,470. SILLS. Silles Products, Inc. SN 246,816. Pub. 1-31-67. Filed 5-27-66.
827,471. CHIGGEREX. Silles Products, Inc. SN 246,817. Pub. 1-31-67. Filed 5-27-66.
827,472. RAUZIDE. E. R. Squibb & Sons, Inc. SN 249,257. Pub. 1-31-67. Filed 6-29-66.
827,473. OPTYME. Barnes-Hind Ophthalmic Products. SN 249,494. Pub. 1-31-67. Filed 7-5-66.
827,474. DOG BLOOM. John Edward Ronicker, d.b.a. J. E. Ronicker Co. Laboratories. SN 250,035. Pub. 1-31-67. Filed 7-11-66.

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- 827,475. DIALSPAN. Laser, Inc. SN 261,311. Pub. 1-31-67. Filed 7-29-66.
827,476. INPHARZAM. Inpharsam S.A. SN 252,103. Pub. 1-31-67. Filed 8-10-66.
827,477. PYOCIDIN. Smith, Miller & Patch, Inc. SN 254,361. Pub. 1-31-67. Filed 9-13-66.
827,478. PURAY. E. R. Squibb & Sons, Inc. SN 257,898. Pub. 1-31-67. Filed 11-3-66.
827,479. MEDIGRAN. E. R. Squibb & Sons, Inc. SN 257,899. Pub. 1-31-67. Filed 11-3-66.

Class 19—Vehicles

- 827,480. OVERLAND ANCHOR LOK. Royal Industries, Inc. SN 224,647. Pub. 1-31-67. Filed 7-30-65.
827,481. LAB CON CO AND DESIGN. Labconco Corporation, by change of name from Laboratory Construction Company. MULTIPLE CLASS (Classes 19, 26, 32, and 34). SN 225,329. Pub. 1-31-67. Filed 8-9-65.
827,482. JOYTIME. Rockford Industries, Inc. SN 240,118. Pub. 1-31-67. Filed 3-8-66.

Class 21—Electrical Apparatus, Machines, and Supplies

- 827,448. (See Class 6 for this trademark.)
827,483. UNIFLUX. American Electric Corp. SN 214,596. Pub. 1-31-67. Filed 3-22-65.
827,484. MISCELLANEOUS DESIGN. A. M. Byers Company. SN 220,271. Pub. 1-31-67. Filed 6-3-65.
827,485. THERMA-MET. American Components Incorporated. SN 221,439. Pub. 1-31-67. Filed 6-18-65.
827,486. TOKO. Toko Kabushiki Kaisha, d.b.a. Toko, Inc. MULTIPLE CLASS (Classes 21 and 26). SN 226,308. Pub. 1-31-67. Filed 8-23-65.
827,487. COURIER. Needle Industries Limited, d.b.a. Henry Milward & Sons. SN 226,662. Pub. 1-31-67. Filed 8-27-65.
827,488. FLAME MATIC. Chief Equipment Corporation. SN 228,631. Pub. 1-31-67. Filed 9-27-65.
827,489. MISCELLANEOUS DESIGN. The Regina Corporation. MULTIPLE CLASS (Classes 21 and 29). SN 230,290. Pub. 1-31-67. Filed 10-15-65.
827,490. VELOZ. Motores y Aparatos Electricos, S.A. de C.V. SN 230,415. Pub. 1-31-67. Filed 10-18-65.
827,491. NOYPER. Yuasa Battery Company Limited. SN 230,469. Pub. 1-31-67. Filed 10-18-65.
827,492. CERASEAL AND DESIGN. Aerovox Corporation. SN 230,748. Pub. 1-31-67. Filed 10-21-65.
827,493. ASTRALUME. Prescolite Manufacturing Corporation. SN 231,486. Pub. 1-31-67. Filed 10-23-65.
827,494. BOLT-LOC. The Barkelew Electric Manufacturing Company. SN 233,865. Pub. 1-31-67. Filed 12-3-65.
827,495. VANDALARM. Electronic Security, Inc., assignee of Vandalarm Systems, Inc. SN 234,156. Pub. 1-31-67. Filed 12-7-65.
827,496. MARTECH. Dayton Aircraft, Inc. SN 234,182. Pub. 1-31-67. Filed 12-8-65.
827,497. MT (DESIGN). Dayton Aircraft, Inc. SN 234,183. Pub. 1-31-67. Filed 12-8-65.
827,498. CE (DESIGN). Cook Electric Company. SN 234,269. Pub. 1-31-67. Filed 12-9-65.
827,499. MIDGI-LITE. Pinlites Inc., assignee of Kay Electric Company. SN 234,436. Pub. 1-31-67. Filed 12-13-65.
827,500. WATER MATE AND DESIGN. Winsco Instruments & Controls Company, Inc., d.b.a. Electro-Oceanics. SN 235,245. Pub. 1-31-67. Filed 12-23-65.

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- 827,501. EO (DESIGN). Winsco Instruments & Controls Company Inc., d.b.a. Electro-Oceanics. SN 235,246. Pub. 1-31-67. Filed 12-23-65.
- 827,502. HELIAX. Andrew Corporation. MULTIPLE CLASS (Classes 21 and 31). SN 236,212. Pub. 1-31-67. Filed 1-12-66.
- 827,503. PILOT. Pilot Radio, Inc. MULTIPLE CLASS (Classes 21 and 36). SN 240,951. Pub. 1-31-67. Filed 3-14-66.
- 827,504. CONDUFLOR. Bargar Metal Fabricating Company. SN 242,321. Pub. 1-31-67. Filed 3-31-66.
- 827,505. PILOT AND DESIGN. Pilot Radio, Inc. MULTIPLE CLASS (Classes 21 and 36). SN 242,389. Pub. 1-31-67. Filed 3-31-66.
- 827,506. E AND DESIGN. Empire Tube Sales, Inc. SN 253,199. Pub. 1-31-67. Filed 8-26-66.

Class 22 — Games, Toys, and Sporting Goods

- 827,507. SNIP 'N TUCK. American Character, Inc. SN 240,569. Pub. 1-31-67. Filed 3-10-66.
- 827,508. THE MAGIC MAKE-UP FACE. American Character, Inc. SN 240,570. Pub. 1-31-67. Filed 3-10-66.
- 827,509. NICE BABY. Kiddie Products, Inc. SN 240,629. Pub. 1-31-67. Filed 3-10-66.
- 827,510. MISS PIGTAILS. Kusan, Inc. SN 241,347. Pub. 1-31-67. Filed 3-18-66.
- 827,511. FLEX-I-PETS. Seymour Adler, d.b.a. Leonis Company. SN 246,139. Pub. 1-31-67. Filed 5-20-66.
- 827,512. ARMOR PLATE. Brunswick Corporation. SN 249,909. Pub. 1-31-67. Filed 7-11-66.
- 827,513. MRS. BEASLEY. Mattel, Inc. SN 250,808. Pub. 1-31-67. Filed 7-25-66.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

- 827,456. (See Class 13 for this trademark.)
- 827,514. TORC-PAC. U.S. Industries, Inc. SN 215,802. Pub. 1-31-67. Filed 4-5-65.
- 827,515. BUG-UP. Omni Manufacturing Company. SN 222,500. Pub. 1-31-67. Filed 6-30-65.
- 827,516. SPLAYDS. Splades Pty. Limited. SN 232,426. Pub. 1-31-67. Filed 11-9-65.
- 827,517. BW AND DESIGN. Barry-Wehmler Company. SN 236,555. Pub. 1-31-67. Filed 1-17-66.
- 827,518. CONNOISSEUR. Cory Corporation. SN 237,939. Pub. 1-31-67. Filed 2-3-66.

Class 24 — Laundry Appliances and Machines

- 827,519. WONDERFIT. Southern Mills, Inc. SN 239,815. Pub. 1-31-67. Filed 2-28-66.

Class 25 — Locks and Safes

- 827,457. (See Class 13 for this trademark.)

Class 26 — Measuring and Scientific Appliances

- 827,481. (See Class 19 for this trademark.)

- 827,486. (See Class 21 for this trademark.)
- 827,520. POLARIZED ANIMATIONS. Donald N. Yates. SN 205,220. Pub. 1-25-66. Filed 10-30-64.
- 827,521. DUOMATIC. Avant Incorporated. SN 221,782. Pub. 1-31-67. Filed 6-23-65.
- 827,522. 33. SCM Corporation. SN 225,816. Pub. 1-31-67. Filed 8-16-65.
- 827,523. LINASCAN. AMF Tuboscope, Inc. SN 232,265. Pub. 1-31-67. Filed 11-8-65.
- 827,524. VIBRATOME. Oxford Laboratories. SN 232,930. Pub. 1-31-67. Filed 11-18-65.
- 827,525. ACU-PROBE. Electronic Development Laboratories, Inc. SN 233,084. Pub. 1-31-67. Filed 11-22-65.
- 827,526. POCKET-PROBE. Electronic Development Laboratories, Inc. SN 233,086. Pub. 1-31-67. Filed 11-22-65.
- 827,527. SHEETLINER AND DESIGN. Sterling, Inc. SN 235,237. Pub. 1-31-67. Filed 12-23-65.
- 827,528. COBI. E. I. du Pont de Nemours and Company. SN 236,460. Pub. 1-31-67. Filed 1-14-66.
- 827,529. NESRAC. Technicon Chemical Company, Inc. SN 236,529. Pub. 1-31-67. Filed 1-13-66.
- 827,530. FEBETRON. Field Emission Corporation. SN 236,585. Pub. 1-31-67. Filed 1-17-66.
- 827,531. TRANSALOID. Xerox Corporation. SN 236,689. Pub. 1-31-67. Filed 1-17-66.
- 827,532. PAR. Bolt Associates, Inc. SN 239,115. Pub. 1-31-67. Filed 2-18-66.
- 827,533. MINI-DIP. Le Grand Products Corporation. SN 243,460. Pub. 1-31-67. Filed 4-14-66.
- 827,534. DELTA AND DESIGN. Sterno Industries, Inc. SN 248,063. Pub. 1-31-67. Filed 6-14-66.

Class 27 — Horological Instruments

- 827,535. SWANK. Swank, Inc. SN 238,900. Pub. 1-31-67. Filed 2-14-66.

Class 29 — Brooms, Brushes, and Dusters

- 827,456. (See Class 13 for this trademark.)
- 827,489. (See Class 21 for this trademark.)
- 827,536. CADILLAC. Cadillac Shoe Products, Inc. SN 230,773. Pub. 1-31-67. Filed 10-21-65.

Class 30 — Crockery, Earthenware, and Porcelain

- 827,537. SVAR. Shenango Ceramics, Inc., assignee of Shenango China, Inc. SN 166,128. Pub. 1-31-67. Filed 4-4-63.
- 827,538. SPYR. Shenango Ceramics, Inc., assignee of Shenango China, Inc. SN 166,136. Pub. 1-31-67. Filed 4-4-63.
- 827,539. CORDOVA. Castleton China, Inc. SN 169,826. Pub. 1-31-67. Filed 5-28-63.
- 827,540. ELYSIUM. Castleton China, Inc. SN 169,827. Pub. 1-31-67. Filed 5-28-63.
- 827,541. POMPEII. Castleton China, Inc. SN 169,828. Pub. 1-31-67. Filed 5-28-63.
- 827,542. RAVENNA. Castleton China, Inc. SN 169,829. Pub. 1-31-67. Filed 5-28-63.
- 827,543. ANDANTE. Castleton China, Inc. SN 217,289. Pub. 1-31-67. Filed 4-26-65.
- 827,544. CAPELLA. Castleton China, Inc. SN 217,291. Pub. 1-31-67. Filed 4-26-65.

- 827,545. CONCERTO. Castleton China, Inc. SN 217,292. Pub. 1-31-67. Filed 4-26-65.
- 827,546. BOLERO. Castleton China, Inc. SN 217,293. Pub. 1-31-67. Filed 4-26-65.
- 827,547. GOLDEN MELODY. Castleton China, Inc. SN 217,294. Pub. 1-31-67. Filed 4-26-65.
- 827,548. MUSICALLE. Castleton China, Inc. SN 217,298. Pub. 1-31-67. Filed 4-26-65.
- 827,549. OVERTURE. Castleton China, Inc. SN 217,299. Pub. 1-31-67. Filed 4-26-65.
- 827,550. FELICITY. Castleton China, Inc. SN 218,068. Pub. 1-31-67. Filed 5-5-65.
- 827,551. PROVINCIAL FLOWER. Castleton China, Inc. SN 218,069. Pub. 1-31-67. Filed 5-5-65.

Class 31 — Filters and Refrigerators

- 827,502. (See Class 21 for this trademark.)
- 827,552. FROST CLEAR. Hupp Corporation. SN 230,249. Pub. 1-31-67. Filed 10-15-65.
- 827,553. QWIK-FILTER. Juva-Tex, Inc. SN 245,317. Pub. 1-31-67. Filed 5-10-66.

Class 32 — Furniture and Upholstery

- 827,481. (See Class 19 for this trademark.)
- 827,554. BUBBLE. Stow & Davis Furniture Company. SN 236,663. Pub. 1-31-67. Filed 1-17-66.
- 827,555. THIS IS VILLA HERMOSA (BEAUTIFUL HOME). Stanley Furniture Company, Inc. SN 244,760. Pub. 1-31-67. Filed 5-2-66.
- 827,556. FLEX-O-SERVE. The Vollrath Company. SN 245,122. Pub. 1-31-67. Filed 5-6-66.
- 827,557. ANTIQUARY. Tomlinson of High Point. SN 245,429. Pub. 1-31-67. Filed 5-11-66.
- 827,558. CORIAN. E. I. du Pont de Nemours and Company. SN 251,857. Pub. 1-31-67. Filed 8-8-66.

Class 34 — Heating, Lighting, and Ventilating Apparatus

- 827,481. (See Class 19 for this trademark.)
- 827,559. UAP AND DESIGN. United Aircraft Products, Inc. SN 243,360. Pub. 1-31-67. Filed 4-18-66.
- 827,560. UAP AND DESIGN. United Aircraft Products, Inc. SN 243,361. Pub. 1-31-67. Filed 4-18-66.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

- 827,561. MAXPLY P-75. Dunlop Tire and Rubber Corporation. SN 236,478. Pub. 1-31-67. Filed 1-14-66.

Class 36 — Musical Instruments and Supplies

- 827,503. (See Class 21 for this trademark.)
- 827,505. (See Class 21 for this trademark.)
- 827,562. PIC-HIT. George E. Runquist Enterprises Inc. SN 223,584. Pub. 1-31-67. Filed 7-16-65.

Class 37 — Paper and Stationery

- 827,563. BUDDGETTE. The Badd Company. SN 214,420. Pub. 1-31-67. Filed 3-18-65.
- 827,564. STARKEY BUSINESS SYSTEMS AND DESIGN. Robert A. Starkey, d.b.a. Starkey Business Services. SN 227,883. Pub. 1-31-67. Filed 9-15-65.
- 827,565. CREDENTIAL. Southworth Company. SN 228,756. Pub. 1-31-67. Filed 9-27-65.
- 827,566. WHEN WE HAVE PEOPLE FOR DINNER AND DESIGN. The Holes-Webway Co. SN 234,029. Pub. 1-31-67. Filed 12-6-65.
- 827,567. FRA-O-FORM. Fraser Paper, Limited. SN 236,081. Pub. 1-31-67. Filed 1-10-66.
- 827,568. SHIELD (DESIGN). Tenneco Inc., by change of name from Tennessee Gas Transmission Company. SN 241,828. Pub. 1-31-67. Filed 3-24-66.
- 827,569. CONTAC-SEAL. Connecticut Valley Paper & Envelope Co., Incorporated. SN 249,381. Pub. 1-31-67. Filed 6-28-66.
- 827,570. UNI. Mitsui-bishi Pencil Company Limited. SN 249,779. Pub. 1-31-67. Filed 7-7-66.
- 827,571. SASHEEN. Minnesota Mining and Manufacturing Company. SN 251,501. Pub. 1-31-67. Filed 8-2-66.

Class 38 — Prints and Publications

- 827,572. PCPC PERSONAL REPORT FOR THE SUCCESSFUL EXECUTIVES. Personal Communications Publishing Corporation. SN 240,473. Pub. 1-31-67. Filed 3-8-66.
- 827,573. FOOD WINE AND LEISURE TIME AND DESIGN. Wine Institute. SN 246,987. Pub. 1-31-67. Filed 6-1-66.
- 827,574. CORINA. Francisco R. Saralegui. SN 252,932. Pub. 1-31-67. Filed 8-23-66.
- 827,575. ROBIN THE BOY WONDER AND DESIGN. National Periodical Publications, Inc. SN 255,263. Pub. 1-31-67. Filed 9-28-66.
- 827,576. "LAZY BONES." Gibson Greeting Cards, Inc. SN 257,011. Pub. 1-31-67. Filed 10-24-66.
- 827,577. FLIBBERTI-GIBBETS. Gibson Greeting Cards, Inc. SN 257,012. Pub. 1-31-67. Filed 10-24-66.
- 827,578. DUTCH TREATS. Gibson Greeting Cards, Inc. SN 257,018. Pub. 1-31-67. Filed 10-24-66.
- 827,579. DEBBIE DEERE. The McNaught Syndicate, Inc. SN 257,235. Pub. 1-31-67. Filed 10-26-66.

Class 39 — Clothing

- 827,580. NOEBEL. Superior Pants, Inc. SN 206,576. Pub. 3-1-66. Filed 11-19-64.
- 827,581. SCHIESSER. Trikotfabriken J. Schiesser A.G. MULTIPLE CLASS (Classes 39 and 42). SN 210,478. Pub. 1-31-67. Filed 1-22-65.
- 827,582. ANDREW FIFTH AVENUE AND DESIGN. Beaver Shirt Company, assignee of Beaver Shirt Manufacturing Co., Inc. SN 220,066. Pub. 1-31-67. Filed 6-1-65.
- 827,583. CAROLINE CHARLES. Jonathan Logan, Inc. SN 228,469. Pub. 1-31-67. Filed 9-23-65.
- 827,584. BIB KINS AND DESIGN. Scott Paper Company. SN 228,572. Pub. 1-31-67. Filed 9-24-65.
- 827,585. STALKER. McGregor-Doniger Inc. SN 228,731. Pub. 1-31-67. Filed 9-27-65.
- 827,586. S AND DESIGN. Schuberth Corporation. SN 228,944. Pub. 1-31-67. Filed 9-29-65.
- 827,587. HIDDEN COMFORT. E. Greenwald & Sons, d.b.a. Greenco Maid. SN 229,088. Pub. 1-31-67. Filed 10-1-65.

- 827,588. CAMPUS COOLERS AND DESIGN. Rockford Textile Mills, Inc. SN 230,195. Pub. 1-31-67. Filed 10-14-65.
- 827,589. ROBERTO DE SEVILLA BY VERDE. Strathmore Shoe Co., Inc. SN 231,273. Pub. 1-31-67. Filed 10-22-65.
- 827,590. STRATHMORE BY VERDE. Strathmore Shoe Co., Inc. SN 231,279. Pub. 1-31-67. Filed 10-22-65.
- 827,591. FILIPPO VERDE DELUXO. Strathmore Shoe Co., Inc. SN 231,281. Pub. 1-31-67. Filed 10-22-65.
- 827,592. J-BAR-B. Joabll Manufacturing Company, Inc. SN 233,182. Pub. 1-31-67. Filed 11-23-65.
- 827,593. EDGEWOOD. Edgewood Casuals, Inc. SN 239,029. Pub. 1-31-67. Filed 2-17-66.
- 827,594. PATTI PIPPINS. Stockton Manufacturing Co., Inc. SN 239,454. Pub. 1-31-67. Filed 2-23-66.
- 827,595. SLIM KNITS. Teen-age Beachwear Corporation. SN 241,094. Pub. 1-31-67. Filed 3-15-66.
- 827,596. CROSS 'N CLING. International Playtex Corporation, by change of name from International Latex Corporation. SN 242,729. Pub. 1-17-67. Filed 4-5-66.
- 827,597. THERMAPLUSH. The Londontown Manufacturing Company. SN 243,250. Pub. 1-31-67. Filed 4-12-66.
- 827,598. BUDO. Sportoon Cards, Inc. SN 243,354. Pub. 1-31-67. Filed 4-13-66.
- 827,599. ALAN MAC DONALD. Alpine House, Inc. SN 243,941. Pub. 1-31-67. Filed 4-21-66.
- 827,600. SPRINGWEAVE. Palm Beach Company. SN 244,239. Pub. 1-31-67. Filed 4-25-66.
- 827,601. COURTLITE. Eagle Shoe Mfg. Company, Inc. SN 244,578. Pub. 1-31-67. Filed 4-29-66.
- 827,602. RACHEL ANNE. Bear Brand Hosiery Co. SN 244,797. Pub. 1-31-67. Filed 5-3-66.
- 827,603. SCINTILLATE. Lewel Manufacturing Co., Inc. SN 244,831. Pub. 1-31-67. Filed 5-3-66.
- 827,604. FENDER. Juba-Schuhfabrik Julius Bock KG. SN 244,904. Pub. 1-31-67. Filed 5-4-66.
- 827,605. SCRUBBIES. Melville Shoe Corporation. SN 244,913. Pub. 1-31-67. Filed 5-4-66.
- 827,606. MARK-X. Superba Cravats, Inc. SN 245,257. Pub. 1-31-67. Filed 5-9-66.
- 827,607. DOUBLE V. International Playtex Corporation, by change of name from International Latex Corporation. SN 246,314. Pub. 1-31-67. Filed 5-23-66.
- 827,608. R.R.X. Wm. G. Leininger Knitting Co., Inc. SN 246,325. Pub. 1-31-67. Filed 5-23-66.
- 827,609. SINCLAIR AND DINOSAUR DESIGN. Sinclair Refining Company. SN 247,159. Pub. 1-31-67. Filed 6-2-66.
- 827,610. R.R.X. AND DESIGN. Wm. G. Leininger Knitting Co., Inc. SN 248,346. Pub. 1-31-67. Filed 6-17-66.
- 827,611. EVENING IN PARIS. Bourjois, Inc. SN 257,906. Pub. 1-31-67. Filed 11-4-66.
- 827,612. NETSKINS. Danskin Inc. SN 257,907. Pub. 1-31-67. Filed 11-3-66.

Class 40—Fancy Goods, Furnishings, and Notions

- 827,613. MINI COMB. Vulcanized Rubber & Plastics Company. SN 247,088. Pub. 1-31-67. Filed 6-1-66.
- 827,614. MOD ROD. The Gillette Company, d.b.a. The Toml Company. SN 247,466. Pub. 1-31-67. Filed 6-7-66.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

- 827,581. (See Class 39 for this trademark.)
- 827,615. FF-8. Huyck Corporation. SN 234,030. Pub. 1-31-67. Filed 12-6-65.

- 827,616. CAROLON. Graniteville Company. SN 240,434. Pub. 1-31-67. Filed 3-8-66.
- 827,617. BEAUTY STRIPE. Crown Rubber Company. SN 241,986. Pub. 1-31-67. Filed 3-28-66.
- 827,618. NATTIER. Esercizio Stabilimenti Litex S.a.S. SN 242,345. Pub. 1-31-67. Filed 3-31-66.
- 827,619. LITEX. Esercizio Stabilimenti Litex S.a.S. SN 242,346. Pub. 1-31-67. Filed 3-31-66.
- 827,620. DU PONT AND DESIGN. E. I. du Pont de Nemours and Company. SN 257,913. Pub. 1-31-67. Filed 11-4-66.

Class 44—Dental, Medical, and Surgical Appliances

- 827,621. INFUMAT. Testa Laboratorium A/S. SN 232,485. Pub. 1-31-67. Filed 11-10-65.
- 827,622. ELECATH AND DESIGN. Electro-Catheter Corporation. SN 233,431. Pub. 1-31-67. Filed 11-29-65.
- 827,623. MARSAUNETTE. Mar Saunette, Inc. SN 235,687. Pub. 1-31-67. Filed 1-3-66.
- 827,624. THERAPACER. Cargille Scientific Inc. SN 245,160. Pub. 1-31-67. Filed 5-9-66.
- 827,625. ROTO-SONIC. Irving Ellman and Shirley Ellman (joint owners), d.b.a. The Ellman Company. SN 245,579. Pub. 1-31-67. Filed 5-13-66.

Class 45—Soft Drinks and Carbonated Waters

- 827,626. REX AND DESIGN. The Louisiana Coca-Cola Bottling Co., Ltd. SN 191,864. Pub. 12-28-65. Filed 4-23-64.
- 827,627. SCOOP. Canteen Corporation, by change of name from Automatic Canteen Company of America. MULTIPLE CLASS (Classes 45 and 46). SN 226,402. Pub. 8-16-66. Filed 8-25-65.
- 827,628. CONGRESS SPRINGS AND DESIGN. Russell Pierce, d.b.a. Congress Springs Development Company. SN 241,680. Pub. 1-31-67. Filed 3-23-66.
- 827,629. KICKAPOO JOY JUICE. Capp Enterprises, Inc. SN 243,770. Pub. 1-31-67. Filed 4-19-66.
- 827,630. JOVO. Sallent Flavoring Corp. SN 256,629. Pub. 1-31-67. Filed 10-18-66.

Class 46—Foods and Ingredients of Foods

- 827,627. (See Class 45 for this trademark.)
- 827,631. RED'S AND DESIGN. Ingram's Food Products Co., Inc. SN 194,390. Pub. 2-15-66. Filed 5-27-64.
- 827,632. HYGRADE'S V.I.P. Hygrade Food Products Corporation. SN 207,211. Pub. 9-14-65. Filed 12-1-64.
- 827,633. GROTESQUE ANIMAL WITH PEANUT FOR BODY (DESIGN). Wingfield-Wilson. SN 231,516. Pub. 1-31-67. Filed 10-23-65.
- 827,634. SHAPIES. National Biscuit Company. SN 237,582. Pub. 12-13-66. Filed 1-28-66.
- 827,635. RING-A-DING. Poultry Guild, Inc. SN 240,778. Pub. 1-31-67. Filed 3-11-66.
- 827,636. FOOD-N-CUP AND DESIGN. Food-N-Cup Corporation. SN 240,874. Pub. 12-13-66. Filed 3-14-66.
- 827,637. NUTTIE-KINS. Beatrice Foods Co. SN 243,395. Pub. 1-31-67. Filed 4-14-66.
- 827,638. OCEAN GARDEN. Ocean Garden Products, Inc. SN 243,706. Pub. 1-31-67. Filed 4-18-66.

- 827,639. SKIPJACK. The Tilghman Packing Company. SN 244,040. Pub. 1-31-67. Filed 4-21-66.

Class 49—Distilled Alcoholic Liquors

- 827,640. FIVE STRIPE. Glenmore Distilleries Company, d.b.a. Five Stripe Distilling Co. SN 240,431. Pub. 1-31-67. Filed 3-8-66.
- 827,641. HIGHLAND SEAL. John Gross & Co. SN 244,823. Pub. 1-31-67. Filed 5-3-66.
- 827,642. HIGHLAND SUPREME. John Gross & Co. SN 244,824. Pub. 1-31-67. Filed 5-3-66.

Class 50—Merchandise Not Otherwise Classified

- 827,643. CYBIS AND DESIGN. Cybis. SN 246,542. Pub. 1-31-67. Filed 5-25-66.
- 827,644. IP AND DESIGN. International Paper Company. SN 247,931. Pub. 12-13-66. Filed 6-13-66.
- 827,645. KOOLETTES. Flambeau Plastics Corporation. SN 250,951. Pub. 1-31-67. Filed 7-25-66.

Class 51—Cosmetics and Toilet Preparations

- 827,646. ANCIENT SUMERIA AND DESIGN. Edmond Bordeaux Szekely, a.k.a. Edmond S. Bordeaux, d.b.a. Elxirs of Light, assignee, by mesne assignment, of Golden Door Cosmetics, Inc. SN 230,245. Pub. 9-20-66. Filed 10-15-65.
- 827,647. POPPAEA. Luzier Incorporated. SN 240,451. Pub. 10-11-66. Filed 3-8-66.
- 827,648. FRUIT D'OR. Jean Eymond, Inc. SN 241,046. Pub. 1-31-67. Filed 3-15-66.
- 827,649. PARFUM DE VOS ETOILES. Jean Eymond, Inc. SN 241,049. Pub. 1-31-67. Filed 3-15-66.
- 827,650. FLEUR DE CIEL. Jean Eymond, Inc. SN 241,050. Pub. 1-31-67. Filed 3-15-66.
- 827,651. MAGNOLIA EXOTIQUE. Jean Eymond, Inc. SN 241,053. Pub. 1-31-67. Filed 3-15-66.
- 827,652. LOTUS DE CEYLAN. Jean Eymond, Inc. SN 241,055. Pub. 1-31-67. Filed 3-15-66.
- 827,653. OEILLET D'ORIENT. Jean Eymond, Inc. SN 241,058. Pub. 1-31-67. Filed 3-15-66.
- 827,654. HIGH BEAM. Bristol-Myers Company. MULTIPLE CLASS (Classes 51 and 52). SN 245,041. Pub. 1-31-67. Filed 5-6-66.
- 827,655. BRIGHT LOOK. Bristol-Myers Company. MULTIPLE CLASS (Classes 51 and 52). SN 245,042. Pub. 1-31-67. Filed 5-6-66.
- 827,656. BRUSHED LOOK. Bristol-Myers Company. MULTIPLE CLASS (Classes 51 and 52). SN 245,043. Pub. 1-31-67. Filed 5-6-66.
- 827,657. 003½. Colgate-Palmolive Company. SN 246,538. Pub. 1-31-67. Filed 5-25-66.
- 827,658. FRESHENER LEMON-JELVYN AND DESIGN. Adams National Industries (Pty.) Ltd. SN 254,019. Pub. 1-31-67. Filed 9-8-66.
- 827,659. LEMON-JELVYN. Adams National Industries (Pty.) Ltd. SN 254,020. Pub. 1-31-67. Filed 9-8-66.
- 827,660. JELVYN AND DESIGN. Adams National Industries (Pty.) Ltd. SN 254,087. Pub. 1-31-67. Filed 9-9-66.
- 827,661. BEN HUR. The Andrew Jergens Company. SN 254,648. Pub. 1-31-67. Filed 9-19-66.

- 827,662. ZARLUNE. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 255,038. Pub. 1-31-67. Filed 9-26-66.
- 827,663. NOW-ARMED. American Home Products Corporation. SN 256,186. Pub. 1-31-67. Filed 10-11-66.
- 827,664. ARMED. American Home Products Corporation. SN 256,187. Pub. 1-31-67. Filed 10-11-66.

Class 52—Detergents and Soaps

- 827,439. (See Class 4 for this trademark.)
- 827,654. (See Class 51 for this trademark.)
- 827,655. (See Class 51 for this trademark.)
- 827,656. (See Class 51 for this trademark.)
- 827,665. NU-DEX. Joe Clifton Nalfeb, d.b.a. American Chemical Co. SN 226,268. Pub. 10-11-66. Filed 8-23-65.
- 827,666. TUF-GUY. Naton-Wide Chemical Co. Inc. SN 246,585. Pub. 1-31-67. Filed 5-25-66.
- 827,667. FIGHT IT. Clairol Incorporated. SN 246,658. Pub. 1-31-67. Filed 5-26-66.
- 827,668. FIGHT BACK. Clairol Incorporated. SN 246,659. Pub. 1-31-67. Filed 5-26-66.
- 827,669. ADVICE. Clairol Incorporated. SN 246,879. Pub. 1-31-67. Filed 5-31-66.
- 827,670. SAPOCETI. Guerlain, Inc. SN 247,225. Pub. 1-31-67. Filed 6-3-66.
- 827,671. GOOD ADVICE. Clairol Incorporated. SN 248,298. Pub. 1-31-67. Filed 6-17-66.
- 827,672. ZARLUNE. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 255,254. Pub. 1-31-67. Filed 9-28-66.
- 827,673. ZULETE. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 255,258. Pub. 1-31-67. Filed 9-28-66.
- 827,674. BRIFFAULT. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 255,259. Pub. 1-31-67. Filed 9-28-66.

Service Marks

Class 100—Miscellaneous

- 827,675. 3 PARALLEL TRIANGLES IN A RECTANGLE (DESIGN). Planning Research Corporation. SN 241,798. Pub. 1-31-67. Filed 3-24-66.
- 827,676. HEROES INC. AND DESIGN. Heroes, Inc. SN 244,113. Pub. 1-31-67. Filed 4-22-66.
- 827,677. KING LOUIE. King Louie Bowling Corporation of Missouri. SN 252,326. Pub. 12-20-66. Filed 8-15-66.
- 827,678. HYATT HOUSE HOTELS. Hyatt Corporation of America. SN 254,167. Pub. 1-31-67. Filed 9-9-66.
- 827,679. ROWNTOWNER. The Downtowner Corporation. SN 256,795. Pub. 1-31-67. Filed 10-20-66.
- 827,680. ROWNTOWNER MOTOR INNS AND DESIGN. The Downtowner Corporation. SN 256,902. Pub. 1-31-67. Filed 10-21-66.

Class 101—Advertising and Business

- 827,681. CHIPS AND DESIGN. Franchise Investment Company, Inc., assignee of Chip's Franchise System, Inc. SN 188,959. Pub. 4-27-65. Filed 3-18-64.
- 827,682. IMI. WOFAC Corporation. SN 232,885. Pub. 12-13-66. Filed 11-17-65.
- 827,683. MS AND DESIGN. Mystic Seaport Stores, Inc. SN 243,344. Pub. 1-31-67. Filed 4-13-66.

- 827,684. S STARLINE AND DESIGN. Starline Corporation. SN 244,148. Pub. 1-31-67. Filed 4-22-66.
- 827,685. MR. WIGGS. Sandusky Distributing Company. SN 245,797. Pub. 1-31-67. Filed 5-16-66.
- 827,686. ADVERTISING COUNCIL AND DESIGN. The Advertising Council, Inc. SN 251,169. Pub. 1-31-67. Filed 7-28-66.
- 827,687. PP8B AND DESIGN. Periodical Publishers' Service Bureau, Inc. SN 253,255. Pub. 1-31-67. Filed 8-29-66.

Class 102 — Insurance and Financial

- 827,688. C/UA AND DESIGN. The College/University Insurance Company of America. SN 258,013. Pub. 1-31-67. Filed 11-7-66.

Class 105 — Transportation and Storage

- 827,689. VISTA. Allegheny Airlines, Inc. SN 254,973. Pub. 1-31-67. Filed 9-23-66.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

SECTION 1

(Combined Certificates)

- 827,701. Artes de Mexico Internacionales, Inc., Dallas, Tex. SN 225,537. Filed P.R. 8-12-65; Am. S.R. 2-13-67.

ARTES DE MEXICO

SECTION 2**Class 5 — Adhesives**

- 827,695. Contract Chemical Manufacturing Corporation, Hato Rey, Puerto Rico. SN 227,261. Filed P.R. 9-7-65; Am. S.R. 2-13-67.

METAL LOG

For Settable Liquid Resinous Composition for Use as an Adhesive and/or Sealing Compound.
First use on or about Aug. 23, 1965.

Class 18 — Medicines and Pharmaceutical Preparations

- 827,696. Kent Feeds, Inc., Muscatine, Iowa. SN 222,712. Filed P.R. 7-6-65; Am. S.R. 2-6-67.

SEASONIZED

For Medicated Livestock and Poultry Feeds.
First use in about January 1962.

Class 107 — Education and Entertainment

- 827,690. KIDDIE KOLLEGE. Hayden Huddleston Advertising Agency, Inc. SN 241,144. Pub. 1-31-67. Filed 3-16-66.
- 827,691. T AND DESIGN. The Tahse Corporation. SN 241,542. Pub. 1-31-67. Filed 3-21-66.
- 827,692. CHEETAH AND DESIGN. The Pop-Op Corporation. SN 251,771. Pub. 1-31-67. Filed 8-5-66.
- 827,693. INTERNATIONAL CORRESPONDENCE SCHOOL WORLD LIMITED, INC. International Textbook Company. SN 255,676. Pub. 1-31-67. Filed 10-4-66.

Collective Membership Mark**Class 200**

- 827,694. NATIONAL ASSOCIATION OF WOMEN IN CONSTRUCTION AND DESIGN. National Association of Women in Construction. SN 244,340. Pub. 1-31-67. Filed 4-26-66.

Class 32 — Furniture and Upholstery

For Furniture and Household Furnishings Made in Mexico—Namely, Tables, Mirrors, Dressers, Cabinets, and Chairs.

Class 34 — Heating, Lighting, and Ventilating Apparatus

For Sconces.

First use Oct. 2, 1961.

Class 19 — Vehides

- 827,697. Brown-Balk Motor Corp., Bronx, N.Y. SN 227,751. Filed P.R. 9-14-65; Am. S.R. 2-13-67.

VEND-R-VAN

For Vehicles—Namely, Trucks Modified for Retail Sales.
First use Mar. 11, 1963.

Class 22 — Games, Toys, and Sporting Goods

- 827,698. American Toy & Furniture Co., Inc., Chicago, Ill. SN 232,508. Filed P.R. 11-12-65; Am. S.R. 1-30-67.

LITTLE RED SCHOOLHOUSE

For Toy Chest Including a Chalk Board and Movable Toy Carts.
First use Sept. 15, 1964.

Class 23 — Cutlery, Machinery, and Tools, Class 39 — Clothing and Parts Thereof

- 827,703. Miller Bros. Hat Co., Inc., New York, N.Y. SN 237,617. Filed P.R. 1-28-66; Am. S.R. 2-10-67.

Mac ADAM

For Men's Sportswear—Namely, Sweaters, Knit Shirts, and Sport Shirts.
First use Dec. 15, 1965.

PURDY'S

For Landlevelers.
First use on or about May 15, 1959.

Class 26 — Measuring and Scientific Appliances Class 46 — Foods and Ingredients of Foods

- 827,704. George F. Tingler, Butler, Mo. SN 238,801. Filed P.R. 2-14-66; Am. S.R. 2-6-67.

PIZZA FRI

For Prepared Food Products—Namely, Pizza Pie.
First use June 1961.

- 827,700. Seymour B. London, d.b.a. Monitor Instruments, Miami Beach, Fla. SN 237,139. Filed P.R. 1-24-66; Am. S.R. 2-16-67.

PRESSUROMETER

For Blood Circulation Monitoring Systems of the Type Used To Determine Systolic and Diastolic Blood Pressure Readings.
First use during October 1963.

- 827,705. General Foods Corporation, White Plains, N.Y. SN 247,017. Filed 6-1-66.

RICH 'N SMOOTH

For Instant Flavored Food Beverage Mix.
First use Oct. 26, 1964.

Class 32 — Furniture and Upholstery

- 827,701. See Section 1 (Combined Certificate).

Class 34 — Heating, Lighting, and Ventilating Apparatus

- 827,701. See Section 1 (Combined Certificate).

Class 51 — Cosmetics and Toilet Preparations

- 827,706. Alex B. Del Bueno, d.b.a. Arpad Dental Products, Somerville, N.J. SN 237,821. Filed P.R. 2-2-66; Am. S.R. 10-27-66.

ARPAD

For Denture Cleaner.
First use July 18, 1961.

Class 38 — Prints and Publications

- 827,702. Holkuha Publishing Co., Ltd. (Kabushiki Kaisha Holkuha), Higashi-ku, Osaka City, Japan. SN 198,953. Filed P.R. 7-31-64; Am. S.R. 12-19-66.

COLOR BOOKS

Owner of Japanese Reg. No. 631,664, dated Dec. 10, 1963; and U.S. Reg. No. 765,522.

For Books Comprising Text Material and Illustrations in Black and White and/or Color, Prints of Flora, Fauna, etc. in Black and White and/or Color.

WOLTZ ITALIANA

Owner of Italian Reg. No. 163,070, dated Aug. 8, 1963; and U.S. Reg. No. 755,727.

For Perfume Products—Namely, Perfume, Bath Oils, and Colognes; Make-Up, Lipstick, Rouge, Eye Shadow, Mascara, Eye Liner, Eyebrow Pencils, and Facial Creams, Nail Polishes and Varnish, and Solvents for Nail Polishes.

First use at least as early as Aug. 8, 1963; in commerce at least as early as Aug. 8, 1963.

- 827,708. Revlon, Inc., New York, N.Y. SN 240,543. Filed P.R. 3-9-66; Am. S.R. 2-6-67.

HONEY UMBER

For Powder.
First use Sept. 22, 1965.

827,709. Wolts-Prodotti di Bellezza S.R.L., Milan, Italy.
SN 241,000. Filed P.R. 3-14-66; Am. S.R. 2-1-67.



Owner of Italian Reg. No. 163,101, dated May 16, 1968;
and U.S. Reg. No. 755,727.

For Perfume Products—Namely, Perfume, Bath Oils, and
Colognes, Make-Up, Lipstick, Rouge, Eye Shadow, Mascara,
Eye Liner, Eyebrow Pencil, and Facial Creams, Nail Polish
and Varnish, and Solvents for Nail Polish.

First use at least as early as May 16, 1963; in commerce
at least as early as May 16, 1963.

Collective Membership Mark

Class 200

827,710. Gray and Ductile Iron Founders' Society, Inc.,
Cleveland, Ohio. SN 235,050. Filed P.R. 12-17-65; Am.
S.R. 2-17-67.



For Iron Castings To Indicate Membership in Applicant.
First use December 1964.

TRADEMARK REGISTRATIONS RENEWED

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|---|---|
| 29,632. QUAKER OATS AND DESIGN. Cl. 46. 3-2-1897. | 226,027. THE PRAIRIE FARMER. Cl. 38. 3-29-27. |
| 56,118. ANTELOPE. Cl. 37. 8-28-06. | 226,615. CENCO. Cl. 18. 4-12-27. |
| 56,119. BEAR. Cl. 37. 8-28-06. | 226,779. K-GELL. Cl. 52. 4-19-27. |
| 56,120. BUFFALO. Cl. 37. 8-28-06. | 226,807. THONET AND DESIGN. Cl. 32. 4-19-27. |
| 56,121. WOLF. Cl. 37. 8-28-06. | 226,854. SAFEWAY. Cl. 46. 4-19-27. |
| 56,122. ZEBRA. Cl. 37. 8-28-06. | 226,961. YUM-YUM. Cl. 46. 4-26-27. |
| 56,126. ANCHOR. Cl. 37. 8-28-06. | 227,295. CHARVAL. Cl. 51. 5-3-27. |
| 56,189. ELK. Cl. 37. 8-28-06. | 227,390. LITTLE GIANT. Cl. 23. 5-3-27. |
| 56,190. LION. Cl. 37. 8-28-06. | 227,613. FORSTELLA. Cl. 42. 5-10-27. |
| 56,191. MOOSE. Cl. 37. 8-28-06. | 227,720. PRINCE ALBERT AND DESIGN. Cl. 17. 5-17-27. |
| 56,192. TIGER. Cl. 37. 8-28-06. | 227,904. THE NEW YORK TIMES. Cl. 38. 5-17-27. |
| 56,195. TRADE. Cl. 37. 8-28-06. | 228,359. GEORGE BANTA PUBLISHING COMPANY AND DESIGN. Cl. 38. 5-31-27. |
| 56,196. PANTHER. Cl. 37. 8-28-06. | 228,508. CAPITANA GALVESTON, TEX. AND DESIGN. Cl. 46. 6-7-27. |
| 57,535. DIAMOND. Cl. 12. 11-13-06. | 229,408. CENCO. Cl. 23. 6-28-27. |
| 57,903. WHITE SEWING MACHINE CO. Cl. 23. 12-4-06. | 229,837. GRAMIX. Cl. 23. 7-5-27. |
| 59,029. TICONDEROGA. Cl. 1. 1-1-07. | 230,041. MEGAVAC. Cl. 23. 7-12-27. |
| 59,505. MEXICAN. Cl. 15. 1-8-07. | 230,109. WALTHAM. Cl. 37. 7-12-27. |
| 60,819. MEXICAN AND DESIGN. Cl. 1. 2-5-07. | 230,203. CENCO. Cl. 14. 7-19-27. |
| 60,521. FLASH AND DESIGN. Cl. 52. 2-12-07. | 230,320. SURPASS KANGAROO AND DESIGN. Cl. 1. 7-19-27. |
| 60,681. THUNDERBOLT. Cl. 46. 2-19-07. | 424,922. AMICO. Cl. 44. 10-29-46. |
| 60,682. I-H. Cl. 46. 2-19-07. | 426,522. PONY BOX. Cl. 22. 12-31-46. |
| 61,289. ALPHA. Cl. 23. 3-12-07. | 427,093. AER-O-FLEX. Cl. 82. 1-28-47. |
| 61,816. U.S.G. CO. S. Cl. 15. 4-9-07. | 427,386. THE D & L. Cl. 46. 2-11-47. |
| 62,752. STAR AND DESIGN. Cl. 23. 5-21-07. | 427,560. YOUNG LAD. Cl. 51. 2-11-47. |
| 62,978. THE UNITED STATES GRAPHITE CO. Cl. 1. 6-4-07. | 428,013. JET. Cl. 22. 3-4-47. |
| 63,405. NV AND DESIGN. Cl. 23. 6-18-07. | 428,140. VIKING. Cl. 23. 8-11-47. |
| 63,490. ESTERBROOK. Cl. 37. 6-25-07. | 428,799. VANITY FRIENDMAKER. Cl. 39. 4-1-47. |
| 64,076. MEXICAN. Cl. 1. 7-23-07. | 429,165. ZAUSNER AND DESIGN. Cl. 46. 4-22-47. |
| 64,130. TESTED XX. Cl. 23. 7-23-07. | 430,018. SOUTHERN CHARM. Cl. 28. 6-3-47. |
| 64,232. BIKE. Cl. 22. 7-30-07. | 430,019. EPIC. Cl. 28. 6-3-47. |
| 64,546. DIASTAFOR. Cl. 6. 8-13-07. | 430,184. CLIMAX AND DESIGN. Cl. 44. 6-10-47. |
| 64,588. AUTOGRAPH AND DESIGN. Cl. 39. 8-13-07. | 430,186. TUBE-TAINER AND DESIGN. Cl. 2. 6-10-47. |
| 64,590. DIAMALT. Cl. 46. 8-13-07. | 430,232. VALAZE AND DESIGN. Cl. 51. 6-10-47. |
| 216,181. RED MULE. Cl. 46. 8-3-26. | 430,348. VAPOTONE. Cl. 6. 6-10-47. |
| 222,857. TYOGA AND DESIGN. Cl. 46. 1-11-27. | 430,567. CROSS DEVICE. Cl. 38. 6-17-47. |
| 228,148. WATCH DOG AND DESIGN. Cl. 6. 1-18-27. | 430,747. CHLORIMET. Cl. 14. 6-24-47. |
| 228,345. SAMARIN. Cl. 18. 2-1-27. | 430,780. HOBART-H IN OVAL. Cl. 21. 6-24-47. |
| 228,554. JEAN PATOU. Cl. 39. 2-8-27. | 430,799. THE PROVIDENCE JOURNAL. Cl. 38. 6-24-47. |
| 228,645. HI TENSO. Cl. 14. 2-8-27. | 430,800. THE PROVIDENCE SUNDAY JOURNAL. Cl. 38. 6-24-47. |
| 224,073. SUPERLA. Cl. 15. 2-15-27. | 430,806. CONFECTIONS THE D.L.C. OF TASTE AND DESIGN. Cl. 46. 6-24-47. |
| 224,166. CABOT'S. Cl. 16. 2-22-27. | 430,888. SUMMER WOODS. Cl. 51. 7-1-47. |
| 224,173. MALTOMILK. Cl. 46. 2-22-27. | 431,079. TIME GASOLINE AND DESIGN. Cl. 15. 7-8-47. |
| 224,577. DIVERSOL. Cl. 6. 3-1-27. | 431,080. ELECTROLUX NEWS. Cl. 38. 7-8-47. |
| 224,703. PALMOLIVE AND DESIGN. Cl. 51. 3-1-27. | 431,438. ORTHO. Cl. 10. 7-22-47. |
| 224,893. SAFEWAY. Cl. 46. 3-8-27. | 431,558. TIME OIL CO. TIME GASOLINE AND DESIGN. Cl. 15. 7-29-47. |
| 224,937. CABOT'S. Cl. 12. 3-8-27. | 431,599. FINA FOAM. Cl. 52. 7-29-47. |
| 225,147. AMERICAN NURSERYMAN AND DESIGN. Cl. 38. 3-15-27. | 431,616. HOBART-H IN OVAL. Cl. 23. 7-29-47. |
| 225,501. ROACHES LAST MEAL AND DESIGN. Cl. 6. 8-22-27. | 431,640. DURCO. Cl. 2. 7-29-47. |
| 225,565. PYROCAST. Cl. 14. 3-22-27. | |
| 225,594. SAFEWAY STORES CALIFORNIA'S LEADING GROCER. Cl. 46. 3-22-27. | |
| 225,956. AMBEROL. Cl. 1. 3-29-27. | |

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued Feb. 28, 1961

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| 711,669. CELLOGARD. Cl. 1. | 711,822. SHOLD-O-POD. Cl. 26. |
| 711,677. LAVAMEE. Cl. 8. | 711,823. EMPOWER. Cl. 26. |
| 711,679. U.S. RUBBER AND DESIGN. Cl. 4. | 711,825. Q-CON. Cl. 26. |
| 711,681. WAX 20. Cl. 4. | 711,828. CATSEYE. Cl. 26. |
| 711,691. REDIFLOC. Cl. 6. | 711,829. IRIDIA. Cl. 26. |
| 711,697. SEA HAWK AND DESIGN. Cl. 7. | 711,830. ZAFFIRD. Cl. 26. |
| 711,702. R BRAND. Cl. 10. | 711,833. RADIPOL. Cl. 26. |
| 711,709. PRESTIGE. Cl. 12. | 711,835. CLINITRON. Cl. 26. |
| 711,711. AMBRIDGE. Cl. 12. | 711,838. THAYER. Cl. 26. |
| 711,715. BULLSEYE BOTTOM. Cl. 13. | 711,841. FM. Cl. 27. |
| 711,717. WEHAG AND DESIGN. Cl. 13. | 711,848. ERINCO. Cl. 32. |
| 711,718. CHAMPION AND DESIGN. Cl. 13. | 711,849. CLASSIC. Cl. 32. |
| 711,719. EDINGS. Cl. 13. | 711,852. DON DUVAL. Cl. 33. |
| 711,722. ACIPCOLOY. Cl. 13. | 711,855. TELE-VENT. Cl. 34. |
| 711,735. DU-LITE. Cl. 16. | 711,860. HI-PEDAL. Cl. 36. |
| 711,736. COLOR GEMS AND DESIGN. Cl. 16. | 711,861. CAPRICORN AND DESIGN. Cl. 36. |
| 711,746. LAXITONE. Cl. 18. | 711,864. TEL-A-CALL. Cl. 37. |
| 711,749. PSORALAN. Cl. 18. | 711,865. ENVEL-MATIC ETC. AND DESIGN. Cl. 37. |
| 711,752. NICAPLEX. Cl. 18. | 711,867. HANDYWAY. Cl. 37. |
| 711,758. OSSEOFAC. Cl. 18. | 711,873. ALCOA ALWRAP AND DESIGN. Cl. 37. |
| 711,761. BRIDAMOL. Cl. 18. | 711,874. ALUPRINT. Cl. 37. |
| 711,762. MEDISCRATCH. Cl. 18. | 711,878. BONDALURE. Cl. 37. |
| 711,763. HEATEX. Cl. 18. | 711,879. ASTRO-VAC. Cl. 37. |
| 711,770. PALOMAR. Cl. 19. | 711,880. CHARM-PAK. Cl. 37. |
| 711,771. AIRBEAM. Cl. 19. | 711,885. TEST. Cl. 38. |
| 711,777. ARGUS. Cl. 21. | 711,888. KNOW YOUR NAVY. Cl. 38. |
| 711,780. WILRITE. Cl. 21. | 711,890. THE PARK AVENUE LINE AND DESIGN. Cl. 38. |
| 711,781. CLINICAIRE. Cl. 21. | 711,891. MY SON JOHN. Cl. 38. |
| 711,782. GUARDAIRE. Cl. 21. | 711,893. FIT/EASE. Cl. 39. |
| 711,783. PROTECTAIRE. Cl. 21. | 711,894. PRM AND DESIGN. Cl. 39. |
| 711,786. LITTLE MIL MAKIT. Cl. 22. | 711,897. PANTERNITIES. Cl. 39. |
| 711,787. ALL SPORTING GOODS ETC. AND DESIGN. Cl. 22. | 711,902. STUDDS BY H.I.S. Cl. 39. |
| 711,788. TAKE-A-TOG. Cl. 22. | 711,904. SANTA'S HELPER. Cl. 39. |
| 711,791. LOCKSLEY. Cl. 22. | 711,909. VELVEDEER. Cl. 39. |
| 711,792. CREE-DUK. Cl. 22. | 711,918. UNITED STATES MILLS ETC. AND DESIGN. Cl. 42. |
| 711,794. RACE A WAY. Cl. 22. | 711,917. FRAPPE. Cl. 42. |
| 711,795. HOTT-NANNY. Cl. 22. | 711,928. MALETIX. Cl. 44. |
| 711,800. INSTA-MATIC. Cl. 23. | 711,929. THERASONE. Cl. 44. |
| 711,803. B-W UNISPRAG. Cl. 23. | 711,930. REMINDERS. Cl. 44. |
| 711,805. SUPER DEMON ETC. AND DESIGN. Cl. 23. | 711,932. PROTO-CATH. Cl. 44. |
| 711,806. ZINC-MATIC. Cl. 23. | 711,935. PONTIFAB. Cl. 44. |
| 711,807. EXPRESS. Cl. 23. | 711,938. VIDEO SPRAY. Cl. 44. |
| 711,808. SUBURBAN. Cl. 23. | 711,941. MELODY. Cl. 46. |
| 711,809. MUSVAC. Cl. 23. | 711,966. FLAVOR SMOKE ETC. AND DESIGN. Cl. 1. |
| 711,810. BIOZON. Cl. 23. | 711,943. JAVA JIM AND DESIGN. Cl. 46. |
| 711,812. MASTERCUT. Cl. 23. | 711,944. GOUDAMAR. Cl. 46. |
| 711,815. TRANSECO. Cl. 23. | 711,950. LOUETTE. Cl. 46. |
| | 711,960. WINGTEL. Cl. 101. |
| | 711,962. A.I.D. Cl. 103. |
| | 711,964. THERMIZING. Cl. 106. |

INDEX OF REGISTRANTS

APRIL 18, 1967

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

- A.J. Industries, Inc., Springfield, Mo. 711,771, canc. Cl. 19.
 AMF Tuboscope, Inc., Houston, Tex. 827,523, pub. 1-31-67.
 Abbott Laboratories, North Chicago, Ill. 711,762, canc. Cl. 18.
 Adams, Clay, Inc., New York, N.Y. 711,835, canc. Cl. 26.
 Adams National Industries, (Pty.) Ltd., Durban, Natal, Republic of South Africa. 827,658-67, pub. 1-31-67. Cl. 51.
 Adler, Seymour, d.b.a. Leonis Co., El Segundo, Calif. 827,511, pub. 1-31-67. Cl. 22.
 Advertising Council, Inc., The, New York, N.Y. 827,686, pub. 1-31-67. Cl. 101.
 Aerovox Corp., New Bedford, Mass. 827,492, pub. 1-31-67. Cl. 21.
 Aircapital Mfg., Inc., Wichita, Kans. 711,812, canc. Cl. 23.
 Al-Craft Mfg. Co., Troy, Mich. 827,457, pub. 1-31-67. Multiple Class (Classes 13, 14, and 25).
 Allegheny Airlines, Inc., Washington, D.C. 827,689, pub. 1-31-67. Cl. 105.
 Alpine House, Inc., Ozone Park, N.Y. 827,599, pub. 1-31-67. Cl. 39.
 Aluminum Co. of America, Pittsburgh, Pa. 711,873, canc. Cl. 37.
 Alvin Corp., The, Providence, R.I. 430,018, ren. 4-18-67. Cl. 28.
 American Brass Co., The, to Anaconda American Brass Co., Waterbury, Conn. 223,645, ren. 4-18-67. Cl. 14.
 American Cast Iron Pipe Co., Birmingham, Ala. 711,722, canc. Cl. 13.
 American Cereal Co., The, Akron, Ohio, Chicago, Ill., and Cedar Rapids, Iowa, to The Quaker Oats Co., Chicago, Ill. 29,632, ren. 4-18-67. Cl. 46.
 American Character, Inc., New York, N.Y. 827,507-8, pub. 1-31-67. Cl. 22.
 American Chemical Co.: See—
 Naifeh, Joe C.
 American Components Inc., Conshohocken, Pa. 827,485, pub. 1-31-67. Cl. 21.
 American Crayon Co., The, Sandusky, Ohio, to The Joseph Dixon Crucible Co., Jersey City, N.J. 230,109, canc. Cl. 37.
 American Electric Corp., Southaven, Miss. 827,483, pub. 1-31-67. Cl. 21.
 American Fruits Publishing Co., Inc., Rochester, N.Y. to American Nurseryman Publishing Co., Chicago, Ill. 225,147, ren. 4-18-67. Cl. 38.
 American Greetings Corp.: See—
 Fairchild, E. E., Corp.
 American Home Products Corp., New York, N.Y. 827,467, pub. 1-31-67. Cl. 18.
 American Home Products, New York, N.Y. 827,663-4, pub. 1-31-67. Cl. 51.
 American Medical Instrument Co., New York, to American Medical Instrument Corp., Flushing, N.Y. 424,922, ren. 4-18-67. Cl. 44.
 American Medical Instrument Corp.: See—
 American Medical Instrument Co.
 American Nurseryman Publishing Co.: See—
 American Fruits Publishing Co., Inc.
 American Oil Co.: See—
 Standard Oil Co.
 American Safety Razor Co.: See—
 Kampfe Bros.
 American Toy & Furniture Co., Inc., Chicago, Ill. 827,698, Cl. 22.
 Ampruf Paint Co., Inc., of Calif., d.b.a. Ampruf Paint Co., El Monte, Calif. 711,736, canc. Cl. 16.
 Anaconda American Brass Co.: See—
 American Brass Co., The.
 Anchor Plastics Co.: See—
 Fisch, Richard A.
 Andrew Corp., Orland Park, Ill. 287,502, pub. 1-31-67. Multiple Class (Classes 21 and 31).
 Archer-Daniels-Midland Co., Minneapolis, Minn. 827,441, pub. 1-31-67. Cl. 6.
 Arco Pharmaceuticals, Inc., Plainview, N.Y. 827,463-4, pub. 1-31-67. Cl. 18.
 Ardee Co., The: See—
 Reiskin, Eli.
 Armour and Co., Chicago, Ill. 711,691, canc. Cl. 6.
 Armour and Co., Chicago, Ill. 727,423-7, pub. 1-31-67. Cl. 1.
 Artes De Mexico Internacionales, Inc., Dallas, Tex. 827,701, Multiple Class (Classes 32 and 34).
 Ashimori Industry Co., Ltd., Higashi Yodogawa-ku, Osaka, Japan. 711,697, canc. Cl. 7.
 Automatic Canteen Co. of America: See—
 Canteen Corp.
 Avant Inc., Lincoln, Mass. 827,521, pub. 1-31-67. Cl. 26.
 B-D Laboratories, Inc., East Rutherford, N.J. 827,440, pub. 1-31-67. Cl. 6.
 Banta, George, Co., Inc.: See—
 Banta, George, Publishing Co.
 Banta, George, Publishing Co., to George Banta Co., Inc., Menasha, Wis. 228,359, ren. 4-18-67. Cl. 38.
 Barger Metal Fabricating Co., Cleveland, Ohio. 827,504, pub. 1-31-67. Cl. 21.
 Barkeley Electric Mfg. Co., Middletown, Ohio. 827,494, pub. 1-31-67. Cl. 21.
 Barnes-Hind Ophthalmic Products, Sunnyvale, Calif. 827,473, pub. 1-31-67. Cl. 18.
 Barry-Webb Miller Co., St. Louis, Mo. 827,517, pub. 1-31-67. Cl. 23.
 Bartlett-Snow-Pacific Inc.: See—
 Pacific Foundry Co.
 Bathurst Containers Ltd., Montreal, Quebec, Canada. 827,433, pub. 1-31-67. Cl. 2.
 Bear Brand Hosiery Co., Chicago, Ill. 827,602, pub. 1-31-67. Cl. 39.
 Beatrice Foods Co.: See—
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 Beatrice Foods Co., Chicago, Ill. 827,637, pub. 1-31-67. Cl. 46.
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 Beaver Shirt Mfg. Co., Inc.: See—
 Beaver Shirt Co.
 Behrwood Foundation, Inc., The, Brasstown, N.C. 827,438, pub. 12-8-66. Cl. 3.
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 Betz, W. H. & L. D., to Betz Laboratories, Inc., Philadelphia, Pa. 226,779, ren. 4-18-67. Cl. 52.
 Blaw-Knox Co., Pittsburgh, Pa. 711,807-8, canc. Cl. 23.
 Bolt Associates, Inc., East Norwalk, Conn. 827,532, pub. 1-31-67. Cl. 26.
 Borg-Warner Corp., Chicago, Ill. 711,808, canc. Cl. 23.
 Bourjois, Inc., New York, N.Y. 827,611, pub. 1-31-67. Cl. 39.
 Bristol-Myers Co., New York, N.Y. 827,654-6, pub. 1-31-67. Multiple Class (Classes 51 and 52).
 British Chemotherapeutic Products Ltd., Bradford, York, England. 827,469, pub. 1-31-67. Cl. 18.
 Brown-Balk Motor Corp., Bronx, N.Y. 827,697. Cl. 19.
 Browning, Charles W., d.b.a. Tel-A-Call Co., Tulsa, Okla. 711,864, canc. Cl. 37.
 Brunette, Frank, d.b.a. Louette Food Products, Yonkers, N.Y. 711,950, canc. Cl. 40.
 Brunswick Corp., Chicago, Ill. 827,512, pub. 1-31-67. Cl. 22.
 Budd Co., The, Philadelphia, Pa. 827,563, pub. 1-31-67. Cl. 37.
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 Texas Star Flour Mills.
 Byers, A. M., Co., Ambridge, Pa. 827,484, pub. 1-31-67. Cl. 21.
 Cabot, Samuel, Inc., Boston, Mass. 224,166, ren. 4-18-67. Cl. 16.
 Cabot, Samuel, Inc., Boston, Mass. 224,937, ren. 4-18-67. Cl. 12.
 Cadillac Shoe Products, Inc., Detroit, Mich. 827,536, pub. 1-31-67. Cl. 29.
 California Spray-Chemical Corp., Wilmington, Del., and Richmond, Calif., to Chevron Chemical Co., San Francisco, Calif. 430,348, ren. 4-18-67. Cl. 6.
 California Spray-Chemical Corp., Wilmington, Del., and Richmond, Calif., to Chevron Chemical Co., San Francisco, Calif. 431,438, ren. 4-18-67. Cl. 10.
 Calmic Ltd., Crewe, England. 711,761, canc. Cl. 18.
 Canteen Corp., from Automatic Canteen Co. of America, Chicago, Ill. 827,627, pub. 8-16-66. Multiple Class (Classes 45 and 46).
 Capp Enterprises, Inc., Boston, Mass. 827,629, pub. 1-31-67. Cl. 45.
 Capricorn Records: See—
 McClean, Margaret L.
 Cargille Scientific Inc., Cedar Grove, N.J. 827,624, pub. 1-31-67. Cl. 44.
 Case Bros. Cutlery Co., Little Valley, N.Y., to W. R. Case & Sons Cutlery Co., Bradford, Pa. 64,130, ren. 4-18-67. Cl. 23.
 Case, W. R., & Sons Cutlery Co.: See—
 Case Bros. Cutlery Co.
 Castleton China, Inc., New Castle, Pa. 827,539-46, pub. 1-31-67. Cl. 30.
 Castleton China, Inc., New Castle, Pa. 827,548-51, pub. 1-31-67. Cl. 30.
 Cederroth, Christian, to Christian Sten Sture Cederroth, Stockholm, Sweden. 223,345, ren. 4-18-67. Cl. 18.
 Cederroth, Christian S. S.: See—
 Cederroth, Christian.
 Cenco Instruments Corp.: See—
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 Central Scientific Co., to Cenco Instruments Corp., Chicago, Ill. 226,615, ren. 4-18-67. Cl. 18.
 Central Scientific Co., to Cenco Instruments Corp., Chicago, Ill. 229,408, ren. 4-18-67. Cl. 23.
 Central Scientific Co., to Cenco Instruments Corp., Chicago, Ill. 230,041, ren. 4-18-67. Cl. 23.
 Central Scientific Co., to Cenco Instruments Corp., Chicago, Ill. 230,203, ren. 4-18-67. Cl. 14.
 Central Valley Citrus Co.: See—
 Whitney, Howard.

Central Valley Citrus & Packing Co.: See—
Whitney, Howard.
Century Contact Lens Co., Inc., Richmond, Calif. 711,825, can. Cl. 26.
Champion Paper Specialties, Inc., Hamilton, Ohio. 711,878-80, can. Cl. 37.
Chemco Photoproducts Co., Inc., Glen Cove, N.Y. 711,806, can. Cl. 23.
Chevron Chemical Co.: See—
California Spray Chemical Corp.
Chicago Pneumatic Tool Co., New York, N.Y. 227,390, ren. 4-18-67. Cl. 23.
Chicago Tribune-New York News Syndicate, Inc., New York, N.Y. 711,891, can. Cl. 38.
Chief Equipment Corp., Denver, Colo. 827,488, pub. 1-31-67. Cl. 21.
Chip's Franchise System, Inc.: See—
Franchise Investment Co., Inc.
Clairrol Inc., New York, N.Y. 827,667-9, pub. 1-31-67. Cl. 52.
Clairrol Inc., New York, N.Y. 827,671, pub. 1-31-67. Cl. 52.
Clark, D. L. Co., The, Pittsburgh, Pa., to Beatrice Foods Co., Chicago, Ill. 430,806, ren. 4-18-67. Cl. 46.
Clark, Wiley E., d.b.a. Erlinc Products, Grand Rapids, Mich. 711,848, can. Cl. 32.
Cohen, Joseph H., & Sons, Inc., to Rapid-American Corp., New York, N.Y. 428,799, ren. 4-18-67. Cl. 39.
Colgate-Palmolive Co.: See—
Palmolive Co., The.
Colgate-Palmolive Co., New York, N.Y. 827,466, pub. 1-31-67. Cl. 18.
Colgate-Palmolive Co., New York, N.Y. 827,657, pub. 1-31-67. Cl. 51.
College University Insurance Co. of America, The, Indianapolis, Ind. 827,688, pub. 1-31-67. Cl. 102.
Colt's Inc., Hartford, Conn. 827,453, pub. 1-31-67. Cl. 9.
Columbia Corrugated Container Corp., Syosset, N.Y. 827,431, pub. 1-24-67. Cl. 2.
Cone Mills Corp., Greensboro, N.C. 827,428, pub. 1-31-67. Cl. 1.
Connecticut Valley Paper & Envelope Co., New York, N.Y. 827,569, pub. 1-31-67. Cl. 37.
Continental Arms Corp., New York, N.Y. 827,432, pub. 1-31-67. Cl. 2.
Contract Chemical Mfg. Corp., Hato Rey, Puerto Rico. 827-696, Cl. 5.
Cook Electric Co., Morton Grove, Ill. 827,498, pub. 1-31-67. Cl. 21.
Cook Paint & Varnish Co., Kansas City, Mo. 827,461, pub. 1-31-67. Cl. 16.
Cory Corp., Chicago, Ill. 827,518, pub. 1-31-67. Cl. 23.
Craddock-Terry Co., to Craddock-Terry Shoe Corp., Lynchburg, Va. 64,588, ren. 4-18-67. Cl. 39.
Craddock-Terry Shoe Corp.: See—
Craddock-Terry Co.
Crown Rubber Co., Fremont, Ohio. 827,617, pub. 1-31-67. Cl. 42.
Crysis, Trenton, N.J. 827,643, pub. 1-31-67. Cl. 50.
Danskin Inc., New York, N.Y. 827,612, pub. 1-31-67. Cl. 39.
Davis & Lawrence Co., Dobbs Ferry, N.Y. 427,386, ren. 4-18-67. Cl. 46.
Dayton Aircraft, Inc., Fort Lauderdale, Fla. 827,496-7, pub. 1-31-67. Cl. 21.
Del Laboratories, Inc.: See—
House of Tre-Jur, Inc.
De Laval Separator Co., The, Poughkeepsie, N.Y. 61,289, ren. 4-18-67. Cl. 23.
Del Buono, Alex B., d.b.a. Arpad Dental Products, Somerville, N.J. 827,708, Cl. 51.
De Martel, Madeleine, Cosmetics: See—
Sherman, Robert M.
Delta Pharmaceuticals, Inc., Atlanta, Ga. 711,746, can. Cl. 18.
Dentists' Supply Co. of New York, The, York, Pa. 711,935, can. Cl. 44.
Diversey Corp.: See—
Diversey Mfg. Co.
Diversey Mfg. Co., to The Diversey Corp., Chicago, Ill. 224-577, ren. 4-18-67. Cl. 6.
Dixon, Joseph, Crucible Co., The, Jersey City, N.J. 59,029, ren. 4-18-67. Cl. 1.
Dixon, Joseph, Crucible Co., The: See—
American Crucible Co., The.
Doall Co., The, Des Plaines, Ill. 711,805, can. Cl. 23.
Douglas Aircraft Co., Inc., Santa Monica, Calif. 711,770, can. Cl. 19.
Downtown Corp., The, Memphis, Tenn. 827,679-80, pub. 1-31-67. Cl. 100.
Dresser Industries, Inc., Dallas, Tex., from Podbielniak, Inc., Chicago, Ill. 711,810, can. Cl. 23.
Drilling Specialties Co., Bartlesville, Okla. 827,449, pub. 1-31-67. Cl. 6.
Dunham, Roy J., Wellsboro, Pa., to Larrow Mills, Inc., Penn Yan, N.Y. 222,857, ren. 4-18-67. Cl. 46.
Dunlop Tire and Rubber Corp., Buffalo, N.Y. 827,561, pub. 1-31-67. Cl. 35.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 711-735, can. Cl. 16.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 827-528, pub. 1-31-67. Cl. 26.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 827-558, pub. 1-31-67. Cl. 32.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 827-620, pub. 1-31-67. Cl. 42.
Durlon Co., Inc., The, Dayton, Ohio. 430,747, ren. 4-18-67. Cl. 14.

Durlon Co., Inc., The, Dayton, Ohio. 431,640, ren. 4-18-67. Cl. 2.
Eagle Shoe Mfg. Co., Inc., Everett, Mass. 827,601, pub. 1-31-67. Cl. 39.
Edgewood Casuals, Inc., Inc., Lexington, N.C. 827,593, pub. 1-31-67. Cl. 39.
Edwards, Thomas C., Oregon, Ohio. 711,719, can. Cl. 13.
Electro-Catheter Corp., Linden, N.J. 827,822, pub. 1-31-67. Cl. 44.
Electro-Oceanics: See—
Winsco Instruments & Controls Co., Inc.
Electrolux Corp., New York, N.Y. 431,080, ren. 4-18-67. Cl. 38.
Electronic Development Laboratories, Inc., Plainview, N.Y. 827,525-6, pub. 1-31-67. Cl. 26.
Electronic Security, Inc., from Vandalarm Systems, Inc., Houston, Tex. 827,495, pub. 1-31-67. Cl. 21.
Ellman Co., The: See—
Ellman, Irving and Shirley Ellman.
Ellman, Irving and Shirley Ellman d.b.a. The Ellman Co., Valley Stream, N.Y. 827,625, pub. 1-31-67. Cl. 44.
Empire Devices Products Corp., Amsterdam, N.Y. 711,823, can. Cl. 28.
Empire Tube Sales, Inc., Jacksonville, Fla. 827,506, pub. 1-31-67. Cl. 21.
Engstfeld, Fa. Wilh., Heiligenhaus, Rhineland, Germany. 711,717, can. Cl. 13.
Erlinc Products: See—
Clark, E. Wiley.
Erste Wiener Export Malzfabrik Hauser & Sobotka, Stadlau-Wien, Austria-Hungary, to Standard Brands Inc., New York, N.Y. 64,546, ren. 4-18-67. Cl. 6.
Erste Wiener Export Malzfabrik Hauser & Sobotka, Stadlau-Wien, Austria, to Standard Brands Inc., New York, N.Y. 64,590, ren. 4-18-67. Cl. 46.
Esercizio Stabilitimenti Lites S.A.S., Turin, Italy. 827-618-19, pub. 1-31-67. Cl. 42.
Esquire Novelty Co., to Esquire Novelty Corp., New York, N.Y. 428,522, ren. 4-18-67. Cl. 22.
Esquire Novelty Corp.: See—
Esquire Novelty Co.
Esterbrook Pen Co., The: See—
Esterbrook Steel Pen Mfg. Co., The.
Esterbrook Steel Pen Mfg. Co., The, Camden, to The Esterbrook Pen Co., Cherry Hill, N.J. 63,490, ren. 4-18-67. Cl. 37.
Etablissements Francois Miserez, Paris, France. 711,841, can. Cl. 27.
Evans Products Co., Plymouth, Mich., from General Plywood Corp., Louisville, Ky. 711,709, can. Cl. 12.
Eymond, Jean, Inc., Miami, Fla. 827,648-53, pub. 1-31-67. Cl. 51.
Fairchild, E. E., Corp., New York, N.Y., to American Greetings Corp., Cleveland, Ohio. 428,013, ren. 4-18-67. Cl. 22.
Farmila Farmaceutici S.a.r.l. Milano, Milan, Italy. 711,936, can. Cl. 44.
Farnell, Arthur L., d.b.a. Shold-O-Pod Co., Wyandotte, Mich. 711,822, can. Cl. 26.
Ferrania S.p.A., Corso Matteotti, Milan, Italy. 711,829-30, can. Cl. 26.
Field Edmission Corp., McMinnville, Oreg. 827,530, pub. 1-31-67. Cl. 26.
Fisch, Richard A., d.b.a. Anchor Plastics Co., New York, to R & S Plastics, Inc., Long Island City, N.Y. 427,093, ren. 4-18-67. Cl. 32.
Five Stripe Distilling Co.: See—
Glenmore Distilleries Co.
Flambeau Plastics Corp., Baraboo, Wis. 827,645, pub. 1-31-67. Cl. 50.
Flash Chemical Co., Boston, to Flash Sales Co., Inc., Woburn, Mass. 60,521, ren. 4-18-67. Cl. 52.
Flash Sales Co., Inc.: See—
Flash Chemical Co.
Floralware Corp., Redondo Beach, Calif. 827,434, pub. 1-31-67. Cl. 2.
Food-N-Cup Corp., Rahway, N.J. 827,636, pub. 12-13-66. Cl. 46.
Forstmann & Huffman Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 227,613, ren. 4-18-67. Cl. 42.
Franchise Investment Co., Inc., Milwaukee, Wis., from Chip's Franchise System, Inc., Rocky Mount, N.C. 827,681, pub. 4-27-65. Cl. 101.
Fraser Paper, Ltd., Madawaska, Maine. 827,567, pub. 1-31-67. Cl. 37.
Frommes Method, Inc., Minneapolis, Minn. 711,749, can. Cl. 18.
Geerpres Wringer Inc., Muskegon, Mich. 827,456, pub. 1-31-67. Multiple Class (Classes 13, 23, and 29).
General Foods Corp., White Plains, N.Y. 827,705. Cl. 46.
General Plywood Corp.: See—
Evans Products Co.
Gibson Greeting Cards, Inc., Cincinnati, Ohio. 827,576-8, pub. 1-31-67. Cl. 38.
Gillette Co., The, d.b.a. The Toni Co., Boston, Mass. 827,614, pub. 1-31-67. Cl. 40.
Glamour Pools Co., Holland, Mich. 827,455, pub. 1-31-67. Cl. 12.
Glenmore Distilleries Co., d.b.a. Five Stripe Distilling Co., Louisville, Ky. 827,640, pub. 1-31-67. Cl. 49.
Goff, Mary M., Kalamazoo, Mich. 711,786, can. Cl. 22.
Golden Door Cosmetics, Inc.: See—
Bordenaux, Edmond S.
Gorham Corp.: See—
Gorham Mfg. Co.
Gorham Mfg. Co., to Gorham Corp., Providence, R.I. 430-018, ren. 4-18-67. Cl. 28.
Graniteville Co., Graniteville, S.C. 827,616, pub. 1-31-67. Cl. 42.

Gray and Ductile Iron Founders' Society, Inc., Cleveland, Ohio. 827,710. Cl. 200.
Greenwald, E., & Sons, New York, N.Y. 827,587, pub. 1-31-67. Cl. 39.
Grissmer, Earl, Co., Anderson, to Earl Grissmer Co., Inc., Indianapolis, Ind. 431,599, ren. 4-18-67. Cl. 52.
Grissmer, Earl, Co., Inc.: See—
Grissmer, Earl, Co.
Gross, John, & Co., Baltimore, Md. 827,041-2, pub. 1-31-67. Cl. 49.
Guardian Paper Co., Newark, Calif. 711,669, can. Cl. 1.
Guerlain, Inc., New York, N.Y. 827,670, pub. 1-31-67. Cl. 52.
Hayden Huddleston Advertising Agency, Inc., Roanoke, Va. 827,890, pub. 1-31-67. Cl. 107.
Hazerton, Thomas A., d.b.a. "Reminders," Hollywood, Calif. 711,930, can. Cl. 44.
Heroes, Inc., Washington, D.C. 827,676, pub. 1-31-67. Cl. 100.
Hi-Pedal Mfg. Co., Florence, N.J. 711,860, can. Cl. 36.
Hobart Mfg. Co., The, Troy, Ohio. 430,780, ren. 4-18-67. Cl. 21.
Hobart Mfg. Co., The, Troy, Ohio. 431,610, ren. 4-18-67. Cl. 23.
Hokusha Publishing Co., Ltd. (Kabushiki Kaisha Hokusha), Uchikynhoji-Machi, Higashi-ku, Osaka City, Japan. 827-702, Cl. 55.
Holes-Webway Co., The, St. Cloud, Minn. 827,566, pub. 1-31-67. Cl. 37.
Hospital Supply Co., Inc., The: See—
Ohio Chemical & Mfg. Co., The.
House of Tre-Jur, Inc., New York, to Del Laboratories, Inc., Farmingdale, N.Y. 227,295, ren. 4-18-67. Cl. 51.
Hupp Corp., Cleveland, Ohio. 827,552, pub. 1-31-67. Cl. 31.
Husky Briquetting, Inc., from Rum River Charcoal Co., Cody, Wyo. 827,417, pub. 1-10-67. Cl. 1.
Huyck Corp., Rensselaer, N.Y. 827,615, pub. 1-31-67. Cl. 42.
Hyatt Corp. of America, Burlingame, Calif. 827,678, pub. 1-31-67. Cl. 109.
Hygrade Food Products Corp., Detroit, Mich. 827,632, pub. 9-14-65. Cl. 46.
Ingram's Food Products Co., Inc., Oakland, Calif. 827,631, pub. 2-15-66. Cl. 46.
Inpharazam S.A., Lugano, Switzerland. 827,476, pub. 1-31-67. Cl. 18.
International Latex Corp.: See—
International Playtex Corp.
International Paper Co., New York, N.Y. 827,644, pub. 12-13-66. Cl. 50.
International Playtex Corp., from International Latex Corp., Dover, Del. 827,596, pub. 1-17-67. Cl. 39.
International Playtex Corp., from International Latex Corp., Dover, Del. 827,607, pub. 1-31-67. Cl. 39.
International Textbook Co., Scranton, Pa. 827,693, pub. 1-31-67. Cl. 107.
Ismert-Hinck Milling Co., to Seaboard Allied Milling Corp., d.b.a. Ismert-Hinck Milling Co., Kansas City, Mo. 60-681-2, ren. 4-18-67. Cl. 46.
Ithaca Gun Co., Inc., Ithaca, N.Y. 827,454, pub. 1-31-67. Cl. 9.
Jensen, Walter E., Long Beach, Calif. 711,960, can. Cl. 101.
Jergens, Andrew, Co., The, Cincinnati, Ohio. 827,661, pub. 1-31-67. Cl. 51.
Jonas & Colver Ltd., to Jonas & Colver (Novo) Ltd., Sheffield, England. 63,405, ren. 4-18-67. Cl. 23.
Jonas & Colver (Novo) Ltd.: See—
Jonas & Colver Ltd.
Jonib Mfg. Co., Inc., New York, N.Y. 827,592, pub. 1-31-67. Cl. 39.
Jubo-Schuhfabrik Julius Bock Kg., Hauenstein Pfalz, Germany. 827,604, pub. 1-31-67. Cl. 39.
Juva-Tex, Inc., Chicago, Ill. 827,553, pub. 1-31-67. Cl. 31.
Kabushiki Kaisha Mitauwa Undoyohin-Ten (F. H. Mitauwa Co. Ltd.), Kita-ku, Osaka, Japan. 711,787, can. Cl. 22.
Kaiser Aluminum & Chemical Corp., Oakland, Calif. 827,419, pub. 1-31-67. Cl. 1.
Kampfe Bros., to Philip Morris Inc., d.b.a. American Safety Razor Co., New York, N.Y. 62,752, ren. 4-18-67. Cl. 23.
Kasar Co., Niles, Ill. 827,462, pub. 1-31-67. Cl. 18.
Kay Electric Co.: See—
Pinlites Inc.
Keebler Co.: See—
Strietmann Biscuit Co., The.
Kent Feeds, Inc., Muscatine, Iowa. 827,696. Cl. 18.
Kidzie Products, Inc., Squantum, Mass. 827,509, pub. 1-31-67. Cl. 22.
King, J. B., & Co., New York, N.Y., to The United States Gypsum Co., Chicago, Ill. 57,535, ren. 4-18-67. Cl. 12.
Kono Mfg. Co., Inc., Woodside, N.Y. 711,828, can. Cl. 26.
Kusan, Inc., Nashville, Tenn. 827,510, pub. 1-31-67. Cl. 22.
Labconco Corp., from Laboratory Construction Co., Kansas City, Mo. 827,481, pub. 1-31-67. Multiple Class (Classes 19, 26, 33, and 34).
Larrow Mills, Inc.: See—
Dunham, Roy J.
Laser, Inc., Crown Point, Ind. 827,475, pub. 1-31-67. Cl. 18.
Lavino, E. J., and Co., Philadelphia, Pa. 827,429, pub. 1-31-67. Cl. 1.
Lee, Frank H., Co., The, Danbury, Conn. 711,893, can. Cl. 39.
Legion Utensils Co., Inc., Long Island City, N.Y. 711,715, can. Cl. 13.
Legend Products Corp., Media, Pa. 827,533, pub. 1-31-67. Cl. 26.
Leininger, Wm. G., Knitting Co., Inc., Mohnton, Pa. 827-608, pub. 1-31-67. Cl. 39.

Leininger, Wm. G., Knitting Co., Inc., Mohnton, Pa. 827-610, pub. 1-31-67. Cl. 39.
Leonis Co.: See—
Adler, Seymour.
Lewel Mfg. Co., Inc., New York, N.Y. 827,603, pub. 1-31-67. Cl. 39.
Lindauer and Co., San Francisco, Calif. 711,702, can. Cl. 10.
Little, H. C., Burner Co., Inc., San Rafael, Calif. 711,855, can. Cl. 34.
Logan, Jonathan, Inc., New York, N.Y. 827,583, pub. 1-31-67. Cl. 39.
London, Seymour B., d.b.a. Monitor Instruments, Miami Beach, Fla. 827,700. Cl. 26.
Londontown Mfg. Co., Baltimore, Md. 827,587, pub. 1-31-67. Cl. 39.
Louette Food Products: See—
Brunette, Frank.
Louie, King, Bowling Corp. of Missouri, Kansas City, Mo. 827,677, pub. 12-20-66. Cl. 100.
Louisiana Coca-Cola Bottling Co., Ltd., The, New Orleans, La. 827,626, pub. 12-28-65. Cl. 45.
Lunchwagon, Inc., Cincinnati, Ohio. 711,943, can. Cl. 46.
Lutler Inc., Kansas City, Mo. 827,647, pub. 10-11-66. Cl. 51.
Maas, Albert G., to Albert G. Maas Co., Indianapolis, Ind. 225,501, ren. 4-18-67. Cl. 6.
Maas, Albert G., Co.: See—
Maas, Albert G.
Maletex Products: See—
Matheny, W. V.
Mallinckrodt Chemical Works, St. Louis, Mo. 827,465, pub. 1-31-67. Cl. 18.
Mar Sannette, Inc., Grand Rapids, Mich. 827,623, pub. 1-31-67. Cl. 44.
Marion Laboratories, Inc., Kansas City, Mo. 711,833, can. Cl. 26.
Matheny, W. V., d.b.a. Maletex Products, Graft, W. Va. 711-928, can. Cl. 44.
Mattel, Inc., Hawthorne, Calif. 827,513, pub. 1-31-67. Cl. 22.
McClean, Margaret L., d.b.a. Capricorn Records, Beverly Hills, Calif. 711,861, can. Cl. 36.
McGregor-Doniger Inc., New York, N.Y. 827,585, pub. 1-31-67. Cl. 39.
McNair Seed Co., Laurinburg, N.C. 827,416, pub. 1-31-67. Cl. 1.
McNaught Syndicate, Inc., The, New York, N.Y. 827,579, pub. 1-31-67. Cl. 38.
Melody Syrup Co., Cottondale, Fla. 711,941, can. Cl. 46.
Melville Shoe Corp., New York, N.Y. 827,605, pub. 1-31-67. Cl. 39.
Microbiological Associates, Inc., Bethesda, Md. 827,446-7, pub. 1-31-67. Cl. 6.
Miller Bros. Hat Co., Inc., New York, N.Y. 827,703. Cl. 39.
Miner, Dumas, Corp., Jackson, Miss. 711,763, can. Cl. 18.
Milward, Henry, & Sons: See—
Needle Industries Ltd.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 827,571, pub. 1-31-67. Cl. 37.
Mister Pants, Inc., New York, N.Y. 711,897, can. Cl. 39.
Mitsu-Bishi Pencil Co. Ltd., Higashi-Oi, Shinagawa-ku, Tokyo, Japan. 827,570, pub. 1-31-67. Cl. 37.
Monitor Instruments: See—
London, Seymour B.
Morgan-Jones, Inc., New York, N.Y. 711,917, can. Cl. 42.
Morris, Philip, Inc.: See—
Kampfe Bros.
Motors y Aparatos Electricos, S.A. de C.V., Mexico City, Mexico. 827,490, pub. 1-31-67. Cl. 21.
Musgrave Mfg. Co., Springfield, Ohio. 711,809, can. Cl. 23.
Myers, E., Lye Co., St. Louis, Mo., to Pennsalt Chemicals Corp., Philadelphia, Pa. 223,148, ren. 4-18-67. Cl. 6.
Mystic Seaport Stores, Inc., Mystic, Conn. 827,683, pub. 1-31-67. Cl. 101.
N.V. Koninklijke Stearine Kaarsenfabrieken "Gouda-Apollo," Gouda, Netherlands. 711,944, can. Cl. 46.
Nalfeh, Joe C., d.b.a. American Chemical Co., Sapulpa, Okla. 827,665, pub. 10-11-66. Cl. 52.
Nash Inc., Jersey City, N.J. 711,677, can. Cl. 3.
National Association of Women in Construction, Dallas, Tex. 827,694, pub. 1-31-67. Cl. 200.
National Biscuit Co., New York, N.Y. 827,634, pub. 12-13-66. Cl. 46.
National Periodical Publications, Inc., New York, N.Y. 827-575, pub. 1-31-67. Cl. 38.
Nation-Wide Chemical Co., Inc., Brooklyn, N.Y. 827,668, pub. 1-31-67. Cl. 52.
Needle Industries Ltd., d.b.a. Henry Milward & Sons, Birmingham, England. 827,487, pub. 1-31-67. Cl. 21.
New York Times Co., The, New York, N.Y. 227,904, ren. 4-18-67. Cl. 38.
Niesemann, F., Co.: See—
Niesemann, Fritz.
Niesemann, Fritz, d.b.a. Niesemann Co., Pittsburgh, Pa. 711,929, can. Cl. 44.
Northern Signal Co., Inc., Saukville, Wis. 711,795, can. Cl. 22.
Northrup, King & Co., Minneapolis, Minn. 827,418, pub. 1-31-67. Cl. 1.
Ocean Garden Products, Inc., San Diego, Calif. 827,638, pub. 1-31-67. Cl. 46.
Ocean Leather Corp., Newark, N.J. 827,415, pub. 1-31-67. Cl. 1.
Ohio Chemical & Mfg. Co., The, Cleveland, Ohio, to The Hospital Supply Co., Inc., Long Island City, N.Y. 430,164, ren. 4-18-67. Cl. 44.

Olin Mathieson Chemical Corp., New York, N.Y. 711,758, can. Cl. 18.
 Olin Mathieson Chemical Corp., New York, N.Y. 827,443, pub. 11-8-66. Cl. 6.
 Omni Mfg. Co., Bristol, Va. 827,515, pub. 1-31-67. Cl. 23.
 Originalities of New York, Inc., New York, N.Y. 711,867, can. Cl. 37.
 Oxford Laboratories, San Mateo, Calif. 827,524, pub. 1-31-67. Cl. 26.
 PBM S.p.A., Milan, Italy. 711,894, can. Cl. 39.
 Pacific Foundry Co., to Bartlett-Snow-Pacific Inc., San Francisco, Calif. 225,565, ren. 4-18-67. Cl. 14.
 Package Containers, Inc., Portland, Oreg. 711,800, can. Cl. 23.
 Palm Beach Co., Portland, Maine. 827,600, pub. 1-31-67. Cl. 39.
 Palmolive Co., The, Chicago, Ill., to Colgate-Palmolive Co., New York, N.Y. 224,703, ren. 4-18-67. Cl. 51.
 Parish Service Co., The, Detroit, Mich. 711,865, can. Cl. 37.
 Park Avenue Co., New York, N.Y. 711,890, can. Cl. 38.
 Paton, Jean, Societe Anonyme: See—
 Paton, Jean.
 Paton, Jean, to Jean Paton, Societe Anonyme, Paris, France. 225,554, ren. 4-18-67. Cl. 39.
 Paul's Wholesale Florist Co., Inc., Washington, D.C. 827,421, pub. 1-31-67. Cl. 1.
 Pearson, Ben, Inc., Pine Bluff, Ark. 711,791, can. Cl. 22.
 Pennsalt Chemicals Corp.: See—
 Myers, E., Lye Co.
 Periodical Publishers' Service Bureau, Inc., Sandusky, Ohio. 827,687, pub. 1-31-67. Cl. 101.
 Personal Communications Publishing Corp., Linwood, N.J. 827,572, pub. 1-31-67. Cl. 38.
 Pearl, Helene, Inc., New York, N.Y. 427,560, ren. 4-18-67. Cl. 51.
 Pfizer, Chas., & Co., Inc., New York, N.Y. 827,445, pub. 1-31-67. Cl. 6.
 Pierce, Russell, d.b.a. Congress Springs Development Co., San Jose, Calif. 827,628, pub. 1-31-67. Cl. 45.
 Pilkington Bros. Ltd., Liverpool, England. 430,567, ren. 4-18-67. Cl. 33.
 Pilot Radio, Inc., Yonkers, N.Y. 827,503, pub. 1-31-67. Multiple Class (Classes 21 and 36).
 Pilot Radio, Inc., Yonkers, N.Y. 827,505, pub. 1-31-67. Multiple Class (Classes 21 and 36).
 Plinthes Inc., from Kay Electric Co., Fairfield, N.J. 827,499, pub. 1-31-67. Cl. 21.
 Pittsburgh Plate Glass Co., Pittsburgh, Pa. 711,962, can. Cl. 103.
 Planning Research Corp., Los Angeles, Calif. 827,675, pub. 1-31-67. Cl. 100.
 Poblelnak, Inc.: See—
 Dresser Industries, Inc.
 Pop-Op Corp., The, New York, N.Y. 827,692, pub. 1-31-67. Cl. 107.
 Poultry Guild, Inc., Moorefield, W. Va. 827,635, pub. 1-31-67. Cl. 49.
 Prairie Farmer Publishing Co., The, Chicago, Ill. 226,027, ren. 4-18-67. Cl. 38.
 Prescolite Mfg. Corp., San Leandro, Calif. 827,493, pub. 1-31-67. Cl. 21.
 Providence Journal Co., Providence, R.I. 430,799-800, ren. 4-18-67. Cl. 38.
 Purdy's Landlevelers, Inc., Dewitt, Ark. 827,699. Cl. 23.
 Quaker Oats Co., The: See—
 American Cereal Co., The.
 R & S Plastics, Inc.: See—
 Fisch, Richard A.
 Race-A-Way Games, Columbus, Ohio. 711,794, can. Cl. 22.
 Ragon, Eleanor, Cleveland, Ohio, 711,932, can. Cl. 44.
 Rapid-American Corp.: See—
 Cohen, Joseph H., & Sons, Inc.
 Regina Corp., The, Rahway, N.J. 827,489, pub. 1-31-67. Multiple Class (Classes 21 and 29).
 Reiskin, Eli, d.b.a. Ardee Co., The, Brooklyn, N.Y. 711,788, can. Cl. 22.
 "Reminders": See—
 Hazelton, Thomas A.
 Revlon, Inc., New York, N.Y. 827,708. Cl. 51.
 Reynolds, E. J., Tobacco Co., Winston-Salem, N.C. 227,720, ren. 4-18-67. Cl. 17.
 Rhodia Inc., New York, N.Y. 827,450, pub. 1-31-67. Cl. 6.
 Rockford Industries, Inc., Rockford, Ohio. 827,482, pub. 1-31-67. Cl. 19.
 Rockford Textile Mills, Inc., McMinnville, Tenn. 827,588, pub. 1-31-67. Cl. 39.
 Rohm and Haas Co.: See—
 Rohm & Haas Co., Inc.
 Rohm and Haas Co., Philadelphia, Pa. 827,452, pub. 1-31-67. Cl. 6.
 Rohm & Haas Co., Inc., to Rohm and Haas Co., Philadelphia, Pa. 225,956, ren. 4-18-67. Cl. 1.
 Ronicker, J. E., Co.: See—
 Ronicker, John E.
 Ronicker, John E., d.b.a. J. E. Ronicker Co., West Milton, Ohio. 827,474, pub. 1-31-67. Cl. 18.
 Royal Industries, Inc., Pasadena, Calif. 827,480, pub. 1-31-67. Cl. 19.
 Rubinstein, Helena, Inc., New York, N.Y. 430,232, ren. 4-18-67. Cl. 51.
 Rum River Charcoal Co.: See—
 Husky Briquetting, Inc.
 Runquist, George E., Enterprises Inc., Savannah, Ga. 827,562, pub. 1-31-67. Cl. 38.
 SCM Corp., New York, N.Y. 827,522, pub. 1-31-67. Cl. 26.
 Safe Padlock and Hardware Co., The, Lancaster, Pa. 711,718, can. Cl. 13.

Safeway Stores, Inc., Los Angeles, to Safeway Stores, Inc., Oakland, Calif. 224,893, ren. 4-18-67. Cl. 46.
 Safeway Stores, Inc., Los Angeles, to Safeway Stores, Inc., Oakland, Calif. 225,594, ren. 4-18-67. Cl. 46.
 Safeway Stores, Inc., Los Angeles, to Safeway Stores, Inc., Oakland, Calif. 226,854, ren. 4-18-67. Cl. 46.
 St. Regis Paper Co.: See—
 Sherman Paper Products Corp.
 St. Regis Paper Co., New York, N.Y. 827,420, pub. 1-31-67. Cl. 1.
 Sallent Flavoring Corp., New York, N.Y. 827,630, pub. 1-31-67. Cl. 45.
 Sandusky Distributing Co., Sandusky, Ohio. 827,685, pub. 1-31-67. Cl. 101.
 Santa's Village, Arcadia, Calif. 711,904, can. Cl. 39.
 Saralegul, Francisco R., Miami, Fla. 827,474, pub. 1-31-67. Cl. 38.
 Schlessner, Trikotfabriken J., A.G., Baden-Wurttemberg, Germany. 827,581, pub. 1-31-67. Multiple Class (Classes 39 and 42).
 Schuberth Corp., Toledo, Ohio. 827,586, pub. 1-31-67. Cl. 39.
 Scott Paper Co., Philadelphia, Pa. 827,584, pub. 1-31-67. Cl. 39.
 Seaboard Allied Milling Corp.: See—
 Ismert-Hincke Milling Co.
 Shelbar, Inc., North Hollywood, Calif. 711,849, can. Cl. 32.
 Shenango Ceramics, Inc., from Shenango China, Inc., New Castle, Pa. 827,537-8, pub. 1-31-67. Cl. 30.
 Shenango China, Inc.: See—
 Shenango Ceramics, Inc.
 Sherman Paper Products Corp., Newton, Mass., to St. Regis Paper Co., New York, N.Y. 430,168, ren. 4-18-67. Cl. 2.
 Sherman, Robert M., d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. 827,662, pub. 1-31-67. Cl. 51.
 Sherman, Robert M., d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. 827,672-4, pub. 1-31-67. Cl. 52.
 Shold-O-Pod Co.: See—
 Fernellus, Arthur L.
 Siegel, Henry I., Co., Inc., New York, N.Y. 711,902, can. Cl. 39.
 Silla Products, Inc., Woodward, Okla. 827,470, pub. 1-31-67. Cl. 18.
 Simoniz Co., Chicago, Ill. 711,681, can. Cl. 4.
 Sinclair Refining Co., New York, N.Y. 827,609, pub. 1-31-67. Cl. 39.
 Skookum Packers Association, to Skookum Packers Association, Inc., Wentachee, Wash. 226,961, ren. 4-18-67. Cl. 46.
 Skookum Packers Association, Inc.: See—
 Skookum Packers Association.
 Smith, Miller & Patch, Inc., New York, N.Y. 827,477, pub. 1-31-67. Cl. 18.
 Societa Metallurgica Italiana, Florence, Italy. 827,459, pub. 1-31-67. Cl. 14.
 Society of Independent Gasoline Marketers of America, New Orleans, La. 827,439, pub. 12-6-66. Multiple Class (Classes 4, 6, 15, and 52).
 Southern Mills, Inc., Atlanta, Ga. 827,519, pub. 1-31-67. Cl. 24.
 Southworth Co., West Springfield, Mass. 827,565, pub. 1-31-67. Cl. 37.
 Splades Pty. Ltd., Sydney, New South Wales, Australia. 827,516, pub. 1-31-67. Cl. 23.
 Sportoon Cards, Inc., Los Angeles, Calif. 827,598, pub. 1-31-67. Cl. 39.
 Squibb, E. R., & Sons Inc., New York, N.Y. 827,468, pub. 1-31-67. Cl. 18.
 Squibb, E. R., & Sons, Inc., New York, N.Y. 827,472, pub. 1-31-67. Cl. 18.
 Squibb, E. R., & Sons, Inc., New York, N.Y. 827,478-9, pub. 1-31-67. Cl. 18.
 Standard Brands Inc.: See—
 Erste Wiener Export Malsfabrik Hauser & Sobotka.
 Standard Oil Co., Whiting, Ind., and Chicago, Ill., to The American Oil Co., Chicago, Ill. 224,073, ren. 4-18-67. Cl. 15.
 Stanley Furniture Co., Inc., Stanleytown, Va. 827,555, pub. 1-31-67. Cl. 32.
 Starkey Business Services: See—
 Starkey, Robert A.
 Starkey, Robert A., d.b.a. Starkey Business Services, Wichita, Kans. 827,564, pub. 1-31-67. Cl. 37.
 Starline Corp., Albuquerque, N. Mex. 827,684, pub. 1-31-67. Cl. 101.
 Sterling, Inc., Milwaukee, Wis. 827,527, pub. 1-31-67. Cl. 26.
 Sternco Industries, Inc., Allendale, N.J. 827,422, pub. 1-31-67. Cl. 1.
 Sternco Industries, Inc., Allendale, N.J. 827,534, pub. 1-31-67. Cl. 26.
 Stevens, J. P., & Co., Inc.: See—
 Forstmann & Huffman Co.
 Stockton Mfg. Co., Inc., Dallas, Tex. 827,594, pub. 1-31-67. Cl. 39.
 Stokes Walesby, Washington, D.C. 711,868, can. Cl. 38.
 Stow & Davis Furniture Co., Grand Rapids, Mich. 827,554, pub. 1-31-67. Cl. 32.
 Strathmore Shoe Co., Inc., Brockton, Mass. 827,589-91, pub. 1-31-67. Cl. 39.
 Strietmann Biscuit Co., The, Cincinnati, Ohio, to Keebler Co., Elmhurst, Ill. 224,173, ren. 4-18-67. Cl. 46.
 Superba Cravats, Inc., Rochester, N.Y. 827,606, pub. 1-31-67. Cl. 39.
 Superior Pants, Inc., New York, N.Y. 827,580, pub. 3-1-66. Cl. 39.

Surpass Leather Co., Camden, N.J. 230,320, ren. 4-18-67. Cl. 1.
 Swank, Inc., Attleboro, Mass. 827,535, pub. 1-31-67. Cl. 27.
 Swears, Leon F., Inc., Johnstown, N.Y. 711,909, can. Cl. 39.
 Sylvania Electric Products Inc., Wilmington, Del. 711,777, can. Cl. 21.
 Szabo, Bill: See—
 Szabo, William B.
 Szabo, William B., d.b.a. Bill Szabo, Oregon, Ohio. 711,792, can. Cl. 22.
 Szekely, Edmond B., d.b.a. Edmond S. Bordeaux, from Golden Door Cosmetics, Inc., San Diego, Calif. 827,646, pub. 9-20-60. Cl. 51.
 Tabac Corp., The, New York, N.Y. 827,691, pub. 1-31-67. Cl. 107.
 Technicon Chemical Co., Inc., Chauncey, N.Y. 827,529, pub. 1-31-67. Cl. 26.
 Teen-Age Beachwear Corp., New York, N.Y. 827,595, pub. 1-31-67. Cl. 39.
 Tel-A-Call Co.: See—
 Browning, Charles W.
 Tenneco Inc., from Tennessee Gas Transmission Co., Houston, Tex. 827,485-8, pub. 1-31-67. Cl. 2.
 Tennessee Gas Transmission Co.: See—
 Tenneco Inc.
 Testa Laboratorium A/S, Copenhagen, Denmark. 827,621, pub. 1-31-67. Cl. 44.
 Tests, Inc., Washington, D.C. 711,885, can. Cl. 38.
 Texas Star Flour Mills, Galveston, to Burrus Mills, Inc., Dallas, Tex. 228,508, ren. 4-18-67. Cl. 46.
 Thayer Scale Corp., Pembroke, Mass. 711,838, can. Cl. 26.
 Thermomet, San Fernando, Calif. 711,964, can. Cl. 106.
 Thermoplastic Industries, Inc., Brockton, Mass. 827,430, pub. 1-31-67. Cl. 2.
 Thonet Bros., Inc., to Thonet Industries, Inc., New York, N.Y. 226,807, ren. 4-18-67. Cl. 32.
 Thonet Industries, Inc.: See—
 Thonet Bros., Inc.
 Tilghman Packing Co., The, Tilghman, Md. 827,639, pub. 1-31-67. Cl. 46.
 Time Oil Co., Seattle, Wash. 431,079, ren. 4-18-67. Cl. 15.
 Time Oil Co., Seattle, Wash. 431,558, ren. 4-18-67. Cl. 15.
 Tingler, George F., Butler, Mo. 827,704. Cl. 46.
 Tobias Paint Mfg. Co., Cleveland, Ohio. 827,460, pub. 1-31-67. Cl. 16.
 Toko Kabushiki Kaisha, d.b.a. Toko, Inc., Ota-ku, Tokyo-to, Japan. 827,486, pub. 1-31-67. Multiple Class (Classes 21 and 26).
 Tomlington of High Point, High Point, N.C. 827,557, pub. 1-31-67. Cl. 32.
 Toni Co., The: See—
 Gillette Co., The.
 Townsend Co., Braintree, Mass. 827,458, pub. 1-31-67. Cl. 13.
 Transco Engineering Co.: See—
 Benjamin, Howard W.
 Union Bag & Paper Co., The, to Union Camp Corp., New York, N.Y. 56,118-22, ren. 4-18-67. Cl. 37.
 Union Bag & Paper Co., The, to Union Camp Corp., New York, N.Y. 56,126, ren. 4-18-67. Cl. 37.
 Union Bag & Paper Co., The, to Union Camp Corp., New York, N.Y. 56,129-92, ren. 4-18-67. Cl. 37.
 Union Bag & Paper Co., The, to Union Camp Corp., New York, N.Y. 56,195-6, ren. 4-18-67. Cl. 37.
 Union Camp Corp.: See—
 Union Bag & Paper Co., The.
 United Aircraft Products, Inc., Dayton, Ohio. 827,559-60, pub. 1-31-67. Cl. 34.
 United States Graphite Co., The, to The Wickes Corp., Saginaw, Mich. 60,505, ren. 4-18-67. Cl. 15.
 United States Graphite Co., The, to The Wickes Corp., Saginaw, Mich. 60,519, ren. 4-18-67. Cl. 1.
 United States Graphite Co., The, to The Wickes Corp., Saginaw, Mich. 61,816, ren. 4-18-67. Cl. 15.
 United States Graphite Co., The, to The Wickes Corp., Saginaw, Mich. 62,978, ren. 4-18-67. Cl. 1.
 United States Graphite Co., The, to The Wickes Corp., Saginaw, Mich. 64,076, ren. 4-18-67. Cl. 1.
 United States Graphite Co., The, to The Wickes Corp., Saginaw, Mich. 229,837, ren. 4-18-67. Cl. 23.
 United States Gypsum Co., The: See—
 King, J. B., Co.
 U.S. Industries, Inc., New York, N.Y. 827,514, pub. 1-31-67. Cl. 23.
 United States Playing Card Co., The, to The United States Playing Card Co., Cincinnati, Ohio. 64,232, ren. 4-18-67. Cl. 22.
 United States Rubber Co., New York, N.Y. 711,679, can. Cl. 4.
 United States Rubber Co., New York, N.Y. 827,448, pub. 1-31-67. Multiple Class (Classes 6 and 21).
 United States Steel Corp., Pittsburgh, Pa. 711,711, can. Cl. 12.
 United Wire Craft Inc., Chicago, Ill. 711,852, can. Cl. 33.
 Universal Oil Products Co., Des Plaines, Ill. 827,442, pub. 1-31-67. Cl. 6.
 Vaculite Corp., Hamilton, Ohio. 711,874, can. Cl. 37.
 Vandalarm Systems, Inc.: See—
 Electronic Security, Inc.
 Viking Tool & Machine Corp., The, Belleville, N.J. 428,140, ren. 4-18-67. Cl. 23.
 Viscol Co., The, Dallas, Tex. 827,444, pub. 1-31-67. Cl. 6.
 Vollrath Co., The, Sheboygan, Wis. 827,566, pub. 1-31-67. Cl. 32.
 Vulcanized Rubber & Plastics Co., Morrisville, Pa. 827,613, pub. 1-31-67. Cl. 40.
 Walker Laboratories, Inc., Mount Vernon, N.Y. 711,752, can. Cl. 18.
 Waring Products Corp., New York, N.Y. 711,781-3, can. Cl. 21.
 Weleda, Inc., New York, N.Y. 430,886, ren. 4-18-67. Cl. 51.
 Wellman Industries, Inc., from Wellman Industries, Inc., Johnsonville, S.C. 827,451, pub. 1-31-67. Cl. 6.
 White Consolidated Industries, Inc.: See—
 White Sewing Machine Co.
 White Sewing Machine Co., to White Consolidated Industries, Inc., Cleveland, Ohio. 57,903, ren. 4-18-67. Cl. 23.
 Whitney, Howard, Redlands, to Central Valley Citrus & Packing Co., d.b.a. Central Valley Citrus Co., Lindsay, Calif. 216,181, ren. 4-18-67. Cl. 46.
 Wickes Corp., The: See—
 United States Graphite Co., The.
 Wilrite Products, Inc., Cleveland, Ohio. 711,780, can. Cl. 1.
 Wine Institute, San Francisco, Calif. 827,573, pub. 1-31-67. Cl. 38.
 Wingfield-Wilson, New York, N.Y. 827,633, pub. 1-31-67. Cl. 46.
 Winsco Instruments & Controls Co., Inc., d.b.a. Electro-Oceanics, Santa Monica, Calif. 827,500-1, pub. 1-31-67. Cl. 21.
 Wirth, L. W., Inc., New York, N.Y. 711,916, can. Cl. 42.
 Wofac Corp., Haddonfield, N.J. 827,682, pub. 12-13-66. Cl. 101.
 Wolts-Prodotti Di Bellezza S.R.L., Milan, Italy. 827,707. Cl. 51.
 Wolts-Prodotti Di Bellezza S.R.L., Milan, Italy. 827,709. Cl. 51.
 Xerox Corp., Rochester, N.Y. 827,531, pub. 1-31-67. Cl. 26.
 Yates, Donald, Gibsonia, Pa. 827,520, pub. 1-25-66. Cl. 26.
 Yuasa Battery Co. Ltd., Osaka Prefecture, Japan. 827,491, pub. 1-31-67. Cl. 21.
 Zausner Foods Corp.: See—
 Zausner Foods Inc.
 Zausner Foods Inc., New York, N.Y., to Zausner Foods Corp., Mountlake, N.J. 429,165, ren. 4-18-67. Cl. 46.

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of
March 1967

Examiner affirmed	269
Examiner affirmed in part	35
Examiner reversed	71
Total	375

Service by Publication

William O'Keefe, Sr.

In accordance with Rule 47(b) of the Rules of Practice of the United States Patent Office in Patent Cases, notice is hereby given of the filing on November 4, 1959, of an application for patent entitled "Water Conditioning Method and Apparatus," on behalf of William O'Keefe, Sr., whose last known address is 407 South Western Avenue, Los Angeles, California. The application was made in compliance with Rule 47(b) and 35 U.S.C. 118 by Exax, Inc. without execution by the said William O'Keefe, Sr. Notice of the filing directed to the above noted address has been returned undelivered.

Any action to be taken by the said William O'Keefe, Sr., in connection with the said application must be taken within thirty days of the publication of this notice.

EDWIN L. REYNOLDS,
First Assistant Commissioner of Patents.

Patents Available for Licensing or Sale

3,309,051. ADJUSTABLE LEG ASSEMBLY FOR FURNITURE OR THE LIKE. Raymond G. Pina, 643 California St., Broderick, Calif., 95605.

3,312,013. MOTOR DRIVEN ROLLING TOY. Joseph R. Graves. Correspondence to: Georges A. Maxwell, 1208 Pershing Square Bldg., Los Angeles, Calif., 90013.

Basic Inc. is prepared to grant non-exclusive licenses under the following patent upon reasonable terms to prospective licensees.

Applications for license should be addressed to: Oberlin Maky, Donnelly & Renner, 601 Rockwell Ave., Cleveland, Ohio, 44114.

2,781,005. METHOD OF REDUCING VANADIUM CORROSION IN GAS TURBINES.

General Signal Corporation is prepared to grant non-exclusive licenses under the following 28 patents upon reasonable terms to domestic manufacturers.

New Applications Received During March 1967

Patents	8024
Designs	478
Plant Patents	9
Reissues	25
Total	8536

Applications for license may be addressed to: General Railway Signal Company, a unit of General Signal Corporation, Attn: Manager, Patent Department, P.O. Box 600, Rochester, N.Y., 14602.

3,251,991. CONTROL SYSTEM FOR RAILWAY CAR RETARDERS.

3,251,992. STORAGE CIRCUIT.

3,253,140. SYSTEM FOR DETECTING HOT ELEMENTS ON RAILWAY VEHICLES.

3,253,141. CONTROL SYSTEM FOR RAILWAY CLASSIFICATION YARD.

3,253,142. CONTROL SYSTEM FOR TRACK BRAKES.

3,260,842. REMOTE CONTROL SYSTEM FOR RAILWAY VEHICLES.

3,264,487. MAGNETIC LOGIC CIRCUIT.

3,264,598. CONNECTOR FOR CIRCUIT BOARDS.

3,267,280. TRACK CIRCUIT.

3,267,281. HIGHWAY CROSSING SYSTEM.

3,268,725. AUTOMATIC CAR RETARDER CONTROL SYSTEM.

3,268,726. TRAIN CONTROL SYSTEM.

3,270,198. HIGHWAY CROSSING SYSTEM.

3,272,979. DECODING APPARATUS FOR CONTINUOUS INDUCTIVE TRANSMISSION SYSTEM.

3,272,980. INTERMITTENT TRAIN CONTROL SYSTEM.

3,272,981. INTERMITTENT INDUCTIVE TRANSMISSION SYSTEM.

3,277,293. STRAINED MOVEMENT DETECTION SYSTEM.

3,278,918. BINARY COUNTER.

3,284,614. REVERSIBLE COUNTING SYSTEM FOR LOCATING MOVING OBJECTS.

3,289,167. CONTROL CIRCUIT FOR CODE COMMUNICATION APPARATUS.

3,289,173. CAR COUPLING INFORMATION STORAGE SYSTEM.

3,290,663. NON-DESTRUCTIVE READ-OUT CIRCUIT.

3,293,549. RADIO COMMUNICATION SYSTEM.

3,294,969. HOT WHEEL DETECTOR APPARATUS FOR RAILWAY VEHICLES.

3,303,470. CODE COMMUNICATION SYSTEM.

3,305,634. SYSTEM AND METHOD OF CODE COMMUNICATION.

3,305,837. CODED SUPERVISORY CONTROL SYSTEM.

3,307,031. AUTOMATIC SWITCH SYSTEM.

General Electric Company is prepared to grant non-exclusive licenses under the following 63 patents upon reasonable terms to domestic manufacturers.

Issue—April 25, 1967

Patents	1284—No. 3,315,272 to No. 3,316,555, incl.
Designs	50—No. 207,477 to No. 207,526, incl.
Plant Patents	1—No. 2,733
Reissues	3—No. 26,196 to No. 26,198, incl.
Total	1338

Applications for license under the following 2 patents may be addressed to: Patent Counsel, Construction Industries Division, General Electric Company, 1285 Boston Ave., Bldg. 1-B, Bridgeport, Conn., 06602.

3,301,989. HANDLE ASSEMBLY FOR CIRCUIT BREAKERS.

3,305,255. STRUCTURAL FRAMEWORK CORNER.

Applications for license under the following 7 patents may be addressed to: Patent Counsel, Power Distribution Division, 100 Woodlawn Ave., Pittsfield, Mass., 01201, Attn: Division Patent Counsel.

3,021,409. CIRCUIT INTERRUPTER.

3,085,863. METHOD OF MAKING SILICON CARBIDE.

3,112,383. COMBINED CIRCUIT BREAKER AND FUSE.

3,271,202. PROCESS FOR PRODUCING SILICON-IRON THIN TAPES.

3,271,203. METHOD FOR PRODUCING ORIENTED SILICON-IRON.

3,301,987. SHORTING DEVICE FOR SECONDARY TERMINALS OF CURRENT TRANSFORMERS.

3,309,219. METHOD OF PRODUCING AN ULTRAVIOLET RESISTANT POLYCARBONATE ARTICLE.

Applications for license under the following 15 patents may be addressed to: Patent Counsel, Major Appliance & Hotpoint Division, General Electric Company, Appliance Park, Louisville, Ky., 40225.

3,050,955. MULTI-TEMPERATURE REFRIGERATOR.

3,163,187. TOOL FOR TIGHTENING WIRES AND BREAKING THE ENDS THEREOF.

3,259,446. REFRIGERATOR CABINET INCLUDING IMPROVED CLOSURE MEANS.

3,283,531. FULL VOLUME REFRIGERATOR.

3,286,004. METHOD OF MANUFACTURING A FOAM PLASTIC ARTICLE.

3,287,927. HYDRAULIC ICE MAKER.

3,288,896. MANUFACTURE OF FOAM INSULATED REFRIGERATOR CABINETS.

3,290,109. REFRIGERATOR CABINET INCLUDING ADJUSTABLE HINGE MOUNTING.

3,300,998. HYDRAULIC ICE MAKER.

3,302,894. PIVOTED POWER UNIT FOR PORTABLE WASTE DISPOSER.

3,303,934. RACK STRUCTURE FOR DISHWASHER.

3,305,460. METHOD OF ELECTROPLATING PLASTIC ARTICLES.

3,306,073. HYDRAULIC ICE MAKER.

3,306,693. RACK SYSTEM FOR DISHWASHER.

3,306,694. DOOR AND RACK STRUCTURE FOR AUTOMATIC DISHWASHER.

Applications for license under the following 17 patents may be addressed to: Patent Counsel, Aerospace Electronics Department, General Electric Company, Ufa, N.Y., 13503.

Re26,027. DIRECT-CURRENT CHARGED MAGNETIC MODULATOR.

2,783,295. WAVEGUIDE SEAL.

2,783,466. AUTOMATIC NOISE LEVELING CIRCUITS.

2,816,180. PROTECTIVE CIRCUIT.

3,013,214. MICROWAVE MASER AMPLIFIER.

3,029,376. DIRECT CURRENT DRIVEN MAGNETIC AMPLIFIER.

3,037,160. MAGNETICALLY REGULATED POWER SUPPLY.

3,046,497. WAVEGUIDE BALANCED MODULATOR.

3,048,794. MICROWAVE AMPLIFYING SYSTEM.

3,054,065. LOWER PUMP FREQUENCY MASER.

3,064,201. PRESSURE TUNED THREE-LEVEL PARAMAGNETIC MASER.

3,088,065. SELF-REGULATED STATIC FREQUENCY CONVERTER.

3,098,929. ELECTRICAL CONTACT ANALOG SIMULATOR.

3,105,966. DOPPLER RADAR SYSTEM.

3,111,592. TUNNEL DIODE WITH VARIABLE BIAS FOR VARYING PULSE WIDTH OUTPUT.

3,114,209. LEVEL SENSOR.

3,114,884. ADAPTIVE FILTER.

Applications for license under the following 22 patents may be addressed to: Patent Counsel, Lamp Division, General Electric Company, Nela Park, Cleveland, Ohio, 44112.

2,622,229. FLASH TUBE CIRCUIT.

2,870,586. EXHAUSTING AND GAS FILLING MACHINES FOR LAMPS.

3,116,623. FLASH LAMP.

3,116,992. METHOD OF MANUFACTURE OF LAMP FILAMENT SUPPORTS.

3,120,694. METHOD AND APPARATUS FOR LOADING FLASH LAMPS WITH FILAMENTARY COMBUSTIBLE MATERIAL.

3,123,993. FLASH LAMP.

3,148,296. INCANDESCENT LAMP.

3,151,922. METHOD OF MAKING A DISCHARGE LAMP.

3,160,776. ELECTRIC INCANDESCENT PROJECTION LAMP.

3,188,162. METHOD OF MAKING FLASH LAMPS.

3,199,316. FLASH LAMP.

3,211,942. ELECTRIC INCANDESCENT LAMP.

3,211,943. ELECTRIC INCANDESCENT LAMP.

3,211,950. ELECTRIC INCANDESCENT LAMP WITH INTEGRAL FUSE.

3,236,269. PHOTOFLASH LAMP FILLING MACHINE.

3,241,029. PORTABLE LIGHTING UNIT.

3,249,789. ELECTRIC INCANDESCENT PROJECTION LAMP.

3,249,798. FUSE IN LEAD-IN OF INCANDESCENT LAMP FILAMENT.

3,280,859. PHOTOFLASH LAMP FILLING MACHINE.

3,285,035. FLASH LAMP.

3,259,777. METAL HALIDE VAPOR DISCHARGE LAMP WITH NEAR MOLTEN TIP ELECTRODES.

D204,714. MOVIE LIGHT.

Policy re: Voluntary Citation of Prior Art by Applicants

Effective immediately, the following policy is being adopted in the hope of encouraging more frequent and meaningful citation of prior art by applicants and their attorneys on a voluntary basis.

Prior art cited by applicants or their attorneys within thirty days of the filing of a patent application, or prior to the first Office action, whichever is later, will be fully considered by the Examiner, will be part of the official record, and will be included in the list of references cited in the patented file and in the printed patent provided the applicant:

(a) Limits the number of references cited to not more than five separate items, unless a satisfactory explanation is given as to why more than five citations are necessary, and submits one copy of each of the references; and

(b) Submits a detailed discussion of the references, which discussion points out, with the particularity required by Rule 111(b) and (c), how the claimed subject matter is distinguishable over the references.

References cited by applicants or attorneys under the "special" examining procedure announced on March 2, 1965, and published in 812 O.G. 953 will also be included in the list of references cited in the patented file and printed patent.

Prior art cited by applicants and attorneys under the practice set forth in the notices published in 797 O.G. 733; 802 O.G. 601; 804 O.G. 1 and 805 O.G. 294 will no longer be listed in the printed patent.

EDWARD J. BRENNER,
Commissioner of Patents.

Apr. 13, 1967.

NEW TELEPHONE EXTENSIONS FOR ELECTRICAL EXAMINING OPERATION AT CRYSTAL PLAZA, VIRGINIA

The Electrical Examining Operation's (including Designs) Name move from the Commerce Building in Washington to Building 4 at Crystal Plaza, Virginia, has been completed. Telephone and room number information follows.

To reach Crystal Plaza from non-government phones a caller in the Washington, D.C. metropolitan area must dial 521-5600, then give the operator the proper extension number he wishes to contact.

The area code for Crystal Plaza which attorneys and others placing long-distance calls to Crystal Plaza must use is 703; the area code for Patent Office employees not moving to Virginia remains 202.

The government interdepartmental dial system (IDS) code for Crystal Plaza will be 161. When using a government line dial 161 plus extension number.

OFFICE OF THE DIRECTOR, OPERATION II, NORMAN H. EVANS

The room number is 4-11E14. The telephone extension number of the Director and his immediate office staff are as follows:

Evans, Norman H.	Ext. 2013
Henry, Clementine	2013
Pierson, Elizabeth	2013
Wheaton, Ardith	2013

ELECTRICAL EXAMINING OPERATION—AREA CODE 703—521-5600

Telephone Extensions and Receptionist's Room Number of Each Group

EFFECTIVE DATE: APR. 10 EFFECTIVE DATE: APR. 10

Group 210 (Rm. 4-9C17):	Group 250 (Rm. 4-8C17):
Manager 2340	Manager 2886
Clerical 2887	Clerical 2671
Art Unit 211 2556	Art Unit 251 2733
Art Unit 212 2558	Art Unit 252 2735
Art Unit 213 2391	Art Unit 253 2884
Art Unit 214 2605	Art Unit 254 2767
Art Unit 215 2321	Art Unit 255 2765
Art Unit 216 2891	Art Unit 256 2776
Art Unit 217 2072	Art Unit 257 2627
	Art Unit 258 2668

EFFECTIVE DATE: APR. 14 EFFECTIVE DATE: APR. 13

Group 220 (Rm. 4-10C17):	Group 280 (Rm. 4-7C17):
Manager 2877	Manager 2900
Clerical 2478	Clerical 2901
Art Unit 221 2894	Art Unit 281 2903
Art Unit 222 2897	Art Unit 282 2911
Art Unit 223 2037	Art Unit 283 2906
	Art Unit 284 2913
	Art Unit 285 2915

EFFECTIVE DATE: APR. 11 EFFECTIVE DATE: APR. 17

Group 230 (Rm. 4-11C17):	Group 290 (Rm. 4-10C14):
Manager 2174	Manager 2877
Clerical 2878	Clerical 2476
Art Unit 232 2118	Art Unit 291 2172
Art Unit 233 2801	Art Unit 292 2265
Art Unit 234 2863	
Art Unit 235 2867	Licensing and Review
Art Unit 236 2871	(Rm. 4-10C24) 2167
Art Unit 237 2881	
Art Unit 238 2875	

ALPHABETICAL LISTING OF PERSONNEL BY GROUP FOLLOWS

GROUP 210 (EFFECTIVE DATE: APRIL 10)

The receptionist is located in room 4-9C17, extension 2887. The telephone numbers of the examining and clerical personnel are as follows:

Name	Ext.
Albritton, Clarence L.	2391
Askin, Laramie E.	2321
Baker, Joseph J.	2556

Name	Ext.
Baltimore, Jean G.	2887
Bartis, Anthony	2391
Beha, William H., Jr.	2558
Bell, Frances L.	2887
Bender, Luther H.	2391
Broadhurst, Alexander W.	2887
Brooks, William D.	2891
Broome, Harold	2891
Burks, Harold	2072
Clay, Darrell L.	2321
Collins, Henry W.	2321
Cooper, Barry A.	2556
Couch, John F.	2558
Cummings, Janice A.	2887
Dimmins, Katie M.	2887
Dobeck, Benjamin	2556
Duggan, Donovan F.	2605
Duley, Barbara A.	2887
Envall, Roy N., Jr.	2891
Evans, Carolyn M.	2887
Garnes, Shirley H.	2887
Gibbs, John W., Jr.	2605
Gilheany, Bernard A.	2891
Gilson, Hiram B.	2891
Ginsburg, Morris	2072
Goldberg, Elliot A.	2321
Goldberg, Gerald	2558
Harris, George, Jr.	2891
Hartwell, Mildred G.	2887
Hirshfeld, Milton O.	2605
Hix, Lee T.	2605
Hohausen, Herman J.	2072
Hunberfeld, Harold	2321
Jolke, Trevor B.	2556
Jones, Herman O.	2072
Knox, Diana P.	2887
Kozma, Thomas J.	2321
Levy, Max L.	2340
Lewitter, Herbert A.	2891
Long, Joyce M.	2887
Lupo, Raphael V.	2605
Lyles, Ruth W.	2887
Lynch, Thomas E.	2556
Macon, Robert S.	2072
Madden, Thomas J.	2556
Mayewsky, Volodymyr Y.	2391
McKenzie, Frank H., Jr.	2887
Miller, J. D.	2605
Myers, Lewis H.	2321
Nye, Bernice R.	2887
Pellinen, A. David	2558
Quarles, Patricia A.	2887
Rader, Oris L.	2556
Reed, Gladys E.	2887
Reed, Mary M.	2887
Rubinson, Gene Z.	2556
Schaefer, Robert K.	2072
Scott, James R.	2072
Shoop, William M., Jr.	2558
Silverman, Joel A.	2605
Simmons, Glen R.	2556
Silney, David X.	2605
Smith, David, Jr.	2072
Smith, J. Gregory	2391
Smith, Lawrence L.	2605
Springborn, Harvey E.	2891
Staubly, Ralph F.	2391
Stein, Barry A.	2391
Thomas, Carolyn E.	2887
Trammell, James D.	2605
Truhe, Joseph V., Sr.	2391
Wachtell, Michael L.	2558
Weinberg, Stanley M.	2558
Wood, Richard M.	2391
Young, Annie M.	2887

GROUPS 220, 290, AND LICENSING AND REVIEW

Receptionist, Group 220 is located in rm. 4-10C17, ext. 2478. Receptionist, Group 290 is located in rm. 4-10C14, ext. 2476. Licensing and review is located in room 4-10C24, ext. 2167. The telephone numbers of the examining and clerical personnel are as follows (effective date Gr. 210—Apr. 10; Gr. 290—Apr. 17; L & R—Apr. 10):

Name	Ext.
Ansher, B.	2172
Bean, Diana Jane	2478
Behrend, Harvey E.	2037
Bennett, Rodney, Jr.	2897
Bentley, Stephen C.	2894
Berger, Richard E.	2897
Black, Linda R.	2476
Blake, Charles B.	2478
Borchelt, B. A.	2894
Boyd, Samuel	2877
Burke, Wallace R.	2172
Coopersmith, J.	2172
Douglas, A.	2172
Draszkowsky, Edward M.	2167
Dunkins, B.	2265
Edwards, E. R.	2172
Engle, Samuel W.	2894
Epstein, Reuben	2037
Farley, Richard A.	2897
Felfer, M.	2265
Feinberg, Samuel	2894
Ginn, Claire D.	2476
Glanzman, Gerald H.	2894
Goodwin, Viola	2476
Gould, Lamont V.	2476
Graves, N.	2265
Greene, Sheila A.	2478
Grudzicki, Ronald L.	2037
Guertin, J. P.	2172
Harris, Donald J., Sr.	2476
Hawkins, Jeannette M.	2778
Henderson, Emmett, Jr.	2476
Henry, W.	2265
Hermann, W. E.	2265
Hodge, Shirley	2167
Hubler, Malcolm F.	2894
Hunter, Edwin H.	2265
Jenkins, Phebe J.	2476
Jordan, Charles T.	2894
Kaufman, Daniel C.	2897
King, Isalah	2167
Kruckow, Beatrice H.	2476
Kujawa, Warren P.	2894
Lanier, L.	2265
Largen, J. B.	2172
Lechert, Stephen, Jr.	2037
Lewis, Joan D.	2476
Miller, Joanne G.	2167
Morris, Jeffrey P.	2897
Noland, Mary E.	2478
Odellas, Lynn R.	2478
Padgett, Benjamin R.	2037
Pendegrass, Verlin R.	2894
Perlstein, L. J.	2265
Price, Brenda M.	2167
Quarforth, Carl D.	2037
Quigley, Francis, Jr.	2167
Ribando, Brian L.	2897
Roch, Wm. C.	2894
Rutledge, L. DeWayne	2037
Scolnick, Melvin J.	2037
Sebastian, Leland A.	2037
Shanley, Peter A.	2894
Sharper, Raymond S.	2167
Skolnik, Robert M.	2894
Spangler, R. C.	2265
Stahl, Robert F.	2894
Stearman, J.	2265
Steelman, A. A.	2478
Steiner, Arthur J.	2037
Stewart, Theda M.	2476
Tubbesing, Theodore H.	2897
Turner, Andree M.	2476
Wamsley, Herbert C.	2897

Name	Ext.
Wands, Charles E.	2897
Washington, Lola E.	2478
Watson, W. L.	2172
Webb, Thomas H.	2894
Wertman, W.	2172
Whithan, Charles L.	2897
Willetts, J.	2265
Woodard, John L.	2167
Word, A.	2172

GROUP 230 (EFFECTIVE DATE: APRIL 11)

The receptionist is located in room 4-11C17, ext. 2878. The telephone numbers of the examining and clerical personnel are as follows:

Name	Ext.
Bailey, Robert C.	2881
Bell, Ronald S.	2118
Bell, Florence L.	2878
Breimayer, Joseph F.	2887
Britton, Howard W.	2801
Byrd, Bernice W.	2878
Caldwell, John W.	2801
Canney, Vincent P.	2867
Claffy, Kathleen H.	2118
Clements, Larkin C.	2878
Cook, Daryl W.	2875
Cooper, William C.	2118
Council, Ronald E.	2875
Eckert, Richard K.	2801
Fears, Terrell W.	2867
Frazier, Louise M.	2878
Frommer, William S.	2801
Gess, Albin H.	2118
Gibson, Norma J.	2878
Gittes, Marvin S.	2867
Goudeau, J. Russell	2867
Griffin, Robert L.	2801
Habecker, Thomas B.	2863
Harrod, Peggy A.	2878
Hartman, Martin P.	2871
Harvey, Dorothy L.	2878
Henon, Paul J.	2881
Hill, Lawrence H.	2867
Hill, Yvonne C.	2878
Holz, Carol A.	2863
Johnson, Betty A.	2878
Kasper, Alan J.	2863
Kavrukov, Ivan S.	2881
Konick, Bernard	2867
Kopacz, William J.	2875
Kurland, Lawrence G.	2867
Levin, Irvin J.	2883
Linn, Richard	2118
McGill, Arthur A.	2118
Mader, Frances A.	2878
Maier, Gregory J.	2875
Milde, Karl F.	2871
Moffitt, James W.	2867
Morganstern, Richard	2867
Morrison, Malcolm A.	2871
Murray, Richard	2118
Myer, Daniel K.	2863
Neustadt, Arthur I.	2867
O'Brien, John A.	2801
Orsino, Joseph A.	2801
Pitts, Harold I.	2863
Read, Neil C.	2863
Redinbaugh, David G.	2801
Richardson, Robert L.	2801
Rickert, Roger M.	2881
Robinson, Thomas A.	2863
Ruggiero, Joseph F.	2871
Safourek, Benedict V.	2801
Satterwhite, Dorothea	2878
Sax, E. J.	2174
Schneider, Gerald I.	2875
Schroeder, Lee J.	2867
Shaw, Gareth D.	2881
Siber, Victor	2871
Snider, Ronald R.	2871
Sperber, Phillip	2867

Name	Ext.
Spivak, Marvin J.	2871
Stewart, Claire A.	2878
Stratman, J. Terry	2801
Taylor, Robert P.	2118
Todd, Oliver E.	2881
Trafton, David L.	2863
Tyler, Costella S.	2878
Uryniewicz, Stanley M.	2867
Vandenburgh, John P.	2881
Wallace, James H.	2875
Waring, Alvin H.	2863
Wilbur, Maynard R.	2875
Woods, Paul E.	2881
Wright, Laurence A.	2118
Yusko, Donald J.	2863
Zache, Raulfe B.	2881
Zeller, Harvey	2118

GROUP 250 (EFFECTIVE DATE: APRIL 10)

Receptionist, Group 250 is located in room 4-8C17, ext. 2671. The telephone numbers of the examining and clerical personnel are as follows:

Name	Ext.
Abramson, Martin	2776
Allahut, Louis	2765
Anderson, Sandra	2671
Baraff, Charles	2765
Bauer, Edward S.	2627
Birch, Anthony L.	2776
Borchelt, Archie R.	2776
Brody, Alfred L.	2735
Brooks, Rosetta	2671
Brown, Dianna Marie	2671
Campbell, Charles, Jr.	2733
Carlson, Walter L.	2668
Chambers, Velma M.	2671
Chatmon, Saxfield, Jr.	2765
Chew, Orville B., II	2627
Cloyes, Judy A.	2671
Corbin, John K.	2627
Corcoran, Robert J.	2668
Craig, Jerry D.	2884
Croft, Alan B.	2776
Dahl, Lawrence	2735
Davis, Bernard P.	2767
Dawkins, Dorothy F.	2671
Demeo, Palmer C.	2733
Edlow, Martin H.	2884
Elbaum, Saul	2776
Epstein, Robert H.	2767
Evans, Fannie L.	2627
Fitchard, Laverne J.	2671
Folsom, Earl C.	2735
Forrer, Donald D.	2767
Galvin, David J.	2733
Gauss, Arthur	2767
Gensler, Paul L.	2765
Graves, Lucille J.	2671
Grimm, Siegfried	2735
Heyman, John S.	2767
Hostetter, Darwin R.	2735
Huckert, John W.	2884
James, Andrew J.	2884
Johnson, Yvonne H.	2671
Jordan, John A.	2767
Judd, Robert L.	2733
Kallam, James D.	2884
Karlson, Ernest F.	2668
Kashinski, Albert A.	2627
Kaufman, Nathan	2735
Kominski, John	2735
Kubasiewicz, Edward E.	2668
Kusmer, Toby H.	2627
Lacomis, Bernard J.	2627
Lafranchi, Vincent	2733
Lake, Roy	2735
Lawrence, James W.	2733
Leavitt, Michael	2776
Lesniak, Andrew M.	2884
Lewis, Loren G., Jr.	2671
Lieberman, Eli	2765

Name	Ext.
Lindquist, William F.	2778
Long, Queenie	2671
Lynch, Michael J.	2668
Mason, Ruth C.	2671
Miller, Paul R.	2627
Miller, Stanley, Jr.	2767
Moore, Patricia H.	2671
Mullins, James B.	2735
Mulrooney, John J.	2668
Nelson, Frederick C.	2671
Nelson, Katherine A.	2671
Nilson, Ralph G.	2776
Nussbaum, Marvin L.	2765
Pedersen, Jewell H.	2627
Perry, Kathryn P.	2671
Plotkin, Robert H.	2627
Polssack, Richard F.	2884
Quarton, Charles E.	2627
Roberts, Charles F.	2668
Rollnec, Rudolph V.	2668
Rubin, David H.	2627
Saibach, Herman K.	2765
Sally, Viola E.	2671
Sandler, Ronald F.	2884
Schlosser, Stanley D.	2733
Schneeberger, Stephen A.	2733
Segal, Robert	2733
Shewmaker, John R.	2884
Sikes, William L.	2627
Sisk, Phyllis L.	2671
Sklar, Warren A.	2627
Stern, Ronald J.	2627
Stolarun, Edward L.	2668
Stolwein, Walter	2776
Strecker, Gerard R.	2668
Taylor, Sandra M.	2671
Vann, Virginia L.	2671
Wall, J. David	2776
Waynes, Mary E.	2671
Wilbert, Ronald L.	2627
Wille, Paul F.	2668
Wiseman, Vernelle I.	2671
Wray, Ruth M.	2671
Zazworsky, John	2767

GROUP 280 (EFFECTIVE DATE: APRIL 13)

The receptionist is located in room 4-7C17, extension 2901. The telephone numbers of the examining and clerical personnel are as follows:

Name	Ext.
Anderson, Lloyd V.	2906
Ansher, Norton	2903
Beauchamp, John P., Jr.	2915
Betts, Annie	2901
Braun, Fred L.	2903
Bynum, Martha R.	2901
Capozzi, Louis J.	2913
Coiner, Julia E.	2903
Crawley, John H.	2901
D'Ambrosio, Felix J.	2906
Evans, Robert L.	2900
Forman, Leonard	2906
Franklin, Lawrence	2911
Freed, Joel M.	2906
Frye, Windham M.	2903
Gaston, Rebecca C.	2901
Gilhooly, Edward D.	2915
Gill, James	2915
Harolan, Harry N.	2906
Harris, Antoinette J.	2901
Hartary, Joseph W.	2911
Henry, William, II	2906
Horan, John M.	2903
Hull, Robert B.	2906
Jacobson, David L.	2903
Johnson, Gloria Jean	2901
Lancaster, Lenora F.	2901
Logan, Charles C., II	2903
Lorch, Michael	2911
Martin, William D., Jr.	2906
Matthews, Samuel S.	2906

Name	Ext.	Name	Ext.
McClelland, C. Irvin	2915	Shoon, Frederick	2913
McLeod, Shirley I.	2901	Siegel, Neil B.	2913
Miller, George H., Jr.	2911	Smith, Josie J.	2901
Miller, Helen P.	2901	Swisher, S. Clement	2913
Myracle, Jerry W.	2915	Tomsky, Stephen J.	2911
Nelson, Dorothy M.	2901	Wal, Stanley A.	2911
Nolton, Jeffrey	2913	Ward, Robert S., Jr.	2911
Overbey, Charles M.	2911	Wilkinson, Richard B.	2911
Peters, Joseph F., Jr.	2903	Williamson, James H.	2915
Prince, Louis R.	2913	Wintercorn, Richard A.	2903
Ruehl, Charles A.	2915	Woodiel, Donald O.	2913
Schneider, Douglas	2915	Yasich, Daniel M.	2913
Schonberg, David	2913	Young, Artholia V.	2901
Scott, Eddie	2915		
Sheer, Richard M.	2903		

Apr. 7, 1967.

C. A. KALK,
Director of Administration.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF MARCH 13, 1967

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager..... Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	9-16-63	1-17-62
GENERAL ORGANIC CHEMISTRY, GROUP 120—G. D. MITCHELL, Manager..... Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	7-25-63	9-12-61
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING, GROUP 140—M. STERMAN, Manager..... Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	11-18-63	1-16-62
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager..... Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	12- 2-63	3-27-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager..... Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	9- 4-63	10-23-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—M. L. LEVY, Manager..... Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	8- 9-63	8-30-62
SECURITY, GROUP 220—S. BOYD, Manager..... Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	3-17-65	6-17-63
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—E. J. SAX, Manager..... Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	8-22-63	7- 3-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—F. M. STRADER, Manager..... Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	8-14-63	11- 3-61
PHYSICS, GROUP 280—R. L. EVANS, Manager..... Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	1-13-64	6-24-63
DESIGNS, GROUP 290—S. BOYD, Manager..... Industrial Arts; Household, Personal and Fine Arts.	10-22-65	6-10-65
Total number of pending applications (excluding Designs).....		190,219
Total number of Design applications pending.....		4,116
Total number of applications awaiting action (excluding Designs).....		139,389
Total number of Design applications awaiting action.....		2,464
Date of oldest new application awaiting action.....		July 25, 1963
Date of oldest amended application awaiting action.....		July 3, 1961

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during April 1967, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 600. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*.

Patents.....	Numbers 2,502,408 to 2,505,747, inclusive
Plant Patents.....	Numbers 930 to 937, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)

	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager..... Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid, Flexible and Special Receptacles and Packages.	4-19-65	9-26-63
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager..... Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding; Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Wood-working; Tools; Cutlery; Jacks; Fasteners.	1- 4-65	10-25-62
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager..... Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, Etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Tolley; Printing; Type-writers; Stationery; Information Dissemination.	8-17-64	7-17-62
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager..... Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	7-16-65	2-28-64
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager..... Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	4- 5-65	4-26-63
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager..... Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	2-16-65	7-25-62

1038

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE JEAN W. MABBOTT

No. 7600. Decided August 18, 1966

[53 CCPA —; 364 F.2d 466; 150 USPQ 735]

1. PATENTABILITY—OBVIOUSNESS—KNOWN PROBLEMS IN ART—EXPECTATION FROM TEACHINGS OF PRIOR ART.

"It is evident * * * that the prior art was aware of certain problems to be faced in attempting to increase the magnetic strength of flexible magnets by increasing the ratio of magnetic to non-magnetic material * * *. In view of the known tensile and flexural properties of polyisobutylene, chlorinated polyethylene and chlorosulfonated polyethylene alone and in blends as illustrated by Strain and Renfrew, we think one of ordinary skill in the art would reasonably expect to ameliorate those problems * * * with the instant elastomeric polymers and blends thereof. Many of the properties of the elastomeric materials employed by appellants * * * would be naturally suggestive of their use in products where, for example, resistance to oxygen, crumbling and flex-cracking is desired. Appellant's findings * * * correspond substantially to what would be expected from the teachings of Renfrew and Strain * * *. Additionally the references disclose and uses for the elastomers and blends thereof similar to the uses appellant makes of his product, i.e., gaskets."

2. SAME—SAME—BUTYL RUBBER AND POLYISOBUTYLENE.

"Appellant points out here that the Strain and Renfrew references do not expressly disclose polyisobutylene, but rather speak of butyl rubber. The Board equated GR-I (butyl) rubber with polyisobutylene, while in fact butyl rubber, according to the Solicitor's brief, is a copolymer constituted of about 98% isobutylene units and 2% isoprene units. Insofar as the record shows, appellant did not raise the issue of nondisclosure below. While appellant is technically correct, he has not demonstrated that one of ordinary skill was not well aware of the existence of both elastomers, or would not expect the properties of the two materials to be substantially the same, apart from the obvious distinction that butyl rubber is curable while polyisobutylene generally is not. Indeed, where one wishes to avoid a blend of elastomers requiring a cure, as appellant apparently does here, it seems to us polyisobutylene would be the logical choice for that purpose."

3. SAME—EVIDENCE—EXPERIMENTAL ERROR IN POINTS ON GRAPH.

In connection with the statement of the Board of Appeals: "We are in agreement with the Examiner that this showing is not convincing. * * * we note that the upsweep of the curves appear to be predicated on but a single plotted point and this departure is within the experimental error as is shown by the scattering of the plotting points, particularly the lower left-most point shown in FIGURE 1," Held that "We find no error in that conclusion. Insofar as appears from the record, each of the ten data points on the above graph reflects but one observation or sampling of the value of magnetic strength, rather than an average of two or more duplicate observations. Appellant has not rebutted the above Patent Office view, which is apparently well taken, by pointing out what the expected experimental error or sampling variation would be in those circumstances, or how it might be calculated."

4. SAME—SAME—STANDARD STATISTICAL TECHNIQUES IN GRAPHS—DEPARTURE FROM EXPECTED LINEAR RELATIONSHIP.

"We are well aware that standard techniques are known to statisticians whereby it can be determined whether a straight line (indicative of a linear relationship) could be fitted to a given set of experimental values (graphical points). Empirical considerations here appear to indicate that a linear relationship between magnetic strength and volume percent ferrite should exist, at least for loadings of ferrite particles of less than 67% by volume. Thus, appellant's discarding of a straight line as a 'best fit' of his data points appears quite arbitrary, absent a showing, statistical or otherwise, that a straight line

should not be fitted to the experimental values with due consideration for experimental error."

5. SAME—PARTICULAR SUBJECT MATTER—"FLEXIBLE PERMANENT MAGNETS."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Flexible Permanent Magnets," as unpatentable over the prior art, because the subject matter as a whole was obvious to one of ordinary skill, is affirmed.

APPEAL from the Patent Office. Serial No. 113,368.

AFFIRMED.

Gordon W. Daisley (William A. Shira, Jr. of counsel) for appellant.

Clarence W. Moore (L. F. Parker of counsel) for the Commissioner of Patents.

Before RICH, Acting Chief Judge, and MARTIN, SMITH, and ALMOND, Jr., Associate Judges, and Judge WILLIAM H. KIRKPATRICK, United States Senior District Judge for the Eastern District of Pennsylvania

KIRKPATRICK, J., delivered the opinion of the court.

This appeal is from the decision of the Board of Appeals affirming the Examiner's rejection of claims 18-29 in appellant's application¹ for "Flexible Permanent Magnets."

Appellant's specification sets forth the following background information concerning the state of the art relating to flexible permanent magnets, and the relationship of his invention thereto:

It is now known that it is possible to make permanent magnets which are flexible by uniting finely-divided magnetic particles with a flexible binder. Such magnets not only possess the advantage of being capable of limited lateral deformation without breakage, but also may have a plurality of magnetic poles distributed over the surface in a wide variety of arrangements. * * *

The magnetic strength of flexible magnets has, however, generally not been as great as those in which the individual magnetic particles are rigidly held together by sintering or fusing the particles at their points of contact. This difference in strength of the two types of magnets is primarily due to the fact that in the flexible type magnet the total amount of magnetic material is less than in a rigid magnet of the same size by the amount of the binder which imparts the flexibility and which is non-magnetic. Attempts to increase the magnetic strength of flexible magnets beyond the maximum presently attainable with known compositions, by simply increasing the ratio of magnetic to non-magnetic material, have resulted in processing difficulties during manufacture and loss of flexibility and excessive fragility in the final product.

In accordance with this invention, flexible permanent magnets are provided which contain a greater percentage of magnetic particles, and hence greater magnetic strength, for a given flexibility than do prior flexible magnets. Alternatively, magnets may now be produced which have greater flexibility and greater resistance to cracking, crumbling and/or breaking than prior flexible magnets of like magnetic strength. These improved properties are made possible by employing as the material for uniting the magnetic particles substances which are of high molecular weight with very long molecules yet are soft and possess good tensile strength, good resistance to oxidation and have high capacity for accepting finely-divided magnetic particles while remaining amorphous.

Appellant's solution to the above discussed problem involves the use of one or more of chlorinated polyethylene, chlorosulfonated polyethylene and polyisobutylene as a polymeric binder for finely divided magnetic particles, as set forth in claim 18:

18. A flexible permanent magnet comprising finely-divided particles of a ferrite, capable of permanent magnetization and having the formula $MO_nFe_2O_3$, in which M is selected from the group consisting of divalent metal and lead and n is an integral number, bonded together by at least one component selected from the group consisting of high molecular weight flexible chlorosulfonated

¹ Serial No. 113,368, filed May 29, 1961.

polyethylene, polyisobutylene and chlorinated polyethylene, wherein the volume of the particles is at least 67% of the total volume of the magnet and the size of the particles is in the range of 0.5 to 10 microns.

Claim 19 differs from claim 18 in reciting a mixture of materials, viz, a "blend consisting of chlorosulfonated polyethylene and one of the class consisting of polyisobutylene and chlorinated polyethylene." Claims 20-25 and 29 are all drawn to flexible permanent magnets employing as a binder blends of chlorosulfonated polyethylene and polyisobutylene, with particular percentages of magnetic ferrite material and polymer distinguishing each claim from the others. Claims 25-27 recite various blends of chlorosulfonated polyethylene and chlorinated polyethylene as a binder, and claim 28 recites the use of only chlorinated polyethylene as a binder.

According to appellant, the addition of chlorosulfonated polyethylene to a polyisobutylene binder for the ferrite particles yields a "stiffer" magnet and improves its "toughness and stress-crack resistance"; conversely, there is a "progressive increase in flexibility" as the proportion of polyisobutylene is increased. The resulting magnets find use in such articles as gaskets.

The references are:

Curtis, 2,655,195, October 13, 1953.

Strain, 2,729,608, January 3, 1956.

Blume, 2,999,275, September 12, 1961.

Renfrew et al., Polythene, Interscience Publishers Inc., New York, 2nd edition, 1960, pages 389 to 404.

Blume discloses a permanent magnet composed of barium or lead ferrite milled to a particle size of about 0.5 micron or greater and disposed in "an elastomeric or plastic medium, such as rubber, polyethylene, plasticized polyvinyl chloride, or the like." In order to increase the magnetic strength of the magnet, the patentee subjects the mixture to a rolling or shearing operation to mechanically align the plate-shaped ferrite particles parallel to the surface of the material. Blume states:

In a typical milling operation, barium ferrite to the extent of 65% by volume of the mix is incorporated into the rubber, *although a still greater quantity may be introduced*. A theoretical limit on ferrite concentration, i.e., "loading factor," is reached when the mix contains such a concentration of ferrite particles that they tend to "interlock" with each other. When this condition is reached the interparticle frictional forces then prevent the impinging shear forces from aligning the particles. *Experimentally, it has been found possible to obtain loading as high as 70% by volume*. However, the uncured composition is then difficult to process and does not have good strength after curing, there being a tendency to crumble. The greater resiliency of the 65% volume materials makes such materials the more suitable for general purpose usage. [Emphasis supplied.]

Curtis relates to a resilient, flexible magnet composed of finely divided particles of magnetite dispersed in an elastomeric material such as natural rubber, various synthetic rubbers, polyethylene or polyvinyl chloride. Curtis uses his flexible magnet material in belts and gaskets of various descriptions.

To fill the void present in Blume with respect to a disclosure of appellant's specific binders, the Examiner turned to Strain and Renfrew which describe properties and characteristics of chlorinated and chlorosulfonated polyethylene polymers, and blends of those polymers with other elastomers. Strain, for example, discloses that chloro-

sulfonated polyethylene is an "elastomer" produced from the treatment of "tough" polyethylene with chlorine and sulfur dioxide. Strain found that addition of between 10-50% chlorosulfonated polyethylene to GR-I (butyl) rubber, the latter being described as a "substantially saturated elastomer," produced a loss of tensile strength and an increase in modulus, hardness and abrasion resistance. Chlorosulfonated polyethylene, as well as its mixtures with natural and other synthetic rubbers, were found to be resistant to deterioration and cracking from the action of ozone or oxygen, hence of value for use in the manufacture of such products as belting and gaskets.

Renfrew describes preparation and properties of chlorinated and chlorosulfonated polyethylene. With regard to chlorinated polyethylene, Renfrew notes that "Soft, rubbery products are obtained in the range of 25-40% chlorine," particularly the polymers produced by a solution chlorination process, in contrast to the higher stiffness of polyethylene per se. Renfrew also discloses that "very pliable products" are provided by chlorosulfonated polyethylenes containing 20-45% chlorine and 1-2.5% sulfur. The cured elastomer is said to possess "good tensile strength," to be "high in modulus" and to have "unusual abrasion resistance, flex-life and resistance to crack growth." Its durability is said to suggest a number of commercial applications, among which are conveyor belts, gaskets or flexible coatings. Renfrew also states:

Blends with other elastomers.—Many of the desirable properties of chlorosulfonated polythene may be imparted to other elastomers by blending. * * *

In addition, blending with chlorosulfonated polythene improves the oil and abrasion resistance of natural rubber compounds, the modulus and heat resistance of butyl rubber compounds and provides plasticizer-free nitrile rubber compounds with good combinations of oil resistance and low temperature toughness. * * * Blends with butyl rubber have been suggested for tyre curing bags, and blends with nitrile rubber for gaskets and diaphragms.

In applying the references, the Board stated:

Each of claims 18 to 29 stands rejected as unpatentable over Blume when considered in view of the known properties of the claimed elastomers shown to be old in the secondary references. The Examiner considers the use of chlorinated or chlorosulfonated polyethylene, or a blend thereof with other polymers, as an obvious alternative to the flexible polymer matrix material of the Blume permanent magnet that uses the unchlorinated rather than the chlorinated derivatives claimed by appellant and shown to be old in Strain and Renfrew et al. The increased flexibility of the claimed polymers is contended to be predictable and hence obvious from their known properties. The Curtis patent was relied on to show the desirability of a high degree of flexibility in a magnetic material and to suggest a need for increased flexibility in Blume.

Blume discloses a flexible permanent magnet having ferrite particles of the size and composition specified in the claims. These particles are bonded together with a suitable polymer of which polyethylene is an example. Blume recognizes the existence of the problem of brittleness or loss of flexibility as the percentage of ferrite particles was increased from 65 to 70% and in our view this would suggest the desirability of retaining this flexibility in the claimed range of at least 67% of ferrite content, even apart from the Curtis patent relied on by the Examiner. The fact that Blume's solution of this problem was to stop short of the claimed range of ferrite by 2% is not considered by us to lead one away from an obvious alternative of using a binding polymer known to be more flexible than polyethylene. Thus the substantial issue presented on this appeal is whether or not the art recognized the increased flexing qualities of the chlorinated and the chlorosulfonated polyethylenes, the polyisobutylenes and blends thereof.

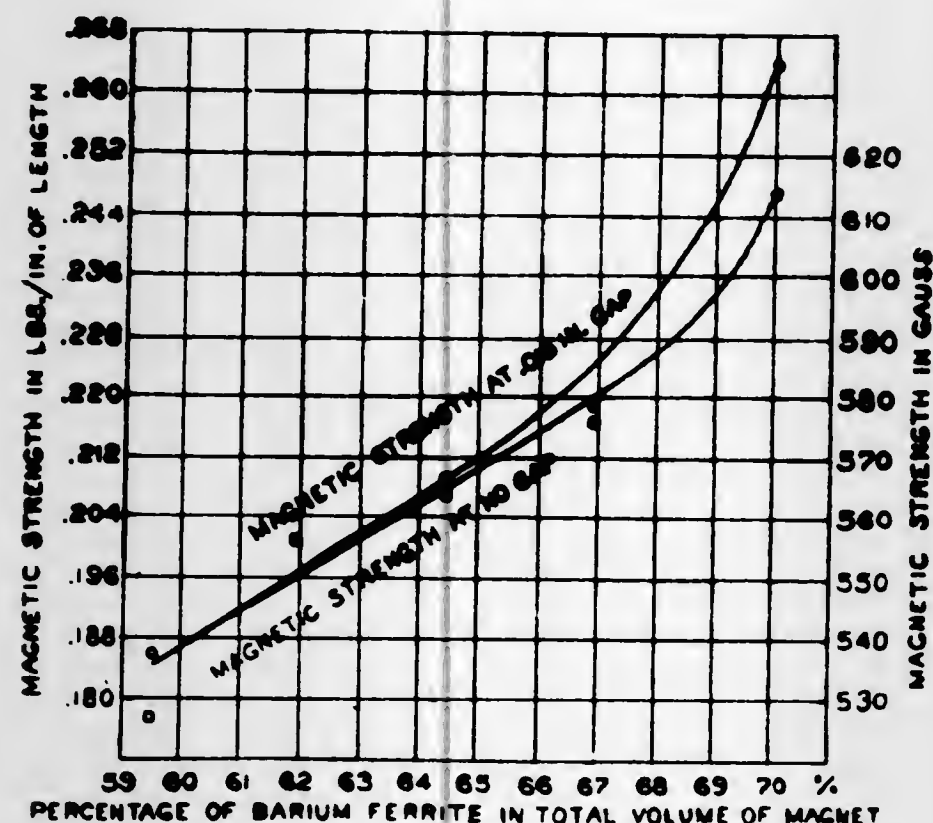
We consider that the references to Renfrew et al. and Strain adequately suggest the use of these polymers where increased flexing qualities are desired.

[1] It is evident from the portions of Blume and appellant's specification quoted earlier in this opinion that the prior art was aware of certain problems to be faced in attempting to increase the magnetic strength of flexible magnets by increasing the ratio of magnetic to non-magnetic material. Blume, for example, discloses that greater than 65% by volume ferrite may be incorporated in the mix, but a practical upper limit of 70% by volume of ferrite is reached where processing becomes difficult and flexibility in the final product is impaired. In view of the known tensile and flexural properties of polyisobutylene,² chlorinated polyethylene and chlorosulfonated polyethylene alone and in blends as illustrated by Strain and Renfrew, we think one of ordinary skill in the art would reasonably expect to ameliorate those problems and obtain a flexible magnet containing at least 67% by volume of ferrite, a volume percentage within the range disclosed by Blume as feasible, with the instant elastomeric polymers and blends thereof. Many of the properties of the elastomeric materials employed by appellant are either similar or superior to those of Blume's materials, and would be naturally suggestive of their use in products where, for example, resistance to oxygen, crumbling and flex-cracking is desired. Appellant's findings that addition of chlorosulfonated polyethylene to saturated polyisobutylene as a particle binder increased the stiffness (modulus) of that material and improved its stress crack resistance correspond substantially to what would be expected from the teachings of Renfrew and Strain that addition of chlorosulfonated polyethylene to a rubber containing about 98% isobutylene units will increase the modulus and improve resistance to cracking. Additionally, the references disclose end uses for the elastomers and blends thereof similar to the uses appellant makes of his product, i.e. gaskets.

Appellant points to a statement in Renfrew that various common filler materials "increase the stiffness and hardness of the [chlorosulfonated polyethylene] polymer and impair flexibility at low temperatures," and argues that in view of that comment one skilled in the art would not be led by Renfrew to substitute the polymers disclosed therein for those in the Blume patent. However, we note that Renfrew also states that fillers "are used to improve the processing characteristics of chlorosulfonated polythene, e.g. as by extrusion or calendering." Further, Blume states that, as magnetic material is added to his binder, "it initially tends to make the rubber softer than before"; however, as additional quantities of ferrite are added, "the increased softness disappears, and the product becomes relatively stiffer." It seems to us that an increase in stiffness of any elastomer upon loading it with a filler would normally be expected by one of ordinary skill, and that fact alone would not discourage him from employing a new elastomer where it had not been used before. Moreover, the upper limit of "in the order of 72%" by volume magnetic particles which appellant has found may be employed before unsatisfactory extrusion and loss of flexibility occurs is not substantially different from the upper limit of 70% disclosed by Blume.

[2] Appellant points out here that the Strain and Renfrew references do not expressly disclose polyisobutylene, but rather speak of butyl rubber. The Board equated GR-I (butyl) rubber with polyisobutylene, while in fact butyl rubber, according to the Solicitor's brief, is a copolymer constituted of about 98% isobutylene units and 2% isoprene units. Insofar as the record shows, appellant did not raise the issue of nondisclosure below. While appellant is technically correct, he has not demonstrated that one of ordinary skill was not well aware of the existence of both elastomers, or would not expect the properties of the two materials to be substantially the same, apart from the obvious distinction that butyl rubber is curable while polyisobutylene generally is not. Indeed, where one wishes to avoid a blend of elastomers requiring a cure, as appellant apparently does here, it seems to us polyisobutylene would be the logical choice for that purpose.

Finally, while conceding that it could reasonably be expected that an increase in the amount of the magnetic particles employed would result in a concomitant increase in magnetic strength, appellant contends that "a surprising result has been found"—namely, the linear increase in magnetic strength with increasing volume percentage of ferrite particles below 67% of the volume of the magnet becomes proportionately much greater, i.e. something other than linear, when the percentage by volume of the ferrite in the magnets is 67% or more. Those results, appellant states, are reflected in the portion of FIG. 1 of his specification which is reproduced below.



Appellant explains the data included in the above graph as follows in his specification:

The magnetic strength of each magnet was measured in two different manners. One determination was made with a commercially available gaussmeter. These values [lower curve] are those expressed in the graph in gauss units. The other determination was made by placing each magnet in turn upon a series of soft iron blocks of known weight and a width of one inch with the magnet extending transversely of the width of the block. A film of non-magnet material of .015 inch was placed between the magnet and block to provide a gap therebetween of this dimension and the weight of the block lifted by the magnet was recorded in terms of pounds per inch of length of the magnet [upper curve].

The Board found appellant's evidence of unexpected results and arguments pertaining thereto not persuasive, stating:

Appellant alleges that the increased ferrite content of the composition of his magnet yields an unexpected increase in magnetic strength. The basis of appellant's contention is the steepening of the right hand terminations of the curves depicted in * * * appellant's FIGURE 1.

We are in agreement with the Examiner that this showing is not convincing. * * * we note that the upsweep of the curves appear to be predicated on but a single plotted point and this departure is within the experimental error as is shown by the scattering of the plotting points, particularly the lower left-most point shown in FIGURE 1. * * *

[3] We find no error in that conclusion. Insofar as appears from the record, each of the ten data points on the above graph reflects but one observation or sampling of the value of magnetic strength,

rather than an average of two or more duplicate observations. Appellant has not rebutted the above Patent Office view, which is apparently well taken, by pointing out what the expected experimental error or sampling variation would be in those circumstances, or how it might be calculated.³

[4] We are well aware that standard techniques are known to statisticians whereby it can be determined whether a straight line (indicative of a linear relationship) could be fitted to a given set of experimental values (graphical points). Empirical considerations here appear to indicate that a linear relationship between magnetic strength and volume percent ferrite should exist, at least for loadings of ferrite particles of less than 67% by volume. Thus, appellant's discarding of a straight line as a "best fit" of his data points appears quite arbitrary, absent a showing, statistical or otherwise, that a straight line should not be fitted to the experimental values with due consideration for experimental error. On this record, we agree with the Patent Office that appellant's assertion of other than a linear relationship between magnetic strength and percent volume of particles for loadings greater than 67% does not appear justified.

[5] While we appreciate appellant's arguments, we are satisfied the Board correctly found the subject matter as a whole to be obvious to one of ordinary skill. The decision is affirmed.

AFFIRMED.

SMITH, J., concurring.

My concurrence in the result here is based solely on the obviousness of the claimed invention under 35 U.S.C. 103, concerning which the following additional observations may be in order.

The Supreme Court in considering section 103 in *Graham v. John Deere*, 383 U.S. 1, 148 USPQ 459 (1966), pointed out the importance of the *factual* considerations which must be taken into account before arriving at the legal conclusion of obviousness. The instant case, it seems to me, is one in which the record establishes a factual basis for this legal conclusion.

The only significant difference between the claims at bar and the permanent magnets disclosed in the Blume, Jr. patent is found in the type of elastomer used as a matrix for the magnetic particles. Applicant claims the use of at least one component selected from the group consisting of flexible chlorosulfonated polyethylene, polyisobutylene and chlorinated polyethylene as the elastomer in their permanent magnets as opposed to the disclosure of Blume, Jr. which calls for an elastomer of rubber, polyvinyl chloride or *polyethylene*.

In view of this difference, I agree with the statement of the issue as set forth in the Solicitor's brief:

The sole point in issue, therefore, appears to be whether the utilization of a permanent magnet with the claimed polymers or blends of those polymers incorporated therein as an elastomer would or would not have been obvious to a person having ordinary skill in the art with the disclosures of the Curtis, Strain

³ We note that Table II of appellant's specification illustrates magnetic strength (gaussmeter readings) values ranging from 621 to 650 for flexible magnets wherein the volume percent of ferrite is maintained constant at 68.26% and the ratio of chlorosulfonated polyethylene and polyisobutylene is changed. The specification also states:

There is no significant variation in the magnetic strength of magnets in which the ferrite is incorporated in a blend of chlorosulfonated polyethylene and polyisobutylene when the ratio of the latter two materials is changed and the amount of ferrite is kept constant. * * * [Emphasis supplied.]

While the magnetic strength values of 621-650 in Table II do not appear directly comparable to the values shown in appellant's FIG. 1 because of differences in sample width and thickness, they would appear illustrative of the potential magnitude of experimental error at any given value of volume percent of ferrite.

and Renfrew et al. references before him at the time the applicant devised his product. 35 U.S.C. 103.

As a preliminary observation it should be noted that we are here dealing with what the record shows to be a developed and sophisticated art. Thus, one seeking to improve the flexibility of the prior art magnets (Blume, Jr.) using polyethylene as a binder would be led by the art to seek modifications or blends thereof which would impart greater flexibility. This search would involve a study of literature relating to the modifications or blends of polyethylene as taught by the secondary references.

While appellant has asserted an increase in magnetic strength, presumably as a solution to some problem which may have existed in the art, this at best is what the Supreme Court referred to in the *Deere* case as a "secondary" factor. However, even the 20% increase in magnetic strength alluded to by appellant in his brief would seem to be obvious from the facts of record. An increase in the ferrite content reduces the amount of polymer in a given magnet, as the non-magnetic material between the magnetic particles is decreased, the magnetic strength of the magnet can be increased not only because of the additional magnetic material present but also because of the reduction of the leakage flux.

These factors support the conclusion that it would have been obvious at the time of appellant's invention to use the more elastic polymers suggested by Curtis, Strain, and Renfrew et al. which permitted the addition of increased amounts of ferrite particles. There was ample reason to do so if one but followed the suggestions in the art leading to what appellant here claims as his invention.

In discussing the characteristics of the magnets which produce the alleged improvement, appellant refers to the fact that claims 22-24, 26, 27 and 29 recite specific percentages of the components in the blend of binding material. However, appellant did not show factually that such proportions were anything more than obvious variants of the materials disclosed in the prior art. In this connection it is noted that appellant's brief admits that when blends of polymers are employed, the ratio of the two binding materials which go to make-up the blend may be varied without affecting the magnetic strength of the magnet.

For the foregoing reasons I concur in the result reached by the majority.

In the United States Patent Office Commissioner's Decision

IN RE APPLICATION FILED NOVEMBER 22, 1952

Decided January 11, 1967

1. FOREIGN APPLICATION FILING—RETROACTIVE LICENSE—INADVERTENCE—35 U.S.C. 184.

Under the provisions of 35 U.S.C. 184 a retroactive license can be granted only when the foreign filing was inadvertent. Inadvertence signifies want of attention and an action which is deliberately taken with full knowledge of the pertinent law and facts, is not inadvertent *In re French*, 24 CCPA 1218, 33 USPQ 537. *In re Cornell et al.*, 32 CCPA 1251, 66 USPQ 320; *In re Smyser*, 30 CCPA 1093, 57 USPQ 402. The foreign filings here involved were deliberate and the petitioner does not, even now, assert that the law required them to be supported by a license. It must therefore be held that they were not inadvertent within the meaning of the applicable statute, and that a retroactive license cannot properly be granted.

2. SAME—SAME—SAME—DILIGENCE.

"* * * even assuming inadvertence to have been present, it was clearly incumbent on the petitioner to apply for a retroactive license [to file a foreign application] with diligence as soon as the need for it became apparent."

ON PETITION.

DENIED.

REYNOLDS, *First Assistant Commissioner*.

This is a petition from the decision of the Manager of the Security Group refusing to grant a retroactive license for foreign filing. The pertinent facts are as follows:

The application on which the present patent was granted was filed November 22, 1952 as a continuation in part of application No. 216,325, filed March 19, 1951, which had been rejected on the ground of insufficient disclosure. Foreign applications based on the disclosure of the present one were filed, without obtaining a license for foreign filing, in November 1952. In a decision rendered November 9, 1964 *Beckman Instrument Co. v. Coleman*, 143 USPQ 278 the Court of Appeals, Seventh Circuit, held that the disclosure of the later application differed materially from that of the earlier one and that accordingly the fact that the earlier case had been pending for more than six months when the foreign applications were filed did not obviate the requirement for a license. The court therefore held the patent invalid in view of the provisions of Title 35, sections 184 and 185 of the United States Code. A petition for a retroactive license to cover the foreign filings was filed on February 18, 1966 and was finally denied by the Manager of the Security Group on June 28, 1966. The present petition followed.

In support of the petition it is asserted that the petitioner was aware of the statutory provisions here involved at the time when the foreign applications were filed but was of the opinion that the disclosure in his first United States application was the same in all material respects as that of the second and that since the first had been filed more than six months prior to the foreign filings, no license was necessary. The petitioner still contends that there is no material difference between the disclosures of the two United States applications but, in view of the decision in the *Beckman* case above cited, that question is not thought to be open for consideration here. Moreover, assuming the petitioner's contention to be correct, there would have been no inadvertent foreign filing and no retroactive license would be needed or proper.

[1] Under the provisions of 35 U.S.C. 184 a retroactive license can be granted only when the foreign filing was inadvertent. Inadvertence signifies want of attention and an action which is deliberately taken with full knowledge of the pertinent law and facts, is not inadvertent *In re French*, 24 CCPA 1218, 33 USPQ 537. *In re Cornell et al.*, 32 CCPA 1251, 66 USPQ 320; *In re Smyser*, 30 CCPA 1093, 57 USPQ 402. The foreign filings here involved were deliberate and the petitioner does not, even now, assert that the law required them to be supported by a license. It must therefore be held that they were not inadvertent within the meaning of the applicable statute, and that a retroactive license cannot properly be granted.

[2] Moreover, even assuming inadvertence to have been present, it was clearly incumbent on the petitioner to apply for a retroactive license with diligence as soon as the need for it became apparent. It appears from the petition that the petitioner was aware, in March

1963, that the validity of his patent might be questioned on the ground of unlicensed foreign filing and that a decision was made to stand on the position that no license was necessary. Even after the Court of Appeals of the Seventh Circuit had held, on November 9, 1964, that a license was necessary, the filing of a petition for a retroactive license was delayed by more than a year. In justification of these delays it is asserted that the petitioner was entitled to await the final court decision and that thereafter it was necessary to collect records and consider various court decisions.

It is not thought that this course of conduct can properly be considered as constituting the requisite diligence under the circumstances of this case. Clearly, the question as to whether a retroactive license would be granted should have been raised and determined at least no later than the time when the validity of the patent was first challenged, since the granting of such a license might have had a very material effect on the court proceedings. Moreover, it is definitely in the public interest that such a question be promptly settled in order that the status of the patent may be known with certainty.

For the foregoing reasons it must be held that the requested retroactive license cannot properly be granted and the petition is accordingly denied.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

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2,564,646, Lelstner, Hecker and Knoepke, HAZE RESISTANT VINYL CHLORIDE POLYMERS; 2,716,002, Lelstner and Hecker, VINYL CHLORIDE RESINS STABILIZED WITH A MIXTURE CONTAINING A PHENOLATE AND A POLYVALENT METAL SALT OF A FATTY ACID, filed Jan. 4, 1967, D.C., E.D.N.Y. (Brooklyn), Doc. 67C-6, Argue Chemical Corp. v. Claremont Polychemical Corp.

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2,709,672. (See 2,609,329.)

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2,716,002. (See 2,564,646.)

2,763,681. (See 2,609,329.)

2,771,006, V. N. Burton, FLUID TIGHT CLOSURE, filed June 30, 1966, D.C., N.D. Okla. (Tulsa), Doc. 6473, T. D. Williamson, Inc. v. W. A. Morrison. Default judgment, defendant enjoined, Jan. 26, 1967.

2,786,585. (See 2,715,968.)

2,878,514, Nichols and Carshells, APPARATUS FOR CURLING PLASTIC YARN, filed Jan. 26, 1967, D.C., E.D.N.Y. (Brooklyn), Doc. 67C-70, Marperi Enterprises, Inc. v. David & David.

2,911,339. (See 2,609,329.)

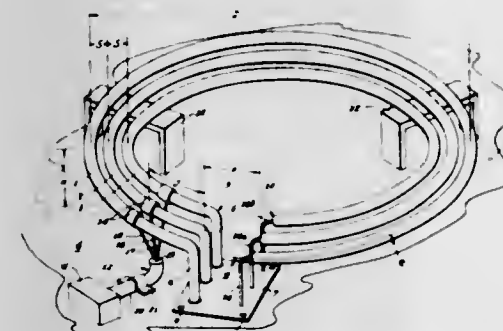
D. 191,144, G. Schanz, COMBINATION STORING AND STACKING CASE, filed Jan. 26, 1967, D.C., E.D.N.Y. (Brooklyn), Doc. 67C-62, G. B. Lewis Co. v. Continental Dynamics Corp. et al. Same, Doc. 67C-63, G. B. Lewis Company v. Gould Products, Inc.

REISSUES

APRIL 25, 1967

Matter enclosed in heavy brackets [] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

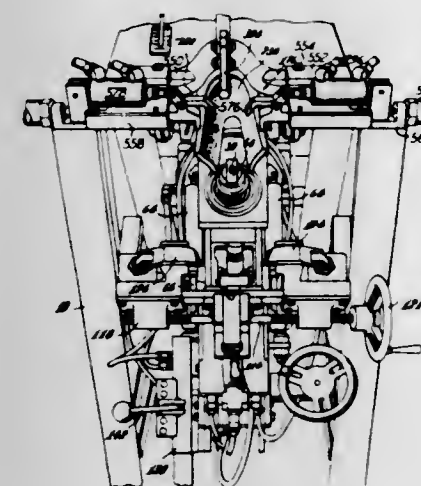
26,196
OPEN RING ANTENNA
Joseph M. Boyer, Rolling Hills, Calif., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California
Original No. 3,151,328, dated Sept. 29, 1964, Ser. No. 206,248, June 29, 1962. Application for reissue Dec. 15, 1965, Ser. No. 526,326
22 Claims. (Cl. 343-742)



19. An antenna comprising a nearly closed conductive ring member, a first end of said ring having a conductive extension in the form of a leg joining said first end at substantially a right angle to the plane of said ring, means for connecting the outer end of said leg to one conductor of a transmission line, and connecting means on said antenna a short distance from the junction of said leg with said ring member for attaching to the other conductor of the transmission line.

26,197
HEEL SEAT LASTING WITH BREAST LINE
PINCERS

Jacob S. Kamborian, 70 Crestwood Road, West Newton, Mass. 02165
Original No. 3,130,429, dated Apr. 28, 1964, Ser. No. 125,691, July 21, 1961. Application for reissue, Apr. 4, 1966, Ser. No. 547,119
26 Claims. (Cl. 12-145)

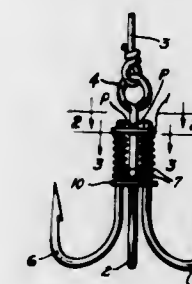


1. A method of heel seat lasting a shoe mounted bottom-up on a last, said shoe including an insole located on the last bottom and an upper mounted on the last,

comprising: applying a pulling force on the forepart portions of the upper on each side of the shoe by first stressing means to stretch the upper tightly about the heel line and heel extending upwardly of the insole; gripping the margin on each side of the last proximate to the breast line by a second stressing means; laying substantial areas of the gripped breast line margin portions on the insole by moving the second stressing means toward each other over the insole inwardly of the marginal edges of the insole in paths substantially parallel to the bottom of the insole and concomitantly releasing the first stressing means from said forepart portions of the upper; clamping the heel of the upper against the last; and wiping the upwardly extending margin at the heel down upon the insole.

5. A heel seat lasting machine comprising: wiping means mounted for forward movement; heel clamping means located below the wiping means; a shoe support located forwardly of the wiping and clamping means for supporting bottom-up a last having an insole located on its bottom and an upper mounted thereon; [upper vamp] forepart gripping means located forwardly of the wiping and clamping means on each side of the shoe support and above the shoe support; breast line gripping means located above the shoe support on each side of the shoe support intermediate the wiping and clamping means and the [vamp] forepart gripping means; means for actuating the [vamp] forepart gripping means to grip the [vamp] forepart portions of the upper and exert a pulling force on the upper to stretch the upper tightly about the heel of the last with the margin of the upper at the breast line and heel extending upwardly of the insole; means for actuating the breast line gripping means to grip the margin of the upper proximate the breast line; means for moving the breast line gripping means toward each other and for concomitantly causing the forepart gripping means to release said forepart portions of the upper; means for actuating the clamping means to clamp the heel of the upper against the last; and means for effecting forward movement of the wiping means to wipe the upwardly extending upper margin at the heel of the upper down upon the insole.

26,198
FISHING DEVICES
Michael Rossman, 11724 Lovejoy St., Silver Spring, Md. 20902
Original No. 3,205,607, dated Sept. 14, 1965, Ser. No. 448,331, Apr. 15, 1965. Application for reissue Sept. 7, 1966, Ser. No. 582,195
4 Claims. (Cl. 43-36)



4. A fishing device comprising a main fishhook including an integral shank portion, a bight portion and a line receiving eye mounted directly on said shank portion, a

first supporting plate rigidly mounted on said shank portion below said eye, a second supporting plate rigidly mounted on said shank portion in spaced relation to said first supporting plate, at least one additional fishhook including shank and bight portions, said additional fishhook being rotatably mounted on said first and second supporting plates for rotation about an axis parallel to the axis of the shank of said main fishhook, a coil spring surrounding the shank of said additional fishhook, the

terminals of said coil spring being so connected as to exert tension on said additional fishhook to rotate and hold the bight thereof at a substantial angle to the bight of said main fishhook, said bight portion of said additional fishhook being rotatable against the bias of said spring to a position parallel to said bight portion of said main fishhook, and means for holding said additional fishhook against longitudinal movement on said first and second supporting plates.

PLANT PATENTS

GRANTED APRIL 25, 1967

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,733
AZALEA

John F. Link, Jr., 3235 Cross Bill Road,
Louisville, Ky. 40213

Filed Nov. 24, 1965, Ser. No. 509,654

1 Claim. (Cl. Plt.—57)

A distinct variety of azalea of the florists' forcing type

as shown and described, mainly distinguishable by its scarlet red color which is truly different, by its rapid growth and lush green foliage, by its profuse blooming and ease of forcing and by its dependability to set bud under the growth retardant conditions required for year round azaleas.

PATENTS

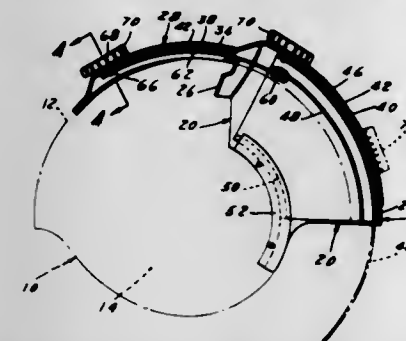
GRANTED APRIL 25, 1967

GENERAL AND MECHANICAL

3,315,272

DUAL VISOR HELMET

John D. Ok, Sierra Madre, and James A. Staphenhill, Azusa, Calif., assignors to Sierra Engineering Company, Sierra Madre, Calif., a corporation of California
Filed Dec. 7, 1964, Ser. No. 416,480
12 Claims. (Cl. 2—3)



1. A visor construction comprising a helmet curved in a fore and aft and in a transverse direction in conformance generally with the shape of a human head and adapted to be supported on the head, and a pair of transparent visors movably mounted on said helmet for movement of each visor between an extended position in the line of sight of the wearer and a retracted position out of said line of sight, said visors being curved in a fore and aft and in a transverse direction on different radii of curvature whereby to space said visors at different locations relative to the exterior of the helmet, said visors being free of engagement with each other, and means mounting said visors on the helmet whereby either or both of said visors are movable to extended position in the line of sight of the wearer independently of the other.

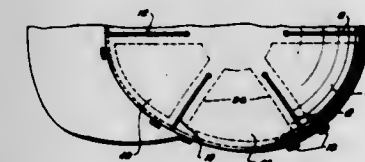
3,315,273

SAFETY CAP

Ethan C. Bullard, 7255 Tampa Ave.,
Reseda, Calif. 91335

Substituted for abandoned application Ser. No. 206,273,
June 29, 1962. This application June 1, 1965, Ser. No.
466,499

4 Claims. (Cl. 2—3)



1. In a safety cap arrangement to be worn by a user to protect the user's head and being retained on the user's head solely by the cap arrangement, including:

- a one-piece liner formed of relatively hard and resilient plastic material; said liner being permanently molded in a crown shape generally conforming in configuration to the user's head;
- said liner having a central section located at the top of the liner and positioned on the top of the user's head;
- at least four cantilever segments independently attached to and extending outwardly and downwardly from said central section, each segment terminating at a lower edge and the lower edges of the segments being laterally aligned with each other, each seg-

ment being separated from adjacent segments by a narrow slot extending radially of said liner;

- each of said slots extending at least about one-half and less than about two-thirds the distance from the lower edge of the segment to the middle of the central section;
- each of said segments being permanently formed to the general shape of the user's head in the area covered by the segments;
- each segment being resilient and swingable in a spring action relative to the central section and relative to each other to adapt the liner for various sizes and shapes of user's heads, and said liner being held on the user's head solely by the segments snugly receiving the user's head;
- a fabric cover material intimately encompassing said liner and generally engaged with the entire outer surface of the liner, the spring action of said segments maintaining the fabric cover material taut on the liner, such that the liner shapes the fabric cover material, a bead affixed to the peripheral edge of the fabric cover material, and said bead being snap-positioned in a tensioned condition beneath the lower edges of the segments to maintain the fabric cover material taut on the liner.

3,315,274
GARMENT

Lulu Roody, New Hyde Park, N.Y., assignor to Leon Levin Sons, Inc., New York, N.Y., a corporation of New York

Filed Aug. 24, 1966, Ser. No. 574,716
3 Claims. (Cl. 2—71)



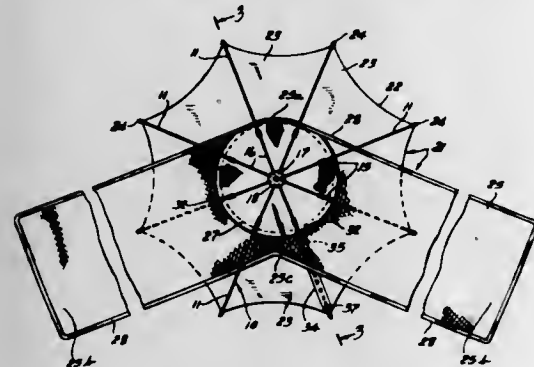
1. A garment comprising an outer skirt body having a waist encircling part, a crotch within said outer skirt body connected to the front and rear vertical medial lines of said outer skirt body at points above the bottom of said body of dividing said skirt portion into two interiorly located leg areas, said crotch including two parts stitched along their upper marginal edges continuing to the front of the garment and turned outwardly to form flaps beneath said outer skirt body, said parts continuing to the rear of the garment and each part being attached thereto along an adjacent portion thereof to form folds defining a pleat in said outer skirt body, said pleat being split along the rear vertical medial line from the bottom of the garment to said point above said bottom, a portion of said flaps along the bottom thereof being free from attachment to the bottom of said outer skirt body to en-

able maximum freedom of movement of the legs of the wearer, the remaining portion of each flap above said connecting point being stitched to the interior of said outer skirt body at a point above the bottom of said outer body and having a length extending to the waist encircling part of said body whereby the continuation of each said flap forms an interior panel beneath said outer skirt body in the front of said garment.

3,315,275 COLLAPSIBLE HEAD SHIELD AND MOUNTING MEANS THEREFOR

Ruth C. Erbb, 2 Sutton Place S.,
New York, N.Y. 10022

Filed Oct. 23, 1965, Ser. No. 503,258
7 Claims. (Cl. 2-177)

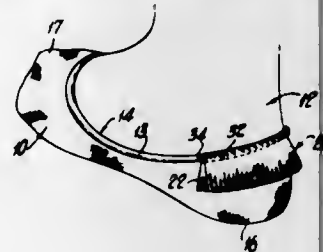


1. A collapsible head shield comprising an umbrella-like frame having a short stem and a ring member anchored thereto centrally of said umbrella-like frame, six to sixteen radial ribs hingedly secured to said ring and extending outwardly therefrom, hinge mountings centrally of said radial ribs, a plurality of radial brace members hingedly secured to said hinge mountings at one of their ends, an elongated central ferrule in alignment with said stem hingedly securing the other ends of said radial brace members, said elongated central ferrule adapted for slidable engagement and disengagement with respect to said stem, said stem being completely concealed and said brace members being inclined above the plane of said hinge mountings in the fully engaged position of said ferrule, and a unitary assemblage secured to said frame, said assemblage consisting of an umbrella-like cover of flexible sheet material, an essentially circular liner of a diameter to extend slightly beyond said hinge mountings, and an elongated flexible scarf member disposed between said cover and liner, end portions of said scarf in extended position being angularly disposed with the center, front forming portion of one long edge following the contour of said liner through an arc of about 45° wherein said end portions diverge outwardly and rearwardly from the center of said head shield, and a portion of said scarf at the opposed long edge being shortened and joined along a radial, rearwardly extending line for a distance substantially beyond the periphery of said liner, said cover, liner and scarf being joined together with circular stitching, at least one circular line of which coincides substantially with the location of said hinge mountings, and positioning means adjacent and outwardly of said hinge mountings for securing said assemblage to said ribs.

3,315,276
CONCEALED SOCK
Thelma Daxe, 54 Nassau Drive,
Great Neck, N.Y. 11021
Filed Mar. 30, 1966, Ser. No. 538,643
6 Claims. (Cl. 2-239)

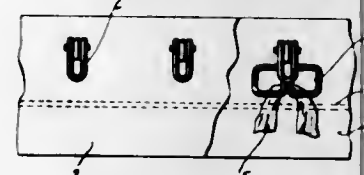
1. An article of hosiery adapted to be worn on the foot inside a shoe having a rim defining the shoe opening, and to be substantially coextensive with the height thereof,

said hosiery article comprising, a knit tubular body having an upper edge defining an opening therein adapted to receive the foot of the wearer therethrough; said tubular body comprising a toe portion, a heel-embracing portion, and a body portion connecting said toe and heel-embracing portions; a tab having an upper substantially non-extensible strip portion and a flap portion extending downwardly therefrom, and non-extensible means securing said non-extensible strip portion to a part of said tubular body upper edge adjacent to said tubular body heel-embracing portion and to a part of said tubular body heel-embracing portion immediately adjacent to said tubular body upper edge thereby rendering non-extensible the part of said tubular body upper edge which is coextensive with said strip portion, a strip of elastic material, means securing said strip of elastic material to said tubular body along



said tubular body upper edge whereby the edge of the opening in the sock is extensible along that portion of the opening which does not have the non-extensible strip portion secured thereto, the remainder of said upper edge being non-extensible, said non-extensible securing means forming a substantially non-extensible shoulder along the bottom edge of said non-extensible strip portion extending from said heel-embracing portion, said substantially non-extensible strip portion having a thickness sufficient such that upon insertion of said hosiery article into a shoe, said strip portion is disposed above a shoe rim, with said non-extensible shoulder seating on a shoe rim, said flap portion being disposed outside of a shoe thereby stabilizing said tubular body heel-embracing portion and preventing said hosiery article from sliding downwardly into a shoe.

3,315,277
CLASP FASTENER AND METHOD OF
MANUFACTURING THE SAME
Jose Fernandez Ruiz, Villafranca 6, Madrid, Spain
Filed Feb. 23, 1965, Ser. No. 434,258
Claims priority, application Spain, Feb. 25, 1964,
296,862
14 Claims. (Cl. 2-265)

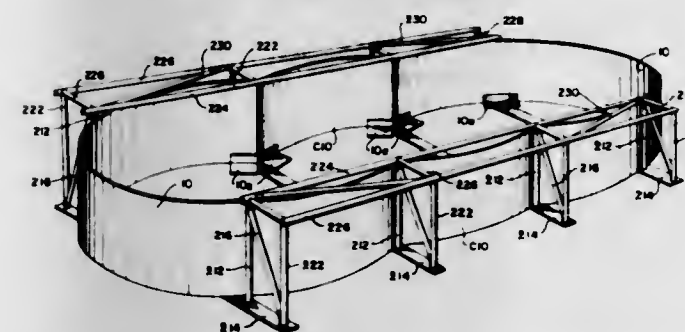


1. A method of manufacturing clasp fastener stringers having a plurality of clasp fastener elements each including a substantially loop shaped attaching portion and a connecting portion projecting to one side of said attaching portion and adapted to engage with a corresponding connecting portion of a clasp fastener element on another stringer, comprising the steps of inserting a short piece of ribbon through the attaching portion of each fastener element of the one stringer with the ends of said ribbon extending to the side of the attaching portion which is opposite to that from which said connecting portion projects; placing a plurality of clasp fastener elements respectively spaced from each other on a band with said attaching portion thereof and said ribbons inserted therethrough abutting against one surface of the band

and said connecting portions of said fastener elements projecting therefrom; and connecting said ribbons at parts thereof extending beyond said attaching portions to said band by means of a straight seam extending in longitudinal direction of said band through the latter and said ribbons.

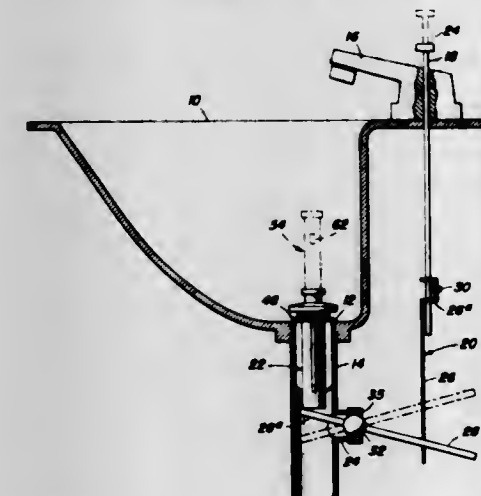
3,315,278
SWIMMING POOL STRUCTURE
Erich Schatzki, New York, Robert Schleeweiss, Beechhurst, and Kenneth Richardson, Lynbrook, N.Y., assignors to Bilnor Corporation, a corporation of New York

Filed Aug. 18, 1965, Ser. No. 480,560
12 Claims. (Cl. 4-172)



1. A supporting structure for a sheet plastic swimming pool lining comprising at least two united wall sections formed of material which is non-rigid in the longitudinal direction, curved in horizontal planes and forming at least a pair of cusps, vertical supports lying along the outer surfaces of the apices of said cusps, transversely extending means connected to the lower ends of said supports for preventing outward movement of said lower ends, and means engaging said vertical supports for preventing outward movements of the upper ends of said supports under contained water pressure.

3,315,279
DRAIN STOPPER WITH OVERFLOW
John E. Nolan, Anchorage, Ky., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 30, 1964, Ser. No. 422,280
10 Claims. (Cl. 4-198)



3. A drain stopper and overflow device for regulating the discharge of liquid through a conduit having a discharge opening comprising an outer tubular element adapted to be moved upwardly and downwardly in the conduit adjacent the discharge opening thereof and having a sealing portion engageable with the conduit to close the opening when one position and to disengage from the conduit to open the opening when in another position, an inner tubular element telescopic within said outer tubular element and having an overflow opening defined

through a wall thereof providing a liquid flow passage from the exterior of said tubular element to the interior thereof, said inner tubular element having another opening adjacent its lower end for the discharge of liquid which passes through the overflow opening back into the conduit, said inner tubular element including a portion which projects from the upper portion of said outer tubular element for engagement by a person's hand, said tubular element being telescopic within said outer tubular element at least to an extent at which the overflow opening thereof will be located below the top of said outer tubular element.

3,315,280
DRAIN OPENING DEVICE
Robert A. Krenn, 4242 N. 11th St.,
Phoenix, Ariz. 85014
Filed Dec. 21, 1964, Ser. No. 419,728
2 Claims. (Cl. 4-255)

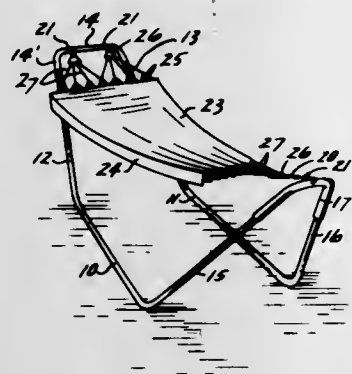


1. A drain opening device comprising in combination: (A) a cylinder having a bore for receiving an aerosol container, (B) a demountable cap on one end of said cylinder to allow insertion and retention of said aerosol container in perforating position in said cylinder, (C) a piercing tube, (D) a pipe opening engaging head on the outer end of said piercing tube, (E) means for mounting said piercing tube on the other end of said cylinder for relative axial movement of said tube and cylinder, (F) and a piercing point on the inner end of said piercing tube arranged to engage and pierce an end of said aerosol container in said cylinder when said cylinder is moved toward said pipe opening engaging head of said piercing tube.

3,315,281
HAMMOCKS
Elliott C. Morris, Milwaukee, Wis., assignor to Gleason Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed July 12, 1965, Ser. No. 471,329
3 Claims. (Cl. 5-120)

1. A hammock, comprising: a tubular metal stand having a head end and a foot end, and having ground-engaging portions therebetween, said stand having a pair of upwardly-angled leg members at its head end, and said stand having a pair of upwardly-angled and converging leg members at its foot end; a tubular header bar mounted on an extending between said leg members at the stand head end, said header bar having downturned end portions fitted over the upper ends of said legs in telescopic relation, and said tubular header bar being provided with spaced hook-receiving apertures therethrough; a tubular inverted V member telescopically fitted over the upper ends of the converging legs at the foot end of said stand,

said inverted V member having a hook-receiving aperture therethrough; a stringing hook removably mounted in each of the apertures in said header bar and inverted V member, said hooks having a straight leg portion inserted into said apertures and extending completely through said tubular members, and a curved hook portion extending over and downwardly partially around said tubular members; a triangular ring carried by each of said header bar hooks, said rings being formed of resilient wire and having overlapping apex portions adapted to be temporarily sprung apart; a chain adjustably carried by the stringing hook at the foot end of said stand; a triangular ring carried on the free end of said chain; a hammock bed supported by said stand, said bed having head and

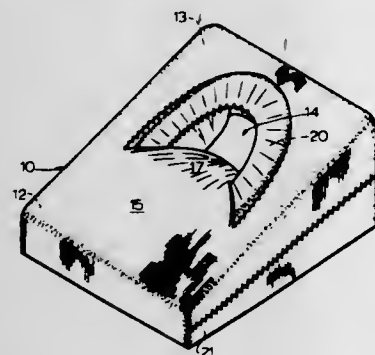


foot ends provided with a plurality of loops spaced therealong; and a plurality of endless looped webbing strings secured to and between said bed loops and the rings carried by said stand header bar and inverted V member, each of said strings being inserted through one or more of said bed loops and pulled through itself to form a tight, non-slip noose engaging said loops, and the opposite end of said string being formed in a noose and arranged on and tightly engaging one of said rings, there being a plurality of said strings converging upwardly and secured to each of said rings, the resilient nature of said rings permitting the temporary opening thereof to allow the attachment of said strings, and said stringing providing a supporting webbing whereby said bed is suspended between the ends of said stand.

3,315,282

HEADREST FOR COSMETIC USE AND THE LIKE
Andrew Lowery, 4806 Revere Road, Parkwood, Durham, N.C. 27707, and William T. Lowery, 15-501 Bypass, Chapel Hill, N.C. 27514

Filed June 8, 1965, Ser. No. 462,232
7 Claims. (Cl. 5-338)



1. A headrest for cosmetic purposes and the like comprising an integral resilient pillow having a flat base surface and a flat body receiving surface, said body receiving surface being inclined relative to said base surface to provide said pillow with increasing depth from the back to the front thereof, the firmness of said pillow increasing with the increasing depth thereof, said pillow having a nose and mouth receiving central aperture extending from said body receiving surface substantially

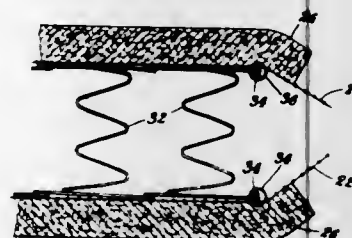
through said pillow to said base surface, and a passageway connecting said central aperture with the atmosphere surrounding said pillow, said passageway being of a size sufficient to allow the proper circulation of air to a person lying prone and having his mouth and nose inserted in the upper portion of said aperture; and a substantially rigid support means residing in and contourly fitting said passageway, said support means providing said passageway with dimensional stability.

3,315,283

SPRING-CUSHION STRUCTURES AND CUSHIONING MATERIAL THEREFOR

Ronald L. Larsen, Minneapolis, Minn., assignor to Wood Conversion Company, St. Paul, Minn., a corporation of Delaware

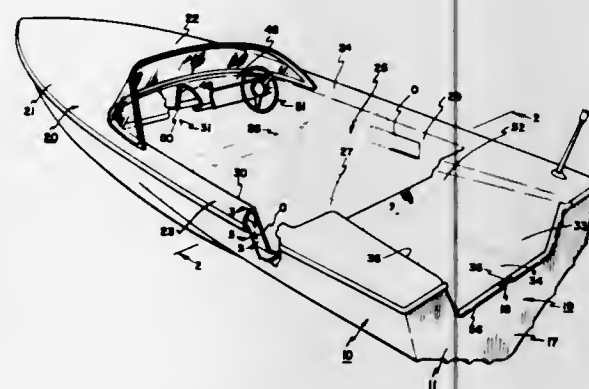
Filed Oct. 18, 1965, Ser. No. 497,255
6 Claims. (Cl. 5-354)



1. A spring cushion structure comprising in combination a resilient metal wire spring foundation presenting a substantially flat face with relatively large open spaces between a multiplicity of relatively small wires in said face, cushioning material supported by said face, an open mesh net interposed between said face and said cushioning material, said net having two crossing sets of flexible normally stretch-resistant polymeric plastic strands, each of said sets having the strands thereof substantially parallel, the crossings of the strands of one set with the strands of another set being integral with the strands forming the crossings, and said structure having the net so secured with respect to the spring foundation that the portions of the net adjacent to the edges of the spring foundation remain substantially fixed in that relation.

3,315,284

BOAT CONSTRUCTION
Roy S. Ludlow, 1890 E. Millbrook, Salt Lake City, Utah 84106
Filed Oct. 11, 1965, Ser. No. 494,804
8 Claims. (Cl. 9-6)



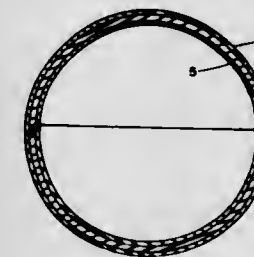
1. A boat construction including, in combination, a hull shell; an upper molded unitary shell configured to form a cockpit, a motor well, and a bulkhead disposed therebetween, each of said shells including an upstanding back panel said upper shell being secured to said back panel of said lower shell along the margins thereof; and

an upstanding, motor-mount transom affixed to and between said shells at the rearward extremity of said boat construction.

3,315,285

PLASTIC BUOY
Everett Walter Farmer, Reeds Ferry, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware

Filed Feb. 1, 1965, Ser. No. 429,437
5 Claims. (Cl. 9-8)



3. An air launched free falling buoy having two mating hemispheres arranged to fit together to form a buoyant sphere, said hemispheres being formed of plastic material, and having a homogeneous coating of nickel substantially increasing the strength and shock resistance characteristic of the same material without said coating, and reducing the water absorbency of said plastic material, said coating having a thickness so small as to have negligible effect on the volume of said sphere, said coating acting to place a compressive force upon the surfaces of said hemispheres to thereby cause said buoy to resist the shock of an impact.

3,315,286

SWIMMING FINS
Benjamin W. Brion, 7233 Emerson Ave. S., Richfield, Minn. 55423
Filed Oct. 20, 1965, Ser. No. 498,662
11 Claims. (Cl. 9-304)

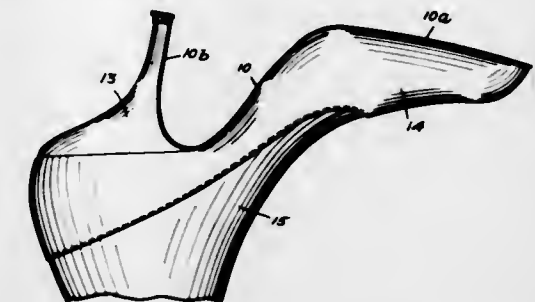


10. A reversible swimming fin combination comprising, a shoe having a heel and toe portion and adapted to fit over and cover a human foot, a fin having a pair of elongated side rails forming a spaced longitudinal support and a web portion extending therebetween and connected to said side rails, said side rails extending beyond said web portion and adapted to fit around the toe portion of the shoe, pivot means included in said shoe intermediate the heel and toe portions, means connecting said side rails of the fin on either side of said shoe at said pivot means such that the web portion extends downwardly from the toe portion of the shoe when the fin is pivoted forward of the toe portion and such that said web portion clears the heel portion of the shoe when the fin is pivoted in toward the heel portion of the shoe, and means pivotally mounted on and between said side rails, said last named means being adapted to pivot over the toe portion of the shoe and rest on the top side of the toe portion to secure the fin in the forward position, the fin when pivoted to the heel portion of the shoe having the said last named means located on the under side of the heel portion of the shoe.

3,315,287

METHOD OF MAKING SHOES
Lloyd K. Davis, Chestnut Hill, Mass., assignor to Allied Novelty Shoe Corp., Boston, Mass., a corporation of Massachusetts

Filed Jan. 31, 1964, Ser. No. 341,537
6 Claims. (Cl. 12-142)

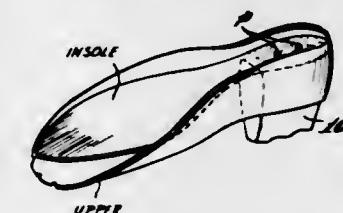


1. The method of making a shoe which comprises cutting an outsole blank, including a breast flap portion, to finished shape in one operation, finishing said blank, assembling the breast flap portion in the finished condition onto the breast of a heel, and subsequently attaching the assembled heel and outsole blank to the bottom of a lasted upper.

3,315,288

METHOD OF SHOE MAKING
James L. Forma, Andover, Mass., assignor to Lowell Molding Corporation, Lawrence, Mass., a corporation of Massachusetts

Filed Sept. 25, 1964, Ser. No. 399,203
9 Claims. (Cl. 12-145)



1. The method of shoe manufacturing comprising attaching the lasting margin at the heel end of an upper, which has been premolded to the shape of the heel end of the last upon which it is to be lasted, to the heel end of an insole containing a prepunched hole at the heel end, comprising providing a last with a positioning pin at the heel end, mounting the assembled upper and insole on the last with the hole at the heel end of the insole engaged with the positioning pin on the bottom of the last to prevent forward movement of the back part of the upper and the rear end of the insole on the last, pulling the lasting margin at the toe upwardly and forwardly on the last to cause the upper to conform snugly to the last, adhesively lasting the margin at the toe to the insole, and then adhesively lasting the marginal edges of the upper intermediate the heel and toe to the insole.

3,315,289

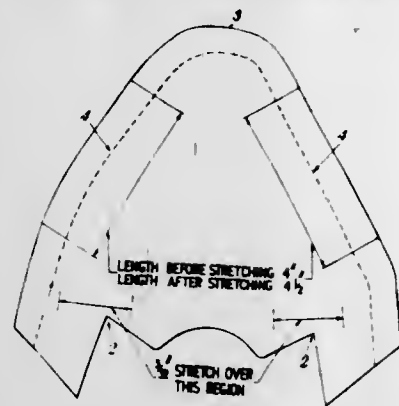
TREATMENT OF LEATHER
David R. Dew, Kettering, England, assignor to The British Boot, Shoe and Allied Trades Research Association, Northamptonshire, England, a British association

Filed Apr. 24, 1964, Ser. No. 362,365
Claims priority, application Great Britain, Apr. 25, 1963, 16,382/63

19 Claims. (Cl. 12-146)

1. The method of preparing for lasting shoe upper foreparts having a toe end, tab points regions, and a waist portion, which comprises in one operation selectively

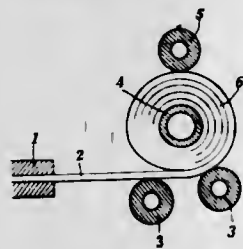
stretching the material of the entire waist portion along regions adjacent, and in directions generally parallel to



and between its lateral margins, and finally setting at least a major portion of the stretch in the waist portion.

3,315,290 METHOD FOR THE MANUFACTURE OF SHOE PATTERN

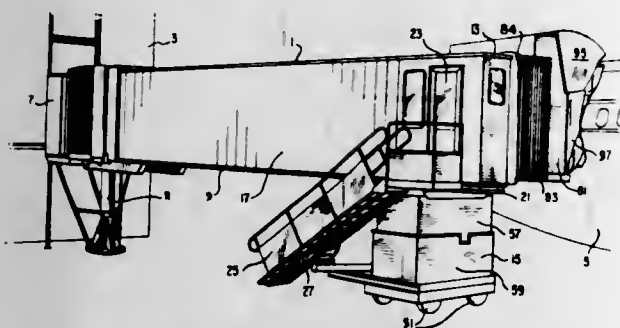
Katsuro Ishii, Osaka-shi, Japan, assignor to Sankyo Kasei K.K.
Filed Sept. 11, 1964, Ser. No. 395,868
Claims priority, application Japan, Oct. 24, 1963, 38/56,931
3 Claims. (Cl. 12-146)



1. A process for manufacturing shoe patterns comprising extruding thermosetting plastic material into sheet form, winding said plastic sheet on a water cooled hollow drum while maintaining the sheets to be wound and the already wound sheets under pressure to produce a compacted bubble-free cylindrically laminated body the surfaces of which thus fuse together, dividing the resulting laminated body into segments along an axial direction and planing the resulting segments to obtain a shoe pattern.

3,315,291 CONVEYANCE LOADING APPARATUS

Joseph C. Wollard, Miami Springs, John S. Slaney, Opa-locka, and Lester L. Preiss, Miami, Fla., assignors to Wollard Aircraft Service Equipment Inc., a corporation of Florida
Filed Nov. 29, 1963, Ser. No. 326,771
5 Claims. (Cl. 14-71)

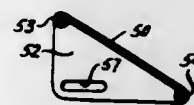


3. A conveyance gangway comprising:
(a) at an elongated portion,
(b) means mounting the elongated portion for substantially horizontal swinging movement about a vertical first axis,

- (c) a conveyance end portion,
- (d) means swingably interconnecting the conveyance end portion with the elongated portion for substantially horizontal swinging movement of the conveyance end portion relative to the elongated portion about a second axis,
- (e) the conveyance end portion extending laterally of the elongated portion,
- (f) the elongated portion having a pair of side walls, one being substantially shorter than the other, and
- (g) an endwall extending from the conveyance end of the other side wall toward the conveyance end portion of the gangway,
- (h) the conveyance end of the one side wall and the end of the end wall nearest the conveyance end portion being each contiguous to the conveyance end portion when the conveyance end portion is disposed at negative and positive acute angles, respectively, to a plane which includes the second axis and which is perpendicular to the length of the elongated portion.

3,315,292 RAMP

Nathaniel S. Collins, Washington, D.C.
(1604 Shenandoah Road, Alexandria, Va. 22308)
Filed Oct. 7, 1964, Ser. No. 402,260
1 Claim. (Cl. 14-72)



A ramp adapted to be positioned against a curbstone to facilitate the movement of wheeled hand trucks thereover comprising, a flat inclined sheet of relatively light strong material, substantially triangular supporting pieces secured to the underside of said sheet and supporting the same at an incline, the maximum height of said end pieces being substantially equal to the height of the average curb, said end pieces being spaced inwardly from the ends of said sheet to provide spaced reinforcement therefor, handle means carried by said end pieces so arranged that said sheet may be stood on end in flush relation without interference from said handle means, the upper and lower transverse edges of said sheet being formed into tubular transverse rolls on the underside thereof to provide transverse reinforcement against bending, said substantially triangular supporting pieces having the extremities of the hypotenuse thereof conforming to the external contour of said tubular rolls and being fixedly secured in supporting relation thereto, the outer sides of said rolls forming arcuate surfaces facilitating the passage of the wheels of a hand truck thereover.

3,315,293 UTENSIL PREWASHING MACHINE

Everett E. Werneke, Box 14, Chillicothe, Okla. 74635
Filed Feb. 26, 1965, Ser. No. 435,414
8 Claims. (Cl. 15-56)

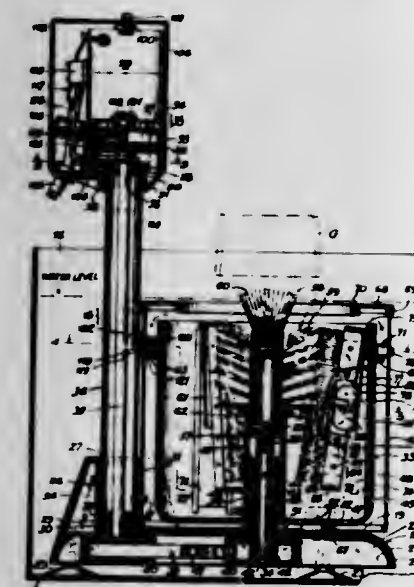


1. A food service utensil prewashing machine comprising a prewash tunnel means supported on a horizontally disposed downwardly inclined gravity-feed conveyor adapted to convey the utensils through said prewash tun-

nel, said conveyor having a relatively high utensil inlet end and a relatively low utensil outlet end, said prewash tunnel including means to soak, dislodge, and rinse away substantially all foreign material adhering to said utensils, said soaking means comprising a first relatively hot water supply connected spray header means adjacent the high inlet end of said conveyor and having a plurality of spray orifices adapted to loosen, emulsify and float away a substantial portion of the foreign material adhering to said utensils before a utensil being operated upon progress along said conveyor into the region of said foreign material dislodging means, said dislodging means comprising power operated brush means located intermediate of the ends of said conveyor and adapted to operatively contact the surface of said utensil to dislodge any tenaciously adhering foreign material, said rinsing means comprising a second relatively cold water supply connected spray header means adjacent the low utensil outlet end and having a plurality of spray orifices adapted to float away the foreign material dislodged by the power operated brush to remove substantially all of the foreign material from said utensils, and a drain means situated in the downwardly inclined conveyor to permit removal of the dislodged foreign material.

3,315,294 GLASS WASHING MACHINE

John F. Gallo, 3530 19th Ave., Kenosha, Wis. 53140
Filed Sept. 1, 1965, Ser. No. 484,375
8 Claims. (Cl. 15-76)



3. In a glass washing machine, a base, rotary brushing means projecting above and rotatably mounted on said base and including a depressible basket having a cylindrical wall with an exterior peripheral flange at its upper portion, a stationary cylindrical open-topped casing concentrically surrounding said basket and fixed to said base, basket-driving means including an electric motor, motor-controlling switch means including a part riding on said flange to be actuated upon depression of said basket, and spacing means carried by said casing and interposed between said casing and basket above said flange to limit lateral deflection of said basket.

3,315,295 TORCH CLEANING TOOL

James T. Jeter, Jr., Tyler, Tex. (5110 Ashbrook Road, Dallas, Tex. 75227), and Shirley McLarty, 417 Blanning St., Dallas, Tex. 75218
Filed July 13, 1964, Ser. No. 382,307
3 Claims. (Cl. 15-105)

1. A tool assembly comprising a body, a plurality of slots in said body, a top section on said body defining

guide openings in alignment with said slots, needle structures in said slots, and means to permit movement of said needle structures in said slots and through said guide openings until one end of a selected one of said needle structures projects beyond said body and is available for utility purposes, a selector member on said tool assembly



to permit only selected needle structure to project beyond said body, said needle structures including different size needles in certain slots, and means on said tool assembly to identify the size of each needle, each of said needle structures including a knob in sliding relation with said slot.

3,315,296 DUSTING TOOLS

William P. Richardson, Greenwich, Conn., assignor to Empire Brushes, Inc., Port Chester, N.Y., a corporation of New York
Filed Nov. 18, 1965, Ser. No. 508,509
10 Claims. (Cl. 15-159)



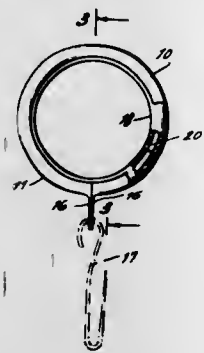
1. A dusting brush comprising an elongated backing member, a first group of tufts extending downwardly from the underside of said backing member, a second group of tufts extending downwardly from the underside of said backing member and completely surrounding the first group, the tufts of said second group being flared outwardly and downwardly and being longer than the tufts of the first group, and said first group including tufts which extend straight downwardly from said backing member, said backing member being formed, at said underside, with an upwardly and outwardly inclined surface of straight transverse cross-section, completely surrounding a flat bottom surface, said first group of tufts extending from said flat bottom surface, and said second group comprising inner and outer rows of tufts extending from said inclined surface.

3,315,297 CURTAIN RING

Samuel Bender, 6 Ashton Road, Yonkers, N.Y. 10705
Filed June 30, 1965, Ser. No. 468,408
1 Claim. (Cl. 16-87.8)

A curtain ring comprising an elongated unitary strip of metal having a circular form, inwardly bent margins on said strip defining a channel therebetween, a liner of

resilient plastic material comprising an elongated member of substantially circular cross-section disposed within the channel and extending towards the center of the ring be-



yond the edges of the margins of the curtain ring, a length of spring wire circumferentially and axially embedded within the liner, and curtain hook receiving members depending from the strip of metal.

3,315,298

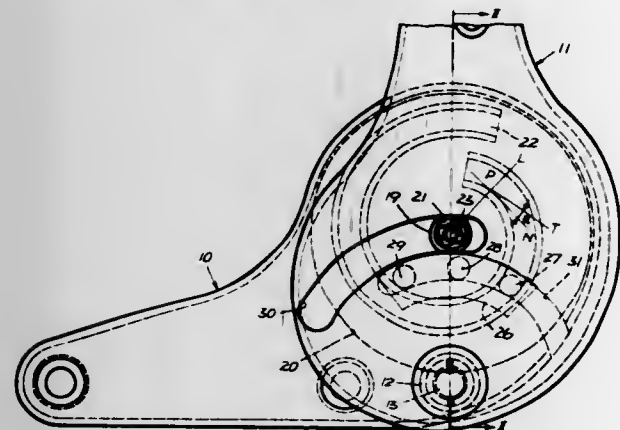
HINGE FITTING FOR ADJUSTING THE INCLINATION OF THE BACK REST OF A SEAT, ESPECIALLY OF A MOTOR VEHICLE

Werner Strien, Fehrbellnerstrasse 39, Stuttgart-Weilimdorf, Germany; Jörg Resag, Epplerstrasse 39-A, Stuttgart-Degerloch, Germany; Wolfgang Fussnegger, Neue Ramtelstrasse 125, Leonberg-Eltingen, Germany; Volker Schmerlein, Markelstrasse 17, Stuttgart, Germany; and Sylvester von Sass, Lindenmannstrasse 20, Cologne-Gartenstadt-Nord, Germany

Filed Dec. 12, 1963, Ser. No. 330,200

Claims priority, application Germany, Aug. 16, 1963, R 35,916

18 Claims. (Cl. 16-146)



14. A hinge fitting for adjusting the inclination of the back rest of a seat, especially of a motor vehicle, comprising a pair of hinge members associated with the seat frame and with the back rest, respectively, and pivotally connected to each other so as to be pivotal relative to each other about a hinge axis, a helical cam member consisting of a disk rotatably mounted on one of said hinge members and having a rib mounted on and projecting at right angles from one of its surfaces, at least the outer peripheral surface of said rib having a helical shape, the axis of rotation of said disk and the axis of said rib coinciding with each other and extending parallel to said hinge axis, means nonrotatably connected to said cam member for turning the same about the disk axis, at least one projection secured to the other hinge member and adapted to slide along said outer peripheral helical surface of said rib, and means for maintaining said projection in engagement with said helical surface.

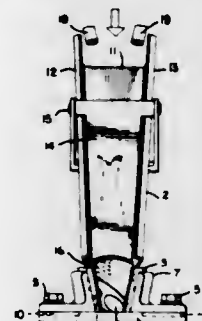
ARRANGEMENT WITH FISH HANDLING MACHINES, DESIGNED TO SORT THE FISH INTO A DEFINITE ORIENTATION

Paul Danielsson, Vallingby, Sweden, assignor to Arencor Aktiebolag, Vallingby, Sweden

Filed Mar. 1, 1965, Ser. No. 436,206

Claims priority, application Sweden, Mar. 17, 1964, 3,317/64

6 Claims. (Cl. 17-2)



1. A fish handling machine comprising a downwardly sloping chute having sides, a bottom, an upper input end and a lower output end for feeding fish headfirst from said input end to said output end, a fish deflecting plate located at said output end forming an extension of said chute bottom, said fish deflecting plate being deflected outwardly from said bottom and provided with two upstanding guide plates arranged edgewise on said fish deflecting plate and converging from said output end, thereby forming a tapering exit of said chute.

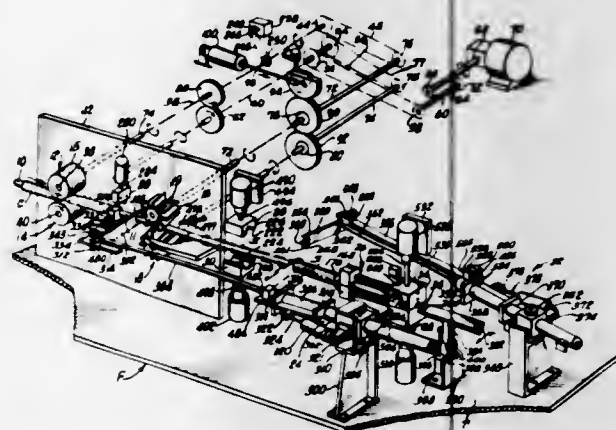
3,315,300

APPARATUS FOR MANUFACTURING CASING FROM A CONTINUOUS TUBE

Francis J. Ziolkowski, Somerville, N.J., assignor to Johnson & Johnson, a corporation of New Jersey

Filed May 29, 1963, Ser. No. 284,048

11 Claims. (Cl. 17-42)



11. Mechanism for shirring a continuous dried collagen tube, the combination comprising: an elongated hollow mandrel having an open end disposed axially within said tube, means for admitting air under pressure into the interior of said mandrel whereby said air is conducted through said interior of said mandrel and emitted from the open end thereof to inflate said collagen tube prior to shirring, means for feeding said collagen tube along said mandrel, means for shirring said collagen tube on said mandrel, means for severing said shirred tube into discrete shirred lengths on said mandrel, transfer and compression means for travelling a shirred severed length along said mandrel away from said shirring zone to a compression station on said mandrel and for axially compressing said shirred length at said compression station, means for removing said shirred and compressed length from said mandrel, the end of said mandrel being open located remote from said compression station, means for sensing the diameter of the inflated tube prior to en-

gement of said tube by said feeding means, and devices controlled by said sensing means for segregating shirred lengths formed of tubing having a diameter within selected limits from shirred lengths of tubing having portions of a diameter greater or smaller than said selected limits.

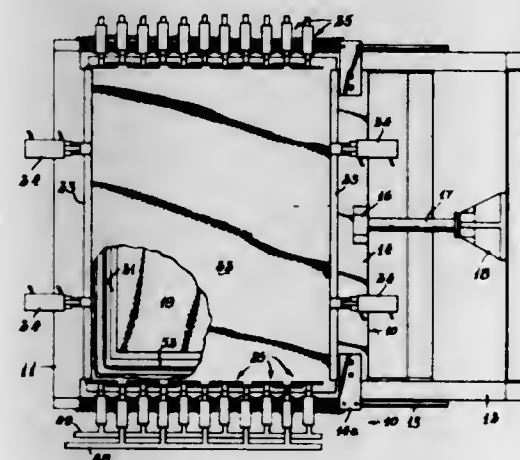
3,315,301

APPARATUS FOR STRETCHING SHEET MATERIAL

Harold J. Dibble, Elburn, and Richard V. Muhlethaler, Park Ridge, Ill., assignors to Arrem Plastics, Inc., Addison, Ill., a corporation of Illinois

Filed Mar. 18, 1964, Ser. No. 352,810

7 Claims. (Cl. 18-1)



1. In apparatus for stretching a rectangular sheet, the combination of, a rectangular frame consisting of parallel side bars and parallel end bars, guide rods paralleling said side bars, a clamp device carried by each end bar and adapted to grip the end margins of said sheet, means operable to move the end bars away from one another to stretch said sheet, a bank of clamp assemblies carried on each guide rod and adapted to grip the longitudinal edges of said sheet, each said bank of clamp assemblies comprising a plurality of separate clamp assemblies of such dimensions that each clamp assembly overlaps an adjacent clamp assembly, and means for normally urging the clamp assemblies in each bank toward one another, and means to impart movement to said clamp assemblies away from each other in response to stretching movement of said sheet.

3,315,302

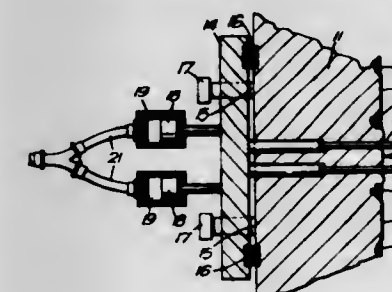
EJECTOR MEANS FOR USE IN AN INJECTION MOLDING MACHINE FOR MOLDING PHONOGRAPH RECORD DISKS

Alan Philippon, Cyril Newman, and Harry Cheesman, all of London, England, assignors to Decca Limited, London, England, a British company

Filed May 3, 1965, Ser. No. 452,538

Claims priority, application Great Britain, May 12, 1964, 19,706/64; Jan. 27, 1965, 3,665/65

8 Claims. (Cl. 18-2)



1. In an injection moulding machine for moulding a phonograph record disk, the combination of a horizontally movable die and a fixed die forming a two part operable mould for moulding said disk, means for injecting mould-

ing material into said mould when the dies are closed together, means for moving said movable die away from the fixed die to open the mould ejector pins for releasing the disk from the movable die which ejector pins are mounted for withdrawal through the movable die, means for holding the ejector pins stationary as the mold is opened, and means operative before the mould is fully opened to move said ejector pins rearwardly with respect to the movable die whereby they are withdrawn away from the disk immediately after the disk has been released from the movable die.

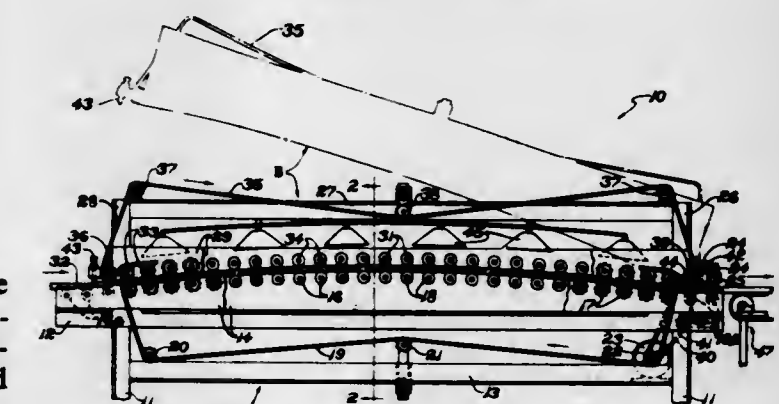
3,315,303

PLASTIC STRIP SHRINKING APPARATUS

Fred K. Barns, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

Original application Nov. 8, 1962, Ser. No. 236,289. Divided and this application Feb. 18, 1966, Ser. No. 528,436

7 Claims. (Cl. 18-2)



1. An apparatus for the reduction of shrinkage in elongated plastic material; said apparatus comprising a first assembly; said first assembly having a plurality of material supporting rollers; a second assembly; said second assembly having a plurality of material confining rollers cooperative with said material supporting rollers to define a passageway therebetween; the outside diameter of each successive roller, on each assembly, in the direction of travel of said material being less than the diameter of the preceding roller by a predetermined increment; means rotatably mounting said rollers on each assembly axially parallel to one another with the distance between the peripheries of adjacent rollers on at least the first assembly being less than the diameter of the smallest of said rollers on said first assembly to prevent festooning of said material between said rollers of said first assembly; and means to rotate said rollers of each assembly jointly at a uniform speed of rotation to effect the removal of shrinkage from said material.

3,315,304

APPARATUS FOR MANUFACTURING LIGHT WEIGHT BUILDING BOARDS

Gerrit Jan van Elten, Trompslaan 1, Voorthuizen, Netherlands

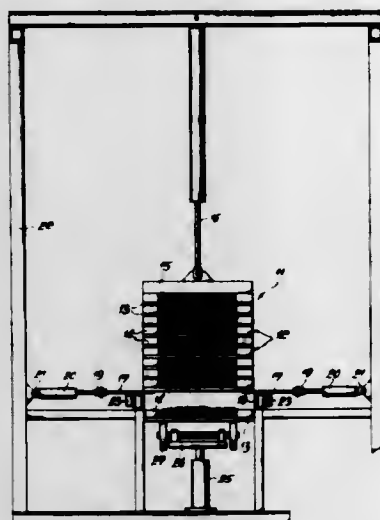
Filed Jan. 28, 1964, Ser. No. 340,654

Claims priority, application Germany, Jan. 30, 1963, E 24,255

9 Claims. (Cl. 18-4)

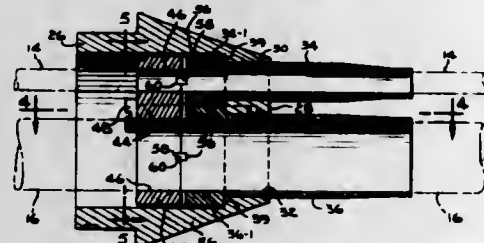
1. In the manufacture of light weight building boards, an apparatus for treating a wood wool-binder mixture carried upon bottom plates of a stack of moulds, said apparatus comprising two opposed plates for engaging opposed bottom edges of the lowermost mould of said stack, means swingably supporting said opposed plates, first hydraulic means connected with said swingable means for moving said opposed plates toward and away from each other, a press table located below said opposed

plates, means carried by said press table for receiving an additional mould, second hydraulic means connected to said press table for actuating said press table and said mould receiving means for moving said additional mould into engagement with the lowermost mould of said stack, an adjustable pressing device located above said opposed plates for engaging the uppermost mould of said stack,



means connected with and actuating said first and second hydraulic means for moving said additional mould into place of said lowermost mould and for compressing the wood wool-binder mixture in said additional mould against the bottom of said lowermost mould and means movable in a horizontal direction towards each other for pushing pressed mixture projecting horizontally outward on said additional mould into said mould.

3,315,305
CORE SHEATHING APPARATUS WITH ADJUSTABLE CORE SUPPORTS
Henry W. Budenbender, Cicero, Ill., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed May 26, 1965, Ser. No. 458,854
5 Claims. (Cl. 18-13)

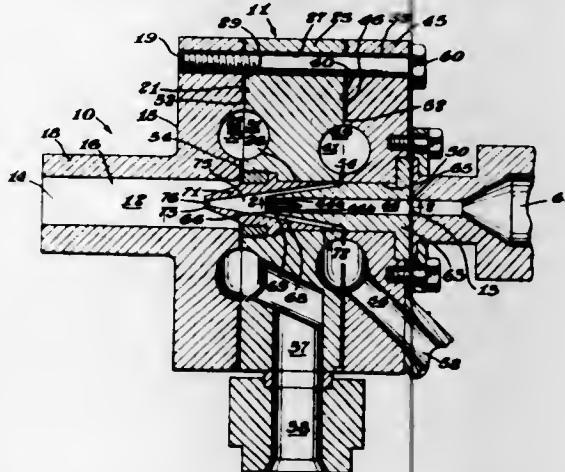


1. In an extrusion apparatus having an extrusion chamber and an extrusion orifice, the combination therewith of:

- support means mounted within said extrusion chamber and forming a passageway for movement of an elongated core through the chamber, said support means having an end wall provided with at least one cylindrical aperture therethrough;
- a cylindrical tubular member adjustably mounted rotatably in said aperture of said end wall and extending therefrom for supporting a core for longitudinal movement through both the extrusion chamber and the extrusion orifice, said tubular member being provided with an annular flange having a surface engaging said wall to form a seal therebetween;
- a movable member for engaging said flange;
- cooperative means on said cylindrical tubular member and said movable member for locking said cylindrical tubular member against rotation relative to said movable member when said members are in engagement with each other; and

adjustable means mounted on said end wall for urging said movable member axially toward said end wall to effect the clamping without rotation of said flange to said end wall.

3,315,306
APPARATUS FOR THE PRODUCTION OF MULTILAYER FILM
John Basil Ladner, Beaverton, and Lloyd Edward Lefevre, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Oct. 15, 1965, Ser. No. 496,551
3 Claims. (Cl. 18-13)

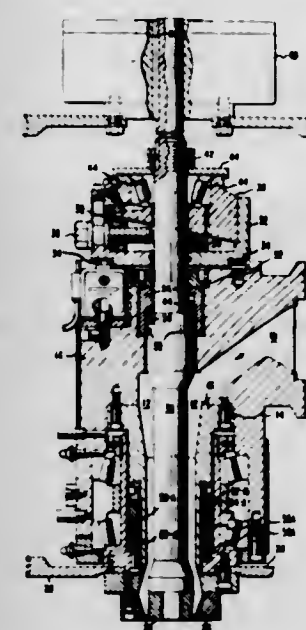


1. An extrusion adaptor particularly suited to be interposed between at least two sources of heat plastified synthetic resinous thermoplastic material and a sheeting die, the adaptor comprising a housing defining a polymer passageway having an inlet and an outlet, the inlet adapted to communicate with a first source of heat plastified thermoplastic resinous material, the outlet adapted to communicate with a sheeting die, the housing defining an internal generally annular plenum disposed about the polymer passageway, the housing defining an internal annular extrusion orifice providing communication between the polymer passageway and the annular plenum, the housing defining a polymer supply passageway in operative communication with the plenum, a bushing disposed within the polymer passageway, the bushing having an inlet of generally circular configuration and at least two outlets of generally elongate configuration, the outlets being disposed intermediate the annular extrusion orifice and the outlet of the polymer supply passageway, a portion of the bushing, which comprises a discharge end, defining at least two generally spaced apart discharge members defining the outlets and providing communication between the inlet end of the passageway and the outlet end of the passageway, the bushing defining a transverse slot between the outlets and so constructed and arranged so as to permit flow of material from the annular extrusion orifice between elongate outlets of the bushing.

3,315,307
PLASTIC EXTRUSION APPARATUS
Richard Walter Hurd, Newburgh, and James Scott McDaniel, Snyder, N.Y., and Donald Ross McGregor, New Providence, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 19, 1965, Ser. No. 472,883
3 Claims. (Cl. 18-14)

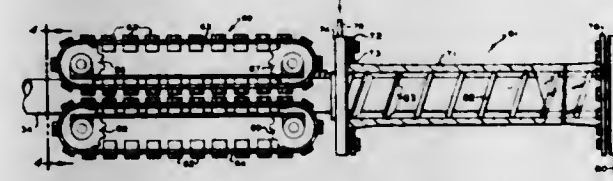
3. In an apparatus for the continuous extrusion of polymer under pressure comprising a rotatable inner die affixed to the lower end of a driven shaft having a flared section at said lower end, an outer die, a housing for the inner die, the outer die, and the shaft affording an enclosed extrusion chamber, and an inlet port to the chamber; the improvement comprising providing the shaft at

its upper end within the chamber with an additional flared section presenting a surface opposed to the surface of the flared section at the lower end of said shaft whereby as the polymer in the chamber contacts the surface of



the flared portion at the upper end of said shaft an upward thrust force thereon is created to offset the downward thrust force exerted by the polymer on the flared section at the lower end of said shaft.

3,315,308
CONTINUOUS PRODUCTION OF BIAXIALLY ORIENTED, CRYSTALLINE, THERMOPLASTIC FILM
Fred E. Wiley, Longmeadow, Mass., and Harry C. Wain, Somers, Conn., assignors to Phillips Petroleum Company, a corporation of Delaware
Original application Feb. 15, 1962, Ser. No. 173,557, now Patent No. 3,248,463, dated Apr. 26, 1966. Divided and this application Feb. 17, 1966, Ser. No. 528,236
8 Claims. (Cl. 18-14)



1. Apparatus for producing a biaxially oriented film of crystalline thermoplastic polymer comprising, in combination, extrusion means including a tubing die, a sizing and cooling sleeve attached to said die, a cooling bath positioned to receive the extruded tube from said sleeve, means for pulling said tube through said sleeve and cooling bath, a heating bath positioned downstream from said pulling means, means for circulating a heated liquid through said heating bath in order to bring the tube to orientation temperature, means for introducing pressurized gas inside the tube in order to inflate same as it issues from said heating bath, means for collapsing and pulling the inflated tube in order to stretch the tube lengthwise as it issues from said heating bath, means for chilling the inflated and stretched tube in order to set the orientation prior to collapsing the tube and means comprising a plurality of annular baffles of graduated inside diameters positioned between said heating bath and said chilling means in spaced relationship to define a substantially conical path for the tube as it is inflated (for directing a current of cooling gas onto the outer surface of the tube as it is inflated and stretched).

3,315,309
APPARATUS FOR MOLDING COMPOSITION RESISTORS
Marinus J. Braun, Youngstown, N.Y., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Original application Nov. 22, 1963, Ser. No. 325,643. Divided and this application May 24, 1966, Ser. No. 552,453

1 Claim. (Cl. 18-16.5)

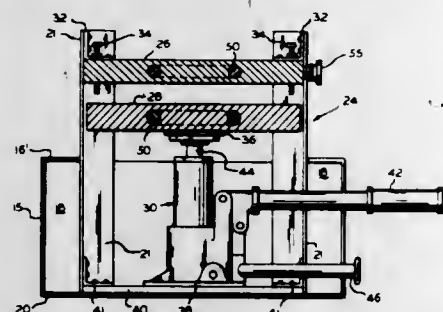


Apparatus for molding insulated resistors, comprising in combination, a die block having a die opening therethrough of predetermined shape to form the shape of the finished resistor, said die opening being of suitable shape to receive in close sliding fit a plurality of punch parts so that any said punch part can be slid through said die opening from end to end of the opening, first and second punch parts for said die opening, said punch parts having alignable openings therethrough to accommodate in close sliding fit a pair of core pins, a base plate supporting a said pair of core pins in relative position to be slid into said alignable openings when said punch parts are in place in said die opening, a first of said punch parts having a projection on one end thereof, said projection extending from one said alignable opening to the other so as to form a core spanning the space from one said core pin to the other when said first punch part receives said core pins within the said alignable openings in said punch part, means to compress moldable insulating material between said punch parts by pressure applied between said base plate and said first punch part while said punch parts are spaced apart within said die opening and said core pins are present in the said alignable openings, said base plate transmitting pressure against one end of the second of said punch parts; a third punch part for said die opening, said punch part having a solid flat face, a fourth punch part for said die opening, said punch part having openings therethrough alignable with the said openings in said first and second punch parts and of slightly less diameter for holding terminal leads in place during molding and thereby preventing escape of moldable resistive material from the cavities formed by the said core pins, and means to apply pressure upon moldable material between said third and fourth punch parts after said base plate and core pins have been removed and the said cored cavity has been filled with moldable resistive material to complete the molding of the resistor.

3,315,310
MACHINE FOR MANUFACTURING PRE-INKED DIES
Samuel M. Weissman, Chicago, Ill., assignor to Bankers and Merchants, Inc., Chicago, Ill.
Filed Mar. 11, 1965, Ser. No. 439,004
8 Claims. (Cl. 18-17)

1. A machine for manufacturing pre-inked dies comprising; a frame; an upper and lower platen positioned in an opposed relationship, said upper platen being rigidly connected to said frame; a jack rigidly connected to said lower platen for moving the same toward and away from said upper platen to form a pre-inked die from a master mold and a slab of die material inserted together between said platens; one of said platens in-

cluding an adjustable stop means for regulating the minimum distance said movable platen can be spaced apart from the other whereby the pressure applied by said platens to said master mold and slab material can be correspondingly changed; heating means associated with each of said platens for heating the same when constructing a master mold; a hot plate rigidly connected to said frame and positioned adjacent said platens, said



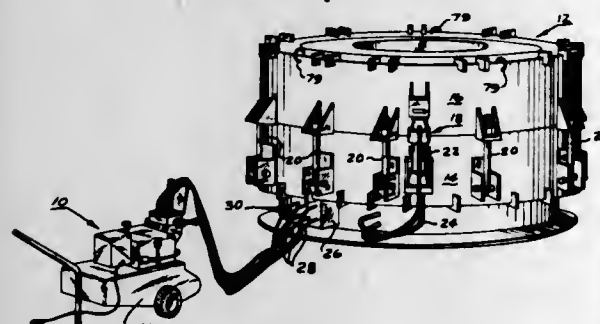
hot plate being constructed of material that heats quickly and evenly to a relatively high temperature for thoroughly heating only the face of said master mold placed in contact therewith during a predetermined period immediately prior to the inserting of the same between said platens; a heating element associated with said hot plate for heating the same; and an electrical power supply for supplying electrical power to heating means and said heating element.

3,315,311

TIRE CURING APPARATUS

Louis T. Fike, Lodi, Calif., assignor to Super Mold Corporation of California, Lodi, Calif., a corporation of California

Filed Sept. 28, 1964, Ser. No. 399,687
6 Claims. (Cl. 18—18)



1. Tire curing apparatus, comprising:
 - a lower mold half formed with a cavity that receives the lower part of a tire to be cured;
 - a coaxial upper mold half formed with a cavity that receives the upper part of a tire to be cured, and said upper mold half being vertically removable from said lower mold half for admitting and discharging a tire to be cured;
 - quick-releasable securing means interposed directly between said mold halves that when engaged retain said mold halves secured against relative vertical movement, said upper mold half being removable from said lower mold half when said securing means are disengaged;
 - a plurality of vertically extending fluid pressure-actuating rams, each having a cylinder secured directly and rigidly to said lower mold half and a vertical shaft reciprocally extending from the upper end of said cylinder;
 - quick-releasable lock means operatively interposed between the upper end of said shafts and said upper mold half, said lock means when disengaged permitting said upper mold half to be removed from said shafts and said lock means when engaged cooperating with said connection means to secure said

shafts to said upper mold half whereby said shafts effect vertical movement of said upper mold half while restraining said upper mold half against horizontal movement; and

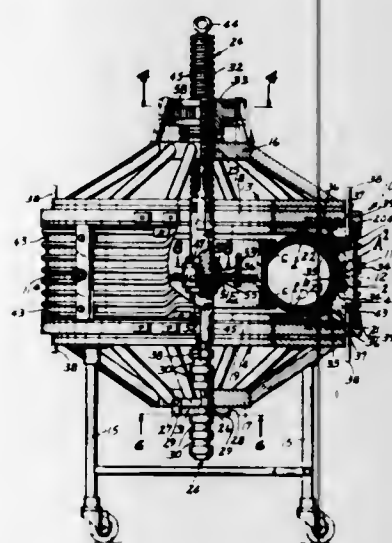
a power and control means for said rams operable to urge each of said ram shafts upwardly or downwardly at a uniform rate to thereby effect parallel opening and closing of said upper mold half relative to said lower mold half.

3,315,312

TIRE RETREADING EQUIPMENT

Lester L. Larson, Minneapolis, Minn., assignor to Paul E. Hawkinson Company, Minneapolis, Minn., a corporation of Minnesota

Filed June 15, 1965, Ser. No. 464,075
5 Claims. (Cl. 18—18)



1. In a device the class described a combination comprising:
 - (a) an annular matrix section having an inwardly facing surface engageable with the crown portion of a tire casing; said matrix also having a cylindrical surface extending outwardly from each side of said crown portion;
 - (b) an annular curing rim engageable with the bead portions of a tire casing being cured in the matrix section and restraining the bead portions against separation;
 - (c) a pair of opposed annular one-piece pressure plates having concave casing engaging faces adapted to engage the side wall portions of a tire casing and engageable with the opposite side edges of the matrix section to form therewith a deep cavity retread mold;
 - (d) said pressure plates having axially aligned openings and each plate having a head portion thereon extending axially outwardly therefrom;
 - (e) an elongated screw extending through each of said head portions and the central openings on said pressure plates;
 - (f) means detachably mounting one end of said screw in one head portion for major adjustments thereof;
 - (g) means associated with the other end of said screw and the other head portion for applying clamping pressure to said pressure plates;
 - (h) cooperating tread design groove forming rib elements carried by the inwardly facing surface of said matrix and the concave casing engaging faces of each of said pressure plates; and, said rib elements on said concave faces projecting from opposing faces of said plates;
 - (i) said rib elements on said concave faces of said plates being telescoped and rotatably received within said cylindrical surfaces outwardly of said matrix;

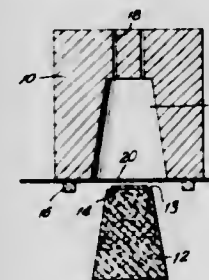
(j) means for aligning the rib elements of said pressure plates with cooperating rib elements of said matrix and maintaining said matrix in concentric relationship with respect to said annular pressure plates; said means comprising:

- (1) a plurality of circumferentially spaced pin and cooperating recess connections directly between said matrix and each of said pressure plates.

3,315,313

THERMOFORMING MOLD

Murray Steigman, Millwood, N.Y., assignor to Union Carbide Corporation, a corporation of New York
Filed Aug. 24, 1965, Ser. No. 482,188
8 Claims. (Cl. 18—19)

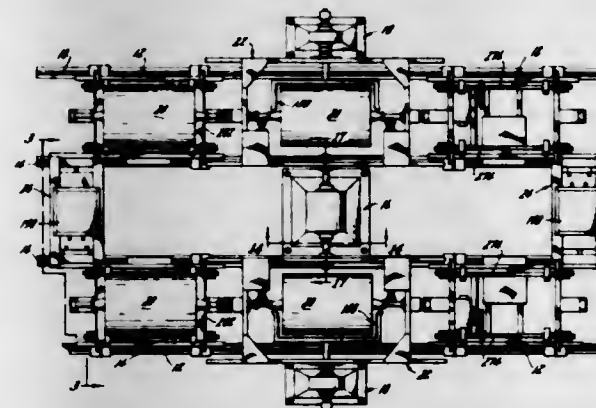


1. In an apparatus for thermoforming hollow plastic articles, said apparatus having a mold with a cavity therein, a plunger mounted in registration with said cavity, which plunger has a leading portion of smaller dimensions than the corresponding walls of said cavity so as to provide an annular space therebetween, said leading portion terminating in a plunger head and being adapted to contact a heated plastic sheet securely positioned between said plunger and the mold cavity and draw said sheet into said cavity for formation of said hollow plastic article, the improvement comprising a cap affixed to said plunger head and covering a portion thereof so as to form part of the sheet contacting surface of said head, said cap having a surface of lesser coefficient of friction than the surface of said head and being of different material than said head and serving to reduce the overall coefficient of friction of said leading portion.

3,315,314

THERMODYNAMIC MOLDING MACHINE

Louis H. Barnett and Henry P. Horton, Fort Worth, Tex., assignors, by mesne assignments, to Loma Industries, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Sept. 9, 1963, Ser. No. 307,587
7 Claims. (Cl. 18—26)



1. Apparatus for manufacturing molded articles comprising in combination:
 - (a) a rotatably mounted frame;
 - (b) a mold mounted for rotation in said frame, the axis of rotation of said mold being perpendicular to the axis of rotation of said frame;

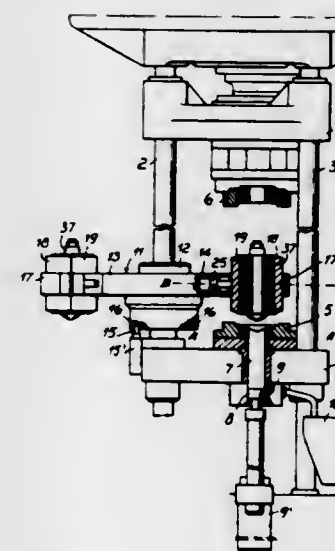
(c) a predominantly infrared heating means, the source of said heating means having a surface temperature in the range from about 1200° F. to about 3000° F., fixedly disposed in relation to said frame, said infrared heating means comprising at least one heater proximately disposed sufficiently close to the wall of said mold, and embracing at least a portion of the profile of said mold;

- (d) means for rotating said frame;
- (e) means for rotating said mold disposed upon said frame;
- (f) a hollow shaft journaled into said frame, said hollow shaft also serving as a means for conducting gas;
- (g) means for indexing said frame in a substantially horizontal position at the beginning and at the end of each multiaxial heating cycle;
- (h) a dolly in which said mold is rotatably cradled, said dolly being adapted both to transfer and to receive said mold, while said mold is rotating uniaxially, to and from said frame at the start and at the end of said multiaxial heating cycle; and
- (i) guide means for guiding said dolly in movement relative to said frame between the limits of travel which comprise a first position in which said mold is charged, closed and rotated in condition for transference to said frame, and a second position in which said mold is cooled, rotation is stopped, said mold is opened and from which the molded article is stripped.

3,315,315

DEVICE IN INJECTING AND MOLDING PRESSES FOR HANDLING HEAVY ARTICLES

Giuseppe Trulzi, Corso Sempione 52, Milan, Italy
Filed Mar. 2, 1964, Ser. No. 348,410
Claims priority, application Italy, Mar. 2, 1963, 4,415/63
11 Claims. (Cl. 18—30)

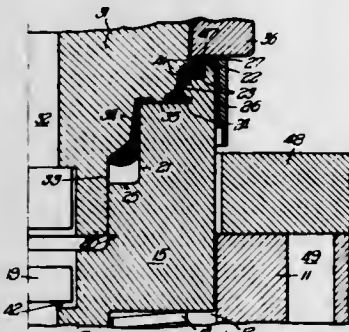


1. Molding press arrangement, comprising, in combination, a press having two press members, at least one of which is movable toward and away from the other; first and second mold parts respectively mounted on said press members; a mold means; means mounting said mold means for movement between a loading and unloading position in which a workpiece is placed within, or removed from said mold means, and an operative position in which said mold means and workpiece are located between said first and second mold parts while the same are spaced from each other; means for moving said one press member toward the other press member so that said first and second mold parts are pressed against said mold means in said operative position to form with the same a mold enveloping said workpiece; and means for casting a molten material into said mold whereby a body is cast and con-

ected with said workpiece whereupon said mold means is moved to said loading and unloading position for removal of the workpiece with said cast body and for insertion of another workpiece into said mold means.

3,315,316 APPARATUS FOR MOLDING FLUID SEAL ELEMENTS

George J. Baney, Maywood, and Warren W. Rasmussen, Elmhurst, Ill., assignors to Victor Manufacturing & Gasket Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 5, 1965, Ser. No. 437,423
11 Claims. (Cl. 18—36)



1. Apparatus for molding a sealing element and bonding the same onto a metal shell that has an outer cylindrical wall and an annular wall projecting inwardly from one end of the cylindrical wall, said apparatus comprising:

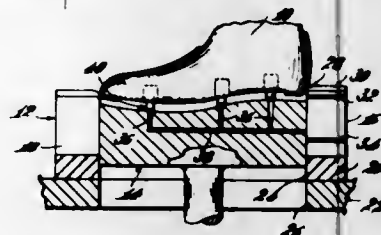
- a lower mold part having a cavity forming surface shaped to form the outer surface of the sealing element;
- means including springs for yieldingly supporting said mold part;
- a pressure land on said mold part adapted to engage the annular wall of a shell to support the shell of the mold part;
- means engaging the shell to center the same on the mold part;
- an upper mold part having a cavity forming surface shaped to form the inner surface of the sealing element and having an upwardly facing shoulder;
- inter-engageable means on said upper and lower mold parts for aligning the same axially;
- a clamping ring encircling said upper mold part and having a downwardly facing shoulder;
- spring means for normally maintaining said shoulders in engagement with each other;
- a pressure land on said clamping ring adapted to engage the annular wall of a shell to clamp the same onto the pressure land on the lower mold part;
- and a pressure land on said upper mold part adapted to engage the lower mold part to close off a cavity in the parts, and, as the apparatus moves into closed position, to move the lower part downwardly against its supporting springs, said clamping ring being thereby moved upwardly against said spring means.

3,315,317 MOLD ASSEMBLY FOR INJECTION MOLDING OF BOTTOMS TO SHOES

Julius G. Winkler, Lexington, Mass., assignor to International Vulcanizing Corporation, Waltham, Mass., a corporation of Massachusetts
Filed Sept. 28, 1965, Ser. No. 490,974
11 Claims. (Cl. 18—42)

1. A mold assembly for injection molding comprising a last, a side ring and sole plate, said sole plate being movable relative to the bottom of the last and containing an injection passage through its upper surface, said side ring containing two injection passages, one of which is adapted to permit injection when the sole plate is raised

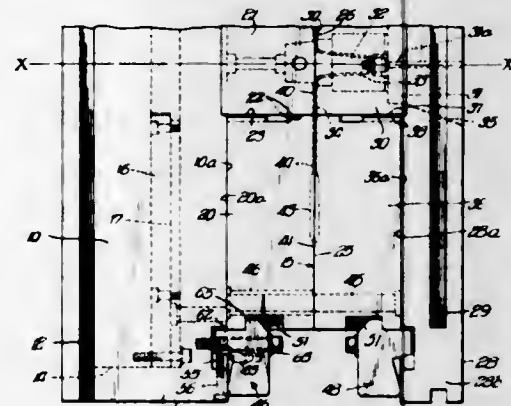
to form an insole layer and the other of which is adapted to permit injection through the passage in the sole plate when the latter is lowered to permit injection of an outsole layer, and means operable to cover the passage through the sole plate during injection through the side ring to form the inner layer when the sole plate is raised,



comprising a yieldable part mounted at the bottom of the last in confronting relation to the injection passage in the sole plate, said part being long enough to have yielding engagement with the open end of the passage in the sole plate when the latter is raised to prevent entry of an elastomer into the injection passage from the mold cavity.

3,315,318 CLAMP FOR UNIT DIE MECHANISM

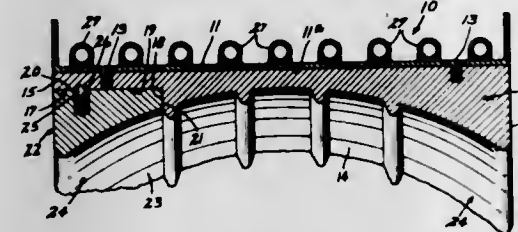
Folke Halward, Birmingham, Mich., assignor to D-M-E Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 25, 1965, Ser. No. 442,586
2 Claims. (Cl. 18—43)



1. In a unit die mechanism for injection molding and casting, which mechanism is of the type including, a member having a surface in parallel relation with the parting plane defined by the mechanism, a cavity plate having inner and outer ends defined by respective parallel faces and having a surface extending between said faces at a right angle thereto, which surface is in contact with the first mentioned surface, a block secured to said member and having a face in interfitting engagement with the face defining the inner end of said cavity plate, the improvement which comprises, said member being provided with an extension projecting outwardly of said mechanism beyond the outer end of said cavity plate, said extension including means defining a wall extending generally perpendicular to said parting plane and facing inwardly of said mechanism, said cavity plate having a ledge adjacent the face thereof defining its outer end, said ledge extending generally parallel with said parting plane and facing the same, a clamp block secured to said projection by fastening means which act in a direction generally perpendicular to the parting plane, which clamp block has generally oppositely facing surfaces in tight abutting engagement, respectively, with said wall and a portion of the face defining the outer end of said cavity plate, said clamp block having a portion thereof defining a ledge in abutting relation with the ledge of said cavity plate, whereby said clamp block serves both to secure said cavity plate against said member and to prevent outward movement of the cavity plate.

3,315,319 TIRE RETREADING MOLD

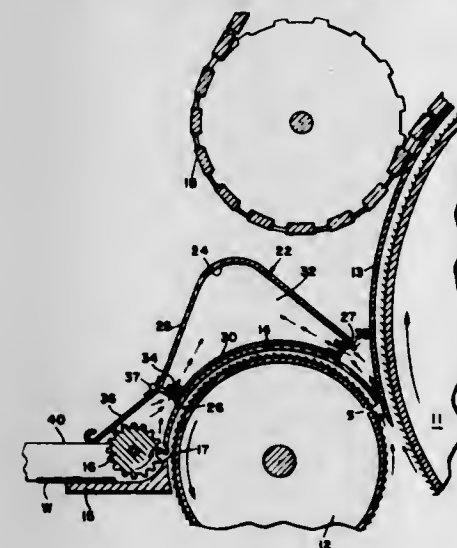
Raymond P. Hawkinson, Minneapolis, Minn., assignor to Paul E. Hawkinson Company, Hennepin, Minn., a corporation of Minnesota
Filed May 7, 1965, Ser. No. 454,103
2 Claims. (Cl. 18—44)



- In a mold for aircraft tires and the like,
- a cylindrical sheet metal mold,
- an annular cast metal primary matrix section snugly received within said mold and made fast thereto,
- said primary matrix section defining a generally cross-sectionally arcuate tread-design-forming cavity for the crown of the tire and in which the width of the tread-forming cavity for the crown has a substantially wide and deep surface, and the arc of curvature of the tread forming surface is generally continuous and of a high degree of curvature,
- one side portion of said matrix having an axially outwardly and radially inwardly opening annular recess in the tread-forming surface defined by an annular shoulder and a generally cylindrical wall surface,
- a complementary annular matrix section removably snugly receivable in said recess and being supplemental to and having a tread-forming surface which is continuous with said highly curved tread-forming surface of said primary matrix section, and
- means for removably retaining said complementary matrix section in said recess and in engagement with said shoulder.

3,315,320 PNEUMATIC CLEANING MEANS FOR CARDING MACHINES

Oscar Bass, Jr., Charlotte, N.C., and Ivan Horvat, Zagreb, Yugoslavia, assignors to R. B. Jenkins & Co., Inc., Gastonia, N.C., a corporation of North Carolina
Filed Aug. 23, 1965, Ser. No. 481,659
4 Claims. (Cl. 19—107)

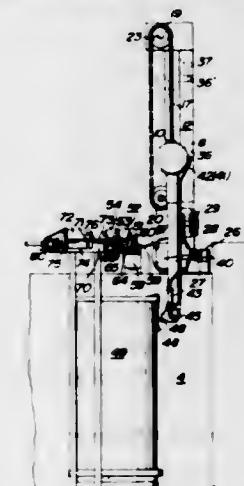


4. A suction nozzle for use with the licker-in end of a carding machine having a licker-in roll, a feed roll, a licker-in cover, and a back knife plate, said suction nozzle comprising a top wall spaced above the licker-in roll and having a first longitudinal edge adjacent the juncture of said back knife plate with said licker-in cover, said top wall having a second longitudinal edge

spaced above the feed roll, a side wall depending from each longitudinal edge of said top wall and extending toward the licker-in roll, each of said side walls having a suction orifice providing communication between the atmosphere and the interior of the nozzle, means otherwise closing the interior of the nozzle from communication with the atmosphere, and means connecting the interior of the nozzle to a source of suction.

3,315,321 APPARATUS FOR AUTOMATICALLY JOINING THE ENDS OF SLIVERS

Masaaki Kobayashi and Yoshikatsu Matsumoto, Itami-shi, Japan, assignors to Nitto Boseki Co., Ltd., Fukushima, Japan, a corporation of Japan
Filed Nov. 12, 1963, Ser. No. 323,028
Claims priority, application Japan, Nov. 17, 1962, 37/50,722, 37/50,723, 37/50,724, 37/50,725
4 Claims. (Cl. 19—157)



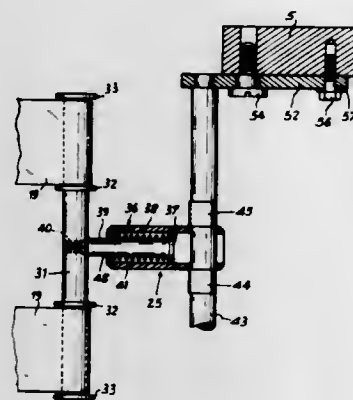
1. An apparatus for automatically joining the ends of slivers in a spinning machine which receives fresh slivers from a plurality of substantially can-like members provided in a large reservoir, said can-like members being arranged to be automatically transferred and replaced, said apparatus comprising conduit means one end of which is open, and forms a sliver end holding means for positioning at a suitable position the ends of the slivers to be joined to the ends of the slivers in the spinning machine, suction means connected to the other end of said conduit means, a suction intercepting member disposed within said open end for intercepting the drawing in of the fresh sliver, and means for imparting to said open end of said conduit means an inverted L-shaped movement between an initial position adjacent the side of said can-like members containing fresh slivers to be joined and a second position adjacent the ends of the slivers in the spinning machine, said means for imparting movement comprising means to lift upwardly the open end of said conduit until it clears said can-like members, abutment means, means secured to said conduit engaging said abutment means for imparting a rotational movement to said conduit to complete said inverted L-shaped movement by moving said open end to a position adjacent the ends of the slivers in the spinning machine.

3,315,322 DRAFTING SYSTEMS FOR TEXTILE FIBRES

Charles Lutz, Soultz, and Jean-Paul Ehrhardt, Guebwiller, France, assignors to Manufacture Alsacienne de Broches, Soultz, France, a French company
Filed Aug. 24, 1965, Ser. No. 482,088
Claims priority, application France, Nov. 12, 1964, 994,638
11 Claims. (Cl. 19—250)

1. In a machine for drafting textile fibres which includes paired upper and lower aprons rotatably mounted

about rolls to have a common overlying traverse, a stretching device for the lower of such aprons comprising a tension bar adapted for insertion into the loops of a pair of adjacent lower aprons, apron retaining portions being provided on the tension bar and defined by pairs of spaced flanges integral with the said tension bar, and a connecting system comprising a telescopic arrangement of a piston



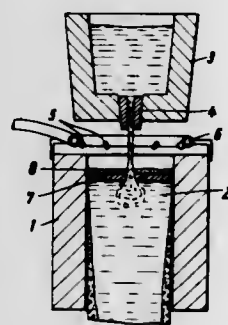
and cylinder, the piston being connected to the centre of the tension bar and being loaded by a helical spring located around the rod of the piston within the cylinder to tend to force the piston into the cylinder, means pivotally connecting the end of the cylinder remote from that end of the cylinder through which the rod of the piston passes to an adjustable support mounted on the frame of the machine.

3,315,323

METHOD OF CONTINUOUS CASTING

Karl Georg Spelth and Adolf Bungeoth, Duisburg, and Klaus Frenken, Essen-Verden, Germany, assignors to Mannesmann Aktiengesellschaft, Dusseldorf, Germany, a corporation of Germany

Filed Oct. 2, 1963, Ser. No. 313,249
Claims priority, application Germany, Oct. 4, 1962, M 54,396; June 18, 1963, M 57,209
1 Claim. (Cl. 22—200.1)

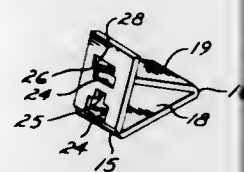


In a method of continuously casting, in an open ended casting mould, metals of high-melting points and their alloys, respectively, the steps comprising applying a powdery covering material to the upper metal bath surface after the upper metal bath surface has reached a substantially predetermined height in the casting mould, at least some of said material being operative to melt, thereby forming a covering slag on a portion of said surface, where the covering slag layer is not more than 25 mm. thick and has a viscosity of over 100 poises, so that the covering slag layer does not touch the mould wall, the gap between the covering slag layer and the mould wall is being filled with the powdery material, and the powdery layer remaining on top of the covering slag layer is at least as thick as the covering slag layer.

3,315,324

BAG FASTENING DEVICE

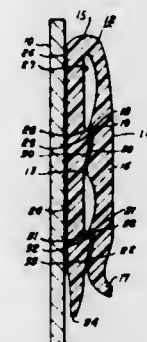
Raymond R. Ward, North Royalton, Ohio, assignor, by mesne assignments, to Harold A. Rippl, Berea, Ohio
Filed July 21, 1965, Ser. No. 473,674
4 Claims. (Cl. 24—34.5)



1. A closure strip for releasably retaining in closed condition, the gathered neck portion of a bag or the like, said closure strip comprising a one piece member of plastic material, said member being provided with two longitudinally spaced and transversely extending grooves which provide the member with an intermediate section and two end sections, the grooves serving as hinge connections for the three sections and each of said sections being of flat form and of substantially the same width, one of said end sections being provided at the free end thereof with a longitudinally disposed locking tab and the other of said end sections being provided with an aperture for the releasable reception and retention of said locking tab, whereby the closure strip may be releasably secured in encircling relation about the gathered neck portion of the bag for releasably retaining said neck portion in closed condition.

3,315,325
CLIP

Victor Cornelius, 406 W. Main St., Eastland, Tex. 76448
Filed Apr. 2, 1965, Ser. No. 445,106
3 Claims. (Cl. 24—66)

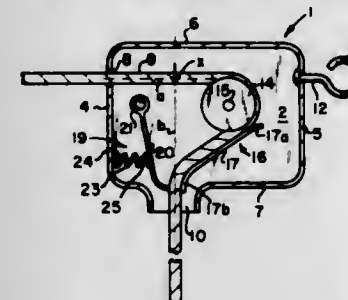


1. A clip including an elongate body having upper and lower margins, the body having a cross-sectional shape of an inverted U-shape with a rearward leg and a forward leg, the rearward leg being longer than the forward leg and being closely spaced thereto, a pair of transversely spaced longitudinal securing ribs on one of the legs intermediate its upper and lower margins projecting toward the other leg and presenting sharp edges projecting toward said other leg, and a pair of longitudinal offset joggles in the other leg in approximately the longitudinal planes of the securing ribs of the first leg complementary to the ribs and transversely spaced from each other by a recess positioned opposite the space between the ribs so as to provide sharp edges above and between the ribs to cooperate with the edges on the ribs to securely grip material placed between the legs, both securing ribs having upper faces directed at an acute angle to the leg carrying the ribs and angular upwardly and outwardly directed lower faces at a lesser angle to provide the sharp edges of the ribs, the joggles of the one leg underlying the securing ribs of the other leg, and the ribs being formed with one relatively narrow longitudinal face and one relatively wide longitudinal face.

3,315,326

TIE-DOWN APPARATUS

Robert O. Spencer, 1809 Gilson Road, Parkersburg, W. Va. 26107
Filed Jan. 6, 1965, Ser. No. 423,790
4 Claims. (Cl. 24—134)

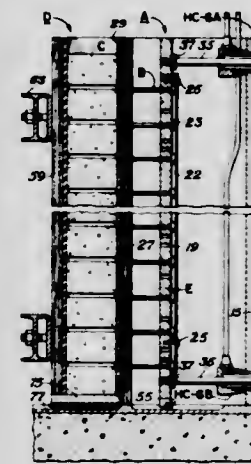


1. Tie-down apparatus for use with a flexible line, said apparatus comprising a housing having an inlet and an outlet through which said line may extend along entering and exiting paths; a turning member supported in said housing around which said line may be trained; linear guide means supported in said housing between said turning member and said outlet and establishing said exiting path at an acute angle of less than 90° to said entering path; anchor means secured to said housing at a point in prolongation of said entering path; clamp means supported in said housing for clamping said line against said guide means; yieldable means constantly biasing said clamp means toward its clamping position; manually operable means connected to said clamp means and extending externally of said housing for moving said clamp means out of its clamping position; and means on said housing for mounting the latter on a support.

3,315,327

MASONRY CONSTRUCTING APPARATUS

Harry W. McClarney, 5621 Westlawn, Waco, Tex. 76710
Filed Jan. 19, 1965, Ser. No. 426,642
36 Claims. (Cl. 25—1)



1. An apparatus for constructing masonries that include a plurality of masonry units joined by means of a cementary bonding substance, said apparatus comprising:

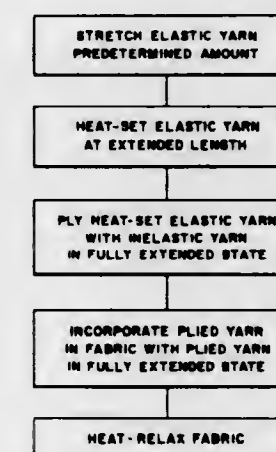
- a base means;
- a unit positioner structure that includes a plurality of horizontally extending protrusions for positioning masonry units in the form of a vertical wall and in predetermined spaced relationship, with said structure being supported by said base means;
- a unit holder adapted to surround said masonry units and being supported by said base means, said unit holder having a plurality of relatively movable walls, one of said walls having apertures through which said protrusions are adapted to extend;

- said unit holder including means engaging said walls to urge them together to clamp said units in said predetermined spaced relationship; and
- said structure and unit holder being retractable with respect to each other to free said protrusions from positioning relationship with said units after said units are clamped.

3,315,328

PROCESS FOR PREPARING FABRICS

Salim M. Ibrahim, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 5, 1963, Ser. No. 299,817
6 Claims. (Cl. 28—72)



1. A process for preparing elastic fabrics which comprises:

- stretching an elastic yarn containing spandex filaments a predetermined amount approaching but not exceeding the elastic limit of said elastic yarn;
- temporarily heat-setting under mild heat-setting conditions to initially stabilize the elastic component but permit retraction of from 30% to 60% when the final fabric is subsequently heat-relaxed, said elastic yarn in its extended condition;
- plying said heat-set elastic yarn with an inelastic yarn while maintaining said elastic yarn in a fully extended condition;
- incorporating said plied yarn in a fabric while maintaining said plied yarn in its fully extended state; and
- heat-relaxing said fabric to permit said elastic yarn to contract.

3,315,329

PROCESS FOR THE MANUFACTURE OF CHEMICAL LACE

Yoshihide Yoshioka, Saijo, Japan, assignor to Kurashiki Rayon Company Limited, Kurashiki, Japan, a corporation of Japan
No Drawing. Filed Oct. 16, 1964, Ser. No. 404,483
Claims priority, application Japan, Oct. 21, 1963, 38/56,498

2 Claims. (Cl. 28—76)

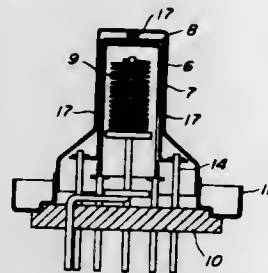
1. A process for the manufacture of chemical lace which comprises reacting alkali cellulose simultaneously with more than 10% by weight based on the cellulose of carbon disulfide and more than 20% by weight based on the cellulose of acrylonitrile, dissolving the resulting reaction product in dilute alkali solution to form a viscose, spinning fibers therefrom, manufacturing from said fibers a base cloth, embroidering the base cloth with a different fiber insoluble in a solvent selected from the group consisting of dilute alkali and water to form an embroidered fabric, and dipping the embroidered fabric in a solvent selected from the group consisting of dilute alkali and water to dissolve the base cloth.

3,315,330 ELECTRON TUBES

Hiroshi Hisada, Mobara-shi, Chiba, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Feb. 19, 1963, Ser. No. 259,520

Claims priority, application Japan, Apr. 7, 1962, 37/14,091

5 Claims. (Cl. 29—25.16)

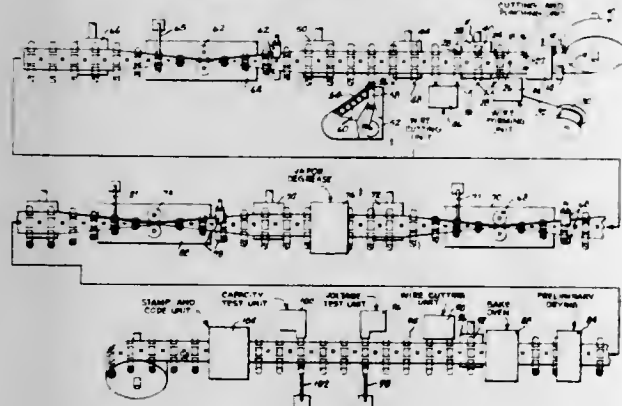


1. An improved method of fabricating an electrode tube assembly by the steps of assembling at least two cylindrical metallic blanks in properly spaced coaxial nested non-abutting insulated relationship, holding said cylindrical blanks precisely fixed in said relationship with respect to one another, simultaneously forming radial aligned slits in said cylindrical blanks to form a coaxial electrode sub-assembly having the same number of electrodes as cylindrical blanks, fixedly mounting said coaxial electrode sub-assembly in a tube structure to form said electrode tube assembly, the improvement essentially consisting of holding said cylindrical blanks precisely in said fixed relationship with respect to one another solely by inserting and self-adherently securing to said cylindrical blanks spacer blocks of removable adhesive material and removing said adhesive material after said coaxial electrode sub-assembly has been fixedly mounted in said tube structure such that the interelectrode capacitance between said electrodes is reduced and the insulated relation between said cylindrical blanks is maintained in the finished tube.

3,315,331 APPARATUS FOR MANUFACTURING CAPACITORS

Felix S. Weiss, Lake Success, N.Y., assignor to Cornell-Dubilier Electric Corporation, a corporation of Delaware

Continuation of application Ser. No. 120,869, June 15, 1961. This application June 16, 1964, Ser. No. 375,604
5 Claims. (Cl. 29—25.42)



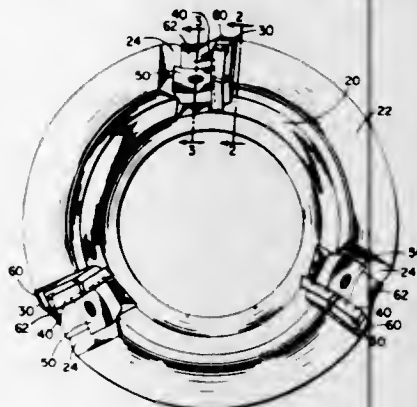
4. In combination, means providing a supply of dispensable conveyor strip material, means for perforating said strip at regular spaced intervals, means for forming at least a pair of transversely aligned longitudinally extending slits in said strip material at locations that recur regularly in uniform relationship to said perforations, cyclically operable means for forming successively a series of hairpin-shaped wire elements each having a pair of legs and a bowed portion interconnecting said legs and for inserting each of said wire elements successively into respective pairs of slits in the strip material with end

portions of the wire element projecting free of the strip material, means for bending the pair of projecting end portions of each of the wire elements carried by said strip material to form a pair of crossed end portions, means for inserting ceramic condenser bodies successively between the pairs of crossed end portions of respective wire elements carried by the strip material, means for soldering inserted condenser bodies successively to respective bent end portions of the wire elements engaged thereby, and feed means having elements cooperating with the perforations in the strip material for feeding said strip material from said supply means stepwise along a continuous path through each of the other aforesaid means in the order named, each of the aforesaid means being cyclically operable by drive mechanism therein, and said feed means including means to arrest the strip material during successive dwell periods in coordination with the drive mechanisms of said cyclically operable means in precise positions adjacent to the other aforesaid means concurrently so that the successive pairs of slits and the succession of elements respectively carried therein are in position for operation thereon by said other aforesaid means during the successive dwell periods.

3,315,332 MILLING CUTTER

Robert D. Lowry and Russell B. Strout, Winchester, Mass., assignors to Lowry Development Corporation, Winchester, Mass., a corporation of Massachusetts

Filed Mar. 18, 1966, Ser. No. 535,505
1 Claim. (Cl. 29—105)



In a rotary end cutting tool head having a front face and a back face with through multiple recesses extending therebetween for receiving replaceable blades and associated anvils, a fixed anvil back-up block in each said recess precision ground surfaces on each back-up block and an adjacent angularly related wall in each recess forming seats for the inner end and trailing face respectively of an anvil, a separable anvil seated against the bottom wall of said recess and against said precision ground block surface and against said recess side wall surface, the leading face of each anvil having a shoulder facing the front face of said head, a separable blade having a cutting edge projecting beyond the front face of said head, said blade having an inner end opposite to the said cutting edge seated against said front facing shoulder of said anvil, said blade having a thickness greater than the transverse width of said anvil shoulder, and a wedge-shaped block in said recess having its trailing wall bearing solely against the leading surface of said blade and constituting common sole means for removably locking both said blade and said anvil against the trailing wall of said recess with said blade projecting from the face of said head in accordance with the particular depth location of said shoulder on said anvil, whereby said anvil may be replaced with other anvils having their shoulders at varying depth locations with respect to their inner ends to vary the depth location of said blade without regard to the depth location of the inner end of said block, thus

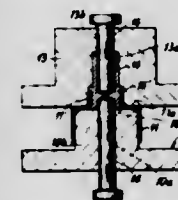
obviating any necessity for changing said block when the block has a greater depth than the depth of said anvil shoulder.

3,315,333 METHOD OF PRODUCING BASE ASSEMBLIES FOR IGNITION DISTRIBUTORS

Wilhelm Kind and Karl-Heinz Schneider, Southofen, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany

Filed Aug. 20, 1964, Ser. No. 390,973
Claims priority, application Germany, Aug. 31, 1963, B 73,334

7 Claims. (Cl. 29—155.5)



1. A method of cold forming base assemblies for ignition distributors of the type wherein the base assembly includes a cup and a bearing sleeve for the drive shaft of the ignition distributor, comprising the steps of drawing a sheet of metallic stock to form a cup-shaped blank with a bottom wall having a tubular extension; placing the extension into a female die whose cavity has an outline corresponding to the desired outline of the bearing sleeve; introducing into the extension a slug of malleable metallic material not completely filling said cavity; and applying to each axial end of the slug a compressive force acting in the axial direction of the extension to transform the slug into a hollow tubular body which fills the cavity and is simultaneously connected with said tubular extension to form therewith said base assembly.

3,315,334 MEANS AND METHOD FOR MAKING HEATER ELEMENTS

Samuel Martin Sterling, 35—25 61st St., Woodside, N.Y. 11377

Filed Feb. 11, 1964, Ser. No. 344,040
5 Claims. (Cl. 29—155.64)



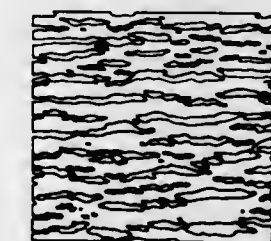
1. An apparatus for use in making heater rod elements comprising a first rod having means to hold a wire, tubular valve means having inner and outer tubular members integrally connected at their lower ends, said outer tubular member having a plurality of openings at its lowermost end to define valve openings, said inner member being slidably mounted on said fixed rod, a passageway being defined between said tubular members to hold heater element material, a valve covering means enclosing said valve means, and means to displace said valve covering means.

3. In a method for making a heater rod tubing with a valve means comprising a stationary rod, concentric tubes telescoped on said rod defining a passageway therebetween, and having valve openings in the lower region of the outer of said concentric tubes, and a valve cover tube, the steps of disposing a tubular housing having swaged lower sections about said stationary rod, attaching a heater wire to the lower part of said stationary rod, said housing being completely above said wire, said wire held by the swaged sections, vertically lowering said valve means and said housing by respective power means to extend said wire, passing heater forming material into the passageway, displacing said valve cover tube to open said valve, and moving the concentric tubes upwardly to fill said housing.

3,315,335 STRESS-RUPTURE PERFORATED STRIP AND METHOD OF PRODUCTION

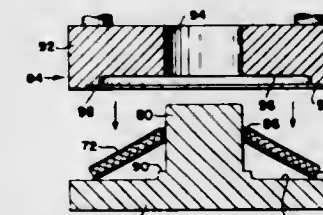
Frank A. Witt, Monroeville Borough, Pa., assignor to United States Steel Corporation, a corporation of Delaware

Filed Jan. 17, 1964, Ser. No. 338,434
3 Claims. (Cl. 29—163.5)



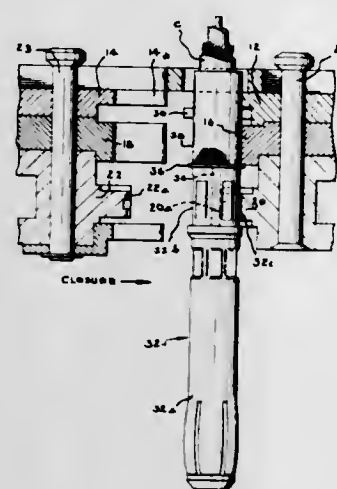
1. The process of stress-rupture perforating of relatively non-reducible, hard, low ductility, foil-like strip material comprising the steps of laying said relatively low-ductility strip between two thicker relatively ductile strips, rolling the composite in a pack, thereby elongating the ductile strips which carry with them the said relatively non-ductile strip and thus extending and multiply rupturing said non-ductile strip to produce relatively uniform and evenly spaced perforations therein, and thereafter separating the three strips.

3,315,336
METHOD OF MAKING FILTER ELEMENT
George F. Parker, Cleveland, and George E. Slater, Gates Mills, Ohio, assignors, by mesne assignments, to Rockwell Standard Corporation, a corporation of Delaware
Original application May 7, 1962, Ser. No. 192,654, now Patent No. 3,261,474, dated July 19, 1966. Divided and this application Apr. 11, 1966, Ser. No. 541,692
5 Claims. (Cl. 29—163.5)



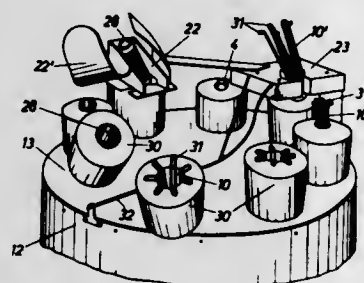
1. In a method of making a filter disc, the steps of laterally corrugating a strip of filter material, joining the ends of said strip to form a cylindrical tubular structure wherein the corrugations are longitudinal, axially collapsing said tubular structure into an annular disc wherein the corrugations extend substantially radially, and compressing the inner and outer peripheries of said annular disc to form inner and outer flat annular peripheral regions.

3,315,337
CRIMPING TOOL WITH RETAINER-EJECTOR
 Robert Stanley Stull, Mechanicsburg, Pa., assignor to
 AMP Incorporated, Harrisburg, Pa.
 Filed June 28, 1965, Ser. No. 467,311
 5 Claims. (Cl. 29—203)



1. In a tool for terminating connectors of the type having an outer shell and a ferrule adapted to be fitted thereover and crimped thereto at one end of said shell and having a center contact member with ports in said shell to permit entry of dies to crimp said center contact member to the center conductor of a cable, the combination comprising opposing sets of dies with at least one die pair to crimp said ferrule and spaced axially therefrom a further die pair to crimp said center contact member, a resilient member disposed between said die pairs in a position to engage the outer shell of a connector inserted in said tool and hold such in alignment with said die sets and against one side of said dies with said ports being aligned with the axis of travel of said further pair of dies, means to guide said dies in movements opening and closing relative to said outer shell, and means for driving said dies in such movements.

3,315,338
APPARATUS FOR INSERTING OF A LAP CARRIER INTO YARN SPOOLS OR THE LIKE
 Gerhard Tigges, Wuppertal-Cronenberg, Germany, assignor to Firma Lebrecht Tigges, Wuppertal-Cronenberg, Germany
 Filed Sept. 21, 1964, Ser. No. 397,869
 Claims priority, application Germany, Sept. 19, 1963, T 24,740; Nov. 7, 1963, T 25,025
 3 Claims. (Cl. 29—234)



1. An apparatus for insertion of a lap carrier into the axial opening of yarn spools, spinning cakes, or the like, comprising
 a supporting table for a yarn lap having an opening, a spindle reciprocable upwardly, so as to receive a lap carrier inserted therein, and downwardly in the opening of said supporting table,
 means for moving said spindle downwardly jointly with said lap carrier,
 said spindle projecting in its lifted position into the axial recess of said yarn lap,
 said lap carrier being centered by said spindle,

said spindle emerging downwardly during said downward movement of said spindle from the axial recess of said lap,
 means for stopping a further downward movement of said lap carrier upon emerging of said spindle from the axial recess of said lap,
 said lap carrier being radially resilient and including laterally directed feet members,
 said spindle being of tubular shape and receiving said lap carrier, and
 said feet members being adapted to abut the end face of said yarn lap to stop a further downward movement of said lap carrier, whereby the continued downward movement of said spindle serves to pull said lap carrier from said spindle.

3,315,339
TOOL FOR MOUNTING OR DEMOUNTING AUTOMOTIVE VALVE ASSEMBLIES
 David W. Young, 900 Clifford Ave., Akron, Ohio 44306
 Filed Sept. 30, 1964, Ser. No. 400,323
 10 Claims. (Cl. 29—249)

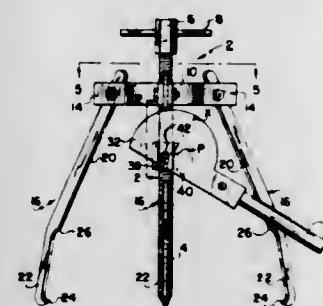


3. A tool for use on an automotive valve or like assembly of the type including a spring-pressed retainer means held locked on a stem by a separable collet segment wherein the stem and the collet have interlocking portions normally holding the collet and the retainer in a position for limited extension of the spring, said tool comprising: a rigid body having an impact end and an opposite end recessed to define a retainer-engaging seat and an inwardly presented peripheral lip; a spring-pressed collar axially shiftable in said recess and normally yieldingly maintained in stop engagement with said lip; a spring-pressed collet centering pin mounted in said recessed end and slidably received through said collar, and normally projecting outwardly of the collar for yielding engagement with the end of the valve stem when said rigid body is positioned to engage said collar with a segmental collet to be inserted to locked position between the stem and the retainer, whereby upon momentary impaction of said body yieldingly to reciprocate said retainer the collet segments are yieldingly moved by said collar to impact the collet between the retainer and the valve stem.

3,315,340
PULLER DEVICE FOR REMOVING BRAKE DRUMS OR THE LIKE
 James D. King, 24030 Hackett Drive, Euclid, Ohio 44123
 Filed Nov. 23, 1964, Ser. No. 412,932
 4 Claims. (Cl. 29—267)

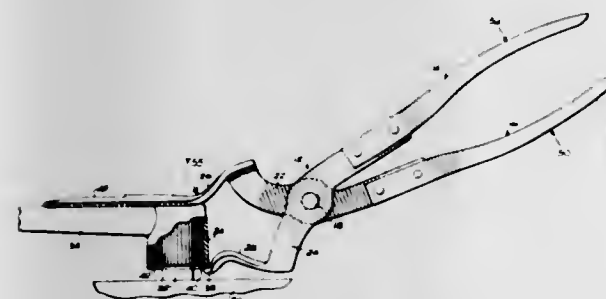
1. A puller device for separating a relatively movable part from a relatively stationary member comprising, an elongated screw for thrust bearing engagement against said member, a spider having bifurcated ear portions

freely mounted for axial sliding movement on said screw, a plurality of puller arms pivotally connected to said ear portions for radial swinging movement toward and away from said screw for gripping engagement with said part, a nut threadably mounted on said screw beneath said spider, a pair of oppositely disposed, eccentric pintles



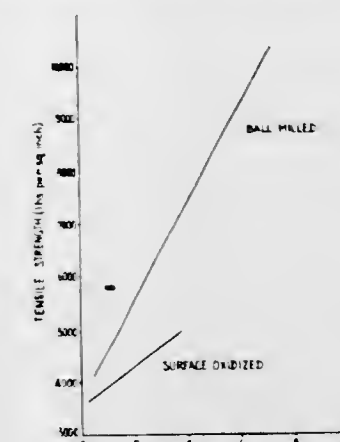
extending laterally outwardly from said nut, a pair of spaced cam plates having oppositely disposed, eccentric slots pivotally mounted by said slots on said pintles, and a lever connected to said cam plates, said cam plates adapted to move said spider axially upwardly along said screw upon pivotal movement of said lever for automatically snapping said part from said member.

3,315,341
PLIERS-TYPE TOOL FOR REMOVING WINDSHIELD WIPER ASSEMBLIES
 Eusebio Rodriguez Lara, 303 NW. 50th Ave., Miami, Fla. 33126
 Filed Apr. 11, 1966, Ser. No. 541,648
 4 Claims. (Cl. 29—278)



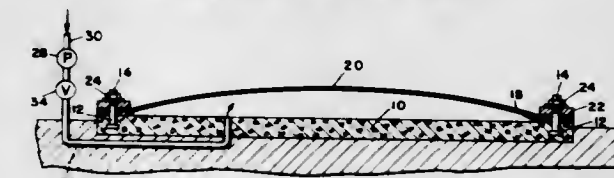
1. A tool for removing an inverted cup-shaped member having a radially projecting arm outwardly of and in the plane of the floor, which cup-shaped member is snugly mounted on a cylindrical member nestled in the recess of the cup-shaped member comprising: pivot means and a first and a second member connected intermediate their lengths and extending in a substantially common plane on either side of the pivot means and arranged for pivotal movement with respect to the said pivot means, each of said members having an extended leg portion and an arm portion with the said pivot means being therebetween, said leg portions being for a purpose of manipulating the arms and said arms extending apart from one another to define a mouth therebetween, one of said arms having a jaw on the distal end thereof with a terminal lip of arcuate shape to companionately engage the brim of a cup-shaped member and the other of said jaws being of sufficient length to extend beyond a cup-shaped member, said jaws being sized so that on movement of the leg portions into close adjacent relation, the jaws are closed and by manipulating said tool with leg portions in close adjacent relation, the cup-shaped member may be lifted from the stud on which it is mounted.

3,315,342
DISPERSION STRENGTHENING OF LEAD
 David Henry Roberts, Harlow, England, assignor, by mesne assignments, to St. Joseph Lead Company, New York, N.Y., a corporation of New York
 Filed Mar. 29, 1963, Ser. No. 269,030
 Claims priority, application Great Britain, May 21, 1962, 19,517/62
 4 Claims. (Cl. 29—420.5)



1. A method for producing dispersion-strengthened lead from lead powder, which comprises subjecting the lead powder to a mechanical process whereby the oxide coatings on the lead particles are broken up and the resultant oxide fragments forced into the lead particles themselves, while further oxidation takes place on fresh surfaces, and thereafter extruding the lead powder to produce solid lead containing a dispersion of oxide.

3,315,343
METHOD OF CONSTRUCTING A BUILDING
 John W. Berg, La Mesa, Calif., assignor, by mesne assignments, to The Bendix Corporation, a corporation of Delaware
 Filed Apr. 13, 1964, Ser. No. 359,341
 4 Claims. (Cl. 29—421)

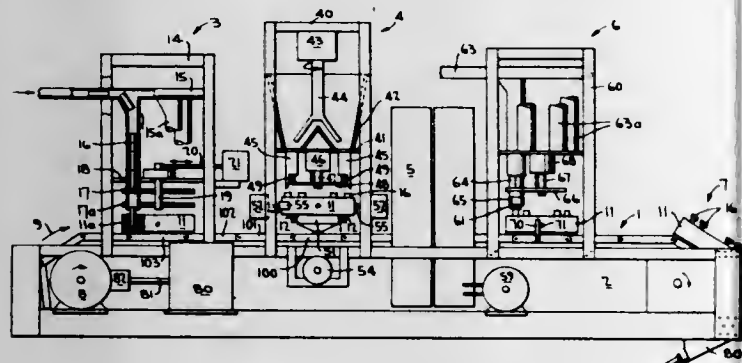


1. The method of constructing a roof of a building in situ which comprises the steps of:
 forming a foundation;
 peripherally securing a sheet of substantially inelastic material to said foundation;
 applying pressure between said sheet and said foundation to stretch said sheet to the desired shape of a roof;
 reducing the pressure;
 releasing the stretched sheet from the foundation;
 raising the stretched sheet and supporting the same at the desired height to constitute a roof over said foundation.

3,315,344
METHOD FOR THE PRODUCTION OF COSMETIC STICKS, PARTICULARLY LIPSTICKS
 Giulio Giuseppe Niclas, Milan, Italy, assignor to Ejectorel S.A., Geneva, Switzerland, a corporation of Switzerland
 Filed June 3, 1963, Ser. No. 285,459
 Claims priority, application Italy, June 6, 1962, 24,150/62; June 12, 1962, 24,354/62; Nov. 14, 1962, 29,007/62
 4 Claims. (Cl. 29—428)

1. A method of manufacturing cosmetic pencils or sticks, particularly lipsticks, in which the paste-like cos-

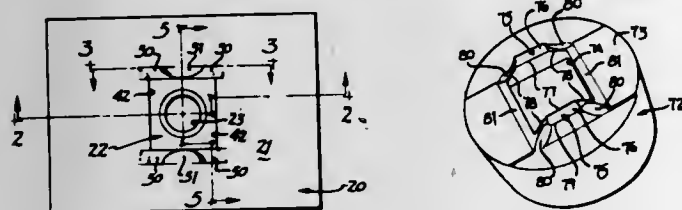
metic stick is poured from a paste mass in a molten condition into a two-part paste-receiving mold surrounded by a casing, with a feed mechanism interconnecting said paste-receiving mold with said casing in order to axially displace said paste-receiving mold relative to said casing, comprising the steps of: detachably supporting at least one container for receiving lipstick casings surrounding the two-part mold upon a conveyor means, transporting said container via said conveyor means to a first station, loading the container at the first station with a specified number of said casings surrounding the two-part mold, with the rear end of each casing being open and exposed for filling of said two-part mold within the casing, transporting the container loaded with casings via said container means to a second station, lifting the casing loaded-container at the second station off of said



conveyor means, filling the stationary, two-part mold of each casing now supported in the stationary, lifted container means via its open rear end with the molten paste mass at said second station and during such time as said conveyor means is moving, then placing said container with the paste filled two-part mold of each casing again on to said conveyor means, transporting the container loaded with casings filled with the molten paste mass via said conveyor means to a third station, cooling the molten paste mass at the third station to form a solidified paste stick within each casing, transporting the container loaded with casings each of which contain a solidified paste stick via said conveyor means to a fourth station, sealing the open rear end of each casing at the fourth station, and then transporting the container via said conveyor means to a fifth station where such sealed casings are emptied from the container.

3,315,345

METHOD OF MAKING NUT-PANEL ASSEMBLY
Plummer E. Double, Detroit, and Herman R. Abbrecht, Birmingham, Mich.; said Double assignor to Multifastener Corporation, Redford, Mich.
Filed Mar. 14, 1962, Ser. No. 179,621
6 Claims. (Cl. 29-432.1)



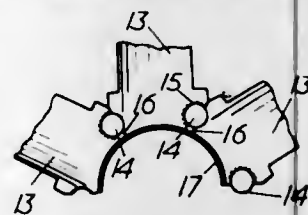
1. In a method of securing to a panel a nut having a central polygonal pilot portion and a pair of laterally projecting shoulders, the nut having a re-entrant groove intermediate the pilot portion and each of the shoulders, said grooves opening onto the shoulder through a restricted mouth, the steps of displacing the nut relative to the panel in a single uninterrupted motion, sequentially
(1) piercing the panel with the nut pilot portion,
(2) bottoming the panel on the nut shoulders,

- (3) severing those portions of the panel aligned with the groove mouths, each such severed portion being of less longitudinal extent than the juxtaposed groove and of a width substantially the same as the width of the groove mouth,
- (4) displacing into the aligned groove less than the entire extent of said severed portions, respectively,
- (5) deforming each of the so-displaced severed portions to a width greater than the width of the groove mouth, and
- (6) displacing to a lesser extent the remainder of the severed portions, respectively, so as to join undeformed portions of the panel to the severed, displaced and deformed portions in said grooves.

2. In an apparatus for securing a nut to a sheet metal panel, the nut having a central polygonal piercing portion, a pair of laterally oppositely directed shoulders and reentrant grooves interposed, respectively, between said shoulders and said piercing portion, said apparatus comprising a die button having a planar end face provided with a central polygonal aperture adapted to receive the nut piercing portion and a plurality of elongated parallel embossments on opposite sides of said aperture adapted to register with the nut grooves, said embossments each being of less linear extent than the length of said grooves and merging into the plane of said die button end face through arcuate joining surfaces, said embossments having a height slightly greater than the depth of the nut grooves less the thickness of said sheet metal panel, and said embossments each having a maximum width slightly less than the minimum width of said grooves.

3,315,346

CRIMPING TOOLS, DIE PARTS AND THE LIKE AND METHODS FOR MAKING THE SAME
Frederick Russell Duffield, 355 Pacific Highway, Artarmon, New South Wales, Australia
Filed Jan. 21, 1965, Ser. No. 426,819
Claims priority, application Australia, May 22, 1964, 44,825/64
11 Claims. (Cl. 29-434)



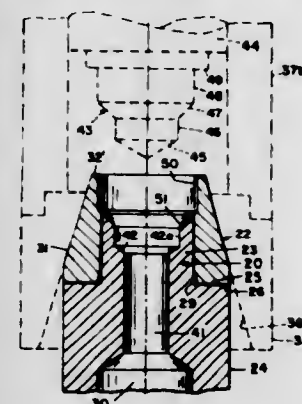
1. A mechanism selected from the group of mechanisms consisting of crimping presses, die presses and analogous mechanisms in which a plurality of fingers are brought together to grip an article or define a central cavity, the said mechanism comprising a plurality of fingers in which the said fingers are formed with tongues and grooves upon mutually adjacent faces which extend across such faces in a direction transverse to the movement of said fingers and are so disposed as to interengage when the fingers are brought together and then to hold the said fingers against displacement towards or from the centre of the article or cavity.

3,315,347

MANUFACTURE OF COMPOSITE WRITING POINTS FOR BALL POINT PENS
Friedrich Schachter, 7333 W. Harrison St., Forest Park, Ill. 60130
Filed Sept. 29, 1964, Ser. No. 400,105
10 Claims. (Cl. 29-441)

1. A method of making a writing point for a ball point pen or the like, wherein the point includes initially separate concentric annular ball encircling and ball seating members and wherein the seating member is finally shaped

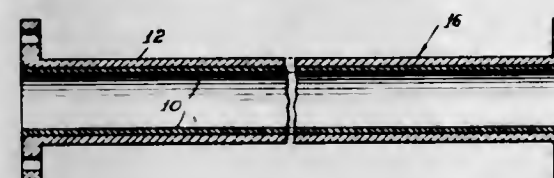
by the application under pressure to the ball seating member of a pressure member having a rounded convex surface corresponding to the shape of the pen ball, and subsequently creating an annular ink well gap by spinning the ball encircling member about the pen ball; the improvement comprising assembling and securely fitting the



ball seating member within the ball encircling member and thereafter machining the ball seating member with tool means centered upon the ball encircling member to remove a portion of the material from the ball seating member prior to finishing the seat by the application of said rounded pressure member.

3,315,348

VESSEL LINING METHOD
John T. Donovan, Baton Rouge, La., and William F. Mick, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Jan. 10, 1964, Ser. No. 337,036
6 Claims. (Cl. 29-475)



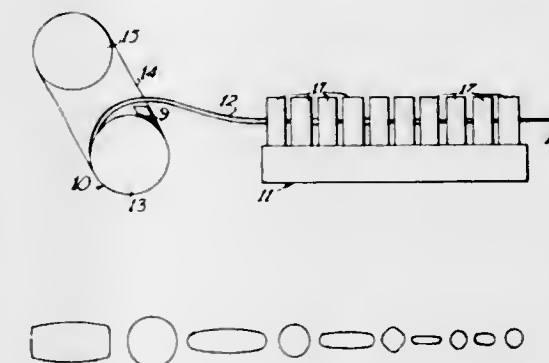
1. An improved method for bonding a synthetic resilient plastic liner to the inside surface of a tubular shaped uniformly metal containing vessel comprising the steps of scoring the inside surface of said vessel to form indentations thereon, inserting a tubular synthetic resilient plastic liner within said vessel, swaging the vessel onto said liner to cause compressive stresses within said liner, heating said vessel and said liner at a rate sufficient to melt the interface layer of the liner adjacent said vessel to cause a synthetic resilient flow of said interface layer into the scored indentations but insufficient to relax said compressive stresses within said liner to effect a permanent bond of said liner to said vessel.

3,315,349

METHOD OF PRODUCING HOT-FORMED COPPER-BASE PRODUCTS
Daniel B. Cofer, Carrollton, Ga., assignor to Southwire Company, Carrollton, Ga., a corporation of Georgia
Filed Oct. 20, 1965, Ser. No. 498,774
9 Claims. (Cl. 29-528)

1. A method of producing a hot-formed copper-base product having a grain structure characterized by uniformly distributed fine grains with substantially no grain alignment, said method comprising the steps of solidifying a molten copper-base metal to obtain cast metal and of hot-forming said cast metal while said cast metal is in substantially that condition in which it solidified by deforming said cast metal a substantial number of times to cause said cast metal to assume a plurality of successive alternately different cross-sections which include sev-

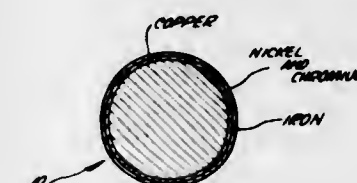
eral substantially flattened and elongated cross-sections and several substantially round cross-sections so as to impart substantial movement to said cast metal along a plu-



rality of angularly disposed axes, said hot-forming serving to hot-form said product and to provide a grain structure characterized by uniformly distributed fine grains with substantially no grain alignment.

3,315,350

METHOD OF MANUFACTURING REPLACEABLE SOLDERING IRON TIPS
George M. Kent, San Gabriel, Calif., assignor to Plato Products, Inc., El Monte, Calif., a corporation of California
Filed Dec. 27, 1963, Ser. No. 333,867
3 Claims. (Cl. 29-529)



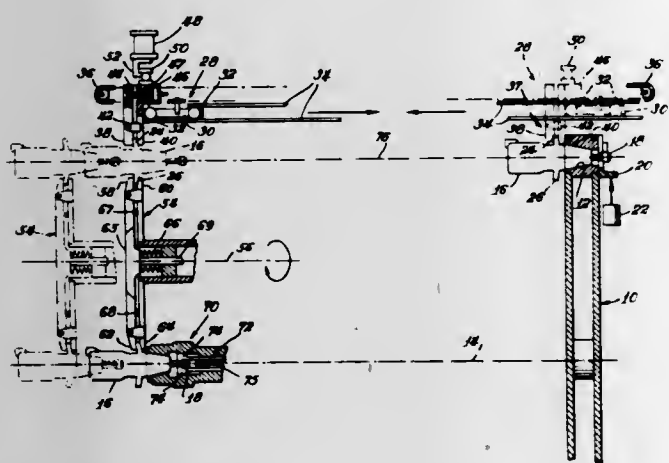
1. In the manufacture of soldering tips, the method comprising the steps of forming a soldering tip of solid copper with a cylindrical shank portion and a working end portion, electroplating at least the shank portion of the tip with iron to a thickness between .002 inch and .010 inch, grinding the shank of the soldering tip to form a smooth surface, electroplating the shank portion of the tip with nickel to a thickness of .0004 inch to .0020 inch, and electroplating the nickel with a layer of chromium to a thickness of .0001 inch to .0030 inch.

3,315,351

AUTOMATIC TOOL CHANGING APPARATUS
Myron L. Anthony, La Grange, and Barnard R. Better, Chicago, Ill., assignors to Scully-Anthony Corporation, La Grange, Ill., a corporation of Illinois
Continuation of application Ser. No. 500,471, Oct. 11, 1965, which is a continuation of application Ser. No. 265,552, Mar. 15, 1963. This application June 10, 1966, Ser. No. 556,782
4 Claims. (Cl. 29-568)

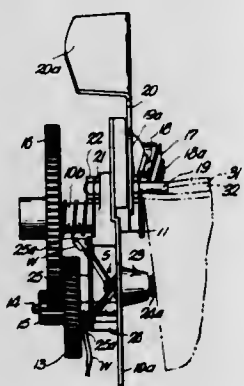
1. In automatic tool changing apparatus for handling tools of the type having a rigidly extending gripping flange in a machine tool having a spindle, the combination comprising, a transfer arm having oppositely extending gripping jaws adapted to lock on said tool flanges, said arm being mounted for rotation and axial sliding movement relative to and about an axis parallel to said spindle and spaced therefrom so as to grip, remove and rotate tools 180° from said spindle to an intermediate position wherein a tool is positioned parallel to and aligned with a tool in the spindle, a rotatable tool magazine releasably carrying a plurality of said tools so as to bring any given

one of the tools into a transfer position behind and axially aligned with said intermediate position, and a transfer mechanism mounted for reciprocating linear movement between and adjacent said transfer and intermediate positions, said mechanism having gripping jaws adapted to



lock on the flange of said tool so that said movement of the mechanism carries said tool from said magazine to said intermediate position where it is gripped by said transfer arm and exchanged with the tool then in said spindle.

3,315,352
POWER PIERCE ARRANGEMENT FOR POWER OPERATED CAN OPENER
Robert J. Scott, Lake Tapawingo, Mo., assignor to Rival Manufacturing Company, a corporation of Missouri
Filed Aug. 27, 1965, Ser. No. 483,116
9 Claims. (Cl. 30-4)

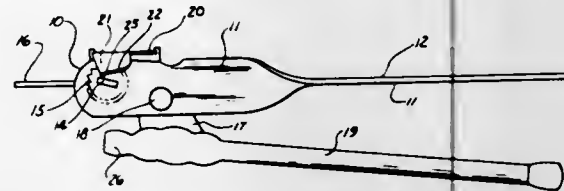


1. In an electrically powered can opener having an upright frame, a rotary feed wheel, and an electric motor drivingly connected with said feed wheel, the combination therewith of

a hand lever pivotally attached to the frame of said can opener,
a cutting element mounted on said lever and movable into and out of overlapping cutting relationship with said feed wheel,
a normally open switch controlling the energization of said motor,

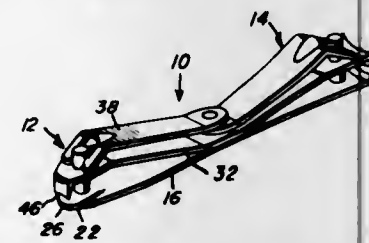
means mounted on said frame of said can opener below said feed wheel engageable by the side of a can, said means operable as a result of the inward force of the side of said can toward said frame against said means to close said normally open switch in response to bringing said cutting element into pressure contact with the end of the can to be opened, said pressure contact resulting in said inward force that is transmitted through said can to said means.

3,315,353
CAN OPENER
Ernest Thomas, Roselle, Ill., assignor, by mesne assignments, to American Home Products Corporation, a corporation of Delaware
Filed May 14, 1965, Ser. No. 455,880
2 Claims. (Cl. 30-15)



1. A can opener for severing the end wall of a can along a line at the junction between said end wall and an upstanding rim surrounding said end wall, said opener including a traction wheel engageable with said rim, an arm on which said wheel is supported for rotation, a cutter mounted on said arm via a mounting member having a wall portion in overhead relation to the traction wheel with opposite edges of said portion spaced apart lengthwise of the line of travel of said cutter for movement of the cutter toward and away from an operative position in relation to said traction wheel, and means having engagement with said can rim and operative in conjunction with said traction wheel to drive said cutter along said severance line upon rotation of said traction wheel while said wheel engages said rim and said cutter is in said operative position relative to said traction wheel, said means having a can rim engaging surface defined by a solid strip of synthetic resinous material having integral claws which engage said opposite edges of said portion of the mounting member to establish the position of said strip relative to said cutter.

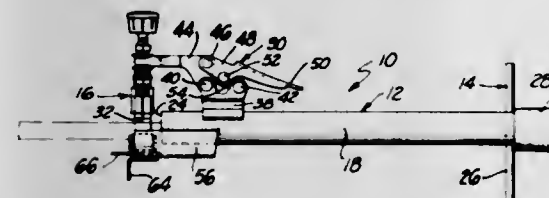
3,315,354
COMBINED FINGERNAIL AND CUTICLE CLIPPER
David J. Oates, Jr., 800 S. Pine St., Rocky Mount, N.C. 27801
Filed May 28, 1965, Ser. No. 449,742
3 Claims. (Cl. 30-28)



1. A combined cuticle and fingernail clipper comprising an elongated bottom member having a pair of upwardly facing cutting elements defined on the opposite terminal ends thereof, an elongated stiff and resilient centrally downwardly bowed upper member having a pair of downwardly facing cutting elements defined on the opposite ends thereof, said upper member generally paralleling, overlying and being in vertical registry with said lower member and having the under surface of the bowed center portion thereof resting upon the upper surface of the center portion of the lower member, the cutting elements on the upper member being normally spaced above the cutting elements on the lower member and displaceable downwardly into cutting cooperation therewith upon downward flexing of the opposite end portions of said upper member, a pair of mounting pins rotatably journaled through and projecting upwardly from opposite end portions of said bottom member, said opposite end portions of said upper member having apertures formed therethrough through which the upper ends of said pins are slidably and rotatably received, said upper member having an aperture formed through the

central bowed portion thereof, a center anchor pin secured to and projecting upwardly from the center portion of said lower member and projecting upwardly through said aperture, a pair of lever members including short angulated end portions pivotally secured to the upper ends of said pins above the corresponding end portions of said upper member for rotation about axes extending transversely of said pins and said lever members and abutting and slightly flexing said end portions of said upper member downwardly, the free ends of said lever members remote from said angulated end portions including apertures through which said center pin is receivable, said levers being pivotable relative to said pins and also with the latter relative to said upper and lower members between first storage positions with the angulated end portions thereof opening downwardly and the free apertured ends thereof telescoped downwardly over said center pin in overlapped relation with each other, second positions with said angulated end portions opening upwardly and said apertured free end portions spaced above said center pin, and thereafter toward third operative positions displaced downwardly at their free ends while said angulated end portions are in camming engagement with said upper member end portions in a manner to urge the latter downwardly toward positions with their cutting elements in cutting cooperative relation with the cutting elements of said lower member.

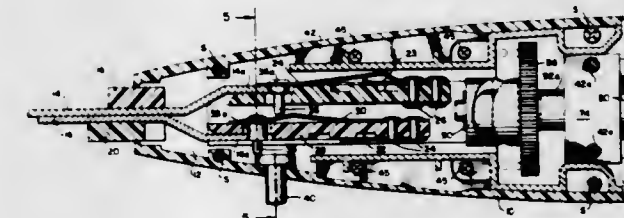
3,315,355
PIPE OR ROD CUTTING TOOL HAVING A DISC TYPE CUTTING WHEEL AND TOGGLE MEANS TO MOVE SAID WHEEL IN AN OPERATIVE OR INOPERATIVE POSITION
Isaac W. Osburn, 13720 Gardenland, Bellflower, Calif. 90706, and Walter E. Osburn, 11804 Ramrock Drive, La Mirada, Calif. 90638
Filed Mar. 29, 1965, Ser. No. 443,301
4 Claims. (Cl. 30-102)



1. A long handled tube cutter, said long handled tube cutter comprising:
a body structure, a drive structure and a tube cutting structure;
said body structure comprising an elongated tube having an interior opening of sufficient diameter to be adapted to accept a portion of the tube which the tube cutter is adapted to cut, said interior opening being of sufficient length to accept a substantial length of the tube adapted to be cut, said tubular body structure having an elongated axis which is adapted to be positioned substantially parallel to the axis of the tube being cut, said tubular body structure having first and second ends;
said drive structure comprising drive means attached to said body structure adjacent said first end thereof;
said tube cutting structure being attached to said body structure adjacent said second end thereof, said tube cutting structure comprising at least one tube cutting backup roller mounted with respect to said body structure, said backup roller being rotatable on an axis substantially parallel to the axis of said body structure, a cutting wheel movably mounted with respect to said backup roller, said cutting wheel being movable along a path at substantially right angles to said axis and rotatable upon an axis substantially parallel to the axis of rotation of said roller;

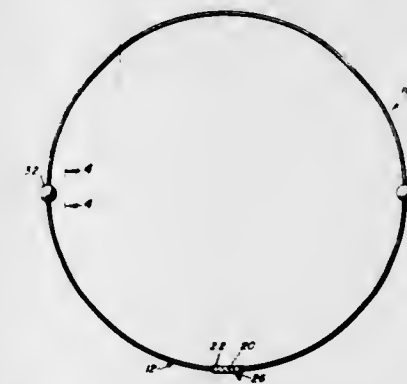
said tube cutting structure including a toggle mounted upon said body structure, said toggle having an operating handle extending toward said drive structure and having a loading lever extending adjacent said tube cutting wheel, a spring positioned between said loading lever and said tube cutting wheel so that actuation of said manual handle moves said loading lever to spring urge said cutting wheel toward said backup roller.

3,315,356
POWER DRIVEN CARVING KNIFE
Roy L. Swanke, Newington, and Allen P. Cawl, Wethersfield, Conn., assignors, by mesne assignments, to General Electric Company, Bridgeport, Conn., a corporation of New York
Filed Sept. 11, 1964, Ser. No. 395,744
5 Claims. (Cl. 30-272)



1. An electric power driven knife blade assembly to effect relative axial reciprocation of a pair of blades comprising a combination of elements, including an electric motor, a pair of blade receptacles, a housing within which said receptacles may reciprocate axially, power transmission means connecting said motor to said receptacles to effect their relative reciprocation in said housing, means on said receptacles comprising spring biased pins for releasably locking each of a pair of cutting blades on said receptacles, said pins extending through the same side of the receptacle, means projecting through the wall of said housing for actuating one of said pins to move it to a release position, and first means operated by said one pin as it moves to the release position for moving the other of said pins to the release position to permit disengagement of both knife blades from said receptacles.

3,315,357
BED CUTTER
Albert J. Jenigen, Bristol, Pa., assignor of fifty percent to Richard H. Ellis, Fairless Hills, Pa.
Filed Oct. 12, 1965, Ser. No. 495,251
5 Claims. (Cl. 30-316)

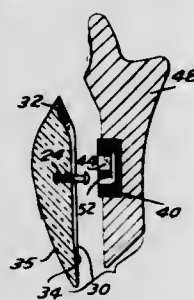


1. A tool for cutting an endless bed border about a ground supported object, said tool comprising an elongated flat bar-like body defined by opposite terminal ends selectively locked to each other so as to form an object encircling single band, and generally parallel upper and lower elongated edges, said lower edge being in the nature of a ground cutting edge, said bar-like body being flexible and capable of flexing outwardly whereby a substantial space is defined between the two ends thereof so

as to allow a lateral positioning of the body about a ground supported object, said body, in its unflexed condition, having the opposite ends thereof closely adjacent each other, generally defining the shape of the object encircling single band, said body, subsequent to a flexing and release thereof, returning to a substantially constant unflexed shape, and a pair of independent handles fixed to said body and projecting vertically therefrom at points generally diametrically opposed from each other.

3,315,358

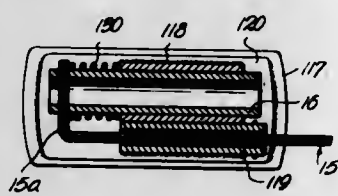
METHOD OF MAKING A DENTAL BRIDGE
Friederich Ludwig Brecht, deceased, late of San Francisco, Calif., by Clara Anna Brecht, executrix, San Francisco, Calif., assignor, by mesne assignments, to Westward Dental Products Company, San Francisco, Calif.
Filed Oct. 2, 1963, Ser. No. 314,089
2 Claims. (Cl. 32-6)



1. A method of making a dental bridge or the like, which consists in building up a form for the bridge at least partly of wax, providing an artificial tooth having at least one headed prong on the back thereof, providing a block of consumable plastic having at least one keyhole slot opening through the forward face thereof, fitting the block to the back of the tooth by inserting the headed prong into the slot and then effecting slight relative displacement of the tooth and block to engage the prong within the narrower part of the slot, incorporating the tooth and plastic block in the wax, shaping the form including the tooth to fit the mouth of the patient, removing the tooth from the plastic block while leaving the block embedded in the wax, by effecting slight relative displacement of the tooth and block to move the prong into the wider part of the slot to permit movement of the headed prong out of the slot investing the form, including the block in a settable mold material, melting out the wax and plastic block, casting metal in the mold so as to provide a metal seat to fit the removed tooth and including a keyhole slot to receive the prong thereon, and anchoring the tooth to said seat by inserting the prong into the wider part of the keyhole slot and then effecting slight relative displacement of the tooth and the metal seat to engage the prong within the narrower part of the slot.

3,315,359

ORTHODONTIC DEVICE
Clifford E. Moss, P.O. Box 432, Syracuse, Nebr. 68446
Filed Mar. 1, 1965, Ser. No. 436,250
8 Claims. (Cl. 32-14)



1. In an orthodontic treatment apparatus for use on a dental arch having a pair of anchor teeth, the combination of
a bracket adapted to be secured to each anchor tooth,

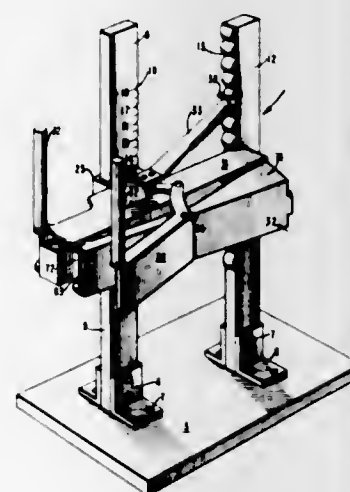
each said bracket including a tubular sleeve member open at both ends and oriented with its axis directed generally along the arch.

an arch wire adapted to extend along the arch with end portions thereof adjacent said sleeve members, said end portions bent substantially at right angles to the major length of the arch wire and overlying the respective outermost ends of said sleeve members,

a slide member secured to and projecting laterally from each said end portion, said slide element slidably received in the adjacent sleeve member, and thrust means operable to create tension in said arch wire through forces acting on said end portions.

3,315,360

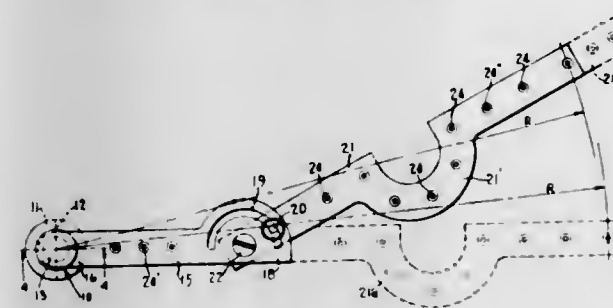
HEM MARKER DEVICE
Benjamin Tarlow, 3809 Glen Ave., Baltimore, Md. 21215, and Andrew E. Friedrich, Laurel, Md.; said Friedrich assignor to said Tarlow
Filed Nov. 8, 1963, Ser. No. 322,357
3 Claims. (Cl. 33-9)



1. An automatic hem marking device to mark the hem line of a garment when in stationary position comprising a vertical gauge standard affixed to a base and provided with an inner notched edge and indicia on one edge corresponding to said notched edge, a notched guide standard mounted on said base parallel to said gauge standard over which the fabric to be pinned is draped, an automatic hem marking device to mark the hem line in garments while being held upright, said hem marking device being pivotally mounted upon a horizontal pivot with respect to said gauge standard and vertically reciprocable thereupon so as to come into lateral, adjusted engaging position with said garment when rotated in a vertical plane, a positive locking means to lock said hem marking device in said adjusted position and to maintain the fabric in a stationary horizontal position while being pinned, said locking means comprising an angularly disposed spring member mounted on said hem marking device for engagement with the notches of said notched edge of said guide standard when said hem marking device has been rotated to said lateral, adjusted position, following means on said pivotally mounted hem marking device to crimp the fabric about the guide standard into position to be pinned, said folding means being in operable engagement with said fabric when in said lateral operable position, and said marking device including a T-pin ejection means having actuating means therefor to force said pins through said folded fabric, whereby pins are forced from the pin ejection means into and through said fabric when said ejection and folding means are in operative position.

3,315,361

FOLDING BEAM COMPASS
Erwin A. Mutter, 313 N. Stiles St., Linden, N.J. 07036
Filed May 13, 1966, Ser. No. 549,929
1 Claim. (Cl. 33-27)



A beam compass, comprising:

a main centering pivot made of transparent material and having a wide flat bottom and a round neck, and carrying cross-hairs visible from the top of said pivot, for use in centering,
a short narrow flat arm having one end mounted around said pivot neck in close-fitting relation and designed for rotation of said arm completely therearound, and having pivot means on its opposite end,
a longer flat narrow arm having a width equal to that of the flat bottom of the pivot and having one end pivoted at said pivot means with the top surface of the longer arm contacting the bottom surface of the short arm and arranged to be rotated around said means, and having locking means for locking it to said shorter arm in any rotational position, said longer arm having an arcuate cutout portion of radius at least as great as the width of said longer arm portion and of a radius for encompassing substantially all of the flat bottom of the pivot, said arcuate portion being designed to fit around said flat bottom of the main pivot when said compass is in folded position, whereby both arms are disposable in overlying parallel condition, and with the bottom surface of said flat bottom of the pivot and the bottom surface of said longer arm being in the same plane, and
pencil holes disposed in said longer arm for insertion therein of a pencil point for drawing an arc or circle as said locked arms are rotated around said main pivot.

3,315,362

ATTACHMENT FOR A TELESCOPIC SIGHT
Richard L. Palmer, P.O. Box 1257, Sierra Vista, Ariz. 85635
Filed Aug. 5, 1964, Ser. No. 387,600
5 Claims. (Cl. 33-50)

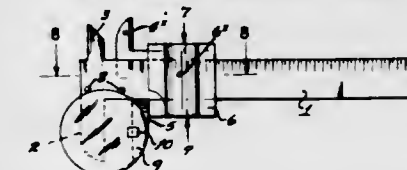


1. An attachment for a telescopic sight comprising a sleeve having one of its ends receivable on the sighting end of a telescopic sight and projecting rearwardly therefrom, a cylindrical eye-piece at the opposite end of said sleeve terminating at its outer end in an outwardly flared annular wall, said sleeve projecting substantially beyond said eye-piece, an annular inwardly projecting shoulder adjacent the juncture of said sleeve and eye-piece having an axially extending bead on its inner edge defining a reduced diameter opening in the line of sight through said attachment, said sleeve and eye-piece having openings formed therein on opposite sides of said shoulder inwardly from the end of said eye-piece, and said eye-

piece being formed of a resilient material whereby said outwardly flared wall can be pressed against and conform to the eye-socket of a person using the attachment.

3,315,363

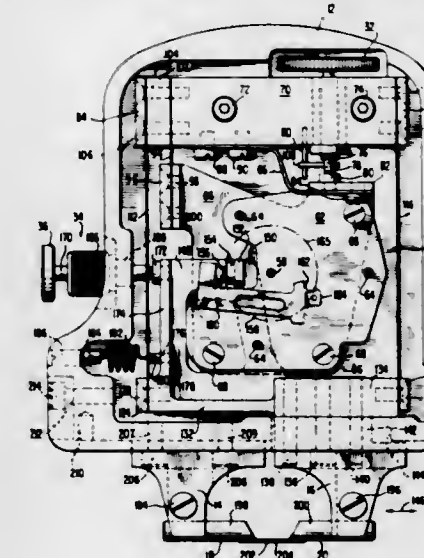
MEASURING SCALE FOR WATCH CRYSTALS
Jerome Shiffman, 128 Carthage Road, Scarsdale, N.Y. 10583
Filed May 4, 1964, Ser. No. 364,611
3 Claims. (Cl. 33-143)



1. A measuring scale for watch crystals of that type in which the crystal is provided with a small, generally rectangular magnifying area at one margin thereof, comprising an elongated scale member marked with measuring lines, a slide carried by and movable along said scale member and having a magnifying area through which the markings of the scale member may be visualized, said scale member carrying two spaced abutments at its front end area, said abutments being in a line running longitudinally of the scale member, and said scale member having a laterally projected support, said abutments being adapted to contact the periphery of a crystal lying upon said laterally projected support, the slide being spaced from said abutments and carrying a registration member having an index edge and extending in the same direction and in the same plane as the support and scale member and providing a support finger for coaction with the support for supporting a watch crystal thereon, said index edge adapted to be moved by the slide to the center line of the magnifying area carried by a watch crystal which at its periphery lies in contact at its top area with said abutments, said magnifying area of said slide being mounted on one end of the slide away from the index edge such that it will not interfere with a watch crystal placed on the support and the registration member.

3,315,364

UNIVERSAL GAUGE
Joseph S. Olasz, Lancaster, and Rodney E. Moseman, Lititz, Pa., assignors to Hamilton Watch Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Nov. 3, 1964, Ser. No. 408,548
12 Claims. (Cl. 33-147)

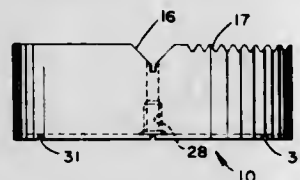


1. A precision linear gauge comprising a generally flat, rectangular case, a fixed jaw secured to said case, a movable jaw, leaf spring means within said case and

supporting said movable jaw for reciprocating movement into and out of engagement with said fixed jaw, a dial indicator movement coupled to said movable jaw, support means including a spring resiliently supporting said indicator movement within said case, and means passing through said case and bearing against said support means for adjusting the zero position of said indicator movement.

3,315,365

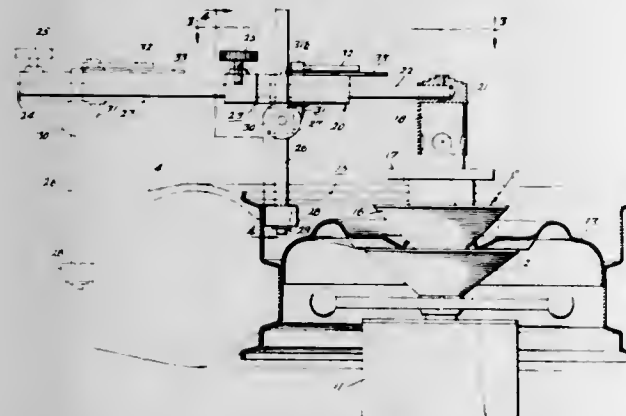
ANVILS FOR COMPARATOR GAGES
David H. Aldeborgh, Poughkeepsie, N.Y., assignor to Standard Gage Corporation, Inc., Poughkeepsie, N.Y., a corporation of New York
Filed Mar. 3, 1965, Ser. No. 436,865
7 Claims. (Cl. 33-147)



1. An anvil for a dial comparator gage comprising, in combination, a shallow cylindrical block, a plurality of different gaging surfaces formed in the upper surface of said block adapted to receive pieces of varying shapes and dimensions to be gaged, means adapted to mount said anvil on a comparator table for rotation about the center of said block whereby a convex piece on the upper surface of said anvil is placed in gaging position and oscillation of said block about its center of rotation gives a passing reading on the dial indicator, a recess in the lower surface of said block, said recess forming an annular rim, said rim resting on the table and a plurality of notches extending radially through said annular rim whereby rotation of said anvil about its center cleans the table and assures maintenance of the upper surface of the anvil in the desired plane perpendicular to the axis of the dial indicator.

3,315,366

OUT OF ROUND GAUGE ATTACHMENT FOR A WHEEL BALANCING STAND
Don J. Marshall, Edgewater, Md., assignor to Goodall Sem-Metallic Hose & Mfg. Co., Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 9, 1965, Ser. No. 447,032
2 Claims. (Cl. 33-172)

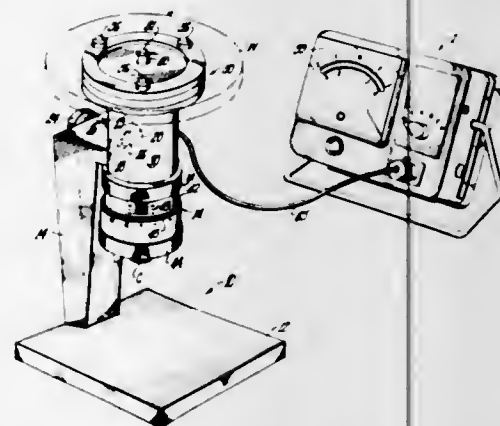


1. An out of round gauge attachment for a wheel balancing stand comprising in combination: a pivotal tire stand connecting means connectable to said tire stand along the pivot axis thereof; a radially extending swing arm projecting from said connecting means; a slide frame slidably mounted on said arm and movable between said connecting means and the extended terminus of said arm; means to lock said frame relative to said arm; a deflection arm rotatably connected at one end to said frame and at the other end to a sleeve; a depending,

vertically slidable bar mounted in said sleeve; and means to secure said bar to said sleeve; a rotatable sensing wheel mounted coaxially along said bar and means to retain said wheel on said bar; a spring biased cam follower mounted in said frame, and a plane surface cam portion on said deflection arm registrable with said cam follower, said cam follower and said cam portion operative to impede the free rotation of said deflection arm and to cause said arm to move towards a neutral position upon rotation in either direction therefrom; an indicator-pointer member and an indicator face member, said face member having indicia inscribed thereon, one of said members connected to said deflection arm and the other of said members mounted on said frame, said members positioned relative to each other to thereby indicate rotational movement of said deflection arm.

3,315,367

ELECTRONIC SPHEROMETERS
Thomas A. Walsh, Paramount, Calif., and Ray H. Strasbaugh, Downey, Calif. (3400 Airport Way, Long Beach, Calif. 90806); said Walsh assignor to said Strasbaugh
Filed Nov. 27, 1964, Ser. No. 414,381
10 Claims. (Cl. 33-178)

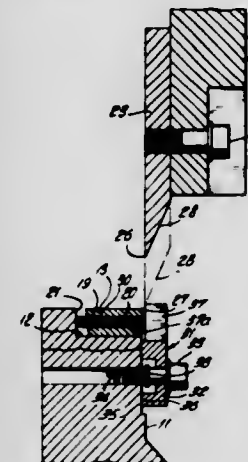


1. A device of the character described, adapted for measuring curvature or surface irregularities of a workpiece contacted thereby, the device comprising in combination:

- a longitudinal housing;
- work-contact means disposed adjacent one end of said housing and characterized by three contact elements, mutually spaced from each other equidistant in an annular plane which is generally perpendicular to said housing;
- a longitudinally adjustable probe, reciprocally carried by said housing and having a contact tip projecting therefrom perpendicular to said annular plane and selectively displaceable on either side of the plane of the three contact elements, the contact tip in such alternate positions thus being adapted to abut the continuous surface of a correspondingly shaped workpiece when the latter is located jointly against the contact tip and against the three contact elements;
- calibrated positioning means operatively coupled to the probe for longitudinally adjusting the same relative to the plane of the contact elements, whereby the probe may be located to define a designated convex or concave curvature of said continuous surface in conjunction with said trio of contact elements; and
- electrically-activated indicator means adapted to register longitudinal displacement of the reciprocable contact tip in either direction from a predetermined and variably set reference position relative to the curvature of said continuous surface.

3,315,368

BOOK TRIMMER KNIFE SETTING GAUGE
Benjamin Doby, New York, N.Y., assignor to H. Wolff Book Manufacturing Co. Inc., New York, N.Y., a corporation of New York
Filed Mar. 16, 1965, Ser. No. 440,089
1 Claim. (Cl. 33-185)

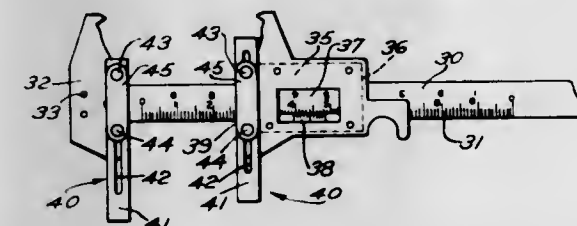


In a tool for setting an adjustable knife of a book trimming machine with an edge thereof in cutting alignment with an edge of a knife reciprocating vertically relative thereto, the combination which comprises:

- (a) an elongated bar having a substantially flat positioning surface formed on one side thereof;
- (b) a series of spaced extensions projecting upwardly from an upper surface of the bar;
- (c) said extensions having inwardly facing knife-positioning surfaces extending above an upper surface of a platform on which a cutting knife is adjustably supported and being located at points intermediate adjusting screws for said knife; and
- (d) means for releasably securing said bar to said platform with the positioning surface on the side of the bar in engagement with a mating surface on a side of the platform and with the inwardly facing surfaces of the extensions in opposing relation to a cutting edge of the adjustable knife and in alignment with a cutting edge of a cooperating knife which reciprocates vertically relative to and across the cutting edge of the adjustable knife.

3,315,369

MEASURING INSTRUMENT FOR OPTICAL FRAMES
Charles W. Johnson, Rehoboth, Mass., assignor to Sadler Bros., Inc., a corporation of Massachusetts
Filed May 7, 1965, Ser. No. 454,006
3 Claims. (Cl. 33-200)

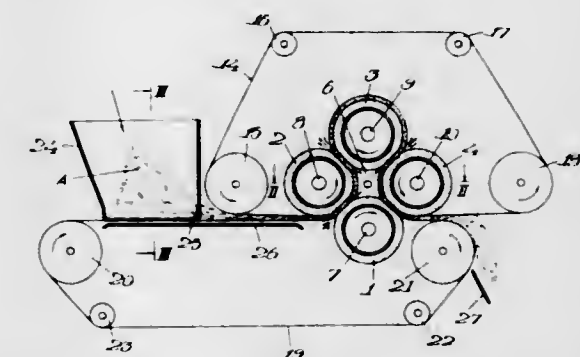


1. A measuring instrument for optical frames comprising an elongated body having scale indicia thereon, a first work contacting jaw fixed to the body and a second work contacting jaw slidable along the body toward and from the first jaw, arms carried by said jaws, said arms extending laterally of said body and in the plane of the body and parallel to each other and each arm having a finger extending transversely of the arm and offset from said plane providing work contacting points distant from the body and means for slidably mounting one of said arms on its jaw for movement in a line parallel to the

other arm toward and from said body to locate its work contacting point a distance from the body different than the location of the work contacting point of the other arm.

3,315,370

CONTINUOUS DEHYDRATING APPARATUS
Hiroshi Hikosaka, 7 1-chome, Hatooka-cho, Kita-ku, Nagoya-shi, Aichi-ken, Japan
Filed Mar. 26, 1965, Ser. No. 443,010
Claims priority, application Japan, May 6, 1964, 39/34,957
1 Claim. (Cl. 34-70)



A continuous dehydrating apparatus for ejecting and removing water contained in a cloth-like material, comprising,

- a frame,
- a plurality of rubber rollers arranged in ringlike axes-parallel disposition and contacting each other for obtaining equal peripheral speeds,
- each said roller being adjacent to and in contact with an oppositely rotating roller,
- the opposite end faces of said rollers being arranged with cooperant wall boards for defining an air tight chamber circumscribed by said contacting rollers and the wall boards,
- each said roller being gear driven for effecting opposite rotation of adjacent rollers,
- said cloth-like material being entrained around adjacent rollers from one to another along the rotary directions of said rollers and delivered outwardly through the rollers and into the air tight chambers,
- a source of compressed air and conduit means for delivery of a charge of compressed air into the air-tight chamber and ejecting the air outside through the portion of the cloth material held between the rollers so as to remove the water from the cloth material.

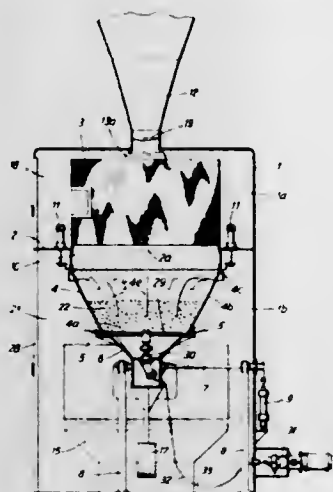
3,315,371

QUICK DRIER FOR DRYING MOLTEN AND PASTY MASSES AND FOR THE PRODUCTION OF POWDERS AND GRANULATES IN A HOT OR WARM AIR STREAM

Werner Glatt, Postfach 23, Haltingen, Baden, Germany, and Hermann Wiedmann, Rummingen, Lorrach, Germany; said Wiedmann assignor to said Glatt
Filed May 13, 1964, Ser. No. 367,179
Claims priority, application Switzerland, May 13, 1963, 5,948/63; Apr. 23, 1964, 5,262/64
16 Claims. (Cl. 34-82)

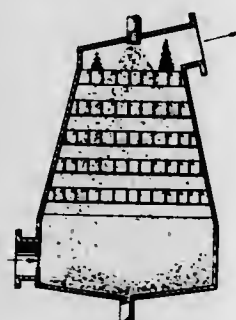
1. A quick drier apparatus for drying flowable and pasty masses and for the production of powders and granulates in a hot air current with a pressure beneath one atmosphere, comprising a housing, means for dividing said housing into at least a filter compartment and a hot air compartment, said filter compartment being disposed above and separated from said hot air compartment, container means for receiving material to be dried arranged in said hot air compartment, air suction means for reducing the air pressure above said hot air compartment to below atmospheric pressure in order to draw

air through said material to be dried, filter means for separating the air from said material to be dried, heater means for heating the air destined to flow through said material to be dried, said hot air compartment receiving the air heated by said heater means, means cooperating with said container means for generating from said hot air compartment a hot air stream which is directed down-



wardly into said container means through the material to be dried and then under the action of said air suction means back upwardly through said material towards the top of said container means, to thereby provide a double-pass of the hot air stream through said material in said container means, a filter located in said filter compartment, and means for connecting said filter in airtight relation to said container means.

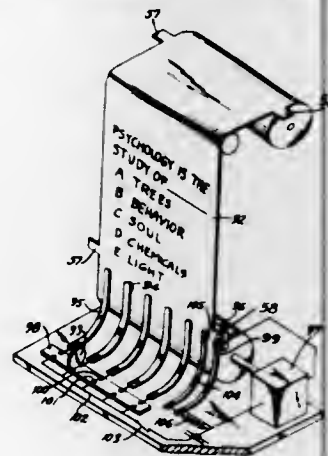
3,315,372
APPARATUS FOR UNIFORM DISTRIBUTION OF PEBBLES IN HEAT EXCHANGERS
Frederick Nettel, 173 Chapel Road, Manhasset, N.Y. 11030, and John Kreitzer, 52 Brixton Road, Garden City, N.Y. 11530
Filed Nov. 27, 1962, Ser. No. 240,352
4 Claims. (Cl. 34-168)



1. In a contact-type heat transfer apparatus using a stream of pebbles as heat carriers, which apparatus comprises upright chamber means in which heat is being transferred between a descending stream of pebbles and an upwardly flowing stream of elastic fluid, said pebble stream being at the place of its entry non-uniformly distributed across the fluid flow area, a system of spaced horizontal grid rods fixedly disposed in said chamber means in a plurality of horizontal layers in each of which the grid rods are parallel to each other, the layers being disposed at successively lower levels, over which rods the pebbles cascade downwards under the influence of gravity in free fall from one layer to the subjacent layer, while heat is being exchanged between said pebbles and said counterflowing elastic fluid, that improvement constituting the provision, in each of a plurality of said layers, of a predetermined number of grid rods having upper surfaces which are laterally asymmetrical, i.e., asymmetrical relative to the vertical plane through the centerline of such rod, for laterally deflecting pebbles impinging

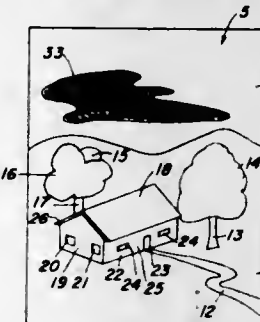
thereon in greater number to one side of such asymmetrical rods than to the opposite side, so as to move by said deflection falling pebbles away from the point of entry toward the walls of said chamber means, thereby attaining improved uniformity of pebble distribution across subjacent rod layers.

3,315,373
COIN CONTROLLED EDUCATIONAL DEVICE
Aaron Leonard Diamond, 4626 Moho St., Honolulu, Hawaii 96816
Filed Feb. 23, 1966, Ser. No. 529,395
13 Claims. (Cl. 35-9)



1. An educational device for assisting an individual in learning comprising a casing having at least one window opening therein, coin slots in the casing, means including at least one movable element having indicia thereon for presenting a series of problems in the window opening and having an aperture for each problem, said aperture having a predetermined relation to one of the coin slots and the subject matter of the problem, a source of power for advancing the movable element, and means including a coin inserted in one of the slots for providing a connection between the source of power and the movable element, selection of the proper coin slot by the operator enabling the aperture associated with it to permit the coin to complete the connection between the source of power and the movable element.

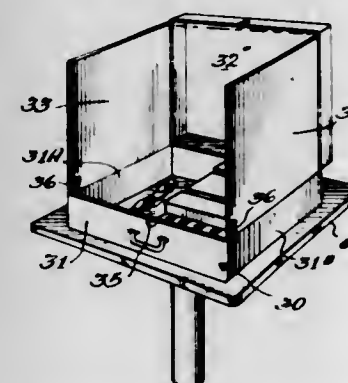
3,315,374
PICTURE AND METHOD OF MAKING SAME
John C. Geraty, 5225 W. Touhy Ave., Skokie, Ill. 60076
Filed Apr. 19, 1965, Ser. No. 448,936
8 Claims. (Cl. 35-26)



1. In an apparatus for making a picture, a base over which is a laminate that includes a layer of pressure-sensitive adhesive, a cover sheet over the pressure-sensitive layer and with the side thereof that faces the pressure-sensitive layer having a pressure release surface, said cover sheet having sections which overlay areas corresponding to portions of the picture, each section of the cover sheet being capable of being individually stripped from the pressure-sensitive adhesive to expose the subjacent area of pressure-sensitive adhesive which remains

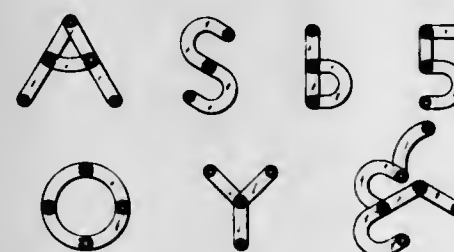
with the base said laminate including an additional layer of pressure-sensitive adhesive against the base, and a backing sheet between the two layers of pressure-sensitive adhesive, the base having a pressure release surface that facilitates stripping a selected portion of said backing sheet and additional layer of pressure-sensitive adhesive from the base to expose the subjacent surface thereof, the pressure release surface of said base being less releasable than that of the cover sheet so that said sections may be stripped without stripping the subjacent parts of the backing sheet from the base.

3,315,375
TEACHING SYSTEM
William L. Heinz, Spring Lake, Mich. (Crocker Citizens Bank Bldg., Suite 744, Riverside, Calif. 92501)
Filed May 19, 1964, Ser. No. 368,528
4 Claims. (Cl. 35-35)



1. A portable carrel for use in audio teaching systems which comprises a base storage case having opposed side walls, a lid for said case, said lid having a pair of opposed parallel edges, means for locking said lid to said case in a closed position, means for mounting said lid normal to said case along respective cooperative marginal edges thereof in an open position, a pair of acoustical panels, each of said pair of panels being adapted to be mounted respectively along one edge thereof to said opposed parallel edges substantially normal to said lid when said lid is in the open position, the vis-a-vis faces of said panels being acoustically treated to provide an acoustical chamber therebetween, said storage case containing electronic receiving and recording equipment comprising a receiver means for receiving a radio signal, amplifier means for said radio signal, a microphone means for providing an input signal to said amplifier, a tape recorder means electrically connected to said amplifier and adapted for recording said radio signal and said input signal, reproducer means for audibly reproducing the output from said tape recorder, and means for providing power to said electronic circuit.

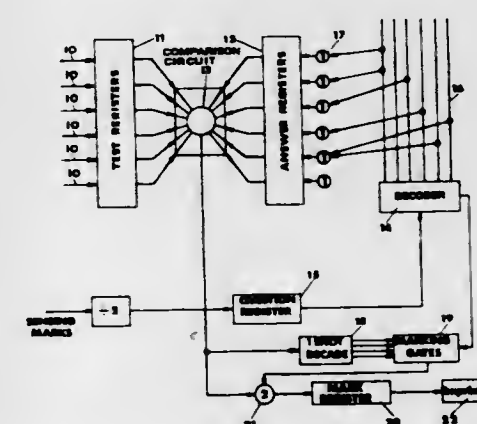
3,315,376
EDUCATIONAL TOY
Ruth A. Nielsen, 3304 W. Nelson, Midland, Mich. 48640
Filed July 12, 1965, Ser. No. 475,306
1 Claim. (Cl. 35-35)



A teaching device for constructing numerical and alphabetical characters which comprises a plurality of releasably connectible flat members including an elongated planar web and composed of an elastically de-

formable plastic material, said members consisting of an assortment of (1) straight elongated elements, (2) arc shaped elements and (3) substantially U-shaped elements; each of said elements having at least two identical indentations in one face of said web, one of said indentations being located at each of the opposite ends of each of said elements, each of said indentations being substantially cylindrical in shape and penetrating only a portion of the total thickness of the element, a substantially cylindrical projection integrally formed and extending outwardly from the face of said web of each element opposite each of said indentations, each of said projections being of a height substantially equal to the depth of said indentation, the height of each said projection being less than about one-fifth the diameter thereof, the outer diameter of each of said projections being substantially identical to the diameter of each of said indentations, the outer end portion of the cylindrical surface of each of said projections formed with a taper to provide a reduced diameter to facilitate alignment and initial engagement of said projection with an indentation of another said element, each of said indentations and said projections opposite thereto defining a through passage, said through passage extending from the base of said indentation through the face of said projection and disposed in axial alignment and concentric relationship with the peripheral surface of said projection defining therewith an elastically deformable annular wall, each of said projections mating with an indentation of a second element in an elastically deformable frictionally engageable press fit thereby providing detachable connecting means for joining said elements together, said elements being pivotally affixed one to another around the axis of the connecting means when attached together by one of said mating indentations and projections providing therewith an assembly arrangeable in a variety of configurations to simulate numerical and alphabetical characters.

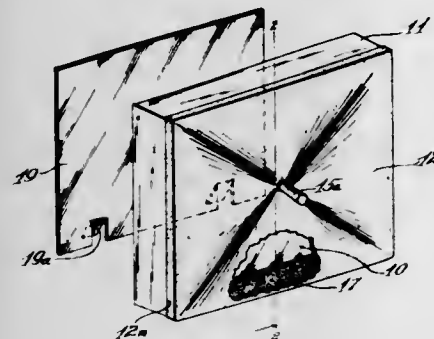
3,315,377
TEST SCORING MACHINE
Peter Frederic Thomas Cryer Stillwell, Aldershot, and Peter James Greaves, Harrow, England, assignors, by mesne assignments, to The Rank Organisation Limited, London, England, a British company
Filed Jan. 28, 1965, Ser. No. 428,626
Claims priority, application Great Britain, Jan. 28, 1964, 2,990/64
4 Claims. (Cl. 35-48)



1. Apparatus for scoring examination papers having a plurality of parallel columns of indicating marks, the presence or absence of said marks representing answers to examination questions and a separate column of marks parallel to said plurality of parallel columns representing the location of marks in the plurality of parallel columns, said apparatus comprising:
means for reading said marks in said plurality of parallel columns;

test register means, responsive to said means for reading said marks in said plurality of parallel columns, for storing electrical signals representing the presence or absence of said marks in accordance with their occurrence in a column of said plurality of columns; means for reading marks in said separate column; question register means, responsive to said means for reading marks in said separate column, for generating an output signal representative of the number of marks read by said means for reading marks in said separate columns; decoder means having a plurality of outputs connected to the output of said question register means for decoding the output signal of said question register means and for energizing said decoder outputs in accordance with said output signal; answer register means connected to the outputs of said decoder means for storing electrical signals representing the energized outputs of said decoder means; comparison means connected to the outputs of said test register means and said answer register means for comparing the outputs of said test register means and said answer register means and for generating an output signal when the outputs from said test register means and said answer register means compare in a predetermined manner; and means connected to the output of said comparison means for accumulating the output signals from said comparison means and for generating an output signal upon the completion of scoring all of the examination questions.

3,315,378
ERASABLE TRACING DEVICES
Charles B. Smith, 4157 N. Clarendon Ave.,
Chicago, Ill. 60613
Filed June 8, 1964, Ser. No. 373,465
7 Claims. (Cl. 35—61)

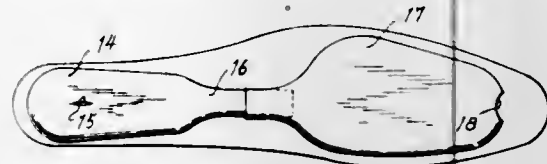


1. An erasable tracing device comprising a container having a transparent pane in one end, and a closure of elastic material for the other end, the container adapted to receive a powdered substance suitable to form a coating on the inner surface of the pane, and means carried by the closure and operable to trace line data through said coating on said inner surface in any direction.

3,315,379
AIR CIRCULATING INSOLE
Ramon D. Estandian, 482 Sanchez St.,
San Francisco, Calif. 94114
Filed Oct. 10, 1966, Ser. No. 585,587
2 Claims. (Cl. 36—3)

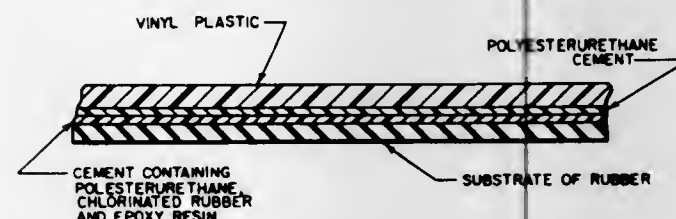
1. A cushioned air circulating insole for footwear with the configuration of the insole of a conventional shoe, comprising a laminated structure having an upper layer as a foot engaging surface, a bottom layer for contact with the insole surface of a shoe, an air circulating means disposed between said upper and lower layers consisting of two elastomeric elements connected together in co-extending heel and toe relationship, a check valve dis-

posed at the point of connection between said elastomeric elements adapted and arranged to limit the passage of air in one direction from the heel to the toe forming elastomeric element, characterized by the fact that the elastomeric elements are in the form of two opposed and connected balloon-like members of rubber in which the



elastomeric heel forming element is inherently expandable and has an open air inlet port that is intermittently opened and closed by the heel of a wearer in walking and the toe forming elastomeric element is of limp inflatable construction with an opening for the exhaust of air at the toe end thereof.

3,315,380
CEMENTED SHOE AND METHOD OF MAKING THE SAME
Edward C. Mack III, Salem, Denis P. Lynch, Cambridge, Arthur A. Pasqualini, Lynn, and Dino A. Canesi, Arlington, Mass., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio
Filed Feb. 25, 1963, Ser. No. 260,821
6 Claims. (Cl. 36—19.5)



1. An article of manufacture having cemented surfaces, one of the surfaces being that of a vinyl plastic, the other surface cemented thereto comprising a solid material composed of a major proportion of rubber, the cement being applied to said vinyl plastic before curing are consisting essentially of a 10-30% by weight solution of a polyesterurethane that is a tough, essentially linear elastomer, thermoplastic, extrudable, moldable, and becomes molten at elevated temperatures, is substantially free of cross-links, substantially soluble in dimethyl formamide, and comprises the reaction product obtained by heating a mixture comprising, as essential polyesterurethane-forming ingredients

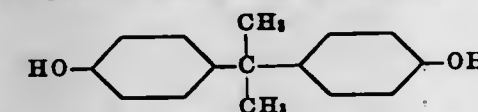
(a) one mole of an essentially linear hydroxyl-terminated polyester of a saturated aliphatic glycol having from 4 to 10 carbon atoms and having hydroxyl groups on its terminal carbon atoms and a material selected from the group consisting of a dicarboxylic acid of the formula



where R is an alkylene radical containing from 2 to 8 carbon atoms and its anhydride, said polyester having an average molecular weight between 600 and 1200 and having an acid number less than 10 and

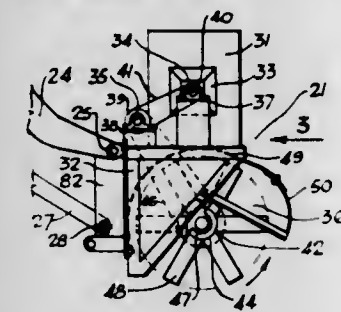
(b) from about 1.1 to 3.1 moles of a diphenyl diisocyanate having an isocyanate group on each phenyl nucleus in the presence of
(c) from about 0.1 to 2.1 moles of a saturated aliphatic free glycol containing from 4 to 10 carbon atoms and having hydroxyl groups on its terminal carbon atoms, the molar amount of said polyester and said free glycol combined being essentially equivalent to the molar amount of said diphenyl diisocyanate whereby there are essentially no unreacted groups

of the class consisting of isocyanate and hydroxyl groups in said reaction product, and the cement applied to said solid material composed of a major proportion of rubber being a cement consisting essentially of a 10-30% by weight solution of 90-25% by weight of the same polyesterurethane as described above and correspondingly 10-75% by weight of chlorinated natural rubber and an epoxide resin, the chlorinated rubber and the epoxide resin being present in approximately equal amounts by weight, and the epoxide resin being a resinous product resulting from the reaction of epichlorohydrin and a bisphenol such as



said resinous product having a molecular weight of from about 900 to about 4000 and a melting point of from about 64° C. to about 135° C.

3,315,381
ROTARY BROOM FOR MATERIAL HANDLING
Earl H. Fisher, 630 Casgrain Ave., St. Lambert, Montreal, Quebec, Canada
Filed Oct. 28, 1963, Ser. No. 319,611
Claims priority, application Canada, Sept. 6, 1963, 884,020
6 Claims. (Cl. 37—24)

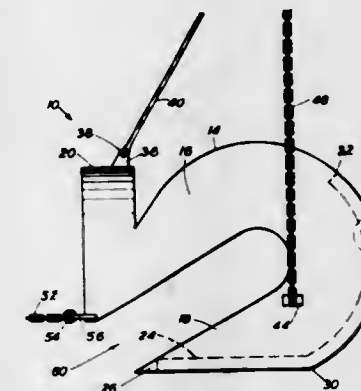


2. In a rotary side sweeping broom, the combination of a supporting frame having an open bottom, a horizontal shaft rotatably journaled in said frame, means for rotating said shaft, and a set of elongated sweeper blades of flexible material secured at circumferentially and longitudinally spaced points to said shaft and extending radially therefrom, said blades being of such length as to project downwardly through the open bottom of said supporting frame and engage material below the frame with a flexible sweeping action, said blades having flat surfaces disposed obliquely to the axis of said shaft and oriented toward one end of the shaft whereby material swept by the flexible blades may be simultaneously side delivered by the oblique blade surfaces and impelled laterally toward said one end of the shaft.

3,315,382
DRAGLINE BUCKET FOR ROCK
William D. Patch, Welch, Okla. 74369
Filed Mar. 25, 1963, Ser. No. 267,567
1 Claim. (Cl. 37—135)

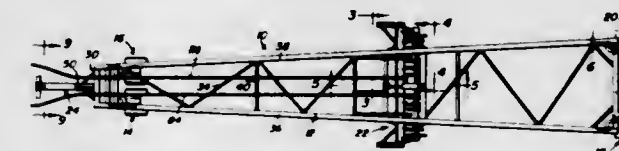
In a bucket for draglines, the combination which comprises a back wall, bottom means attached to said back wall and having forwardmost portions for engaging material, spaced vertically disposed C-shaped side walls, said side walls each having an upper and a lower arm with a recess therebetween, said recesses being open at the forward sides of said respective side walls, said lower arms being attached to sides of said bottom means, the rear walls of said recesses each terminating a substantial distance from the forward side of the rearward wall of the bucket for substantial material retention, the said lower arms of said side walls extending forwardly ap-

proximately to the forwardmost portions of said bottom wall for substantially retaining material from falling off the sides of said bottom wall, the upper and lower walls of said recesses being substantially spaced for permitting portions of large chunks of coal to protrude outwardly from said sides while carried by said bucket, yoke means extending from side to side of said bucket and extending from one of said side walls to the other and having a



concave surface on its underside and spaced upwardly from said bottom means for causing said yoke to have a minimum interference with material entering the forward side of said bucket, and said yoke means further having two sides each attached to forward portions of a respective side wall of said bucket, whereby an upwardly extending tilt-line can be attached to an intermediate portion of said yoke means for controlling tilt of said bucket.

3,315,383
LAND LEVELING DEVICE
William Glenn Hart, Box 3, Stratford, Tex. 79084
Filed July 29, 1964, Ser. No. 386,026
10 Claims. (Cl. 37—153)



1. A land leveler comprising, an elongated frame having a forward end and a rear end, a pair of caster wheel assemblies mounted by the frame at each of said forward and rear ends, means yieldably resisting angular displacement of the wheel assemblies at the rear end of the frame about laterally spaced vertical axes, a leveling blade mounted by the frame intermediate the forward and rear ends and means rotatably mounting said wheel assemblies at the forward end of the frame for free angular displacement about vertical axes spaced closer to each other than said axes at the rear end of the frame.

3,315,384
DEVICE FOR DIGGING TRENCHES AND PITS
Heinrich Weyers, Pater Eljardstraat 1, Stevensbeek, Netherlands
Filed July 8, 1964, Ser. No. 381,119
Claims priority, application Netherlands, July 12, 1963, 295,265
7 Claims. (Cl. 37—191)

1. A device for digging trenches or pits, which device consists of a digging element, which can be hingedly secured to an adjustable arm of an engine propelled vehicle and which can be driven by and operated from said vehicle, and which comprises an endless chain having right and left links interconnected by bolts and running

over two sprocket wheels, and being provided with a plurality of members for taking away the soil, said chain being stretched by means of at least one compression spring which acts between said sprocket wheels, wherein the said members for taking away the soil comprise a plurality of chisel shaped scraping-conveying members, protruding from the front side of the chain and each hav-

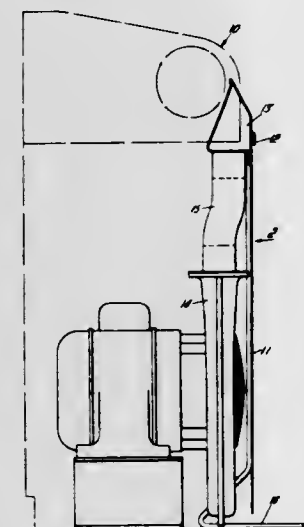


ing a working edge which is substantially parallel to the chain bolts and a working width which is smaller than the width of the trench to be dug, said scraping-conveying members being arranged alternately at the left side and at the right side of the chain, and between the said scraping-conveying members loosening members are provided, also arranged alternately at the right and at the left sides of the chain, which determine at least the sides of the trench to be dug.

3,315,385

FEEDING OF LAUNDRY FLATWORK

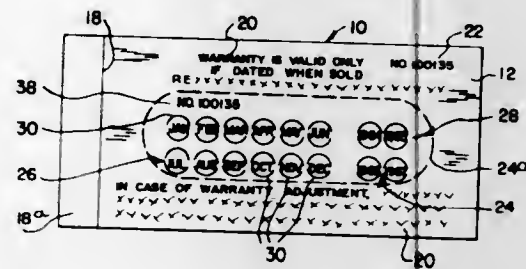
Ernest Taylor, Nottingham, England, assignor to Manlove, Allott, & Co. Limited, Nottingham, England
Filed Nov. 25, 1964, Ser. No. 413,696
Claims priority, application Great Britain, Nov. 26, 1963, 46,708/63
3 Claims. (Cl. 38-143)



1. A laundry flatwork straightening device, comprising a flat plate having a plain surface and means subjecting the trailing portion of each sheet, or like flatwork piece, to the action of an unconfined stream of air while said trailing portion is travelling past said plain surface, the air stream being strong enough to create a turbulent condition of the material of said trailing portion and being generally in a direction opposite to the direction of travel of the sheet at the time.

3,315,386
LABEL

Donald O. Kest, Cleveland, Ohio, and Haugan W. Figgis, Detroit, Mich., assignors to Alroy Printing Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 4, 1965, Ser. No. 412,979
7 Claims. (Cl. 40-2)

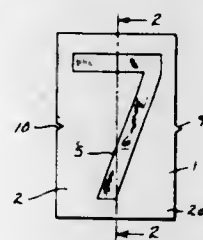


1. A label-like article adapted for application to a product for indicating information comprising, a facing member having an encompassing section and a severable section surrounded by said encompassing section, adhesive means secured to the inner face of said sections, a backing member detachably connected to said facing member by said adhesive means, said backing member having an encompassing section and a severable section surrounded by said encompassing section, the severable section of said facing and backing members being disposed in generally confronting relationship with one another, whereby the encompassing section of said backing member is adapted to be removed from said facing member so as to leave the severable section thereof in said confronting relationship with the severable section of said facing member thereby to prevent exposure of the adhesive means on the severable section of said facing member.

3,315,387

ADHESIVE LABELS WITH STRUCTURAL ALIGNMENT MEANS

Elliott G. Heuser, Mequon, Wis., assignor to W. H. Brady Co., Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 22, 1965, Ser. No. 501,916
5 Claims. (Cl. 40-2)

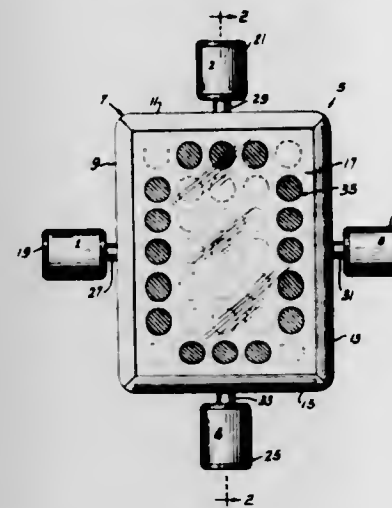


1. In an adhesive label comprising a first layer, a pressure sensitive adhesive layer covering one side of the first layer, and a backing releasably joined to the adhesive layer on the opposite side thereof from the first layer, said backing being removable from the adhesive layer without separating the adhesive layer from the first layer and said first layer including a legend which is to be adhesively affixed to an object; the combination wherein said label includes (1) at least one tab projecting from a marginal portion of the label, and (2) at least one notch defined in an opposite marginal portion, whereby the label can be aligned with a second label of the same construction upon interengagement of a tab of one label with a notch of the other; and wherein (3) the entire first layer forms the legend which is to be adhesively joined to an object and the legend can be adhered to an object when the backing under the legend is removed to uncover the pressure sensitive adhesive layer underneath the legend.

3,315,388

DISPLAY DEVICE

Robert J. Stahl, New York, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Aug. 26, 1965, Ser. No. 482,852
7 Claims. (Cl. 40-28)

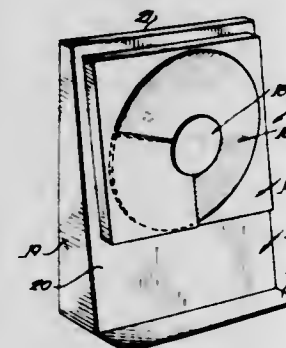


1. A visual display device comprising: an array of elements in predetermined arrangement for visually displaying intelligence in a first numbering system; and means for selecting and activating certain of said elements in response to a signal representing intelligence received in a second numbering system, said means being spaced from said elements and including a substantially planar code plate having indicia and means for causing relative movement between said code plate and said array of elements in at least one of four lateral and one of four vertical positions in a plane substantially parallel to the plane of said code plate and said array of elements to provide contact between certain of said indicia and certain of said elements and cause activation of said certain elements to provide a visual display of intelligence in said first numbering system.

3,315,389

DISPLAY DEVICE

Fred Drueck, Jr., Chicago, Ill., assignor to Prevue Display Services, Inc., Chicago, Ill., a corporation of Illinois
Filed Sept. 16, 1965, Ser. No. 487,749
9 Claims. (Cl. 40-53)



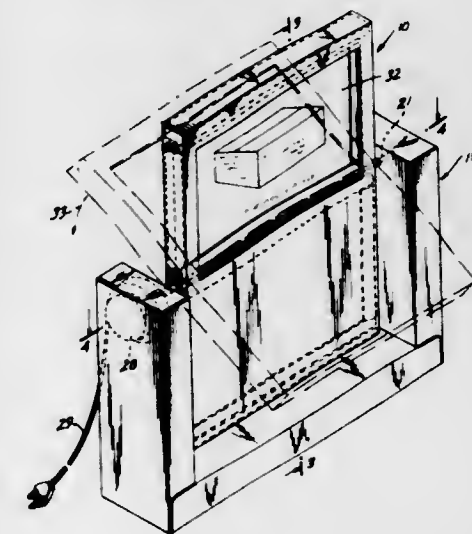
1. A display device comprising, in combination: a support stand having a front wall; motor means having a shaft secured to said front wall, said motor means being of the reversing type when its direction of rotation is restricted; drive means secured to said shaft; a front panel secured to said front wall of said support stand having a slot formed therein extending from one side edge thereof to its center; and a disk having a slot formed therein extending from its edge to its center rotatably

secured to said front panel and adapted to extend through said slot in said front panel as it is rotated; means secured to said disk which engage said drive means, whereby said disk is rotated; and stop means engaged by said drive means to thereby cause said motor means to reverse its direction of rotation and cause said disk to pass back into said slot in said front panel.

3,315,390

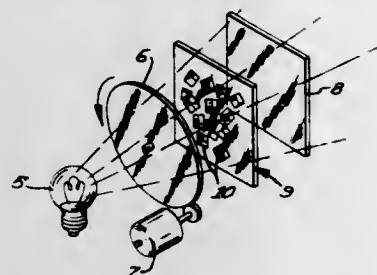
DISPLAY DEVICE FOR SUCCESSIVELY EXHIBITING DIFFERENT DISPLAYS

Richard E. Paige, New York, N.Y., assignor to Paper Products Development Corporation, New York, N.Y., a corporation of New Jersey
Filed Mar. 26, 1964, Ser. No. 354,999
8 Claims. (Cl. 40-81)



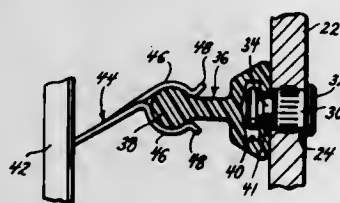
1. In a display device: a shallow rectangular cardboard box composed of opposed sections each of which comprises a relatively large main wall and relatively narrow peripheral walls, said sections being telescopically interfitted so that said peripheral walls lie in overlapping relation and define two-ply side and end walls on the box, a rigid rod extending horizontally across the center of said box with its ends projecting out through the telescoped sections of the opposed side walls thereby constituting means for locking said opposed sections, means for securing said rod to at least one of said side walls, means for supporting said rod ends for rotation of the rod on its axis, and means for slowly rotating said rod so that the box will rotate and bring its opposite end walls alternately to a relatively raised position, each main box wall having a display opening, said openings being symmetrically arranged with respect to the rod axis, an odd number $(2x+1)$ of rectangular cardboard display panels within said box, each being of a size to fit within one half of the box on one or the other side of said rod, said panels bearing display indicia on each of their faces, the box depth between its main walls being just sufficient to accommodate $(x+1)$ of said panels in superposed relation, and the display panels being provided with enlarged smoothly rounded stiffeners along their edges to rigidify the panels and assure free sliding of the panels successively and by gravity from one end region of the box to the other as the box rotates, whereby $(4x+2)$ different display faces can be brought successively to view through said display openings.

3,315,391
ILLUSORY MOTION DISPLAY DEVICES AND METHOD OF MAKING SAME
 Thomas H. Lane, Wayzata, and William E. Tomlinson, Minnetonka, Minn., assignors to Anagraphic Corporation, Minneapolis, Minn., a corporation of Minnesota
 Filed Apr. 7, 1964, Ser. No. 357,891
 9 Claims. (Cl. 40-106.52)



6. An illusory motion display device comprising, a source of light, a rotatable sheet of polarized transparent material mounted for rotation ahead of said light source in position so that the light therefrom will pass there-through, as said sheet is rotated, means for rotating said sheet, a sheet of transparent rigid substantially non-elastic thermoplastic material disposed ahead of said rotatable sheet of polarized material in the path of the light passing therethrough and extending generally transversely thereof, and a sheet of polarized transparent material disposed on the side of said sheet of plastic material opposite to said rotatable sheet of polarized material, certain areas of said sheet of transparent rigid thermoplastic material being maintained under fixed abnormal internal stress of different magnitudes whereby an illusion of motion is created therein by the light cast thereupon by said source through said rotatable sheet of polarized transparent material.

3,315,392
DISPLAY SIGNS
 Lindell N. Edwards, St. Louis, Mo., assignor to Commander Board International, Inc., St. Louis, Mo., a corporation of Missouri
 Filed May 23, 1966, Ser. No. 552,301
 9 Claims. (Cl. 40-143)



1. A display sign which comprises:
 - (a) a panel that has a plurality of openings therein,
 - (b) a fastener that is disposed within one of said openings,
 - (c) a second fastener that is disposed within another of said openings,
 - (d) each of said fasteners having a portion thereof that projects outwardly in rigid and unyielding fashion beyond the edge of the opening, in said panel, in which said fastener is disposed and that coacts with said panel to resist movement of said fastener forwardly through said opening in said panel,
 - (e) each of said fasteners having a further portion thereof that is disposed forwardly of the front of said panel and that is dimensioned to pass forwardly through said opening in said panel,
 - (f) a support that is selectively securable to or separable from the first said and said second fasteners and that has a portion thereof which is adapted to releasably receive a resilient clip that is secured to an indicia to releasably secure said indicia to said support,

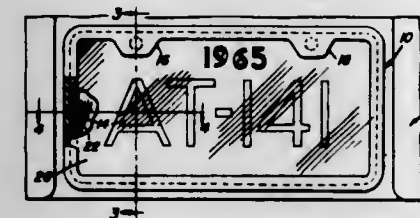
- (g) said support being too large to pass through the first said or said other opening and being dimensioned to span the distance between the first said and said other openings in said panel, and
- (h) interacting surfaces on said support and on said further portions of said fasteners that releasably engage each other and that enable said support to resist movement of said fasteners rearwardly through said openings, in said panel, in which said fasteners are disposed whenever they are in engagement with each other,
- (i) whereby the first said and said second fasteners can be passed forwardly through said one opening and said other opening until said further portions thereof are disposed forwardly of said panel and said interacting surfaces can be moved into engagement with each other so said support and said fasteners can coact with said panel to constitute mutually-interlocking elements that can remain in assembled relation with each other despite the application to said support and fasteners of rearwardly-directed and forwardly-directed forces as said resilient clip is releasably secured to and separated from said support.

3,315,393
DISPLAY SIGN STANDARD
 Nathan Louft, Washington, D.C.; Rosemary Louft, executrix of the estate of Nathan Louft, deceased, assignor to Rosemary P. Louft and Doris J. Louft, both of Silver Spring, Md.
 Filed Feb. 1, 1965, Ser. No. 429,483
 4 Claims. (Cl. 40-145)



1. A display sign construction for supporting a pair of flat sign placards comprising a right angled standard having right angularly related integral flanges, one of said flanges having a flat outer face formed with a hole there-through and against which one said sign placard is adapted to be in face to face relationship, a spacer member of a width of the inner face of the other of said flanges and having an opening aligned with the hole in the one flange, a bolt passed through the aligned hole and opening, said spacer member having a flat outer face against which the second of said flat sign placard is adapted to lie in face to face relationship, said bolt having threaded end portions projecting beyond the outer face of the one flange and the outer face of the spacer member, and nut means detachably attached to said end portions and adapted to lock the sign placards against the said faces, said spacer member being a one piece right angled member and having right angularly related integral flanges, one of said spacer member flanges having a free edge abutting the inner face of said one standard flange and the other of said spacer member flanges having the flat outer face and opening and being disposed in spaced parallel relation with said one flange of the standard.

3,315,394
STRETCH-ON LICENSE PLATE FRAME
 Richard D. Kluck, 4583 N. Elston, Chicago, Ill. 60630
 Filed Apr. 1, 1965, Ser. No. 444,591
 3 Claims. (Cl. 40-209)



1. In combination, a stretch-on license plate protector comprising a resilient integral marginal frame having an inwardly opening groove extending around its outer periphery for receiving the marginal edges of a license plate to be protected, a transparent sheet carried by said frame having its peripheral edge portions received in corresponding positions of said groove and adapted to be disposed in contiguous relationship to the face of a license plate also having its peripheral edge portions received in said groove, a pair of integral flaps projecting inwardly from said marginal frame and adapted to overlies the adjacent ends of fasteners utilized to secure the license plate to a vehicle, said flaps being provided with concave recesses adapted to receive the adjacent ends of said fasteners.

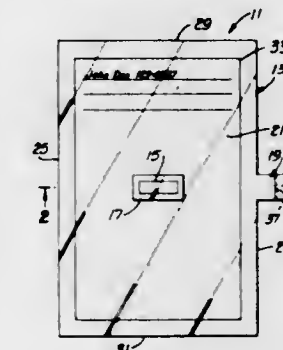
3,315,395
WRITING INSTRUMENT PROVIDED WITH DISPLAY FEATURE
 George W. Kirklen, 754 Manchester Drive, Chattanooga, Tenn. 37415
 Filed Sept. 10, 1965, Ser. No. 486,429
 5 Claims. (Cl. 40-334)



1. In a writing instrument, a barrel provided with at least one window part, a cartridge mounted in the barrel for advancement and retraction from the writing end of the barrel, a spring surrounding the cartridge and urging it rearward, an actuating mechanism for latching and unlatching the cartridge in its advanced position, said mechanism including a cup-shaped ratchet surrounding the rear end of the cartridge and moving both axially and arcuately during operation of said mechanism said ratchet being an element entirely separate from said cartridge, an elongated sleeve coaxially surrounding but unconnected to said cartridge, means on said ratchet and means on said sleeve for connecting the rear end of said sleeve to said ratchet so that the sleeve will partake only of the arcuate movements of the ratchet, and indicia on the external surface of said sleeve positioned to show through said window, the independence of said cartridge

of both said ratchet and said sleeve permitting the cartridge to be removed and replaced without disturbing said sleeve and ratchet.

3,315,396
POCKET TELEPHONE ATTACHMENT
 Marshall S. Hacker, 12013 Thermo St., Los Angeles, Calif. 90066
 Filed Apr. 30, 1965, Ser. No. 452,303
 10 Claims. (Cl. 40-336)



1. A pocket telephone attachment for holding a memo and adapted for use with a telephone having a metal baseplate spaced vertically from a supporting surface by a plurality of depending feet, the space between the baseplate, the supporting surface, and two adjacent feet defining an elongated opening, said pocket telephone attachment comprising:

an envelope of a size to be insertable into the elongated opening and having a transparent upper face and an opposed lower face, said envelope having at least one aperture through which the memo may be inserted, the memo being visible through said transparent upper face when it is in said envelope;

magnetic means;

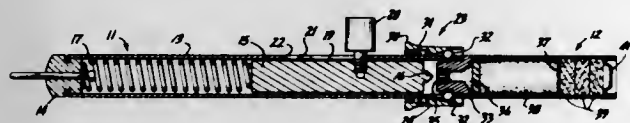
means for securing said magnetic means to at least one of said faces, insertion of said envelope through the elongated opening causing said magnetic means to releasably secure said envelope to said metal baseplate; and

a tab secured to said envelope for moving said envelope through the opening, said tab extending outwardly from one edge of said envelope through the opening and beyond the perimeter of the telephone when said envelope is magnetically secured to the baseplate, said tab being secured to said envelope generally centrally of said magnetic means to avoid the application of torque to said envelope about said magnetic means in response to exertion of outwardly directed removing forces on said tab.

3,315,397
FLARE GUN HAVING QUICK DISCONNECT COUPLING
 Clarence W. Gilliam, Crane, and Richard D. Smith and John E. Wildridge, Washington, Ind., and Raymond W. Szypulski, Berwyn Heights, Md., assignors to the United States of America as represented by the Secretary of the Navy
 Filed Nov. 29, 1965, Ser. No. 510,478
 3 Claims. (Cl. 42-1)

1. A gun for launching a pyrotechnic signal in a cartridge having a circumferential groove around the outer periphery thereof, said gun comprising:
 - a cylindrical tube having a closed end and an open end,
 - a cylindrical firing pin slidably positioned within said cylindrical tube and having a pointed striker on the forward end thereof,
 - a coiled spring within said cylindrical tube between said closed end and the rear end of said firing pin,

- a longitudinally extending firing slot through the wall of said cylindrical tube,
 a longitudinally extending cocking slot through the wall of said cylindrical tube, said cocking slot being parallel to and shorter than said firing slot,
 a cross slot connecting the rearward ends of said firing slot and said cocking slot,
 a cocking pin connected to said firing pin and passing through and being movable in said firing and cocking slots,



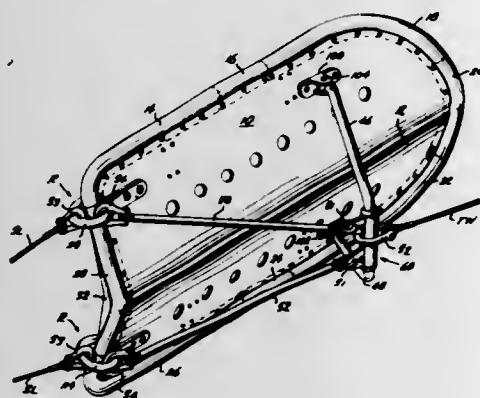
- a plurality of equally spaced tapered holes near said open end of said cylindrical tube,
 a plurality of spherical balls positioned one each in each said tapered hole, said balls being engageable with said circumferential groove in said cartridge,
 a sleeve slidably positioned on the outer periphery of said cylindrical tube, said sleeve having an inner tapered surface engageable with said plurality of spherical balls, and
 spring means for biasing said tapered surface against said balls.

3,315,398 TRAWL DOORS

Frank J. Luketa, 5567 Greenwood Ave. N.,
Seattle, Wash. 98103

Application Apr. 23, 1965, Ser. No. 453,870, which is a continuation of application Ser. No. 291,203, June 27, 1963, now Patent No. 3,269,048, dated Aug. 30, 1966. Divided and this application Jan. 17, 1966, Ser. No. 521,190

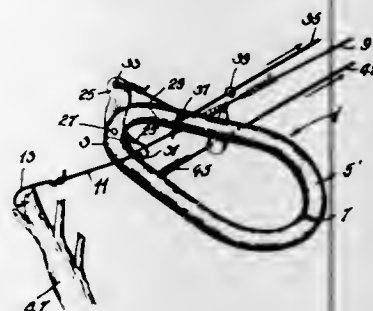
12 Claims. (Cl. 43—9)



1. A trawl door of the type adapted to be towed in the water by a towing warp leading from a trawling vessel to said door and used for spreading a side portion of the trawl net, said door comprising a water reaction panel and a bridle assembly including a bridle leg forming member secured to said panel and having a substantially straight section offset from said panel and including spaced abutment means; a line connector at said substantially straight section comprising a pair of related connector members together substantially surrounding said substantially straight section and positioned between said abutment means, said members together including at least one coupler aperture; bridle leg means interconnected between said panel and said line connector, and including a line coupler engaged in said coupler aperture; and means interconnecting said related connector members.

3,315,399 FISHING LURE RETRIEVER

Jean Couture, 305 Angers St., Jonquiere,
Lapointe County, Quebec, Canada
Filed Nov. 4, 1964, Ser. No. 408,779
4 Claims. (Cl. 43—17.2)



1. A fishing lure retriever comprising:
 (a) a weighted body capable of sinking in water and including a U-shaped part having a first and a second leg spaced from one another and connected by an arcuate piece merging into said legs;
 (b) said piece being formed with a through slot extending centrally longitudinally thereof;
 (c) a bell-crank lever having a pair of angularly disposed arms and a fulcrum at the apex thereof mounting said lever substantially centrally of said piece and in said slot for rotation of the lever about an axis normal to the general plane of said U-shaped part;
 (d) said first leg having a guiding passage therethrough;
 (e) a pull-line extending across said guiding passage and connected to the free end of one of said arms whereby, when said pull-line is pulled, said lever is rotated and the other arm of said pair is drawn nearer the second leg;
 (f) a fishing line catching hook formed at the end of said other arm of said pair in the shape of a notch opening toward said second leg.

3,315,400 FISHING ROD FOR CONVENTIONAL FISHING AND SPIN FISHING, AND NON-FOULING LINE GUIDES INCORPORATED THEREIN

Jule C. Axelson, Newport Beach, Calif., assignor to Axelson Fishing Tackle Mfg. Co., Newport Beach, Calif., a corporation of California
Filed Nov. 13, 1964, Ser. No. 410,954
15 Claims. (Cl. 43—24)

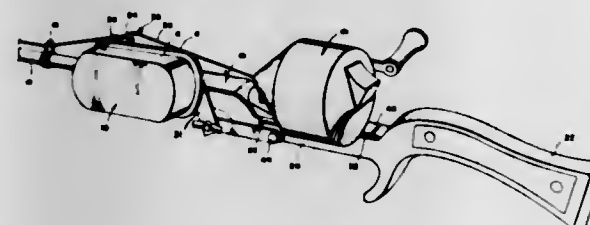


14. A single-roller non-fouling line guide for mounting on a portion of a fishing rod shaft in spaced relationship from the tip of the shaft, which comprises:
 a body having a front portion and a rear portion, said front and rear body portions being generally angularly related to each other and joining each other at a bridge region,
 roller-mounting means provided on one of said body portions,
 the other of said body portions being devoid of roller-mounting means,
 a roller mounted in said roller-mounting means, and first and second line-receiving slots formed, respectively, in said front and rear body portions for reception of a fishing line,
 each of said slots being sufficiently long that said fishing line, when in taut condition and engaged tangentially with either the region of said roller nearest said shaft portion or the region of said

roller farthest therefrom, may extend parallel to said shaft portion without contacting either of said body portions.

3,315,401 SUPPORT FOR FISH-BITE DETECTING DEVICE

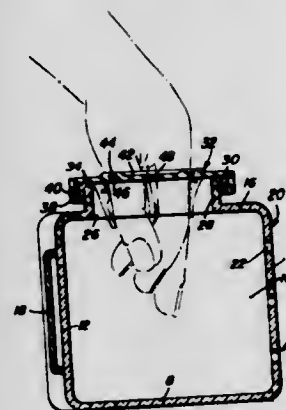
Burton E. Wagner, 350 W. Crocker St.,
Fostoria, Ohio 44830
Filed May 20, 1965, Ser. No. 457,415
2 Claims. (Cl. 43—25)



1. An attachment for securing a fish-bite signalling device to a conventional fishing rod and reel, comprising:
 (A) a first portion inserted between the rod and reel together with first means fixing said first portion therebetween in locking relationship;
 (B) a second portion extending generally transversely of said first portion;
 (C) second means adjustably securing said second portion to said first portion such that said second portion may rotate with respect to said first portion, when desired; and
 (D) third means mounting the signalling device upon said second portion.

3,315,402 LIVE BAIT CONTAINER WITH IMPROVED COVER

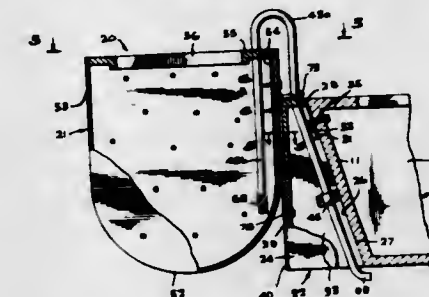
Charles D. Scott and Earl Lutzenhiser, Helena, Mont., assignors of three-sixteenths to Leo J. Kottas, one-fourth to Sam Copenhaver, and one-eighth to Frank Griffin, all of Helena, Mont.
Filed Oct. 1, 1964, Ser. No. 400,728
6 Claims. (Cl. 43—55)



4. In combination with a container including portions marginally encompassing and defining an opening in said container, a panel-like closure member including a reinforced outer peripheral rim portion removably secured to said portions of said container, said panel-like member being constructed of deformable and resilient material and including an elongated endless reinforcing belt spaced inwardly of said rim portion and marginally encompassing an area within said belt, said area being registered with said opening and provided with a normally closed, elongated, expansible and contractible pressure responsive slit defining closely adjacent opposing lips on opposite sides of said slit.

3,315,403 LIVE BAIT CONTAINER DEVICE

Thomas A. Smith, Sun Valley, Calif., assignor of one-half to Fred D. Massimini, Los Angeles, Calif.
Filed Oct. 20, 1964, Ser. No. 405,074
3 Claims. (Cl. 43—55)

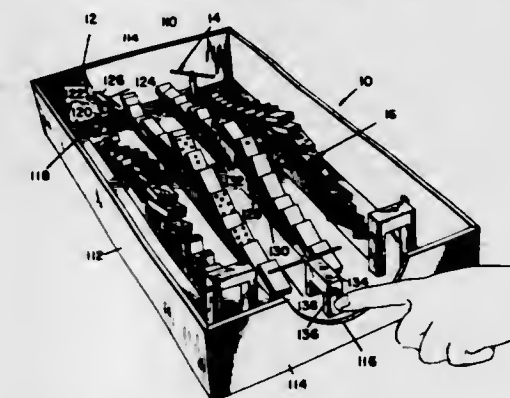


1. A live bait container device for use with a boat comprising:
 a bait container having a plurality of openings in the surface thereof;
 support means connected to said boat and mounting said container on the transom of said boat for movement substantially vertically with respect to the water level;
 means for holding said container in an up position substantially out of the water when the boat is under way;
 probe means connected to said support means in fixed relationship with said boat and having an inlet opening continually located in said water and facing in the direction of movement of the boat for moving water into said container when the boat is in motion;
 means for supporting said container in a lower position when the boat is stationary or drifting with a major portion of the container in the water;
 said support means comprising a pair of sides each having an edge engaging said transom and a second substantially vertical edge;
 a substantially vertical panel secured to said vertical edges and supporting first slide means;
 second slide means on said container cooperating with said first slide means to provide for vertical movement of said container; and
 means connecting said sides to said transom.

3,315,404 GAME EMPLOYING SUCCESSIVELY TOPPLING GAME PIECES

Leonard B. Rosen, R.D. 2, Jamestown, Pa. 16134
Original application Aug. 25, 1964, Ser. No. 392,375. Divided and this application Mar. 17, 1966, Ser. No. 535,235

3 Claims. (Cl. 46—1)



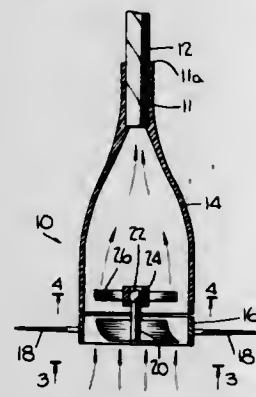
1. A racing-type amusement device comprising:
 a game board having a planar bottom with a plurality of playing paths extending therealong in spaced parallel relation;
 a pivotal gate means disposed at one end of said board between at least two of said playing paths;

said gate means including a pair of projecting arms adapted to extend at least partially across each of said paths;
 a pivotally mounted indicating flag disposed at the opposite end of one of said paths;
 a plurality of upstanding playing pieces disposed in spaced alignment along said playing paths;
 said pivotally mounted indicating flag including a depending leg extending into said path;
 said playing pieces having means whereby said pieces are adapted to be successively toppled upon digital actuation of one piece in one path to thus strike and pivot said gate means projecting arms to in turn successively topple the playing pieces in the next adjacent path until the last piece in said next adjacent path strikes said depending leg to cause said indicating flag to pivot to a lowered position.

3,315,405

DRINKING STRAW ATTACHMENT

Arthur L. Hoffer, 117 High St., Woodbridge, N.J. 07095
 Filed Sept. 23, 1964, Ser. No. 398,551
 2 Claims. (Cl. 46-41)

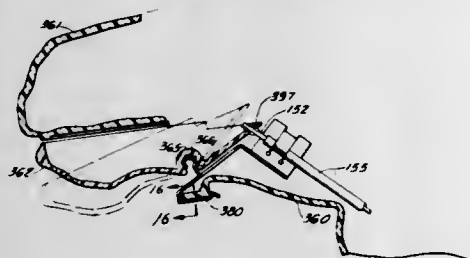


1. A drinking straw attachment comprising:
 a first housing having a first end and a second end,
 a second housing rotatably mounted about an axis at said second end of said first housing and having an interior in communication with said interior of said first housing,
 impeller means fixedly mounted within said second housing to cause said second housing to rotate when fluid passes through said second housing into said first housing,
 and receiving means at said first end longitudinally aligned with said axis for detachably receiving a drinking straw, said receiving means being in communication with the interior of said housing.

3,315,406

ANIMATED SPEAKING FIGURE TOY

John W. Ryan, Bel-Air, Calif., assignor to Mattel, Inc., Hawthorne, Calif., a corporation of California
 Original application Feb. 8, 1963, Ser. No. 257,123, now Patent No. 3,230,665, dated Jan. 25, 1966. Divided and this application Nov. 1, 1965, Ser. No. 505,895
 6 Claims. (Cl. 46-118)



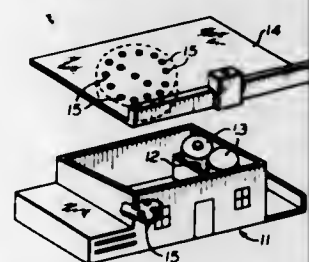
1. In a toy figure adapted to simulate a talking animal, the combination comprising:
 a semi-rigid forward body part forming an upper jaw

part simulating the upper jaw of said animal and a ledge subjacent said upper jaw part;
 a semi-rigid lower jaw part adapted to simulate the lower jaw of said animal, said lower jaw part including an embossment having an arcuate opening provided thereon;
 a bracket having a rolled end engaging said arcuate opening to pivotally mount said lower jaw part in said toy, said bracket also including a clip connecting said bracket to said ledge for pivotally mounting said lower jaw part subjacent said upper jaw part;
 a phonograph device mounted in said toy for playing sounds characteristic of sounds emitted by said animal, said phonograph device including a turntable having a cam groove provided thereon, said groove having a predetermined shape; and
 connecting means connecting said lower jaw part to said groove on said turntable for pivoting said lower jaw part when said phonograph is played, said connecting means including a cam follower following the predetermined shape of said groove, whereby said lower jaw part will be opened and closed in a predetermined manner when said phonograph device is played.

3,315,407

ELECTRIC MOTOR DRIVEN NOISE SIMULATOR

Noel L. Case and Bernard J. Tuschak, Girard, Pa., assignors to Louis Marx & Co., Inc., New York, N.Y., a corporation of New York
 Filed July 14, 1964, Ser. No. 382,563
 1 Claim. (Cl. 46-232)



In a noise simulator, the combination comprising a planar base, sound releasing means in said planar base, an annular frame secured to said planar base and surrounding said sound releasing means, a sounding board carried by said annular frame and spaced thereby from said planar base, a motor mounted on said frame on a side of said sounding board away from said planar base and adapted to be operated by an energy source, an elongated rotor attached to the armature shaft of said motor for rotation therewith, the central axis of said elongated rotor being perpendicular to the axis of said armature shaft, and a striking element slidably carried by said rotor and adapted to extend partially beyond one end of said rotor in its outer limit of movement, said rotor being positioned for rotation in a plane perpendicular to the plane of said sounding board, said striking element being positioned to strike said sounding board as said rotor is rotated and said striking element is urged to its outer limit of movement.

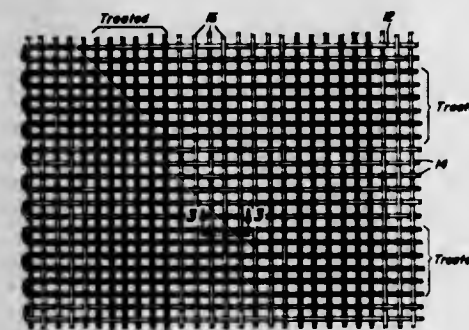
3,315,408

SOLUBLE FIBROUS MATERIAL FOR CONTROLLING SOIL EROSION

Sidney G. Fisher, 38 Riverside Drive, Charleston, S.C. 29403
 Filed Mar. 22, 1965, Ser. No. 441,776
 5 Claims. (Cl. 47-9)

1. A protective mat for placement on the ground comprising a plurality of elongated hollow core yarns formed from soluble cellulosic derivative material, said yarns being intertwined and spacedly related in an open mesh fashion, each of said yarns being filled with a fluid mate-

rial selected from the group consisting of fertilizers, pesticides and weed killers and said yarns having walls rupturable and disintegrable by a biochemical reaction caused

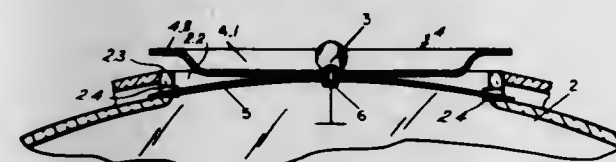


by micro-organisms in the ground when the yarns are placed on the ground in contact with the soil so as to release at a predetermined time the fluids in the yarn for contact of the fluids with the ground.

3,315,409

GREENHOUSE

Noe J. Poulin, Box 41, Quinebaug, Conn. 06262
 Filed Oct. 27, 1965, Ser. No. 505,328
 8 Claims. (Cl. 47-17)

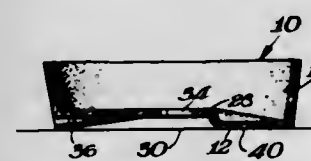


1. A greenhouse comprising:
 a light-admitting housing having a flat apex with an opening having a rim formed by a wall portion of the housing, and having opposite slots in said wall portion;
 a cover for said opening capable of resting freely on said rim; and
 a bimetal strip extending with its ends into respective slots, at its intermediate region centrally contacting said cover, and oriented uniformly to lift said cover from the opening upon direction of the strip by temperature rise.

3,315,410

MOLDED PULP CONTAINER

Richard S. French, Waterville, Maine, assignor to Keyes Fibre Company, Waterville, Maine, a corporation of Maine
 Filed Nov. 3, 1965, Ser. No. 506,223
 6 Claims. (Cl. 47-34)



1. A container molded of fibrous pulp material comprising a bottom having an upwardly and outwardly flaring side wall connected around the periphery of the bottom, the connection between the bottom and the side wall forming a corner lying in a substantially flat plane defining the lower extremity of the container for supporting it on a surface, the bottom including a horizontal center portion spaced above the substantially flat plane and a conical portion that extends upwardly from the corner to the horizontal center portion, a drainage aperture extending through the horizontal center portion of the bottom, downwardly contoured support means formed in the conical portion of the bottom to extend from adjacent the aperture, the lower extremity of the sup-

port means lying along its entire length in the substantially flat plane to maintain the aperture spaced above the substantially flat plane, upwardly contoured channel means formed in the conical portion of the bottom to extend from the horizontal center portion of the bottom to the corner, the channel means being spaced from the support means and forming a brief interruption in the corner defining the lower extremity of the container.

3,315,411

TREE PROP

James Fitzgerald, Ravenna, Ohio, assignor to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey

Filed Nov. 12, 1964, Ser. No. 410,353
 4 Claims. (Cl. 47-43)

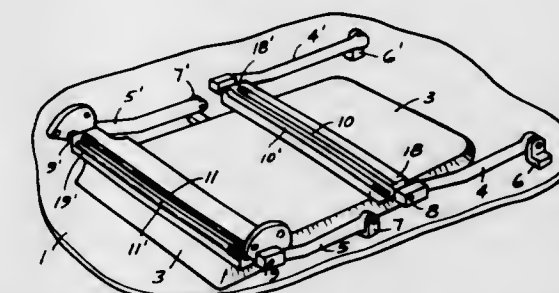


1. A tree prop assembly, comprising, in combination, a pole, means adjacent the lower end of the pole to serve as a foot rest to force the pole into the ground and to limit the depth to which the pole may be inserted in the ground, tree engaging means adjacent the upper end of the pole to embrace a portion of the tree to be supported, and a ladder including side rails adapted to be supported upon the ground and including rungs overlying said pole, and means on said rungs for detachably embracing the pole to prevent lateral movement of the ladder relative thereto.

3,315,412

CLOSURE DEVICE FOR CLOSING AN ENTRANCE OPENING

Karl Sten Rudolf Hultgren, Bofors, Sweden, assignor to Aktiebolaget Bofors, Bofors, Sweden, a Swedish corporation
 Filed Mar. 12, 1965, Ser. No. 439,382
 Claims priority, application Sweden, Mar. 20, 1964, 3,526/64
 4 Claims. (Cl. 49-246)



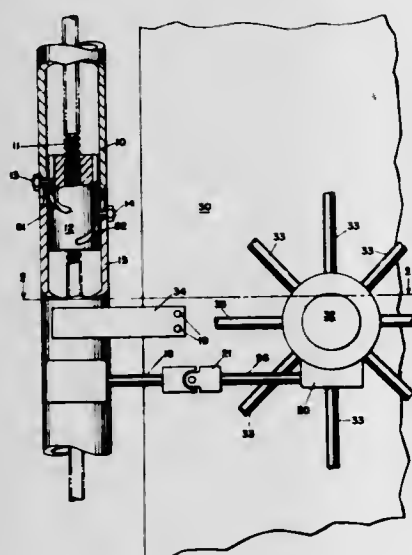
1. A closure device for closing an entrance opening in a wall, said closure device comprising a closure plate for closing said wall opening, a pair of parallel linkage means, each of said linkage means including at least two levers disposed on two opposite sides of said closure plate, a first mounting means for pivotally securing one end of both levers of each linkage means to said wall, a pivotal second mounting means securing the other end of both levers of said linkage means to the closure plate, the levers of both linkage means being pivotal in mutually

parallel planes for lifting and lowering said closure plate in reference to the wall, a torsion member for each of said levers, each of said torsion members being secured at one end to the closure plate and at the other end to the respective second mounting means for distorting said other end in reference to said one end by pivoting the respective lever, the resulting distortions of the torsion members generating torsional forces counteracting the gravitational force acting upon the closure plate when the same is lifted or lowered in reference to said wall, locking means on said closure plate and said pivotal second mounting means for locking the latter in a predetermined pivotal position in reference to said closure plate, said locking means including a locking member movably supported by said closure plate and a receiving means on said second mounting means, and an actuating member coacting with said locking member for moving the latter into and out of engagement with said receiving means, said receiving means including a locking plate including several locking holes and supported by said second mounting means pivotal in unison therewith in response to a pivotal movement of the respective lever, engagement of said locking member with a selected one of said holes locking the levers in corresponding angular positions in reference to the closure plate.

3,315,413

POWER OPERATED DOOR

Donald J. Beecher, Alvin Lodge, and Edward A. Bellucci, Erie, Pa., assignors to American Sterilizer Company, a corporation of Pennsylvania
Filed Feb. 8, 1965, Ser. No. 430,967
5 Claims. (Cl. 49—280)



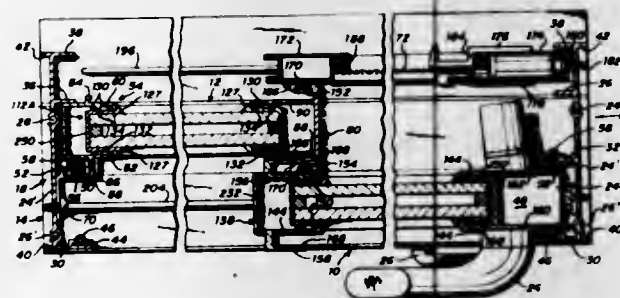
1. In combination, an autoclave, a door, and a door operating mechanism, said operating mechanism having a motor, means connected to said motor to move said door to closed position, means connected to said motor to lock said door when it is in closed position, said means connected to said motor being further adapted to unlock said door and to move said door to open position when it is unlocked, said means connected to said motor comprising a threaded shaft connected to said motor to be rotated thereby, said threaded shaft being disposed concentric to the axis of swinging of said door, a fixed member, a cam member threadably supported on said threaded shaft,

a first cam element and a second cam element on said cam member, a first follower member fixed to said fixed member and engaging said first cam element, a second cam follower member fixed to said door and engaging said second cam element, and gear means and said cam elements and said cam follower members operably connecting said threaded shaft to said locking means, said cam elements being so related that said cam member is not rotated relative to said fixed member until said threaded shaft is rotated a predetermined number of turns in a given direction whereby said threaded shaft moves said follower members along said cam elements without swinging said door until said locking means is unlocked and said cam member swings said door open when said locking means is unlocked.

3,315,414

EDGEWISE MOVABLE WALL CLOSURE CONSTRUCTION AND METHOD OF MAKING THE SAME

William A. Nolan and John S. Gilles, Louisville, Ky., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Dec. 4, 1963, Ser. No. 328,790
9 Claims. (Cl. 49—449)



1. In combination: a vertical rectangular frame having right and left vertical frame side jambs, a horizontal frame sill and a horizontal frame top head member; a pair of rectangular panels relatively movable parallel to and adjacent each other in said frame, said panels being mountable in said frame in a first position and also mountable in said frame in a second position in which said panels are positioned 180° relatively to said first position about respective vertical axes, each panel having a meeting rail with a pair of inner central panel holding flanges and with a pair of outer interlockable flanges, with a first interlockable flange of one panel interlocking with a first interlockable flange of the other panel when said panels are mounted in said frame in said first position and with a second interlockable flange of said one panel interlocking with a second interlockable flange of the other panel when said panels are mounted in said frame in said second position.

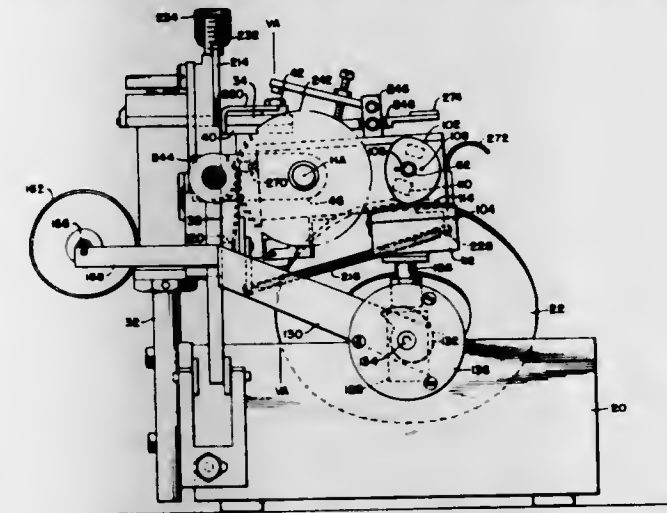
3,315,415

BEVEL EDGING DEVICE

William A. Lannom, Blue Island, Ill., assignor of one-half to Edgar J. Schroth, Blue Island, Ill.
Filed Aug. 11, 1964, Ser. No. 388,824
9 Claims. (Cl. 51—97)

1. In a lens bevel-edging machine, the combination of abrading means, a lens supporting head including a holder rotatable thereon and adapted to support a lens with its periphery in position to be bevel-edged by the abrading means, drive means to turn said lens holder through an angular distance sufficient that all of the periphery of the lens will be presented to the abrading means in an edging cycle, said head being swingable

about a vertical axis, resistance-imparting means settable to resist the swing of the lens supporting head about said vertical axis through a portion of said angular distance,

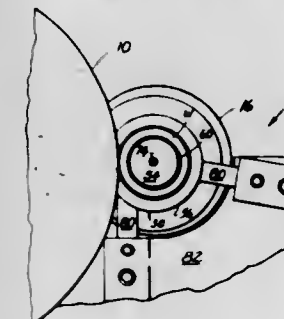


and means operated by said drive means which deactivate said resistance-imparting means after the lens has been turned through said angular portion of the edging cycle.

3,315,416

GRINDING MACHINE FOR RING-LIKE WORKPIECES

Francis P. Healy, Springfield, Mass., assignor to Universal American Corporation, Springfield, Mass., a corporation of Delaware
Filed Nov. 27, 1964, Ser. No. 414,197
11 Claims. (Cl. 51—105)



1. A machine for peripheral grinding of a ring-like workpiece including a driven grinding wheel and a workhead which are relatively movable, the workhead having a driven spindle and a driving disk secured to one end thereof; an arbor comprising a cylindrical flange and a coaxial forwardly projecting shank, means for exerting a driving connection between the disk and flange when in surface contact but permitting limited radial movement of the flange relative to the disk, a sleeve mounted on said shank, said arbor defining a closed fluid system for exerting outward pressure on the sleeve, means for selectively varying the pressure respectively to expand the sleeve into non-slip engagement with the bore of a workpiece to be ground and to release said workpiece for replacement, and a pair of circumaxially spaced shoes engaging the periphery of the arbor flange to support the arbor and workpiece on an axis independent of the spindle with the workpiece in engagement with the grinding wheel and while the spindle and disk rotate the arbor and workpiece on said independent axis.

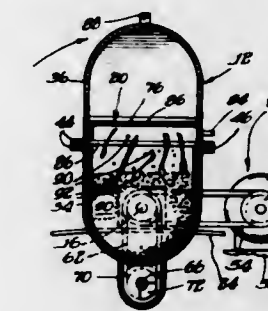
3,315,417

VIBRATORY FINISHING APPARATUS

Donald E. Roberts, 141 Rice Ave., Bellwood, Ill. 60104
Filed May 25, 1964, Ser. No. 370,002
3 Claims. (Cl. 51—163)

1. In apparatus for vibratory surface treating a charge of metallic workpieces, the combination comprising: substantially closed vessel means having a medial plane and a

laterally opening aperture disposed closely adjacent said plane, said vessel means being shaped and adapted to contain on one side of said plane a charge of workpieces and an inert particulate surface-treating medium during vibratory processing and to define a headspace on the opposite side of said plane of sufficient volume to receive substantially the total amount of said charge; frame means; pivot means supportably mounting said work vessel on said frame means, said pivot means being arranged for swinging of said vessel means about a horizontal axis; vibratory drive means connected to said vessel means to produce an orbital motion about said axis, including vibratory means mounted on said vessel and a

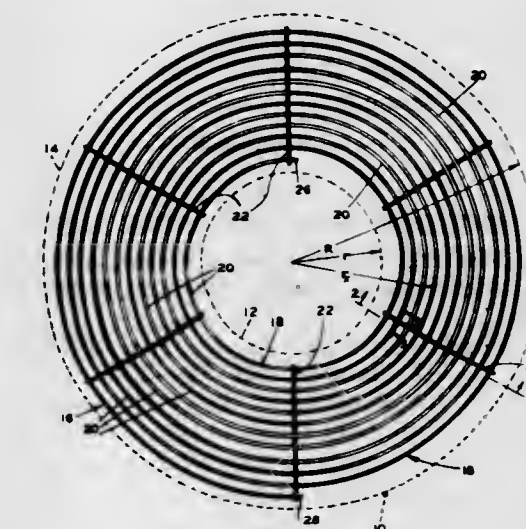


drive motor connected to said vibratory means, said drive motor being fastened to said frame means at a position spaced radially from said axis to facilitate swinging movement of said vessel means, and power-transmitting means impositively coupling said motor to said vessel means whereby to accommodate said swinging movement; and foraminous tray means withdrawably mounted within said vessel means in alignment with said lateral aperture, whereby rotation of said vessel means, upon completion of said vibratory processing, transfers said medium through said tray means and into said headspace, said tray means retaining said workpieces for ready extraction thereof with said tray means through said lateral aperture.

3,315,418

REINFORCED GRINDING WHEEL AND REINFORCING STRUCTURE THEREFOR

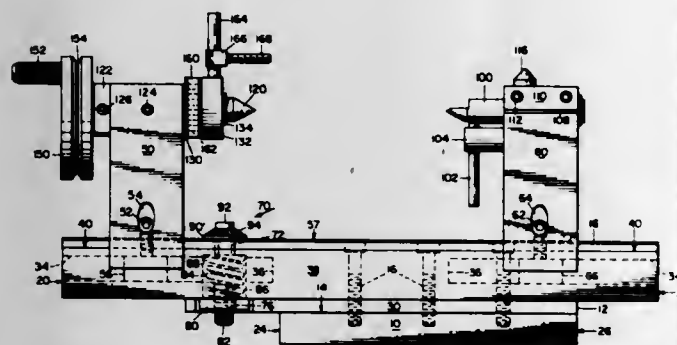
James T. Zawodni, Birmingham, and Robert J. Markotan, Allen Park, Mich., assignors to Acme Abrasive Co., Warren, Mich., a corporation of Michigan
Filed Sept. 14, 1964, Ser. No. 396,113
4 Claims. (Cl. 51—206)



4. An abrasive wheel having a reinforcing structure of generally annular character embedded therein generally coaxially thereof, said structure comprising a single length of glass fiber cord arranged in a spiral outline in substantially a single plane paralleling the sides of the wheel and

having radially progressive convolutions in substantially uniform radial spacing relative to one another, and elongated, circumferentially spaced and radially extending tie means threaded through the body of successive convolutions of the cord and substantially coextensive radially with the respective innermost and outermost convolutions of the cord.

3,315,419
WORK HOLDING AND CENTERING MEANS
Walter F. Daubitz, Agawam, Mass., assignor to Oxford Precision, Inc., West Springfield, Mass., a corporation
Filed Mar. 18, 1964, Ser. No. 352,760
1 Claim. (Cl. 51-237)

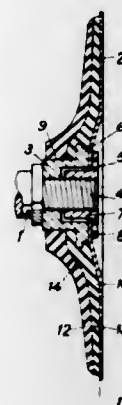


A device for supporting a work piece for outside diameter grinding or other operation comprising in combination, a horizontal bed plate, a centering rail connected to said bed plate, a slide bar connected to said centering rail, head and tail blocks having lower portions slideably fitting said slide bar and extending vertically upwardly therefrom, securing means for releasably securing said lower portions of said blocks to said slide bar at various distances apart, aligned head and tail centers in said head and tail blocks respectively, means for adjustably positioning the axes of said centers including a retaining plate fixed at one end to said slide bar and having its opposite end disposed below said centering rail and a spring-loaded jack pin rotatably mounted in said centering rail and threadedly engaged with said opposite end of the retaining plate and a dial on said jack pin having graduations registrable with indicia of said centering rail, and driving means for rotating a work piece rotatably supported by and between said centers including a primary sprocket rotatably mounted on said head center and a secondary sprocket pivotally linked to said head center and an endless timing belt entrained about said sprockets and having steps engageable therewith and a drive wheel connected to said secondary sprocket.

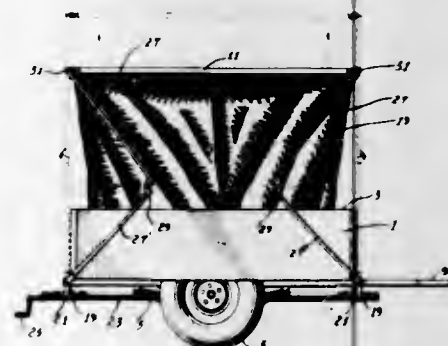
3,315,420
HOLDER FOR ABRASIVE DISKS
Karl Åke Moberg, Trollbacken, Sweden, assignor to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed Nov. 17, 1964, Ser. No. 411,841
7 Claims. (Cl. 51-378)

1. A holder for an abrasive disk comprising a rotatable drive shaft, a hub connected to said shaft for rotation therewith, a first annular layer of rubber vulcanized to said hub and extending laterally therefrom to form an annular backing surface with the outer portion thereof coaxial with said shaft and disposed in a plane perpendicular thereto but spaced axially from one end of said hub, a second annular layer of rubber vulcanized to said hub and to the surface of the first layer opposite said plane, said first layer having a Shore hardness substantially higher than the said second layer whereby centrifugal displacement of said first layer in a direction to

decrease the space between said plane and said hub is counteracted by centrifugal stretching of said second layer, and locking means disposed in the space between

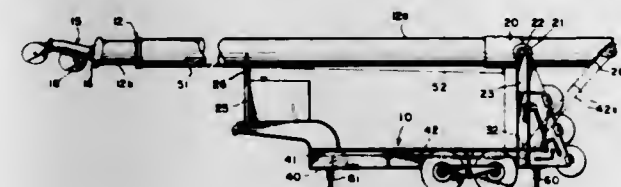


3,315,421
COLLAPSIBLE TRAILER TENT
Clovis Roy, 1955 Martin, St-Hubert, Chambly County, Quebec, Canada
Filed Dec. 30, 1964, Ser. No. 422,134
3 Claims. (Cl. 52-66)



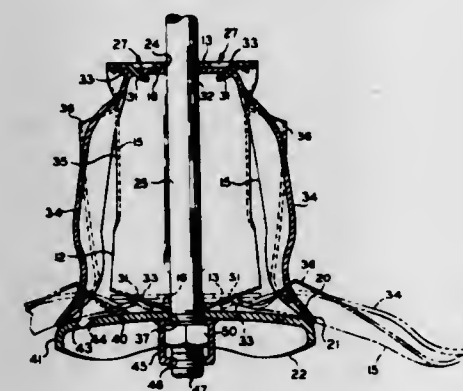
1. In a trailer-tent, the combination comprising:
 - (a) a wheeled box-like base having four side panels and an open top;
 - (b) a cover for said box-like base liftable away therefrom;
 - (c) pivot shafts mounted for rotation transversely of said box-like base, outwardly thereof and at each lower end;
 - (d) pairs of arms located outside the panels and extending in planes parallel to the sides of the base;
 - (e) for each pair of arms, an articulated joint connecting two ends; a pivot joint connecting one free end to said cover for pivoting the said pair of arms in one plane parallel to the side of the base, and means securely mounting the other free end to one of said shafts;
 - (f) a tent-like material hanging around said cover;
 - (g) links secured at one end to and radially projecting from said shafts;
 - (h) reversely threaded sleeves pivotally mounted on the other end of said links;
 - (i) an operating rod correspondingly threaded at the ends thereof and threaded in said sleeves, and
 - (j) means to cause rotation of said threaded rod to rotate said links said shafts whereby to bring said arms in said in and out of alignment position.

3,315,422
SINGLE CABLE TOWER RAISING SYSTEM
Maurice J. McIntyre, Sedro Woolley, Wash., assignor to The Humboldt Company, Seattle, Wash., a corporation of Washington
Filed June 15, 1964, Ser. No. 375,127
1 Claim. (Cl. 52-116)



In a logging tower unit having a tower, a base, and means mounting said tower on said base for pivotal movement about a generally horizontal pivotal axis between a substantially vertical upright position of use and a substantially horizontal position of non-use, a tower raising and lowering system comprising; a first succession of coaxial sheave wheels mounted on said base, the pivotal axis of said tower and the axis of said first succession of sheave wheels being parallel and disposed in the same vertical plane, a second succession of coaxial sheave wheels mounted on the lower end of the tower, the axis of said second succession of sheave wheels and the pivotal axis of the tower being located in a plane parallel to the central longitudinal axis of the tower, a cable looped in succession about said sheave wheels, one end of said cable being dead ended on either said tower or said base and cable winding means connected to the other end of said cable, the distance between said pivotal axis and said axis of said second succession of sheave wheels being less than the distance between said pivotal axis and said axis of said first succession of sheave wheels, whereby winding in of said cable will move said tower to the vertical upright position and align the axes of said sheave wheels and the pivotal axis of the tower in the same vertical plane, and inherently maintain all of said axes in said vertical plane as long as the cable is tight.

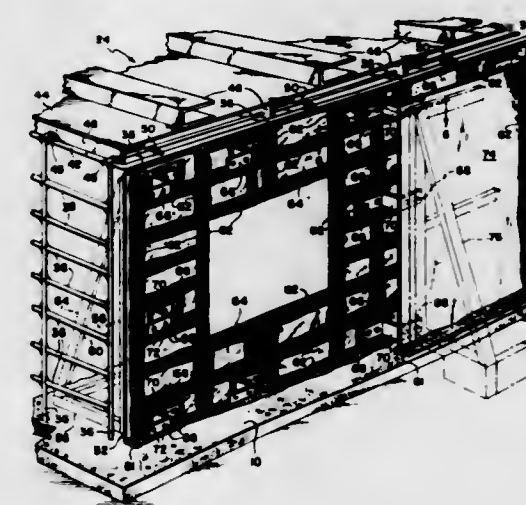
3,315,423
FOUR-WAY EXPANSION EARTH ANCHOR
John A. Toedtman, Warson Woods, Mo., assignor to Jasper Blackburn Corporation, St. Louis, Mo., a corporation of Missouri
Filed July 2, 1964, Ser. No. 379,879
4 Claims. (Cl. 52-160)



1. An expansion earth anchor comprising:
 - (a) a pair of blade members, each blade member including a pair of blade lobes integrally interconnected by an intervening plate defined between spaced transverse bending zones, the blade members being disposed in substantially right angular relation with the plate of one superimposed upon the plate of the other,

- (b) the width of the overlying plate being greater than the distance between the bending zones of the underlying plate to provide an overhang beyond the bending zones,
- (c) the underlying plate having slots substantially in the bending zones,
- (d) the overlying plate having integral tabs spaced inwardly from the side edges of said plate and struck downwardly to extend through the slots in the bending zones of the underlying plate to secure the plates together, the tabs being spaced inwardly to allow the overhang to increase the impact plate surface of the overlying plate,
- (e) a strain plate engaging the blade lobes, and
- (f) an anchor rod extending through the superimposed plates and attached to the strain plate.

3,315,424
BUILDING CONSTRUCTION
Eugene S. Smith, 2978 Sunset Road, Fort Myers, Fla. 33901
Filed Sept. 20, 1963, Ser. No. 310,343
20 Claims. (Cl. 52-206)

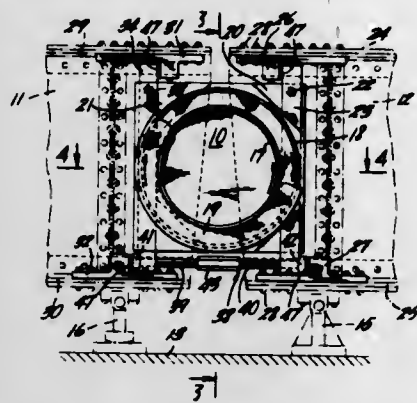


13. A building comprising a ground slab, a series of vertical rods anchored in said slab, a series of horizontal rods secured to said vertical rods in a rectangular lattice work, and having window and door openings, a system of interior wallboard secured to said lattice work by patches of resin and fiberglass, a series of transverse spacers secured to said interior wallboard by resin and fiberglass and extending through the lattice work, a coating of moisture-impervious resin on the outer surface of said interior wall board, and covering said fiberglass, an exterior system of wallboards, secured by fiberglass to the outer ends of said spacers, and a filler of porous plastic between said systems of wallboards.

3,315,425
STRESSED STRUCTURAL ELEMENT
Harry J. Kahn, 188-49A 71st Crescent, Fresh Meadows, N.Y. 11365
Filed Aug. 19, 1963, Ser. No. 302,913
13 Claims. (Cl. 52-223)

12. A device for prestressing abutting structural members, comprising a generally vertical cylinder on multiple coaxial cylinders for storing torsional forces therewithin interposed between the abutting structural members, an upper couple arm beam extending transversely across the structural members and operatively fixed to the upper extremity of said vertical cylinder, a lower couple arm beam extending transversely across the structural members and operatively fixed to the lower extremity of said vertical cylinder, a pair of upper flange fittings cooperatively transferring tension forces from said upper couple

arm beam to the structural members, and a pair of lower flange fittings cooperatively transferring compression forces from said lower couple arm beam to the structural members to prestress the structural members.



3,315,426
PREFABRICATED WALL STRUCTURE
Robert C. Rolland, 7 Place Stanislas, Cannes, France
Filed Mar. 31, 1964, Ser. No. 356,203
Claims priority, application Great Britain, Apr. 9, 1963, 14,021/63
6 Claims. (Cl. 52-235)

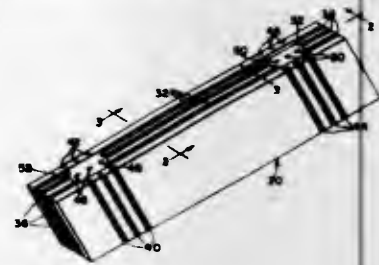


3. In a building having a framework, a wall structure comprising rectangular wall panel elements, resilient sealing strips secured to the peripheries of said panel elements and having rear faces engageable with outer wall surfaces of said framework, means for removably attaching said panel elements to said framework including interengageable latching means in a side of each said panel element and on said framework, respectively, and spring mounting means associated with said latching means for resiliently retractable cooperation thereof during interengagement of the latching means, and adjusting means cooperating with said latching means and operable after interengagement thereof to draw the panel element inwardly with respect to the framework for adjustable, tight engagement of said rear face of the sealing strip with said outer wall surface of the framework.

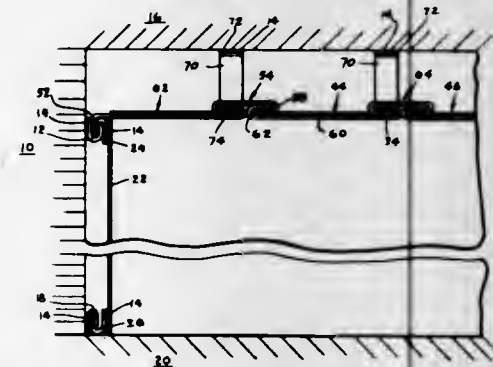
3,315,427
CONSTRUCTION ARRANGEMENT
Norman V. Frye, R.R. 4, Davenport, Iowa 52804
Filed Mar. 12, 1965, Ser. No. 439,407
5 Claims. (Cl. 52-271)

1. Construction of the class described, comprising a plurality of substantially identical block-like elements of regular parallelepiped form including a first set disposed

in a first tier in which the elements are uniformly separated horizontally from each other to leave between neighboring elements substantially equal spaces of less horizontal dimension than that of an element, a second set of similar elements arranged in a second tier atop the first tier, said second tier elements bridging the spaces between the first tier elements and themselves having similar spaces therebetween, and a plurality of rectangular



3,315,428
MEANS FOR APPLYING COVERINGS TO THE WALLS AND CEILING OF A ROOM
Malcolm Goldstein, 45 Kew Gardens Road, Kew Gardens, N.Y. 11415
Filed July 6, 1964, Ser. No. 340,479
7 Claims. (Cl. 52-278)

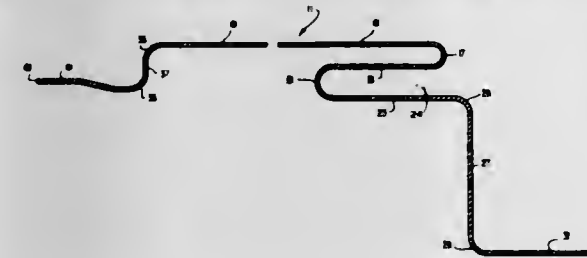


1. Means for covering the wall and ceiling of a room, including a first grooved channel member attached to said wall at the top thereof, a second grooved channel member attached to said wall at the bottom thereof, a wall covering, a first tongued member attached to said wall covering at the top thereof, a second tongued member attached to said wall covering at the bottom thereof, said first and second tongued members being engaged by said first and second grooved members, respectively, thereby securing said wall covering to said wall, a ceiling covering, said ceiling covering comprising a plurality of rigid substantially square sheets, a plurality of metal strippings, said metal strippings being attached to each side of said sheets interconnecting said sheets, whereby the ends of said sheets abut one another, some of said strippings having a flange at one end thereof, said flange being inserted into said first grooved channel member for securing said ceiling covering with respect to said ceiling.

3,315,429
WALL CONSTRUCTION AND ELEMENT
William D. Swanson, Oakdale, Pa., assignor to National Steel Corporation, a corporation of Delaware
Filed July 7, 1964, Ser. No. 340,875
1 Claim. (Cl. 52-588)

A wall construction panel comprising a major, uniplanar first portion terminating at one edge in a first bend

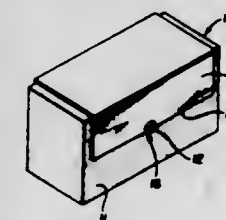
line, a second portion extending reversely from said bend line along said first portion, a third portion extending reversely along said second portion and terminating in a second bend line, said second and third portions being substantially parallel to said portion and together forming an edgewise, outwardly-opening re-entrant recess, a fourth portion extending from said second bend line about perpendicularly away from the plane of said first portion, and a fifth portion forming a lip extending along the opposite



edge of said first portion generally parallel to said recess and laterally offset from said plane on the same side thereof as said recess a distance intermediate of the distances said second and third portions are spaced from said plane, the surface of the outer edge part of said lip forming fifth portion facing said first panel portion being convex, and the inner edge part being spaced more distantly than the outer edge part from the plane of said first portion.

3,315,430
METAL ENCASED REFRACTORY ARTICLE
Charles B. Reynolds, Saratoga, Calif., and Walter M. Eklund and Donald C. Burklo, Columbiana, Ohio, assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Application Mar. 20, 1962, Ser. No. 192,299, which is a continuation of application Ser. No. 696,771, Nov. 15, 1957, now Patent No. 3,083,453, dated Apr. 2, 1963. Divided and this application Dec. 24, 1964, Ser. No. 425,997

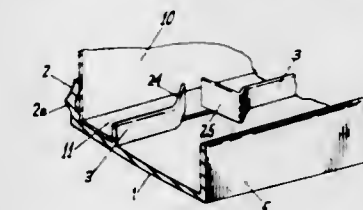
4 Claims. (Cl. 52-599)



1. Metal encased masonry unit comprising a whole non-acid refractory brick having a first side face and a pair of side faces adjacent said first side face, one of said pair of side faces having at least one preformed shallow discontinuous depression free of zones of weakness and cracks and of diminutive depth compared to the thickness of said brick between its said pair of side faces, said depression having a surface lying inwardly of the surface of said one side face, said brick having its cross-section at said depression not substantially reduced, said depression being of small area compared to the area of said one side face and lying wholly within a central portion of the latter, a U-shaped metal casing having a web portion and a pair of side arms adjacent said web portion, said casing being firmly adhered to said brick with the inner surface of said web portion in engagement with the surface of said first side face and with the inner surfaces of said pair of side arms in engagement with the surfaces of said pair of side faces, the one side arm of said metal casing at said one side face having a continuous terminal edge lying over at least a portion of said depression, a projection extending into said depression formed from the metal of said one side arm at a portion of said terminal

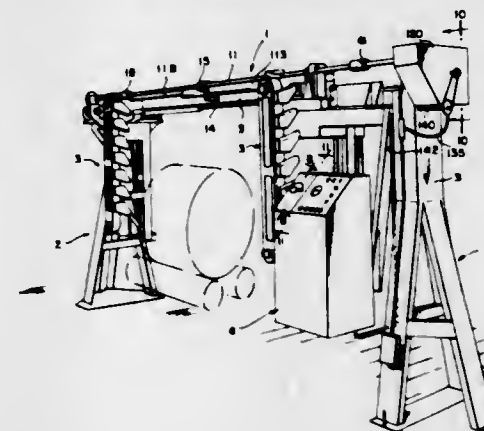
edge overlying said depression and of a height not exceeding the depth of said depression, said projection having an inner surface in continuous and non-interrupted relation with the inner surface of said one side arm, said inner surface of said projection conforming substantially to and frictionally engaging with said surface of said depression to prevent relative movement of said casing and said brick in any direction with respect to each other, and to retain said inner surface of said web and said inner surfaces of said pair of side arms in firm adhering relation with said surface of said first side face and said surfaces of said pair of side faces of said brick, respectively.

3,315,431
FRAMED PANEL AND FASTENING MEANS THEREFOR
William H. Yake, Connersville, Ind., assignor to Design and Manufacturing Corporation, Connersville, Ind., a corporation of Indiana
Filed Aug. 3, 1964, Ser. No. 387,149
9 Claims. (Cl. 52-614)



1. The combination of a frame member characterized by a back portion and at least a first and a second rib spaced from each other and extending substantially normal to and substantially along the length of the back portion and a panel element having a general panel surface and angularly related lips at certain, at least, of its edge portions, said lips lying entirely between said first and second ribs of the frame element, said first rib overlying a portion of said general panel surface, said second rib being distorted so as to form tab means in part at least overlying and engaging the lips of the panel element, said tabs being formable substantially anywhere along the length of said second rib.

3,315,432
ROLL CRIMPING MACHINE
Roger F. Turnbull, Montesano, Swan Christensen, Hoquiam, and George W. Herigstad, Aberdeen, Wash., assignors to Lamb-Grays Harbor Co., Inc., Hoquiam, Wash., a corporation of Washington
Filed Mar. 13, 1964, Ser. No. 351,724
20 Claims. (Cl. 53-3)



18. A method for crimping the protruding end of a cylindrical roll wrapper including the steps of: rotating said roll in place at a constant speed about its longitudinal axis, moving the first of a number of successive

vertically spaced crimper blades downwardly past the top periphery of said roll and in contact with said protruding wrapper during the rotation of said roll to form a crease in said wrapper, halting said blade below the top periphery of the roll for a given increment of time dependent upon the diameter of said roll, then moving successive blades in a like manner downwardly and halting each blade the given increment of time until the protruding wrapper on the entire peripheral extent of said roll is crimped, and then removing said blades from the end of the roll.

3,315,433

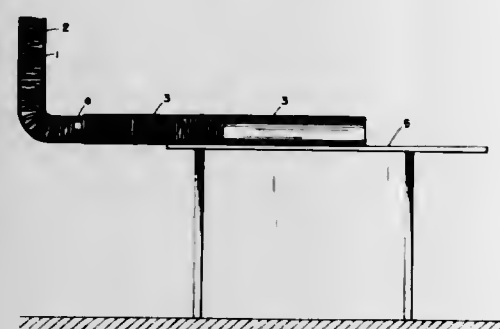
PROCESS FOR PACKING THREAD CABLES

Horst Taul and Adolf Wehlow, Kassel-Bettenhausen, Germany, assignors to Spinnfaser Aktiengesellschaft, Kassel-Bettenhausen, Germany

Filed June 24, 1963, Ser. No. 289,957

Claims priority, application Germany, July 4, 1962, V 22,735

1 Claim. (Cl. 53—21)



A process for packing a cable of individual threads which comprises: passing a folded cable of parallel, wet, threads downwardly through a shaft; drying said folded cable in said shaft; pressing said cable through a horizontal extension of said shaft and into a flexible tube drawn over said extension with the folds in said cable lying perpendicular to the longitudinal axis of said flexible tube; severing said cable; securing the ends of said cable to prevent fanning out; and thereafter closing said tube to provide a substantially air-tight passage.

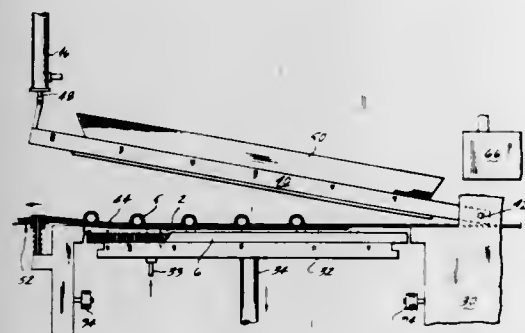
3,315,434

METHOD AND APPARATUS FOR PACKAGING

Herman G. Kraut, New Britain, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut

Filed Oct. 7, 1963, Ser. No. 314,202

23 Claims. (Cl. 53—22)



1. In the method of skin-packaging articles between a substrate and a thermoplastic film, the steps comprising: pressing a substrate onto an air-pervious support member having a generally planar surface and a plurality of locating members projecting upwardly therefrom to project

said locating members through said substrate, said locating members being spaced apart to receive an article therebetween; placing an article on said substrate between said plurality of locating members; supporting a length of synthetic thermoplastic film adjacent the margins thereof in a position overlying said substrate, article and support member; drawing suction through said support member and substrate to draw said film about said article and into engagement with the upper surface of said substrate about said article to form a skin-packaging assembly; blowing air upwardly through said support member to lift said skin-packaging assembly upwardly of said planar surface and locating members thereof; lowering said support member relative to the supported ends of said length of film; and pulling one end of said film to draw said skin-packaging assembly to one side of said support member.

3,315,435

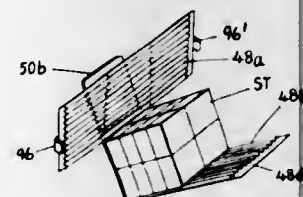
METHOD OF PACKAGING CUBOID CONTAINERS

John C. Gunyou, Don Mills, Ontario, Canada, assignor to Signet Packaging Enterprises Limited, Toronto, Ontario, Canada, a corporation

Filed Oct. 3, 1963, Ser. No. 313,667

Claims priority, application Great Britain, Oct. 23, 1962, 40,167/62

5 Claims. (Cl. 53—24)



1. Method of packaging a stack of filled cuboid containers formed of thin sheets of stiff bendable material, in a wrapper formed of panels of packaging stock preformed to the dimensions of the stacks when under compression, comprising arranging said containers loosely in a stock, and then: applying substantially simultaneously pressure to all sides of the loosely arranged stack to cause the containers to fit snugly together; applying wrapper panels to the stack while compressed; and securing the adjoining edges of the panels to hold the package under compression.

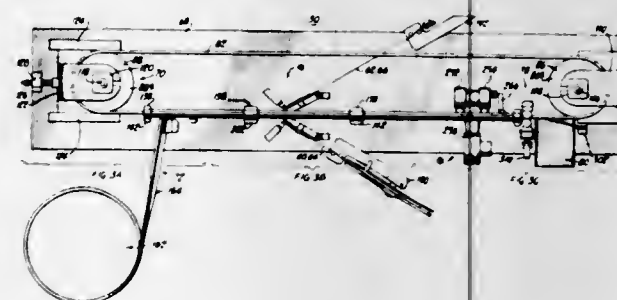
3,315,436

APPARATUS FOR AND METHOD OF MAKING STRIPS OF NAILS

William H. Baum, Westchester, and Ronald J. Mosetich, Lombard, Ill., assignors to Fastener Corporation, Franklin Park, Ill., a corporation of Illinois

Filed May 11, 1964, Ser. No. 366,487

14 Claims. (Cl. 53—35)



1. A method of making a strip of fasteners having a shank portion, which method comprises the steps of

arranging the fasteners in alignment with the shanks extending generally parallel to and spaced from each other, moving the aligned fasteners along a predetermined path, feeding a length of flexible material into contact with the shanks of the fasteners at a given point in their path of movement to move with the fasteners, applying a mass of fluid plastic material to the length of flexible material at a position disposed in front of the given point considered with respect to its path of movement so that the mass of fluid material is applied to the shanks of the fasteners by the length of flexible material, and solidifying the fluid material during movement of the fasteners to join the fluid material and the flexible material to the fasteners to form a strip thereof.

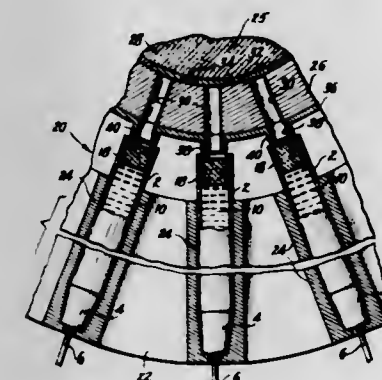
3,315,437

METHOD OF CHARGING BALLPOINT PENS

Ernst J. Henriksen, 1 Alpenstrasse, Lucerne, Switzerland

Filed July 9, 1964, Ser. No. 381,390

6 Claims. (Cl. 53—37)



2. The method of charging an open ended pen reservoir with ink and a non-solid follower, comprising the steps of: placing a body of fluid material, including a column of ink in said reservoir to a level adjacent but spaced inwardly from said open end; centrifuging said reservoir and fluid material with said open end extending radially inwardly; and simultaneously positioning a body of non-solid follower material adjacent said open end and aligned therewith whereby said centrifuging step simultaneously expresses air from said reservoir and column of ink and causes said body of follower material to enter said open end, engage the adjacent end of said body of fluid material and conform to the inner periphery of said reservoir.

3,315,438

APPARATUS FOR HIGH-SPEED PACKAGING OF ARTICLES

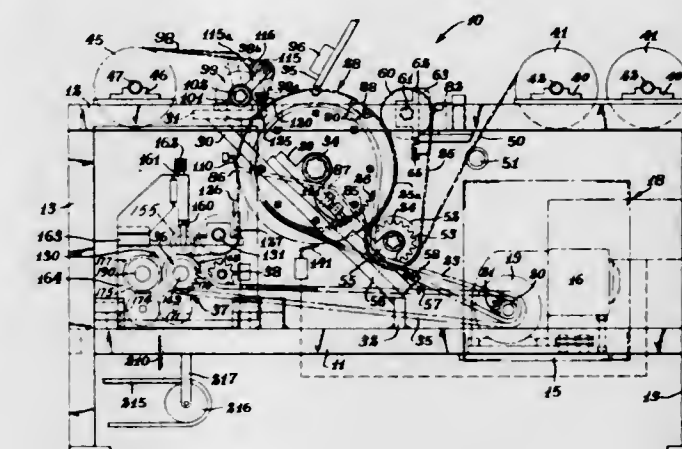
J. Edward Kostur, Sr., Elmhurst, Ill.; Pioneer Trust & Savings Bank, executor of the estate of said Kostur, Sr., deceased, assignor to Comet Industries, Inc., Village of Bensenville, Ill., a corporation of Illinois

Filed Dec. 11, 1963, Ser. No. 329,688

23 Claims. (Cl. 53—141)

1. Apparatus for high speed continuous packaging of articles between sheets of heat-sealable and formable materials comprising, means establishing a predetermined first path of travel for heat-sealable and formable material, means for heating said formable material while the same is in said first path, movable molding means comprising a part of said first path, movable clamping means cooperable with said molding means for securing said formable material therebetween, said molding means being adapted to cause said material to be formed while the

same is clamped so as to form receptacles for the articles to be packaged, an article receiving station in said first path after said molding means, means establishing a second predetermined path of travel for a material that is heat sealable with relationship to said formable material, second means for heating said sealable material, means for urging said two materials together in heat sealable relationship, separating means for cutting said sealed-together materials into discrete package portions, said sepa-



rating means including a shear having at least one blade movable in the same sense of movement and in velocity coincident relationship with said materials along an additional portion of the path of travel of said materials for cutting the same transversely thereof, said separating means including means for slitting the materials longitudinally of said additional path of travel, said clamping means comprising an endless heated belt having a portion biased toward said molding means.

3,315,439

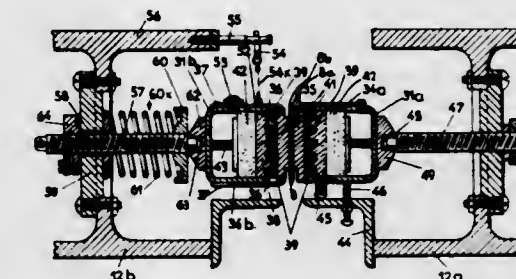
MACHINE FOR HEAT SEALING THERMOPLASTIC BAGS

Jean-Louis Pierre, Grand Couronne, France, assignor to Potasse & Engrais Chimiques, Paris, France, a societe anonyme of France

Filed July 30, 1963, Ser. No. 298,692

Claims priority, application France, Aug. 21, 1962, 907,356, Patent 1,367,424

16 Claims. (Cl. 53—373)



1. A machine for heat sealing of thermoplastic material such as open ends of filled bags which comprises a frame on which are mounted two endless belts supported by rollers having parallel axes and maintained in contiguous relationship on a part of their travel, at least a pair of heating shoes and at least a pair of cooling shoes, means to freely hang in neutral equilibrium at least one shoe of each heating pair from the machine frame, yieldable pushing means to urge said at least one shoe against the other, and motor means to move in synchronism the two belts between which the bag openings to be sealed travel.

ERRATUM

For Class 54—8 sec:
Patent No. 3,315,459

3,315,440

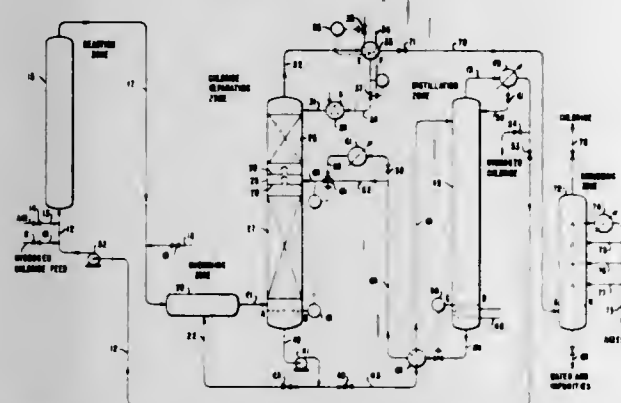
HYDROGEN CHLORIDE RECOVERY FROM ADMIXTURE WITH CHLORINE USING WATER EXTRACTANT

Alphonsus M. Alkemade, The Hague, Netherlands, assignor to Shell Oil Company, New York, N.Y., a Delaware corporation

Filed Dec. 2, 1963, Ser. No. 327,205

Claims priority, application Netherlands, Dec. 5, 1962, 286,349

The portion of the term of the patent subsequent to Feb. 8, 1983, is disclaimed
3 Claims. (Cl. 55—48)



1. The process for recovering hydrogen chloride, free of any substantial amount of water, and chlorine from a hot gaseous reaction mixture containing hydrogen chloride in admixture with water vapor and chlorine, by the combination of steps consisting essentially of: quenching said hot gaseous mixture to a temperature of from about 40° to about 150° C. with a member of the group consisting of water and hydrochloric acid, in a quenching zone, subjecting the resulting quenched mixture to countercurrent contact in an extrusion zone with liquid solvent emanating thereto as two separate streams from within the system as described below, thereby separating a vapor overhead fraction comprising water vapor and chlorine from a liquid bottom fraction comprising concentrated hydrochloric acid in said extraction zone, passing said overhead vapor fraction from said extraction zone into a cooling zone, cooling said overhead vapor fraction in said cooling zone, thereby separating a liquid fraction consisting essentially of water from a gaseous fraction comprising chlorine and water vapor in said cooling zone, separating chlorine from said gaseous fraction separated in said cooling zone, passing said liquid fraction from said cooling zone into said extraction zone at a point near the withdrawal of said vapor overhead fraction therefrom to be used therein as the first of said two streams of solvent emanating thereto from within the system, passing said liquid bottom fraction separated in said extraction zone into a distillation zone, distilling hydrogen chloride free of any substantial amount of water from liquid bottoms consisting essentially of dilute hydrochloric acid in said distillation zone, passing said liquid bottoms from said distillation zone into said extraction zone at an intermediate point thereof to be used therein as the second of said two liquid solvent streams emanating thereto from within the system, and controlling the degree of cooling and consequent water vapor condensation effected in said cooling zone to maintain the quantity of water retained in said gaseous fraction separated in said cooling zone plus any quantity of water eliminated in the uncondensed overhead from said distillation zone substantially equal to the total quantity of water entering said quenching zone from a source outside the recovery system.

PROCESS FOR SEPARATING AMMONIA FROM METHYL CHLORIDE

David G. Hutton and William S. Murray, Wilmington, Del., and Anthony F. Benning, deceased, late of Woodstown, N.J., by Jerome A. Benning, administrator, St. Paul, Minn., assigns to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 15, 1965, Ser. No. 472,364
9 Claims. (Cl. 55—56)

1. The process for separating ammonia from mixtures thereof with methyl chloride which comprises
(A) contacting from about 50 to about 1,000 vapor volumes of a gaseous mixture consisting essentially of a major proportion of methyl chloride and a minor proportion of ammonia
(B) with about 1 liquid volume of a brine which consists essentially of a liquid solution in water of from about 35% to about 45% by weight of lithium chloride to absorb the ammonia in the brine
(C) at a temperature of from about -15° C. to about +30° C.
(D) and at a pressure of from about 1 to about 5 atmospheres, and
(E) separating the gaseous methyl chloride from the liquid brine.

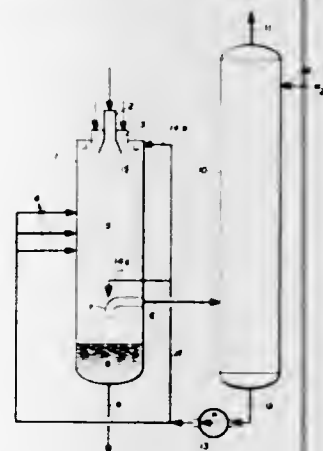
3,315,442

QUENCHING OF CRUDE MELAMINE GASES

Lun Lee Yuan, Wayne, N.J., and George Kurose, Norwalk, Conn., assigns to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Oct. 5, 1964, Ser. No. 401,555

2 Claims. (Cl. 55—70)



1. In the production of melamine from urea wherein a stream of crude melamine gas containing ammonia, carbon dioxide, and inert gases is introduced into a quenching zone of sprayed water whereby the gases are cooled and a slurry of purified melamine is formed, the improvement which comprises blanketing the stream of crude melamine gas with gaseous ammonia in said quenching zone.

3,315,443

METHOD AND APPARATUS FOR CLEANING EXHAUST GASES FROM OXYGEN STEELMAKING FURNACES

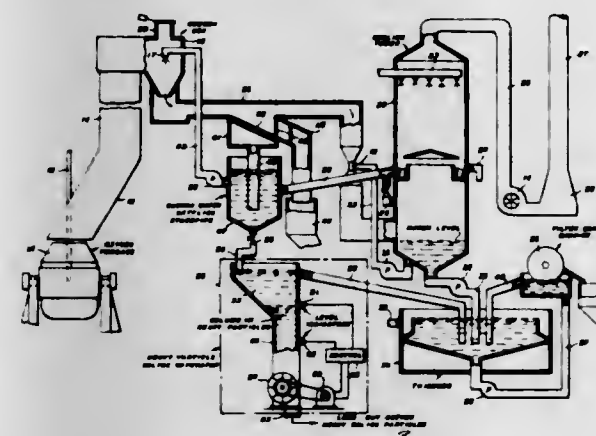
Jesse D. Marino, Whitehall Borough, Pa., assignor to United States Steel Corporation, a corporation of Delaware

Filed Oct. 5, 1965, Ser. No. 493,149

10 Claims. (Cl. 55—85)

1. In a wet-washing process for cleaning exhaust gases from an oxygen steelmaking furnace, which process includes quenching the gases with water to pick up in the water a portion of the particles carried by the gases, which portion includes all the heavier particles along with some lighter particles, transferring the water and particles

picked up therein to a standpipe, recovering as a sludge another portion of the particles carried by the gases, which other portion is composed of lighter particles, and thickening said sludge, the combination therewith of a method of handling particles which go into said standpipe, said method comprising transferring water-borne particles from the bottom of said standpipe to a settling tank, re-



taining the water and particles in said tank until the heavier particles settle from the water and lighter particles forming a column of minimum height of about 4 feet of settled heavier particles from said tank, withdrawing heavier particles from the bottom of said column, and thickening the water and lighter particles from said tank to the exclusion of the heavier particles.

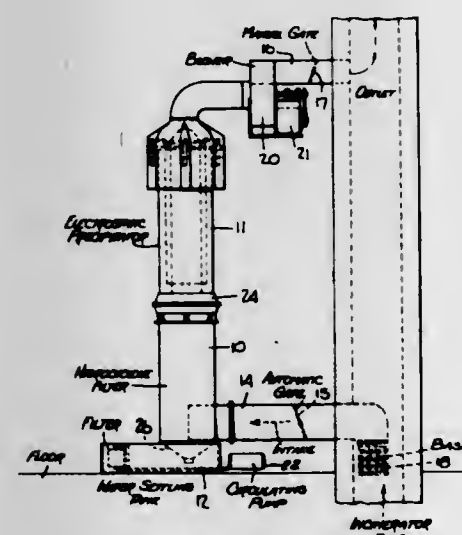
3,315,444

INTEGRATED MECHANICAL FILTER AND ELECTROSTATIC PRECIPITATOR SYSTEM FOR BROAD SPECTRUM PURIFICATION

Alexander P. de Seversky, Northport, N.Y., assignor to Electronatom Corporation, New York, N.Y., a corporation of New York

Filed May 1, 1964, Ser. No. 364,143

5 Claims. (Cl. 55—122)



1. An integrated system for removing both fine and coarse particles from a contaminated gaseous medium, said system comprising:

- A. a hydrodynamic section for extracting coarse particles from said contaminated gaseous medium and including,
 - (a) a chamber having an input and an output,
 - (b) means introducing said contaminated gaseous medium into said input to produce a cyclonic motion of said medium in said chamber, and

- (c) means subjecting the gaseous medium in said chamber to high-velocity jets of water to effect intermingling of said water and said medium to entrap said coarse particles and causing said medium to emerge from the output of said chamber in a wet, turbulent state,
- B. an electrostatic precipitator section for extracting fine particles from said medium and including,
 - (a) collector and discharge electrodes disposed in spaced relation to define a flow passage therebetween having an input and an output,
 - (b) means to apply a high voltage between said collector and discharge electrodes to produce an electrostatic field therebetween extending transversely with respect to the longitudinal axis of said flow passage, and
- C. an aerodynamic flow converter section coupling the output of said chamber to the input of said flow passage, and including,
 - (a) an array of vanes defining a plurality of substantially unobstructed conduits dividing the wet, turbulent gaseous medium emerging from the output of said chamber into laminae extending in planes parallel to the longitudinal axis of said flow passage causing said medium entering said flow passage to assume a laminar form whereby electrostatic precipitation is effected therein with optimum efficiency and said medium passes out of the output of said flow passage in decontaminated form, and
 - (b) means to eliminate mist from said wet, turbulent medium to cause said medium to enter the input of said flow passage in a relatively dry condition to minimize deleterious arcing in said electrostatic field.

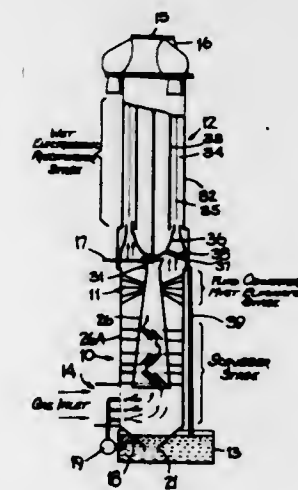
3,315,445

INTEGRATED POLLUTION CONTROL SYSTEM

Alexander P. de Seversky, Northport, N.Y., assignor to Electronatom Corporation, New York, N.Y., a corporation of New York

Filed Nov. 15, 1965, Ser. No. 507,826

5 Claims. (Cl. 55—122)



1. An integrated system for removing both fine and coarse particles from a contaminated gaseous medium, said system comprising:

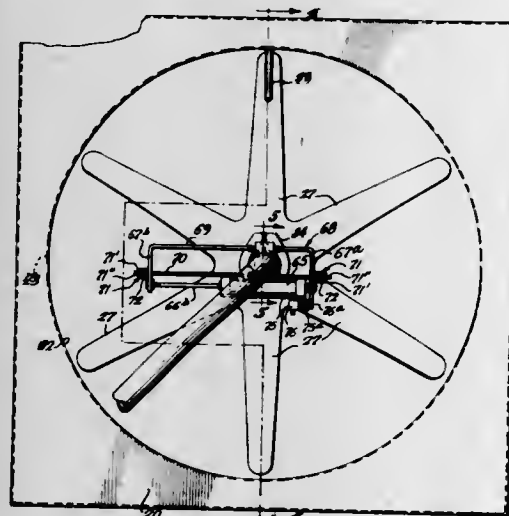
- A. a hydrodynamic section for extracting coarse particles from said contaminated gaseous medium and including,
 - (a) a chamber having an input and an output,
 - (b) means introducing said contaminated gaseous medium into said input to produce a cyclonic motion of said medium in said chamber, and

- (c) means subjecting the gaseous medium in said chamber to high-velocity jets of water to effect intermingling of said water and said medium to entrap said coarse particles and causing said medium to emerge from the output of said chamber in a wet, turbulent state,
- B. an electrostatic precipitator section for extracting fine particles from said medium and including,
- (a) collector and discharge electrodes disposed in spaced relation to define a flow passage therebetween having an input and an output,
- (b) means to apply a high voltage between said collector and discharge electrodes to produce an electrostatic field therebetween extending transversely with respect to the longitudinal axis of said flow passage, and
- C. an aerodynamic flow converter section coupling the output of said chamber to the input of said flow passage, said converter section comprising an array of vanes, each having,
- (a) a first portion formed by a series of pleats defining a plurality of zig-zag conduits dividing the wet turbulent gaseous medium emerging from the output of said chamber into moisture-laden gaseous streams which impinge on said pleats to cause the moisture therein to adhere thereto whereby the streams leaving said zig-zag conduits are in a relatively dry condition to minimize arcing in said electrostatic field when the medium is acted upon in the flow passage of the electrostatic precipitator section, and
- (b) a second and planar portion defining a plurality of substantially unobstructed conduits in registration with said zig-zag conduits to convert the dry gaseous streams therefrom into laminae extending in planes parallel to the longitudinal axis of said flow passage and causing the dry medium entering said flow passage to assume a laminar form whereby electrostatic precipitation is effected therein with optimum efficiency and said medium passes out of the output of said flow passage in decontaminated form.

3,315,446

FILTER CLEANING APPARATUS

James F. King, Jr., Winston-Salem, N.C., assignor to The Bahnsen Company, Winston-Salem, N.C., a corporation of North Carolina
Filed July 15, 1963, Ser. No. 294,880
7 Claims. (Cl. 55-272)



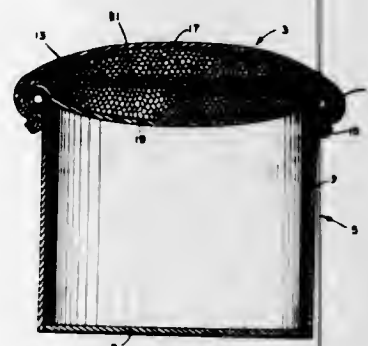
1. Apparatus for filtering solids from a fluid stream containing the solids comprising a fluid pervious drum member having a fluid pervious cylindrical filtering wall

located in the fluid stream for passage of the fluid along radially inwardly directed flow paths therethrough, the outwardly facing surface of said filtering wall being the upstream surface thereof relative to said flow paths, means for establishing pressure conditions within said drum to produce flow of said fluid along said radially inwardly directed flow paths through said wall with accumulation of said solids on the upstream surface thereof, an elongated pneumatic stripper tube spanning the axial length of said wall extending parallel to said member's axis radially outwardly of said wall having an intake nozzle immediately adjacent said upstream surface facing radially inwardly toward the wall and spanning the axial length thereof, means for periodically sweeping said stripper tube through a single revolution cycle along the circumference of the wall from a selected rest position to said rest position, means for applying suction to said stripper tube to produce suction currents immediately externally of said suction nozzle during sweeping movement thereof to pneumatically withdraw the accumulated solids from the whole working area of said upstream surface through said nozzle into said stripper tube during each single revolution cycle, and means at said rest position for closing said suction nozzle to terminate said suction currents during the period said stripper tube registers with said rest position.

3,315,447

WATER REPELLANT DEHUMIDIFIER

Vincent D. Meler, Port Washington, N.Y., assignor to the United States of America as represented by the Secretary of the Navy
Filed Oct. 23, 1964, Ser. No. 406,205
2 Claims. (Cl. 55-384)



1. A closure for an enlarged opening in a container, said closure comprising:
- (a) a first plasticized vinyl membrane which covers the entire opening and is sealed to the lip of the container that defines the opening;
- (b) a second plasticized vinyl membrane which covers the exterior surface of said first membrane and is also sealed to the lip of the container, said second membrane being dark in color so as to readily absorb heat from radiant solar energy; and
- (c) a desiccant disposed between the first and second membranes.

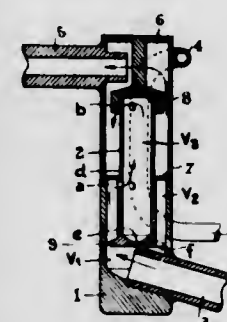
3,315,448

FLUID TRAP

Michel Nicolas, Blevres, France, assignor to Compagnie Industrielle Francaise des Tubes Electroniques Courbevoie, Seine, France
Filed Nov. 5, 1964, Ser. No. 409,195
Claims priority, application France, Nov. 8, 1963, 953,127, Patent 1,387,101
6 Claims. (Cl. 55-441)

1. A fluid trap to separate any entrained liquid in a gas flow comprising a central cavity, two superposed annular

compartments surrounding said central cavity, an input nozzle at the lower portion of the lower compartment, an output nozzle at the upper portion of the upper compartment, an annular partition separating said two superposed

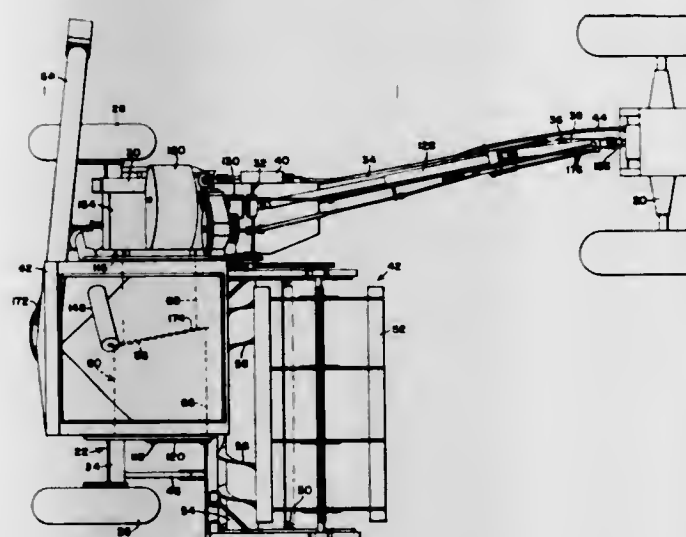


annular compartments, said central cavity comprising a first orifice located just beneath said annular partition, a second orifice at its upper portion, a third orifice just above said annular partition, and a fourth orifice in its bottom.

3,315,449

CROP HARVESTER

Charles S. Morrison, Henry H. Denison, and Kenneth R. Thomas, all of Moline, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Apr. 15, 1964, Ser. No. 359,947
20 Claims. (Cl. 56-21)



1. A crop harvester, comprising: a main frame adapted to advance over a field; a harvesting device carried by the frame and including rearwardly directed crop-discharge means; threshing and separating apparatus carried by the frame and including generally cylindrical housing structure having coaxially adjacent but functionally separate threshing and separating portions and said threshing portion including an inlet in communication with said crop-discharge means, threshing means operative within the threshing portion and including a threshing cylinder journaled coaxially in said threshing portion, separating means operative within the separating portion and including a rotatable separating element journaled coaxially in said separating portion in substantially end-to-end relation to the cylinder, and crop-transfer means primarily in said threshing portion and separate from said cylinder and element for moving threshed crops from the threshing portion to the separating portion; and drive means connected to and for rotating said cylinder and element.

3,315,450

CROP GATHERING AND CHOPPING MACHINE

Edgar Bauer, Osterburken, Germany, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Nov. 9, 1964, Ser. No. 409,917
Claims priority, application Germany, Nov. 8, 1963, D 42,890
3 Claims. (Cl. 56-24)

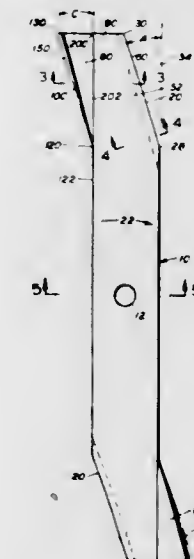


1. In a crop chopping machine adapted to advance over a field of previously cut crops and having a chopper housing of generally inverted U shape including opposite side walls, front and rear wall portions and an open bottom and a chopper rotor rotatable in the housing on an axis transverse to the line of advance with the forward portion of the rotor moving upwardly and operative to engage crops via the open bottom, the improvement comprising: a crop pickup means closely forwardly of and below the chopper rotor and operative to move previously severed crops upwardly through the open bottom and directly to the chopper rotor; means mounting the pickup means for travel with the machine; and arcuate, plate-like bottom means disposed beneath and concave toward the chopper rotor, transversely spanning the housing bottom and extending rearwardly from the pickup means to a crop-tight junction with the housing rear wall, the clearance between the rotor and the bottom means decreasing in the direction of rotation of the rotor.

3,315,451

MOWER BLADE

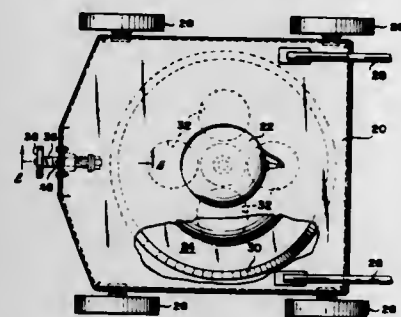
Gilbert Hill, 3223 Webster St., Omaha, Nebr. 68131
Filed June 5, 1963, Ser. No. 285,836
1 Claim. (Cl. 56-295)



A mower blade of the character described comprising a relatively narrow elongated straight central section terminating at each end thereof in similar integral angularly disposed end sections, each of which extends outwardly and is inclined rearwardly from said central section and is provided along the forward edge thereof with an undercut cutting edge; the rearward side of each of said end sections being provided with a wind directing trian-

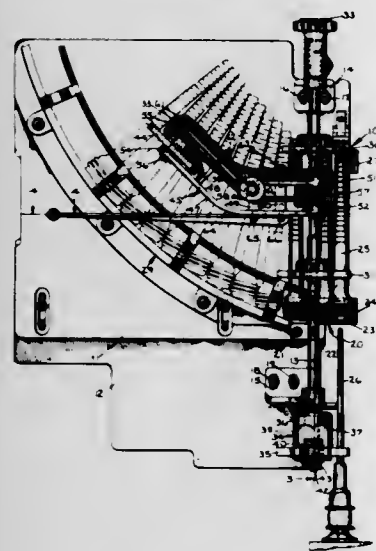
gular flange which extends upwardly and rearwardly at an acute angle of approximately 27 degrees with respect to the upper surface of said central section; the rear edge of each of said flanges being inclined upwardly and rearwardly at an acute angle of approximately 14 degrees with respect to the vertical rear side edge of said central section.

3,315,452
SELF-SHARPENING ROTARY MOWER BLADE
Angelo F. Rossi, 1671 Donalor Drive,
Escondido, Calif. 92025
Filed Sept. 16, 1964, Ser. No. 396,881
5 Claims. (Cl. 56-295)



1. In a rotary disc type lawn mower having a pan-shaped housing, a cutter therefor comprising a cutting disc substantially circular in plan view, means for mounting said disc on said mower about an axis perpendicular to said disc, a beveled cutting edge formed about the periphery of said disc, a bearing mounted on said housing, a reciprocable sharpening element mounted in said bearing and having a beveled jaw for engaging the beveled edge of said disc, resilient means urging said sharpening element toward said cutting disc, and releasable means for holding said sharpening element from engagement with said disc, the axis of said bearing being substantially coplanar with said disc, and said sharpening element being disposed radially of said disc.

3,315,453
BOBBIN FEED FOR DONNING MECHANISM
Herman Haagsma, Whitinsville, and John A. Cugini,
Hopdale, Mass., assignors to Draper Corporation,
Hopdale, Mass., a corporation of Maine
Filed Aug. 17, 1964, Ser. No. 390,001
3 Claims. (Cl. 57-53)



1. For a bobbin donning mechanism having in combination a reservoir of bobbins in which said bobbins are gravity fed to a donning position, a bobbin feeding means for constantly urging said bobbins downwardly in said reservoir to said donning position, said bobbin feeding

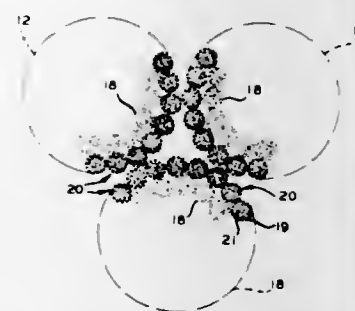
means including a continuously rotating feed wheel adapted to peripherally engage the bobbins and interconnected with and adapted to function in conjunction with said donning mechanism, and tensioning means for forcing said feed wheel into contact with said bobbins.

3,315,454
SYNTHETIC BALING AND TYING TWINES
William L. Carranza, 4401 SW. 13th St.,
Miami, Fla. 33134
Filed Mar. 9, 1964, Ser. No. 350,583
7 Claims. (Cl. 57-144)



1. Synthetic twine suitable for forming non-slipping knots in baling, tying and other automatic knot tying machines which comprises a plurality of filaments of a thermoplastic synthetic resin selected from the group consisting of polyethylene and polypropylene, said filaments having a diameter of about 65 to 950 deniers and containing dispersed therein a substance which is a gas at ordinary temperatures in an amount up to about 35% by volume based on the volume of the resin, said twine having a denier in the range about 6,000 to 28,000.

3,315,455
SYNTHETIC ROPE STRUCTURE
Frederick L. Stoller, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 23, 1964, Ser. No. 406,071
8 Claims. (Cl. 57-144)

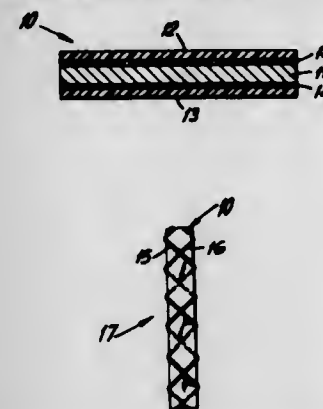


1. A strand for a polyolefin rope comprising a core of unfoamed polyolefin filaments and an enclosing layer of foamed polyolefin filaments, said polyolefin being selected from the group consisting of polyethylene and polypropylene.

3,315,456
SUPPORTED METALLIC YARNS
Ralph M. Freyberg, Rye, N.Y., assignor to Acme Backing Corporation, New York, N.Y., a corporation of New York
Filed Dec. 7, 1965, Ser. No. 312,061
10 Claims. (Cl. 57-144)

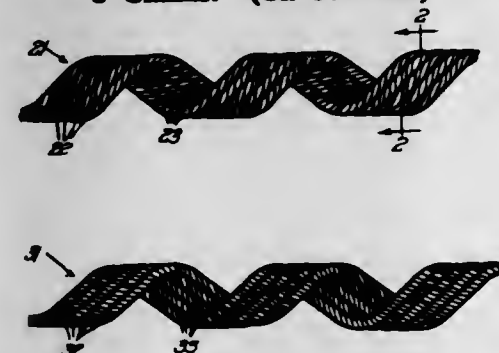
1. A textile yarn comprising at least one end of multifilament stretch nylon and one end of a laminated metallic thread in twisted relation, said metallic thread com-

prising a ply of metal film and a ply of transparent synthetic resin film in adhered relation to at least one sur-



face of said ply of metal film, said metallic thread having a width of from about .01 inch to about .005 inch.

3,315,457
APPLIANCE FOR LINEAR BODIES
Howard F. Sibra, Cleveland, Ohio, assignor to Preformed Line Products Company, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 25, 1965, Ser. No. 435,269
8 Claims. (Cl. 57-145)



1. A gripping device for linear bodies comprising a plurality of mutually conforming helical elements pre-shaped to a uniform open pitch and to an internal diameter less than the outside diameter of such linear body for application to the linear body from the side thereof in gripping relation therewith, at least one of said helical elements comprising strands intertwined in the same hand-of-lay as said helical element, said intertwined strands being movable relative to one another an amount sufficient to enable said strands to shift slightly when bending forces are applied to said helical element.

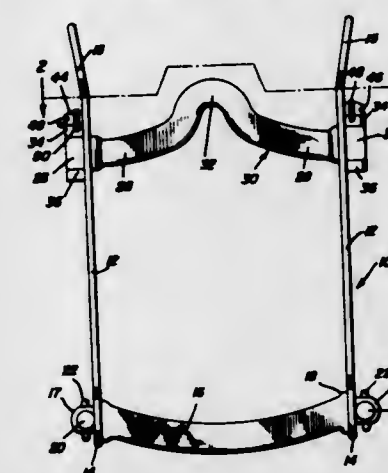
3,315,458
METHOD FOR SPLICING MULTI-PLY TWISTED CORDS
Wayne D. Alexander, Chester, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed Sept. 10, 1963, Ser. No. 307,891
4 Claims. (Cl. 57-159)



1. Method for splicing multi-ply twisted cords and like twisted and cabled structures, consisting essentially of the following steps: gripping at two spaced locations each of two like cords which are to be spliced at a terminal gripping location toward the end of the cord and at an interior gripping location toward the main length of the cord, thus defining a gripped segment of each

cord, along which uncontrolled torsional and longitudinal cord movement is prevented; the two gripped segments being made approximately equal in length; aligning said gripped segments with the terminal gripping location of each cord aligned with the interior gripping location of the other cord; removing the twist from the gripped segment of one cord by rotating said first gripped segment together with its terminal gripping location; removing the twist from the gripped segment of the second cord by rotating said second gripped segment together with the interior gripping location thereof thus building up and storing in the main length of said second cord the same amount of twist as is removed from the gripped segment thereof; separating the individual yarns or strands composing the gripped segments; uniting each yarn of said first segment to a yarn of said second segment at non-overlapping sites to form a region of splice; said sites where union is made being so chosen that the yarn length for each united pair of yarns, from one interior gripping location to the site of union and on to the other interior gripping location is the same for all the united pairs of yarns; and after freeing the yarn ends for movement about the cords, giving the gripping location of the second cord the same number of turns of rotation as previously but in the opposite sense, thereby restoring the original amount of twist in the region of splice and in the main length of the second cord.

3,315,459
BRIDLE BIT WITH INTERCHANGEABLE MOUTHBARS
Melvin D. Gunthert, Rte. 2, Box 127,
Sweet Home, Oreg. 97386
Filed Oct. 12, 1965, Ser. No. 495,249
9 Claims. (Cl. 54-8)

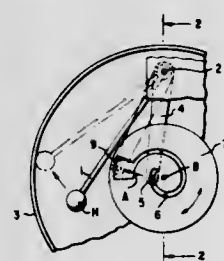


1. A bridle bit of the type characterized by a frame comprising a pair of opposed duplicate cheek plates having upper and lower end portions, a plate linking and assembling member at right angles to and interposed between said lower end portions and having outer ends loosely but positively structurally connected with their respectively cooperable lower end portions, a readily attachable and detachable interchangeable-type mouthbar interposed between said upper end portions, said mouthbar having terminal end portions, said upper end portions having alignable apertures, the respective terminal end portions of said mouthbar extending through and beyond said apertures, said extending end portions having non-circular latch pin holes, and readily insertable and removable latch pins passing slidably but non-rotatably through their respectively cooperable latch pin holes, each cheek plate being provided above and below the apertures with aligned outstanding fixed lugs, each terminal end portion of said mouthbar fitting insertably but firmly between said lugs, said lugs also having non-circular latch pin holes, and said latch pin passing downwardly through and being retentively but removably

keyed in the coordinating latch pin holes, each latch pin being provided at its upper end with an enlarged integral head, and detachable safety catch means cooperable with said head and removably retaining the latch pin between said lugs.

3,315,460

ALARM CLOCK CLAPPER RETARDER
Heinz Odenbach, Schwenningen am Neckar, Germany, assignor to Kienzle Uhrenfabriken G.m.b.H., Schwenningen am Neckar, Germany, a limited-liability company of Germany
Filed Sept. 20, 1965, Ser. No. 488,550
6 Claims. (Cl. 58-21.12)

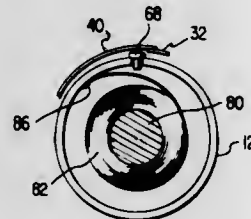


1. An alarm clock having a frame, a gong, a turnable shaft on the frame carrying an alarm escape wheel, a verge and hammer system, a mass-body movably mounted for varying speed of movement on the frame and having a cam groove laterally open and having closed ends, a swing lever on the shaft and mounted to swing with the hammer system, the lever having a projection on the swing end thereof to move in an arc and engaged in the groove between the walls thereof, at least a portion of the groove being out of line with the direction of motion of the projection during swing of the swing lever and hammer system so that swinging of the lever will cam the body to move and provide an inertia load on the lever and hammer system for slowing the latter, an end portion of the groove being outwardly turned so that when the hammer nears the gong as a consequence of movement of the lever and body in a one-half swing, engagement of the projection on the groove walls is less restrictive for swinging movement of the projection and hammer system to permit the hammer system to strike the gong without appreciable impedance of the mass-body.

3,315,461

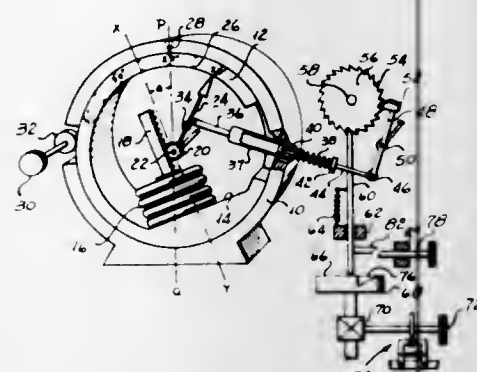
MAINSRING MONITOR

Ralph G. Eshleman and John O. James, Lancaster, Pa., assignors to Hamilton Watch Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Dec. 18, 1964, Ser. No. 419,324
14 Claims. (Cl. 58-85)



1. A monitor for the mainspring of timing devices comprising a rotatable mainspring barrel, an expandable mainspring in said barrel, a pair of electrical contacts mounted on and rotatable with said barrel, an electrical power source and an electrical indicator, a pair of stationary resilient wiper arms engaging said contacts and coupling said electrical power source to said electrical indicator through said contacts, and means radially movable through the wall of said barrel in response to mainspring expansion for separating said contacts.

3,315,462
METEOROLOGICAL ALARM CLOCK
Maurice E. Bosquet, Les Hautes, Fontenelles 32, Rue des Fontenelles, Sevres, France
Filed Sept. 4, 1963, Ser. No. 306,451
4 Claims. (Cl. 58-152)



1. An alarm system including in combination alarm means adapted to produce a signal, first releasable means for normally disabling said alarm means, means for releasing said first releasable means at a predetermined time, second releasable means for normally disabling said alarm means, means connecting both said releasable means to said alarm means, means comprising a movable member responsive to a certain atmospheric condition, coupling means comprising interengageable elements connected respectively to said movable member and to said second releasable means, and means mounting said interengageable elements for movement toward each other in response to movement of said member in one direction to release said second releasable means at a particular value of said condition to cause said alarm means to produce its signal upon the concurrence of said predetermined time and said particular value of said atmospheric condition and for idle movement away from each other in response to movement of said member in the other direction.

3,315,463

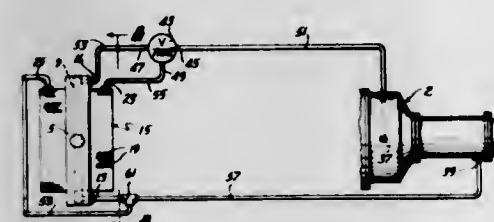
EXPANSIBLE LINK CHAIN AND CONNECTORS
Henri F. Laverriere, Etremblere, France, assignor to Etablissements Zuccolo, Rochet & Co., Annecy, Haute Savoie, France, a corporation of France
Filed Feb. 10, 1964, Ser. No. 343,559
Claims priority, application France, Mar. 19, 1963, 928,486
5 Claims. (Cl. 59-79)



1. In an expansible link chain, the combination of a series of links disposed at least in the contracted position of the chain in two rows, the links of each row being staggered relative to the links of the other row, and two connectors for each link, each connector being connected to a link of one row and connected to a link of the other row, said connectors thereby connecting each link of one row with two links of the other row, said connections being free from any bias in the links of one row and being resiliently biased in the links of the other row for urging the links into the contracted chain position, each link comprising a hollow casing having tongues defining a I-shaped slot through which the connectors are inserted for connection to the links, the tongues of the link of one row being provided in a face thereof adjacent to the face of the links of the other row contain-

ing the tongues thereof, and a closure member removably inserted in the slot of each bias-free link, of said one row for releasably closing at least a portion of the slot, thereby restraining disengagement of the connectors from the link of said one row.

3,315,464
HEAT-EXCHANGE SYSTEM
Perez M. Hayden, 5596 Jurupa Ave., Riverside, Calif. 92504
Filed July 6, 1961, Ser. No. 122,212
7 Claims. (Cl. 60-12)

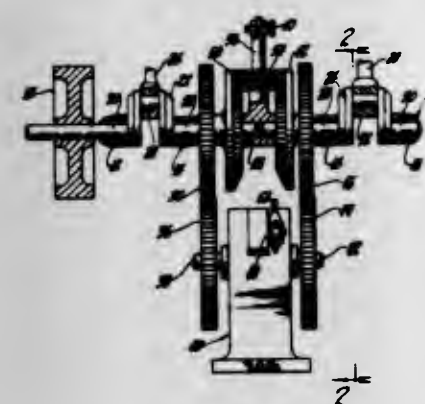


1. A heat-exchange system adapted to cool the oil employed in connection with the operation of an engine driven torque converter, comprising: an engine; a radiator; means connecting said radiator to said engine for circulating coolant from said radiator through said engine; conduit means for cooling said oil positioned within said radiator with the exterior wall of said conduit means being in heat-exchange relationship with said coolant; a torque converter driven by said engine; a heat exchanger for cooling said oil; and means connecting said torque converter with said heat exchanger and with said conduit means for circulating the oil in said torque converter through said heat exchanger and through said conduit means.

3,315,465

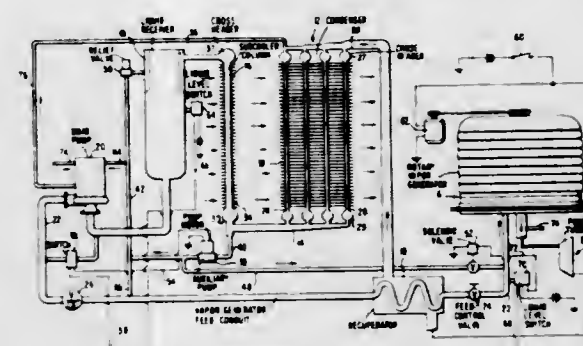
PHASE RELATION CONTROL

Rolland B. Wallis, La Grange Park, Ill., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 9, 1965, Ser. No. 470,674
11 Claims. (Cl. 60-24)



1. In combination with a pair of crankshafts adapted to be driven by the same power source, means to control the phase angle between said crankshafts comprising variable ratio transmission means drivingly connected between said crankshafts and including means providing a ratio of unity as well as predetermined ratios above and below unity to relate the rotational speeds of said crankshafts, and ratio selection means adapted to carry out the selection of said ratios so as to selectively relate said crankshaft speeds at any desired one of said ratios whereby the phase relation of said crankshafts with one another may be regulated in a desired manner.

3,315,466
VAPORIZED FLUID POWER SYSTEM
James H. Anderson, 1615 Hillock Lane, York, Pa. 17403
Filed Aug. 5, 1965, Ser. No. 477,402
5 Claims. (Cl. 60-36)



1. A vaporized fluid power system comprising in series: a vapor generator; a fluid motor connected to said generator for extracting mechanical energy from the vapor output thereof; a condenser for receiving and condensing the vapor therefrom comprising at least one substantially vertically disposed condensing tube connected at the upper end thereof to the vapor exhaust from said motor; a subcooler for transmitting and subcooling the condensate from said condenser comprising at least one substantially vertically disposed subcooling tube and means providing fluid communication between the lower end of said subcooling tube and the lower end of said condensing tube; and means sequentially directing cooling air in heat exchange relationship over said subcooler and said condenser so that vapor is condensed in said condenser and the liquid condensate is subcooled in said subcooler at relative pressures such that a pressure gradient is imposed in the fluid of sufficient magnitude to cause said condensate to flow upwardly in said subcooler against the adverse static head conditions imposed thereon by gravity; a liquid reservoir in communication with the upper end of said subcooler to receive and store condensate therefrom; a fluid pump disposed proximate the lower end of said reservoir, the inlet of said pump being in communication with the lower end of said reservoir, the static head provided by the fluid stored in said reservoir being such that cavitation and vapor flash of fluid in the inlet of said pump is prevented; and means to selectively transmit fluid from the outlet of said pump to said vapor generator for vaporization therein; and means to compensate for fluid thermal migration in the system during system inactivity.

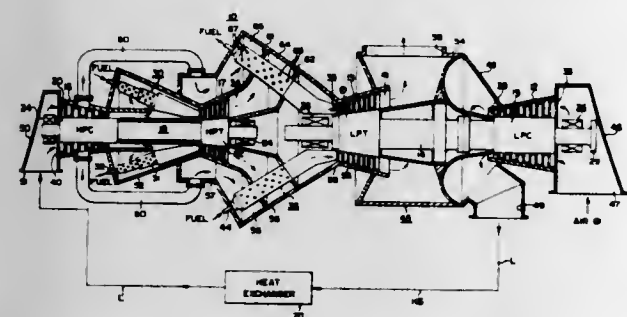
3,315,467

REHEAT GAS TURBINE POWER PLANT WITH AIR ADMISSION TO THE PRIMARY COMBUSTION ZONE OF THE REHEAT COMBUSTION CHAMBER STRUCTURE

Stewart H. De Witt, Marple Township, Media, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 11, 1965, Ser. No. 438,853
6 Claims. (Cl. 60-39.17)

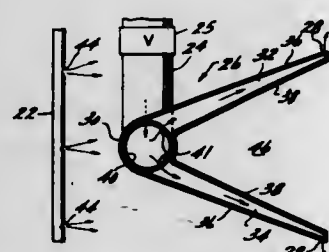
1. A unitary open-cycle gas turbine power plant, comprising: a first multi-stage compressor having a rotor and a second multi-stage compressor having a rotor, a first gas turbine drivingly connected to said first compressor rotor,

a second gas turbine drivingly connected to said second compressor rotor and having an output shaft for driving an external load, said turbines and compressors being coaxially arranged, first fuel combustion apparatus interposed between said first compressor and first turbine for providing hot motive gases to said first turbine, casing structure encompassing the outlet of said first turbine and the inlet of said second turbine and effective to provide a passageway for the exhaust gases from said first turbine to said second turbine to motivate the latter, second fuel combustion apparatus interposed in said passageway for reheating the exhaust gases from said first turbine before admission to said second turbine,



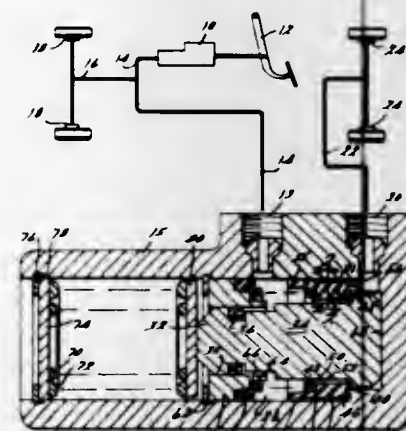
said second fuel combustion apparatus including at least one tubular combustion chamber, said combustion chamber having a primary combustion zone and a secondary combustion zone, means for admitting fuel to said primary zone, means defining a first passageway for directing the exhaust gases into said secondary zone, and means for bleeding pressurized air from one of said compressors and defining a second passageway for directing the bled air to said primary zone for combustion.

3,315,468
COOLED FLAMEHOLDER ASSEMBLY
John W. Vdovlak, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Oct. 1, 1965, Ser. No. 492,039
3 Claims. (Cl. 60-39.72)



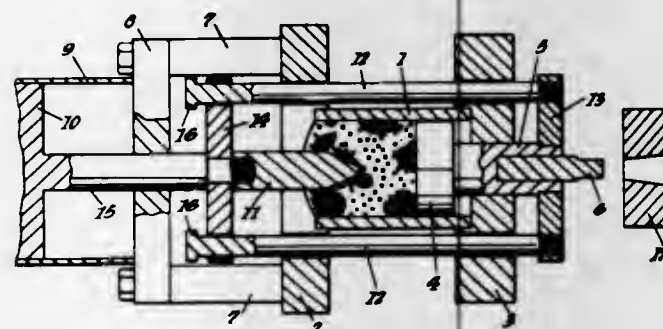
2. A flameholder assembly disposed within a combustion chamber having a gas flow therethrough comprising, a V-shaped member in cross-section having its apex directed upstream and legs directed downstream, said member including spaced walls to form hollow separated legs, said V-shaped flameholder is circular and closed upon itself, support means connected to said member to direct cooling air into said legs, apertures spaced along at least one trailing edge of said legs on the outer surface of the V to direct said cooling air into the gas flow at separately spaced points, and fuel injection means upstream of the flameholder to inject fuel substantially in alignment with said apertures.

3,315,469
PRESSURE PROPORTIONING VALVE
William Stelzer, Bloomfield Hills, Mich., assignor to Kelsey-Hayes Company
Filed July 14, 1965, Ser. No. 471,920
11 Claims. (Cl. 60-54.5)



1. A proportioning valve adapted to be interposed between a fluid motor and a brake cylinder of a vehicular hydraulic brake system including a housing having an inlet opening, an outlet opening and a chamber providing communication between said inlet opening and said outlet opening; a piston in said chamber movable in response to a predetermined pressure differential between said inlet opening and said outlet opening; a valve element carried by said piston operable to block fluid communication between said inlet opening and said outlet opening; and elastomeric valve means exposed to inlet fluid pressure on one side thereof and having recess means on the opposite side thereof exposed to outlet fluid pressure, said valve means being compressible in response to an increase in inlet fluid pressure over outlet fluid pressure after closure of said valve element to contract the volume of said recess means whereby said recess means will expand upon a subsequent reduction in inlet fluid pressure to relieve outlet fluid pressure.

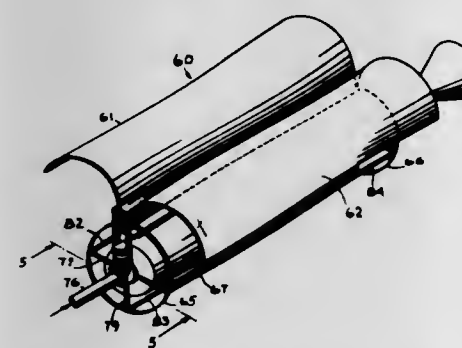
3,315,470
PRESSURE APPLYING DEVICES
Charles H. Clews, 177 Barnes Lane, Rushall, Walsall, England
Filed Aug. 10, 1965, Ser. No. 478,684
2 Claims. (Cl. 60-54.5)



1. A pressure applying device comprising a cylinder, a piston head that is slidably mounted in the cylinder, a first piston rod rigid with said piston head and extending out of the cylinder for use as an intensified pressure delivering member, a second piston rod extending into the cylinder, said second piston rod having a cross-sectional area that is less than the cross-sectional area of said piston head, and a mass of small balls within the cylinder for transmitting to the piston head pressure created by movement of the second piston rod towards said piston head, said first and second piston rods extending in the same direction, mechanical means interconnecting said first and

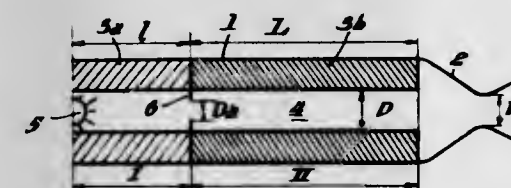
second piston rods such that the second piston rod is free to move toward the piston head on the first piston rod, the second piston rod can only be retracted from the piston head on the first piston rod by a predetermined amount before said mechanical means causes the first piston rod to retract with the second piston rod.

3,315,471
DIRECT CYCLE RADIOISOTOPE ROCKET ENGINE
Charles Lee Dalley, Palos Verdes Estates, Barnam I. Friedman, San Pedro, John S. Martinez, Torrance, Earl W. Allen, Malibu, and Donald Jortner, Palos Verdes Peninsula, Calif., assignors, by mesne assignments, to TRW Inc., a corporation of Ohio
Continuation of application Ser. No. 243,140, Dec. 7, 1962. This application Oct. 6, 1965, Ser. No. 505,090
9 Claims. (Cl. 60-203)



7. A direct cycle radioisotope-heated propellant, thruster comprising:
a radioisotope heat source;
a housing surrounding said heat source in spaced relation thereto and providing an annular fluid passage for flow of propellant over said heat source;
said housing having a propellant inlet to one end of said passage;
said housing including an outer radiation shield, said radiation shield comprising a plurality of sections movable from a closed to an open position and thermostatic means responsive to temperature changes within said housing for moving said sections to thereby maintain a predetermined operating temperature by permitting radiation directly from the inner portion of said housing adjacent said heat source, and
a nozzle receiving the heated propellant from the outlet end of said passage.

3,315,472
HYPERGOLIC GAS GENERATOR
André Moutet and Hélène Moutet, Villaine-par-Mansy, France, assignors to Office National d'Etudes et de Recherches Aéronautiques, Chatillon-sous-Bagneux, France, a French body corporate
Filed Oct. 13, 1965, Ser. No. 495,603
Claims priority, application France, Aug. 30, 1961, 602; July 12, 1962, 903,830; July 11, 1963, 941,153
22 Claims. (Cl. 60-251)



6. A high velocity gas stream generator which comprises, in combination, a reaction chamber having a nozzle at the rear end thereof, at least two solid compo-

nents housed in said chamber in respective portions thereof and one of which, called downstream portion, is nearer to said nozzle than the other, called upstream portion, said solid components forming at least one longitudinal passage in communication with said nozzle, the end of said passage adjoining said nozzle being called the passage downstream end and the other end of said passage being called the passage upstream end, means for injecting into said passage a fluid component hypergolic with said solid components to produce a gas stream flowing toward said nozzle, said fluid component injecting means being located near the upstream end of said passage, the upstream solid component portion having with respect to the fluid component injected thereon a delay of ignition shorter than the downstream solid component portion with respect to said fluid component.

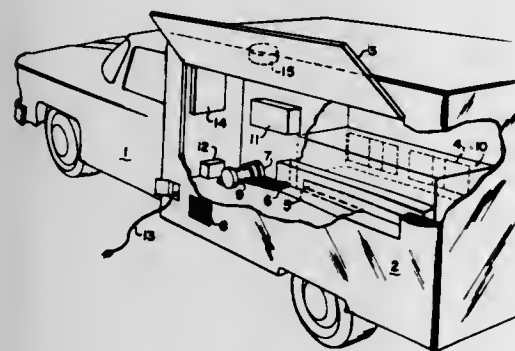
3,315,473
OFFSHORE PLATFORM
Ferdinand R. Hamber and Claude L. Clark, both of Houston, Tex., assignors to Brown & Root, Inc., Houston, Tex., a corporation of Texas
Continuation of application Ser. No. 165,997, Jan. 10, 1962. This application Aug. 27, 1965, Ser. No. 494,289
6 Claims. (Cl. 61-46.5)



1. A tower resting on the bottom of a body of water in an offshore location and extending above the surface of said body, said tower comprising:
a central, substantially vertically extending leg;
a plurality of mutually spaced and substantially vertically extending intermediate legs, said intermediate legs being disposed laterally outwardly from said central leg;
a plurality of outer legs having upper submerged ends, said outer legs being inclined downwardly and outwardly of said intermediate legs;
said intermediate and said outer legs being generally symmetrically disposed in relation to said central leg, with said intermediate and said outer legs being generally aligned with planes extending radially of said central leg;
said upper ends of said outer legs being mutually spaced, with each such upper end being disposed generally between adjacent intermediate legs;
each of said central, intermediate, and outer legs having hollow lower ends;
at least one pile projecting downwardly from and out of the hollow lower end of each of said central, intermediate and outer legs and extending into a submerged formation on the bottom of said body of water;

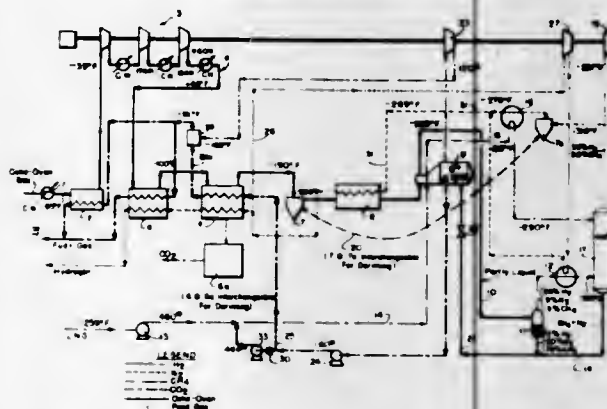
- a generally annular body of cementitious material disposed and hardened in situ between an outer peripheral portion of each of said piles and an inner portion of the hollow lower end of the leg from which it projects;
- a plurality of vertically spaced first securing means carried by the lower end of each of said legs, each comprising a ring secured to a leg interior and having a plurality of circumferentially spaced fingers inclined inwardly and downwardly thereof, and at least partially embedded within said cementitious material;
- a plurality of vertically spaced second securing means carried by each of said piles, each comprising a ring secured to a pile exterior and having a plurality of circumferentially spaced fingers inclined outwardly and upwardly, thereof, and at least partially embedded within said cementitious material;
- at least some of said first securing means of each leg being each superposed above a second securing means and generally aligned longitudinally therewith in relation to their respectively associated leg and pile;
- a plurality of vertically spaced guide stations, each said guide station including a plurality of horizontally displaced but interconnected annular collars, with at least some of the collars of said plurality of guide stations being superposed in axial alignment;
- a plurality of conductor conduits, each conductor conduit passing generally axially through a plurality of superposed collars of a plurality of said guide stations; and
- frame means interconnecting said central, intermediate, and outer legs, said guide stations and said collars.

3,315,474
MOBILE THERMOELECTRIC REFRIGERATION SYSTEM
 Irving Farer, 4654 Kraft Ave., North Hollywood, Calif. 91602
 Filed Aug. 23, 1965, Ser. No. 481,706
 17 Claims. (Cl. 62-3)



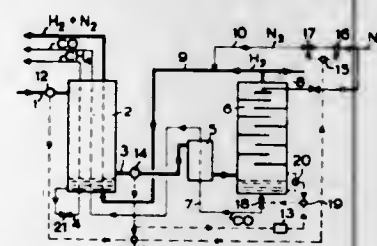
1. A mobile thermoelectric refrigeration system comprising:
 - a thermally insulated case defining a food storage compartment;
 - a thermoelectric array comprising a plurality of thermoelectric modules disposed in heat exchange relationship with respect to the interior of said case to absorb heat therefrom;
 - a source of direct current connected to said thermoelectric array;
 - an alternating-current motor driven blower located adjacent to said thermoelectric modules whereby forced air from said blower is directed in heat exchange relationship with said modules for transferring heat away from said modules; and
 - inverter means connected to said source of direct current for supplying said blower with alternating current derived from said source.

3,315,475
FREEZING OUT CONTAMINANT METHANE IN THE RECOVERY OF HYDROGEN FROM INDUSTRIAL GASES
 Alexander Harmens, Purley, Surrey, England, assignor to Conch International Methane Limited, Nassau, Bahamas, a Bahamian company
 Filed June 15, 1964, Ser. No. 375,131
 Claims priority, application Great Britain, Sept. 26, 1963, 37,870/63
 9 Claims. (Cl. 62-12)



1. Process for the recovery of hydrogen from industrial feed gases such as coke-oven gas, comprising the steps of
 - (a) partially liquefying the feed gas,
 - (b) separating the partly liquefied feed gas into a gaseous fraction and a liquid fraction,
 - (c) sub-cooling a separate supply of liquefied natural gas,
 - (d) washing said gaseous fraction in the sub-cooled liquefied natural gas in an absorber and thereby recovering hydrogen as a major volatile constituent, contaminated only by minor amounts of methane,
 - (e) combining said liquid fraction with the liquid absorber bottom product from step (d),
 - (f) passing the combined liquids from step (e) in heat-exchange relationship with the incoming feed gas in step (a) to partially liquefy same,
 - (g) expanding said methane-contaminated hydrogen leaving the absorber to freeze out the contaminating methane as a separate solid product, and
 - (h) using the expanded, methane-free hydrogen obtained for further sub-cooling the liquefied natural gas.

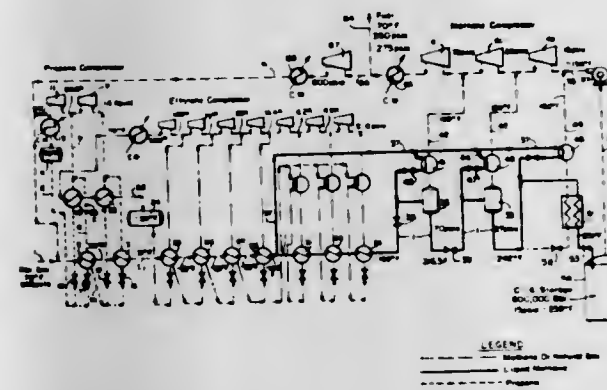
3,315,476
CONTROLLED NITROGEN ADDITION TO RECOVERED HYDROGEN RESPONSIVE TO TEMPERATURE
 David Kortlandt, Geleen, and Jacobus Th. Reuteling-sperger, Stein, Netherlands, assignors to Stamlicarbon N.V., Heerlen, Netherlands
 Filed Jan. 21, 1965, Ser. No. 426,921
 Claims priority, application Netherlands, Jan. 24, 1964, 6,400,523
 5 Claims. (Cl. 62-20)



1. In a process for separating a gas mixture rich in hydrogen including the steps of feeding the gas mixture to a separating column and cooling the same therein under pressure to form a condensed fraction and leave a gaseous residue containing the hydrogen, removing the condensed fraction from the column and expanding the same, then passing the expanded fraction back through

said column in indirect heat exchange relationship with the gas mixture therein to cool said mixture, withdrawing the gaseous residue from the column and scrubbing the same with liquid nitrogen in a scrubbing column to provide a scrubbed gas comprising nitrogen and hydrogen and another condensed fraction from said gas mixture, expanding said other condensed fraction and passing the same in indirect heat exchange relationship to the gas residue discharged from said separating column to cool the same prior to scrubbing and supplying additional nitrogen to the nitrogen-hydrogen gas obtained from said scrubbing column, the improvement which comprises maintaining the amount of said other condensed fraction substantially constant on an average during said separation but momentarily varying the amount of said other condensed fraction from said scrubbing column used to cool said gas mixture according to the temperature of gaseous residue withdrawn from the separating column and controlling the amount of nitrogen supplied to the nitrogen-hydrogen mixture depending upon said temperature.

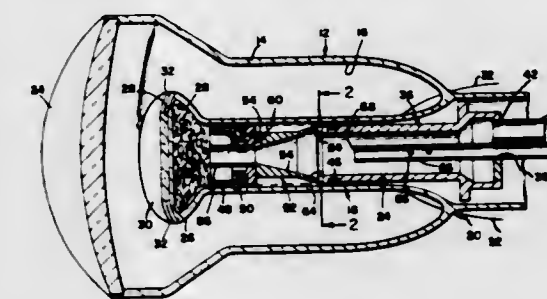
3,315,477
CASCADE CYCLE FOR LIQUEFACTION OF NATURAL GAS
 Jackson O. Carr, Shawnee Mission, Kans., assignor to Conch International Methane Limited, Nassau, Bahamas, a company of the Bahamas
 Filed July 15, 1964, Ser. No. 382,774
 4 Claims. (Cl. 62-23)



1. The method of liquefying a gas comprising
 - (a) supplying the gas in a main feed stream at high pressure and essentially ambient temperature,
 - (b) removing heat from the gas to cool the gas to a temperature at which it is in a liquid state at said high pressure,
 - (c) withdrawing from said main feed stream a portion of the liquefied gas from step (b) as a side stream,
 - (d) subcooling the rest of the gas in said main stream to a still lower temperature than the gas in the side stream,
 - (e) throttling said subcooled liquid gas from step (d) into a flash drum at a reduced pressure to flash off part of the gas as a vapor and still further cool the residual liquid gas,
 - (f) heat exchanging liquefied gas from said side stream of step (c) with the flash vapor from step (e) to further subcool said liquefied side stream gas,
 - (g) throttling said liquefied subcooled side stream gas of step (f) into the flash drum to rejoin the main stream,
 - (h) throttling the subcooled main stream liquefied gas into a storage container as liquefied gas at substantially atmospheric pressure,
 - (i) withdrawing vapor from said storage container to maintain the pressure in said container at substantially atmospheric pressure,

- (j) compressing said vapor in multi-stage compression and cooling said compressed vapor to ambient temperature,
- (k) withdrawing part of said compressed vapor for use as product, and
- (l) further compressing the remainder of said compressed vapor to about the initial pressure of the main feed stream, and returning it to the entry point of the main feed stream.

3,315,478
CRYOGENIC TRANSFER ARRANGEMENT
 Peter J. Walsh and Kenneth W. Cowans, Los Angeles, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
 Filed June 29, 1965, Ser. No. 467,984
 10 Claims. (Cl. 62-45)



1. In a cryogenic refrigerating fluid transfer arrangement,
 - a hollow cooling finger having a separate liquid refrigerant chamber at one aspect thereof,
 - a fluid droplet collector and guide device defining one end of the refrigerant chamber and in transfer communication therewith,
 - a filler line operative to convey refrigerating fluid to the hollow cooling finger,
 - said device being positioned within the hollow finger to collect the conveyed refrigerating fluid and guide same to the refrigerant chamber,
 - the device and collector being in spaced relation to each other,
 - the space between said device and collector providing a common path to admit fluid droplets to the device for conveyance to said chamber and to accommodate the escape of evaporated fluid from the chamber, and
 - means associated with the device to inhibit escape of refrigerating fluid from the chamber,
 - said last-mentioned means being effective to inhibit said escape as the arrangement is moved into various physical attitudes in space.

3,315,479
STORING HYDROGEN
 Richard H. Wiswall, Jr., Brookhaven, and James J. Reilly, Jr., Bellport, N.Y., assignors to the United States of America as represented by the United States Atomic Energy Commission
 No Drawing. Filed June 15, 1966, Ser. No. 558,220
 4 Claims. (Cl. 62-48)

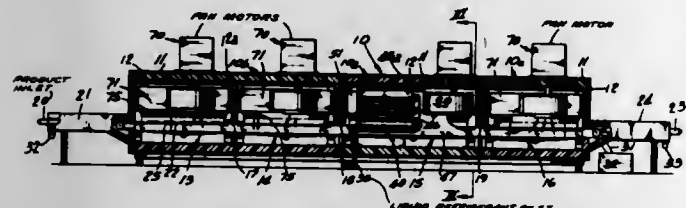
1. The method of storing hydrogen comprising contacting gaseous hydrogen with a solid nickel-magnesium alloy, said alloy being composed of from about 40 weight percent to about 80 weight percent nickel based on the total weight of the nickel-magnesium alloy and from about 20 weight percent to about 60 weight percent magnesium based upon the total weight of the nickel-magnesium alloy, while maintaining said hydrogen and said alloy at a pressure of at least about 18 pounds per square inch and at a temperature of at least about 250°

C. until said alloy has absorbed up to about 5 weight percent hydrogen based on the total weight of the nickel-magnesium alloy.

3,315,480

CRYOGENIC METHOD AND APPARATUS FOR QUICK FREEZING

Harold M. Rich, Northbrook, Ill., assignor, by mesne assignments, to Chemetron Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 27, 1964, Ser. No. 406,795
22 Claims. (Cl. 62-63)

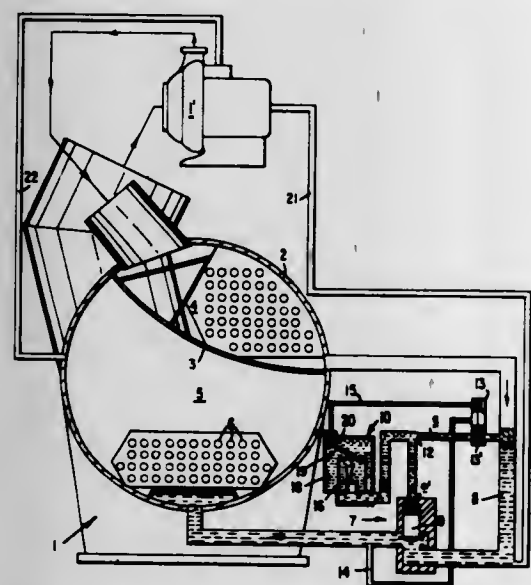


1. The method of providing an efficient low temperature quick-freezing atmosphere for cooling and quick-freezing a continuously moving product to be frozen, comprising providing a source of liquid cryogen at atmospheric pressure, passing a current of gaseous form of said cryogen in heat transfer relation to said liquid to progressively evaporate said liquid by the addition of heat thereto, directing the thus evaporated cryogen in its gaseous form into said current and forcing the combined current against said product in a jet stream and forcibly recirculating the gaseous form of said cryogen leaving said product into heat transfer relation with said liquid cryogen.

3,315,481

APPARATUS AND METHOD FOR CONTROLLING REFRIGERANT FLOW IN A REFRIGERATION MACHINE

Donald R. Check, Minneapolis, Minn., and William E. Clark, Syracuse, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Feb. 16, 1966, Ser. No. 527,869
9 Claims. (Cl. 62-115)



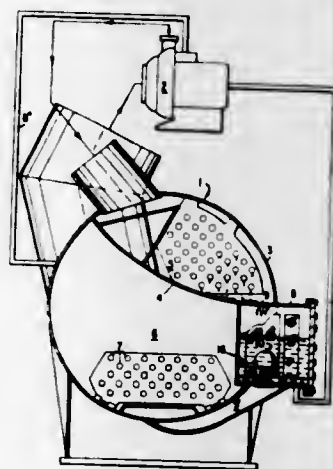
9. A method of controlling refrigerant flow in a refrigeration machine which consists in the steps of: regulating the passage of liquid refrigerant from the high pressure side of the machine to the low pressure side of the machine by a mechanism operable in response to the level of liquid refrigerant collected in the high pressure side of the machine, and overriding the action of said mechanism at a predetermined load on the machine so that a mixture of gaseous and liquid refrigerant from the high pressure side may pass to the low pressure side unimpeded by the action of the mechanism.

ous and liquid refrigerant from the high pressure side may pass to the low pressure side unimpeded by the action of the mechanism.

3,315,482

REFRIGERANT FLOW CONTROL FOR MAINTAINING MINIMUM HEAD

Howard W. Kirtland, East Syracuse, N.Y., and Donald R. Check, Minneapolis, Minn., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Feb. 16, 1966, Ser. No. 527,877
3 Claims. (Cl. 62-115)

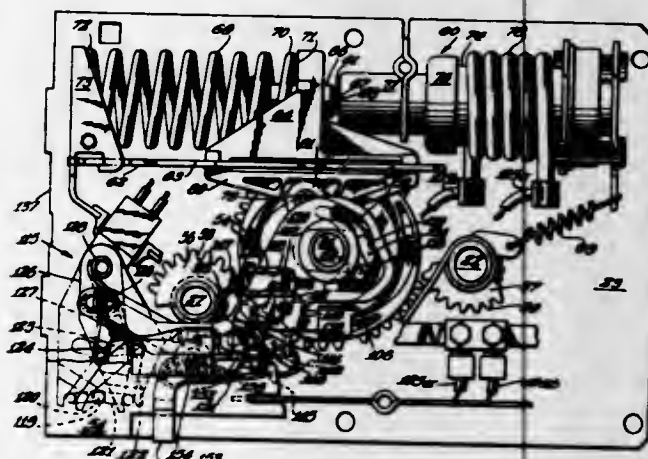


3. The method of controlling refrigerant flow in a refrigeration machine which consists in the steps of: regulating a passage of liquid refrigerant from the high pressure side of the machine to the low pressure side of the machine by mechanism operable in response to the level of liquid refrigerant collected in the high pressure side of the machine, and overriding the action of said mechanism when the pressure differential between the high pressure and low pressure sides of the machine is below a desired minimum to hold said mechanism closed until the desired minimum pressure differential is attained.

3,315,483

AUTOMATIC ICE MAKER

William R. Donahue, Jr., Geneva, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed Feb. 14, 1966, Ser. No. 527,189
8 Claims. (Cl. 62-137)



1. In an automatic ice cube maker having a housing, an ice cube tray rotatably mounted on the housing, a driver member and a driven member both rotatably mounted on the housing with the driven member being operatively connected to the ice tray for corotation therewith, an electrically operated power element connected to the driver member for effecting oscillatory rotatable movement thereof, a radial shoulder and an inclined ramp leading to

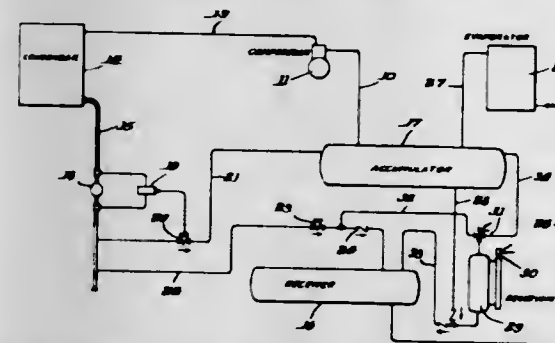
the shoulder formed on one of said rotatable members, a radially movable pawl mounted for corotation on the other of said rotatable members, means biasing the pawl radially against the ramp for radial guidance of the pawl by the ramp through a path of travel into engagement with the shoulder upon rotation of the driver member in one direction of rotation and for maintaining the pawl in engagement with the shoulder to rotate the driven member with the driver member upon rotation of the driver member in an opposite direction of rotation, the improvement comprising,

stop means movable into the path of travel of said pawl for moving said pawl radially inwardly away from said shoulder upon rotation of said driver member and said pawl in said one direction of rotation to prevent engagement of the pawl with the shoulder.

3,315,484

PRESSURIZED REFRIGERATION CIRCULATING SYSTEM

Robert R. Roas, Wheaton, Ill., assignor to H. A. Phillips & Co., Chicago, Ill., a corporation of Illinois
Filed May 17, 1965, Ser. No. 456,136
7 Claims. (Cl. 62-174)



1. In a refrigerating system, in combination, a condenser, an evaporator, a feed line for supplying liquid refrigerant under pressure to said evaporator in an amount greater than the evaporator is capable of evaporating, said feed line including a receiver and said feed line connecting the condenser with the receiver, a suction line for drawing off the vaporized and liquid refrigerant from the evaporator, an accumulator in the suction line for trapping the liquid refrigerant passing through the evaporator, liquid return means including a reservoir for receiving and temporarily storing the liquid refrigerant from said accumulator, a conduit connecting said reservoir with the receiver, means operable in response to changes in the level of the liquid in the reservoir, valve means controlled by said liquid level responsive means for introducing refrigerant from the feed line of the system into the said reservoir to force the liquid from the reservoir into the receiver for eventual delivery to the evaporator, means for controlling receiver pressure including a downstream pressure regulator located in the feed line in advance of the receiver, whereby the receiver is maintained at a pressure below condenser pressure but above evaporator pressure, and conduit means having connection with the feed line between the condenser and the pressure regulator for delivering liquid refrigerant to the accumulator.

3,315,485

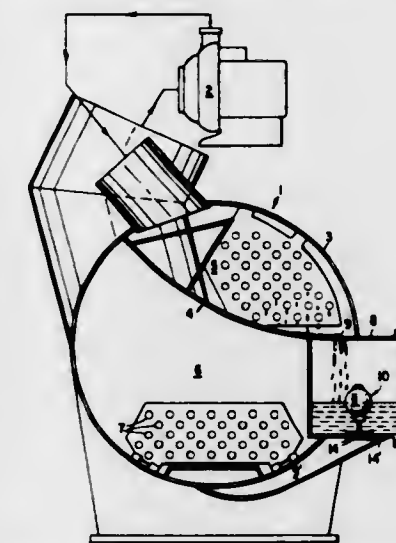
REFRIGERANT FLOW CONTROL INCLUDING REFRIGERANT AGITATION

William E. Clark, Syracuse, N.Y., and Donald R. Check, Minneapolis, Minn., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Feb. 16, 1966, Ser. No. 527,868
4 Claims. (Cl. 62-218)

1. A refrigerant flow control device for varying the position of a refrigerant metering float valve in the high pressure side of a refrigeration machine irrespective of

the refrigerant level therein under low load conditions comprising:

a pneumatic cylinder in the high pressure side of the refrigeration machine having one end in communication with the high pressure side of the machine, a piston slidably disposed in said cylinder,

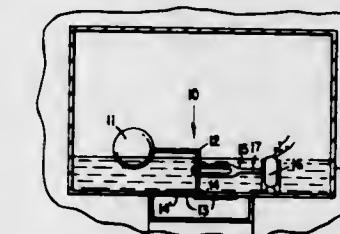


flexible means operably connecting said piston to the float valve to hold the valve open a predetermined amount when said piston is displaced in a direction away from the end of said cylinder in communication with the high pressure side of the machine, means responsive to an operating characteristic of the refrigeration machine indicative of low load conditions to provide low side pressure to the end of said cylinder opposite the end in communication with the high pressure side of the machine.

3,315,486

REFRIGERANT FLOW CONTROL FOR IMPROVING LOW CAPACITY EFFICIENCY

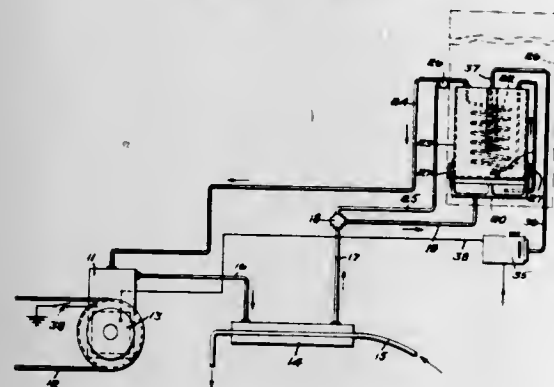
Ellis L. Le Chien, Syracuse, N.Y., and Donald R. Check, Minneapolis, Minn., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Feb. 16, 1966, Ser. No. 527,870
2 Claims. (Cl. 62-218)



1. In a centrifugal refrigeration system, the combination of a high pressure side including a centrifugal compressor and a condenser;
a low pressure side including an evaporator having a tube bundle therein;
a refrigerant metering device comprising a float valve disposed in the high pressure side of the system to meter passage of refrigerant from the condenser to the low pressure side, said float valve being operable in response to liquid refrigerant level in the high pressure side to pass refrigerant to the evaporator to maintain a constant liquid level in the high pressure side under normal operating conditions; and an actuating assembly for actuating said float valve, said assembly being responsive to an operating characteristic of the system at low load to hold said valve open irrespective of the refrigerant level in the high pressure side to pass gaseous refrigerant from the high pressure side to the evaporator to agitate liquid refrigerant in the evaporator thereby wetting sub-

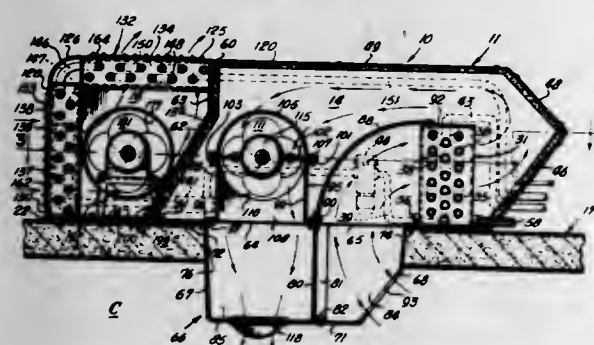
stantially all the tubes of the bundle with liquid refrigerant to increase evaporator efficiency under low load conditions.

3,315,487
REFRIGERATING APPARATUS FOR BOATS AND AUTOMOBILES
Lance A. Heaton, Boston, Mass. (30 Beach Road, Apt. 3B, Middle River, Md. 21220)
Filed July 2, 1965, Ser. No. 469,190
1 Claim. (Cl. 62-226)



Mechanical refrigerating apparatus for boats and automobiles having an engine and a box to be refrigerated, comprising a compressor mechanically coupled to and driven by the engine, a condenser, an expansion valve, and a freezing compartment for ice cube trays, a brine tank, a conduit for refrigerant interconnecting the compressor, the condenser, the valve and said compartment and said brine tank, said brine tank and compartment being located in the box and the box providing a food storage compartment, a conduit for refrigerant leading from said compartment into said brine tank and back to said compressor, and clutch means intermediate the engine and the compressor; thermostatic control means for regulating the operation of the clutch and for regulating the operation of the expansion valve in accordance with the temperature in the brine tank; said freezing compartment having a double-walled bottom and double-walled sides providing communicating spaces between said walls for the circulation of liquid refrigerant through said spaces and thence to the brine tank conduit, and means for circulating refrigerant through said spaces; and spacing means between the respective walls of said bottom for holding said walls in substantially parallel, spaced relation against pressures created in the space between them.

3,315,488
REFRIGERATION APPARATUS
William E. Lind, Dallas, Tex., assignor to Cummins Engine Company, Inc., Columbus, Ind., a corporation of Indiana
Filed Apr. 5, 1966, Ser. No. 540,275
18 Claims. (Cl. 62-241)



1. A condenser and evaporator assembly mountable on a vehicle, said assembly including: a housing mountable on the roof of a vehicle and having a front condenser compartment and rear evaporator compartment, said

housing having a front aperture opening into said condenser compartment at its front end and a top aperture opening to said condenser compartment at its top; a condenser in said condenser compartment and having a front section positioned rearwardly of said front aperture and a top section mounted below said top aperture and rearwardly of said front section, whereby when said vehicle is in forward movement air flows into said condenser compartment through said front aperture and said front condenser section and then out of said condenser compartment through said top condenser section and said top aperture; an evaporator mounted in said evaporator compartment; means providing an inlet passage and an outlet passage opening to said evaporator compartment and also opening to a compartment of a vehicle when said assembly is mounted on the roof of the vehicle; and means for circulating air from said inlet passage through said evaporator to said outlet passage.

3,315,489
POULTRY FREEZING APPARATUS OF THE LIQUID SPRAY TYPE
Ralph S. Zebarth, Kansas City, Mo., and James L. Gerner, Shawnee, Kans., assignors to Ralph Zebarth, Inc., Kansas City, Mo., a corporation of Missouri
Filed Dec. 20, 1965, Ser. No. 514,805
10 Claims. (Cl. 62-264)

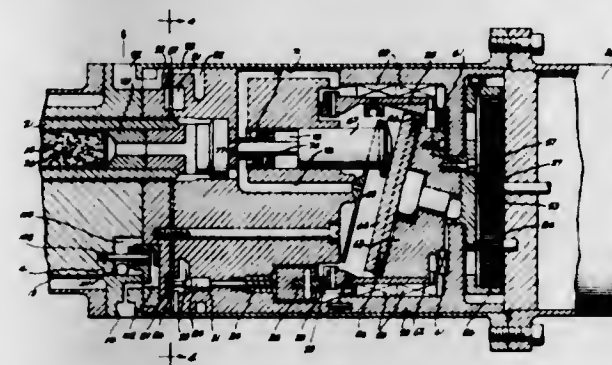


1. A poultry freezing apparatus of a type utilizing a hygroscopic liquid refrigerant comprising:
(a) a cabinet defining a horizontal path of travel,
(b) a conveyor operable to convey poultry to be frozen along said horizontal path through said cabinet, said cabinet being open at the respective ends of said path,
(c) flow control means within said cabinet and operable to direct a hygroscopic liquid refrigerant downwardly over the poultry carried by said conveyor in the form of a series of continuous unbroken flowing curtains, said curtains being spaced apart longitudinally to the path of travel and extending transversely to said path of travel from side to side of said cabinet, whereby to inhibit free circulation of air within said cabinet.

3,315,490
CRYOGENIC REFRIGERATOR
Robert L. Berry, Hawthorne, and Kenneth W. Cowans, Playa del Rey, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Apr. 13, 1965, Ser. No. 447,684
16 Claims. (Cl. 62-333)

1. A device for cooling a heat load comprising: a first refrigeration circuit including a refrigerator having a cylinder and piston means forming a refrigeration stage expansion chamber and valve means coupled to feed and exhaust compressed gas to and from said expansion chamber; and a second refrigeration circuit to receive compressed gas and including a heat exchanger means thermally coupled to the refrigerator, and a Joule-Thomson

liquefier coupled to receive a flow of compressed gas from said heat exchanger means, said heat exchanger means transferring heat from the compressed gas contained therein to said refrigerator stage to cool the compressed gas flowing to the Joule-Thomson liquefier whereby the Joule-Thomson liquefier expands and further cools the received



gas, and means to transfer heat from the load to the expanded and cooled gas of the Joule-Thomson liquefier, said heat exchange means including line means carrying the expanded and cooled gas from the liquefier into thermal heat exchange relationship with the heat exchanger received compressed gas.

3,315,491
PORTABLE TANK COOLER
Fred Zant, Inglewood, Calif., assignor to Protective Packaging, Inc., a corporation of California
Filed Apr. 5, 1966, Ser. No. 545,199
4 Claims. (Cl. 62-338)

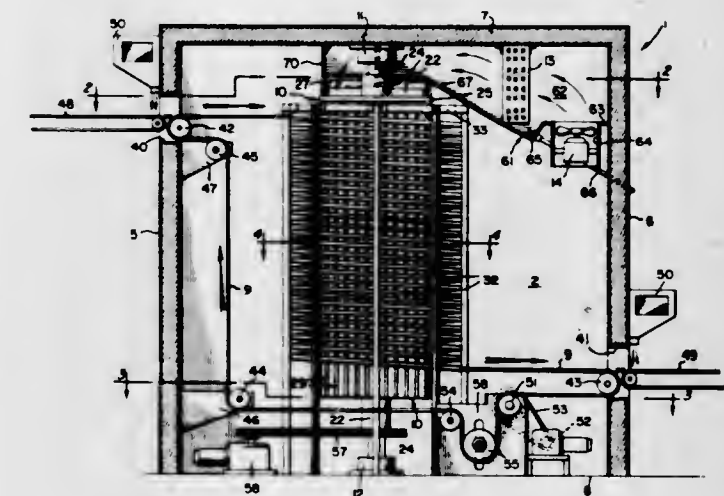


1. A portable refrigeration unit for cooling fluid with a solid coolant, comprising:
a rigid tank of somewhat cylindrical configuration for containing said fluid and having a spigot means for drawing fluid therefrom;
an insulating container for snugly containing said tank substantially enclosed and furthermore, defining a cavity contiguous to said tank for receiving said solid coolant, and having a displaceable slide section for providing access to said spigot means of said tank; and
means for biasing said solid coolant into engagement with said rigid tank.

3,315,492
CONTINUOUS ONCE THROUGH MATERIAL TREATMENT APPARATUS
Moshe Y. Dreksler, Waynesboro, Pa., assignor to Frick Company, Waynesboro, Pa., a corporation of Pennsylvania
Filed Feb. 21, 1966, Ser. No. 528,847
15 Claims. (Cl. 62-381)

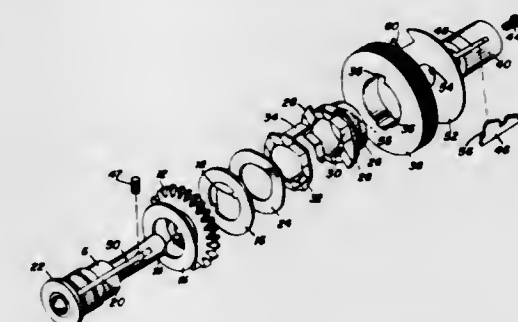
1. In combination with an air conditioning means, an apparatus for treating material comprising
(a) wall means defining a chamber,
(b) a perforated, open ended drum vertically supported for rotation about its longitudinal axis within said chamber,

(c) an endless, flat, foraminous conveyor belt,
(d) a stationary support exteriorly of said drum constructed and arranged to support the conveyor belt substantially flat and in a helical path of travel around said drum,
(e) loading means for delivering material onto said conveyor belt;
(f) unloading means for removing material from said conveyor belt after being treated,



(g) means for rectilinearly moving said conveyor belt,
(h) means for circulating the conditioned air in said chamber, and
(i) baffle means for directing air circulation within said chamber into one end of said drum and out through the perforations in the drum and into contact with the material carried on the conveyor belt.

3,315,493
ADJUSTABLE TORQUE SPINDLE
Fred N. Woodhouse, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Apr. 26, 1965, Ser. No. 450,881
7 Claims. (Cl. 64-30)



1. In an improved spindle mechanism for applying more than one predetermined value of torque to a reel, the combination comprising:
a drive shaft for driving a reel;
drive means;
slip clutch means frictionally interconnecting said drive means to said drive shaft for driving same; and
adjusting means for said slip clutch means rotatably mounted on said drive shaft to provide a backstop for said reel, said adjusting means further being rotatably movable around said shaft between a first position for adjusting said slip clutch means to achieve a predetermined torque of one value, and a second position for adjusting said slip clutch means to achieve a torque of a different value.

3,315,494

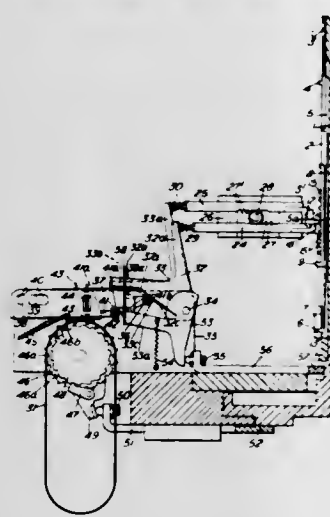
PATTERNING MECHANISM FOR CIRCULAR KNITTING MACHINES

Ernest L. Farmer, Leicester, England, assignor to Wildt Mellor Bromley Limited, Leicester, England, a British company

Filed Jan. 7, 1965, Ser. No. 423,982

Claims priority, application Great Britain, Jan. 15, 1964, 1,722/64

18 Claims. (Cl. 66—50)



1. In a circular knitting machine, in combination; a cylindrical rotary bed having formed therein a circular series of axial grooves; individually movable elements mounted in said grooves, said elements being furnished with control butts and, in addition to being movable lengthwise, having the portions thereof provided with the butts capable of radial movements selectively towards and away from the axis of said cylindrical bed; cam means for acting on said control butts to move the elements lengthwise, the butts being presented to or caused to miss the cam means depending on the selective radial movements of the butted portions of the elements; pressers arranged in the same grooves as and in front of the elements to be controlled, there being one presser to each element and the stem of each presser being furnished with a single patterning butt; a stack of co-adjacent rotary discs which are fixed so far as any movements thereof towards and away from the pressers are concerned, said discs having thereon prearranged peripheral formations for action on the patterning butts for the purpose of pressing the pressers and hence also the corresponding elements to be controlled radially inwards into their grooves; and variable presser moving means for sequentially shifting the pressers longitudinally upwards and downwards to dispose their single patterning butts opposite to the peripheries of predetermined discs.

3,315,495

ARRANGEMENT FOR TRANSFERRING YARN LOOPS BETWEEN NEEDLES OF A KNITTING MACHINE

Gottfried Kühnert, Reichenbach, Westhausen, Germany, assignor to Universal Maschinenfabrik Dr. Rudolf Schleber G.m.b.H., Westhausen, Germany

Filed Dec. 18, 1964, Ser. No. 419,425

Claims priority, application Germany, Dec. 23, 1963, U 10,368

4 Claims. (Cl. 66—96)

1. In a knitting machine, in combination:
(a) two needle beds horizontally offset from each other and defining a knitting area therebetween;
(b) a plurality of elongated needles longitudinally reciprocable in each needle bed between respective rest positions off-set from said knitting area and respective raised positions in which said needles are located in said area,

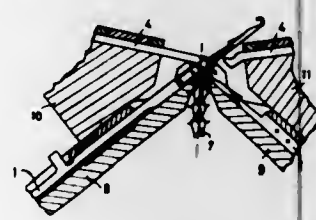
(1) the needles being laterally juxtaposed in respective substantially parallel elongated rows in said needle beds,

(2) each needle having a shank terminating in a hook-shaped head and a shoulder on said shank,

(3) the shoulder having a face transverse of the direction of elongation thereof, said face being spaced from said head and facing toward the same;

(c) resilient means on each needle defining an eye substantially aligned with said face transversely of said direction, said eye being normally closed and adapted to open resiliently toward said head;

(d) two loop holders respectively associated with said needle beds, and elongated in the direction of elongation of the needles in the associated needle bed, each loop holder having two end portions and being formed with a throat in one of said end portions;



(e) means for moving each loop holder in the direction of elongation thereof between an operative position in which the loop holder extends into said knitting area, and a retracted position offset from said knitting area; and

(f) means for moving each loop holder in the direction of elongation of the row of needles in the associated needle bed between a plurality of positions of alignment in which the loop holder is longitudinally aligned with the eyes of respective needles on the associated needle bed when the same are in the raised positions thereof, the loop holder when in the operative position thereof engaging the eye of the aligned needle in said knitting area,

(1) each loop holder enclosing an angle not greater than 90° with an aligned needle in all said positions of said loop holder and of said needle, and

(2) each loop holder and the needles on the associated needle bed being offset from said knitting area in a common direction when the loop holder is in the retracted position and the needles are in the rest position thereof.

3,315,496

GAS FUEL CIGARETTE LIGHTER

Stanley H. Newman, 19 E. 70th St.,

New York, N.Y. 10021

Filed Oct. 13, 1964, Ser. No. 403,551

Claims priority, application France, Feb. 19, 1964, 964,355

9 Claims. (Cl. 67—7.1)



8. A gas fuel lighter having a casing, a fuel tank within said casing, a valve in said fuel tank for releasing a flow of fuel, and means on said casing for igniting said flow of fuel, rotatably operable means within said valve

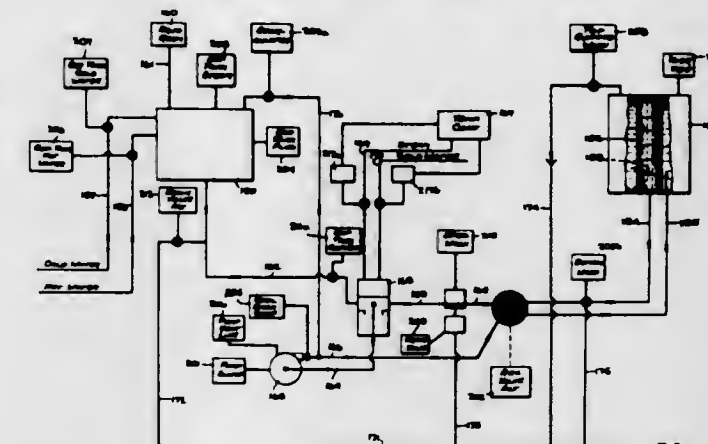
3,315,499

APPARATUS FOR CONTROLLING A DYEING MACHINE

Thomas E. Westall, Marion, N.C., assignor to The American Thread Company, New York, N.Y., a corporation of New Jersey

Continuation of application Ser. No. 249,719, Jan. 7, 1963. This application June 13, 1966, Ser. No. 557,321

10 Claims. (Cl. 68—12)



1. A control system for apparatus which is adapted to apply a plurality of predetermined timed dyeing cycles to goods, each of the predetermined timed dyeing cycles being divided into a series of predetermined periods, the apparatus having a kier for receiving the goods to be dyed, a tank for receiving treating liquids to be transferred with respect to the kier, means for introducing dyeing materials into the apparatus, and a plurality of elements for conditioning the flow and the state of treating liquids which are to be applied to the goods in the kier, at least some of the plurality of elements conditioning the flow and the state of the treating liquids during every period of each of the plurality of predetermined time dyeing cycles, said control system comprising a plurality of means for operating each of the plurality of conditioning elements, interchangeable timing means containing data restricted to a selected one of the plurality of predetermined time dyeing cycles for automatically actuating each of the plurality of operating means in accordance with the selected cycle to which said interchangeable timing means is restricted, means for driving said interchangeable timing means through the selected dyeing cycle to which said interchangeable timing means is restricted, means responsive to said interchangeable timing means for interrupting the operation of said driving means at the end of each of the predetermined periods of the selected dyeing cycle, the interrupting of the driving of said interchangeable means providing the time necessary for the means for introducing dyeing materials to function, means for restoring the operation of said driving means following an interruption thereof, and means connected to at least a portion of the plurality of conditioning elements and driven in synchronism with said interchangeable timing means for controlling the temperature of treating liquids in response to a predetermined timed temperature program which corresponds to at least the selected dyeing cycle to which said interchangeable means is restricted.

3,315,500

OSCILLATING POWER SOURCE PARTICULARLY FOR LAUNDRY MACHINE

Robert W. Brundage, Belmar, St. Louis, and William J. Waigant, Florissant, St. Louis, Mo., assignors to The Emerson Electric Mfg. Co., St. Louis, Mo., a corporation of Missouri

Filed Mar. 9, 1966, Ser. No. 533,086

7 Claims. (Cl. 68—133)

1. A laundry machine having an agitator to be reciprocated or oscillated, a reversible, constant-displacement, hy-

for coarsely adjusting said flow of fuel, linearly operable means within said valve for finely adjusting said flow of fuel, and means operable from externally of said casing for effecting linear movement of said linearly operable means, whereby the flow of fuel from said valve and the flame produced by the burning of said fuel can be separately adjusted both coarsely and finely.

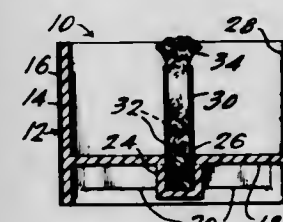
3,315,497

SIMULATED CANDLE

Robert D. MacDonald, Tecumseh, Mich., assignor to Cardinal of Adrian, Inc., Adrian, Mich., a corporation of Michigan

Filed Feb. 28, 1966, Ser. No. 530,314

8 Claims. (Cl. 67—55)



1. A device for producing light and heat comprising a one-piece receptacle of light transparent plastic material having a sidewall of generally circular transverse cross-sectional shape, a circular, substantially planar bottom having a central recess opening toward the interior of the receptacle, a metal tube frictionally held in said recess and extending upwardly to a point near a plane through the upper edge of said sidewall, said tube having a plurality of openings, and a wick in said tube extending substantially the length thereof and protruding above the upper end of said tube to receive a combustible liquid through said tube openings from a pool of liquid in said receptacle.

3,315,498

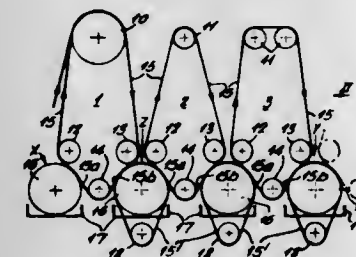
THREAD TREATING MACHINES

Sydney Warren Barker, Colne, Lancashire, England, assignor to Nelvale Limited, Nelson, England, a British company

Filed Aug. 25, 1964, Ser. No. 391,993

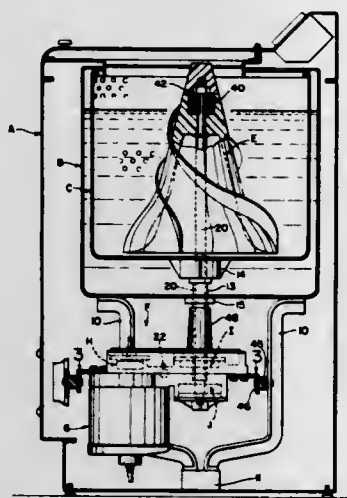
Claims priority, application Great Britain, Aug. 27, 1963, 33,831/63

14 Claims. (Cl. 68—9)



1. A skew roll thread treating machine having an upper main roll and a group of three lower main rolls, all said main rolls cooperating to store and advance thread laid therearound in helical loops to form a thread sheet extending over successive treatment zones spaced along the length of the machine, said group of three rolls being symmetrically disposed about the median plane of the machine, and a set of coaxial treatment rolls located externally of the thread sheet, each treatment roll making contact with the thread sheet on at least one of its flights between a pair of successive main rolls in the group.

draulic motor mechanically associated with said agitator, a constant displacement hydraulic pump supplying hydraulic fluid to said hydraulic motor, a substantially constant speed electric motor driving said pump, a valve means between said pump and said motor for reversing



the direction of fluid flow in said hydraulic motor, said motor having, speed-time variation which is substantially a square wave; and, other means limiting the acceleration of said agitator when said hydraulic motor is reversed.

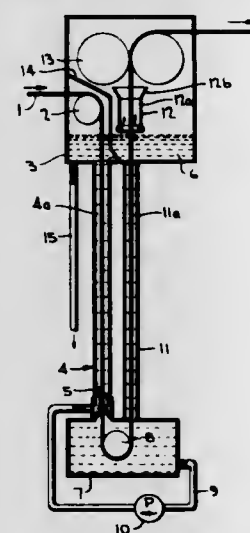
3,315,501

APPARATUS FOR THE CONTINUOUS WET TREATMENT OF TEXTILES AND THE LIKE

Hermann G. Müller, Herisau, Aargau, Switzerland, assignor to Aktiengesellschaft Cilander, Herisau, Switzerland

Filed Sept. 14, 1964, Ser. No. 396,149
Claims priority, application Germany, Sept. 19, 1963, A 44,094

5 Claims. (Cl. 68-181)



1. Apparatus for the continuous wet treatment of a textile material and the like comprising means providing at least two operatively communicating compartments through which the textile material is delivered in downward direction and then in upward direction, said two communicating compartments providing means including connecting means for intercommunicating said two compartments at their lower portions, at least one treatment liquid delivery apparatus disposed at the region of the lower portion of that compartment through which the textile material moves downwardly, said treatment liquid delivery apparatus including a nozzle through which passes said textile material, said nozzle incorporating means for directing a stream of treatment liquid substantially parallel to the surface of the textile material, outlet pipe means communicating with said connecting means, a pump con-

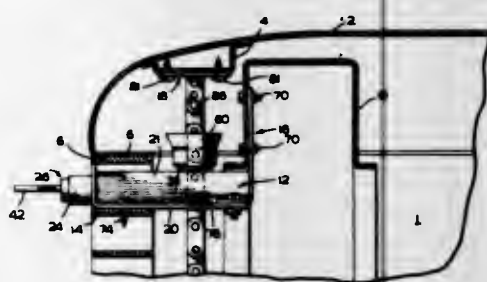
nected with said outlet pipe means, and a connecting pipe communicating the pressure side of said pump with said treatment liquid delivery apparatus.

3,315,502

AUTOMOBILE HOOD LOCKING LATCH DEVICE

Andrew Skrapits and Adolph Braun, both of Bronx, N.Y., assignors to Bronx Locksmiths, Inc., Bronx, N.Y., a corporation of New York

Filed Oct. 22, 1965, Ser. No. 500,902
7 Claims. (Cl. 70-240)



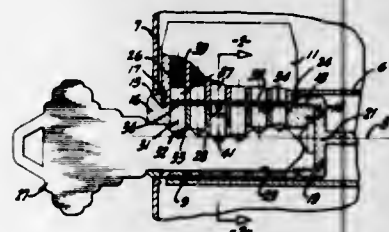
1. An automobile locking latch device for a rear-hinged automobile hood comprising a casing secured to a fixed cross member of an automobile front engine compartment with the front of the casing accessible from in front of the automobile, lock mechanism in said casing including a bolt operable by a key insertable through the front of the casing, and a chain secured to the under side of the automobile hood, hanging vertically therefrom and adapted, when the hood is lowered, to enter said casing through a hole therein and to latch the hood in lowered position by penetration of said bolt between links of the chain.

3,315,503

CONSTRUCTION CYLINDER UNIT

Ernest L. Schlage, Burlingame, Calif., assignor to Schlage Lock Company

Filed July 31, 1964, Ser. No. 386,716
4 Claims. (Cl. 70-383)



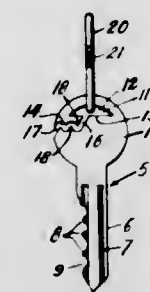
1. A construction cylinder unit comprising a cylinder body having a circular cylindrical plug bore therein and having at least one pin bore intersecting said plug bore, a cylinder plug rotatable in said plug bore, said cylinder plug having a key channel therein and having at least one tumbler bore intersecting said key channel and adapted to register with said pin bore in one rotated position of said plug, a pin slidable in said pin bore, a spring in said pin bore urging said pin toward said plug, a tumbler slidable in said tumbler bore and engageable by said pin and by a key in said channel, said tumbler having bendable means extending toward said pin and movable at least partially into said pin bore to permit shortening of said tumbler, when said plug is rotated, by first engaging a side of said pin bore and then bending laterally into said tumbler bore, said bendable means comprising a laterally bendable end portion of reduced lateral dimensions.

3,315,504

DETACHABLE KEY

Percy G. Billings, Jr., 1103 Pekay St., Vienna, Va. 22180

Filed Aug. 7, 1964, Ser. No. 388,225
4 Claims. (Cl. 70-408)



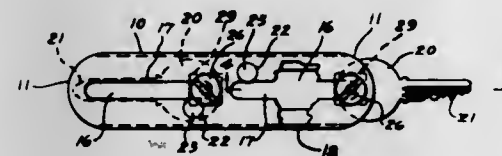
1. The combination of a key and a key ring having an area of reduced section, said key consisting of a shank, a handle on one end of said shank having a key ring receiving slot forming a restricted passageway for said key, said passageway defining a zig-zag slot and a series of nodes and projections extending into said slot which frictionally and yieldingly engage the key ring when the key is assembled on said ring, said area of reduced section being of a size slightly smaller than said slot to permit attachment and detachment of said key when said reduced section is brought into registry with said restricted passageway.

3,315,505

KEY HOLDER

Malcolm C. Shelton, 2902 E. Russell Road, Kansas City, Mo. 64117

Filed May 25, 1965, Ser. No. 458,534
2 Claims. (Cl. 70-456)



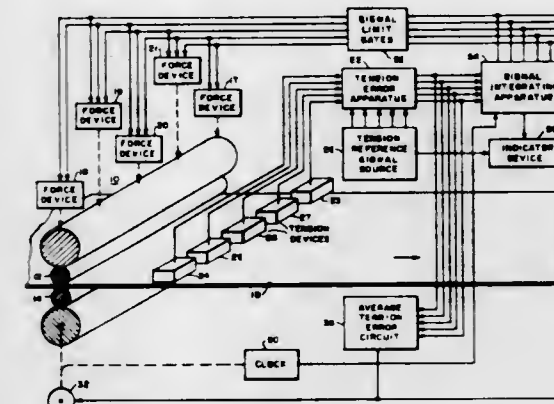
2. A key holder having an elongated, flat faced body portion provided with a plurality of wide, open ended, longitudinally extending key receiving passages, each of said passages having a wall having straight, longitudinal slots therein shorter than said passage, said slots being in longitudinally aligned pairs with the inner ends thereof in longitudinally spaced relation to each other and the outer ends thereof inwardly spaced from the open ends of said passage, a wall opposite said slotted wall having a longitudinally extending groove therein opposite said slots co-extensive with said passage, a key engaging retaining member mounted in each of said slots, said retaining members each comprising a pair of headed screw-threadedly connected members, the head of one of said members engaging a flat face of said body portion and being slotted and the head of the other of said screw-threadedly connected members being rectangular and slidably engaging in said groove, each of said retaining members having a tubular shank mounted in one of said paired slots, said body portion having a recess therein laterally adjacent each of said slots, said recess being adjacent the inner end of said slot but spaced longitudinally from said inner end of said slot, said recess extending through one side wall of said slot and a compressible member mounted in said recess and having a convexly curved yieldable portion projecting into said slot to provide a restriction in said slot narrower than the diameter of said shank and yieldable upon pressure of a retaining member thereagainst.

3,315,506

WORKPIECE TENSION AND SHAPE CONTROL METHOD AND APPARATUS

John R. Schneider, Franklin Township, Westmoreland County, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 9, 1964, Ser. No. 336,701
6 Claims. (Cl. 72-9)



1. Strip workpiece shape control apparatus operative with a rolling mill having first and second strip workpiece tension controlling means, and including first strip tension sensing means for providing a first control signal in accordance with the tension error of said strip workpiece in a first portion of said strip workpiece, second strip tension sensing means for providing a second control signal in accordance with the tension error of said strip workpiece in a second portion of said strip workpiece, third strip tension sensing means for providing a third control signal in accordance with the tension error of said strip workpiece in an intermediate portion between said first and second portions of said strip workpiece, first control means operative with said first strip workpiece tension controlling means and responsive to a predetermined combination of said first control signal and said third control signal for correcting the tension error in said first portion of the strip workpiece, and second control means operative with said second strip workpiece tension controlling means and responsive to a predetermined combination of said second control signal and said third control signal for correcting the tension error in said second portion of the strip workpiece.

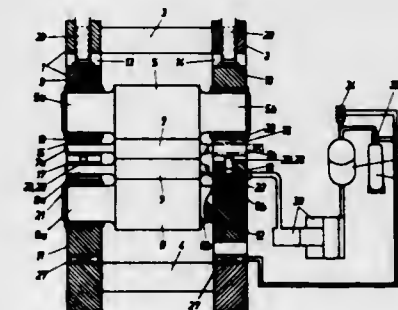
3,315,507

METHOD AND APPARATUS FOR CONTROLLING THICKNESS OF ELONGATED WORKPIECES

Hans-Friedrich Marten, Siegen, Westphalia, Germany, assignor to Siegener Maschinenbau G.m.b.H., a corporation of Germany

Filed Dec. 20, 1963, Ser. No. 332,078
Claims priority, application Germany, Dec. 24, 1962, S 83,066

11 Claims. (Cl. 72-16)



1. In a rolling mill including a housing for processing elongated material such as strip, bars and the like wherein the material is characterized by portions offering irregu-

lar resistance to deformation such as different thicknesses comprising:

means for measuring the rolling force developed during processing,

means for varying the elastic expansion of the housing pursuant to a change in the rolling force to maintain the thickness of the processed material substantially uniform according to the equation

$$h = SO + \frac{P}{C_1} + \frac{F}{C_2}$$

wherein:

h =the thickness of processed material,

P =prestressing of the housing,

F =rolling force,

C_1 =spring constant of the housing,

C_2 =spring constant of the housing including the rolls, and

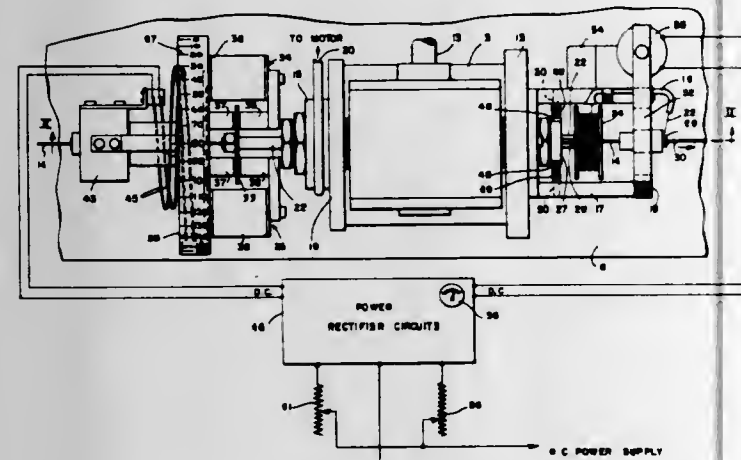
SO =size of the roll gap when no material is being rolled.

3,315,508

LAMP FILAMENT WINDING MACHINE

Stanley J. Mikna, Penn Hills, and Merrideth D. Wilson, Monroeville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 20, 1964, Ser. No. 346,297
12 Claims. (Cl. 72-66)



2. In a filament coiling machine for the winding of fine wire filaments for electric lamps, the combination of:

(a) a winding head for supporting a mandrel guide through which a mandrel wire is advanced, together with a bobbin supplying a fine filament wire, and a bridge pin, said head being operable upon rotation to draw the fine filament wire from said bobbin across said bridge pin and wind such wire in the form of a tight helix upon said mandrel wire as it is advanced;

(b) drag torque means carried by said winding head and rotatable therewith for applying a drag torque to said bobbin to maintain a uniform tension on the fine filament wire and prevent undesirable unspooling thereof from said bobbin upon any variation in rotation speed of said winding head,

(c) control means carried by said machine adjacent said drag torque means and operable to cause the latter to apply a preselected drag torque to the bobbin carried by said winding head,

(d) and means carried by said winding head and operable upon deceleration of the latter to decrease the speed of rotation of said bobbin and prevent over-riding therebetween and thereby maintain sufficient tension of said fine filament wire to eliminate tangling thereof.

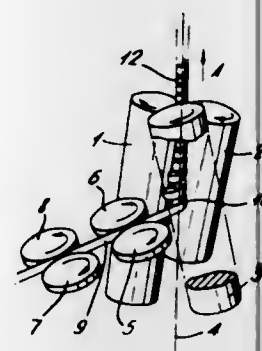
3,315,509

MANUFACTURE OF TUBE-LIKE STRUCTURES

Boris Victorien Barlow, Edgware, Middlesex, England, assignor to S. Smith & Sons (England) Limited, Cricklewood Works, London, England, a British company

Filed Nov. 5, 1963, Ser. No. 321,570
Claims priority, application Great Britain, Nov. 7, 1962, 42,024/62

16 Claims. (Cl. 72-145)



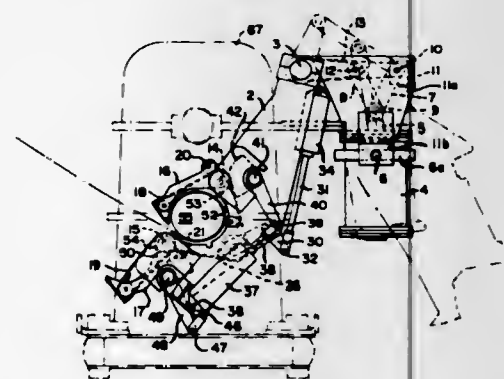
3. Apparatus for the manufacture of a tube-like structure formed by winding wire helically, with the helical turns in the same cylindrical plane, comprising at least two spaced forming rollers skewed similarly about an axis to form a throat, said rollers being cylindrical and of uniform cross-section, means for driving said rollers synchronously in the same direction and feed means for drawing wire from a reel and operative to drive said wire under force into the space formed between said roller at substantially right angles to the axis of the roller with which the wire first comes into contact and at a location spaced apart from the throat of said rollers.

3,315,510

BELT WRAPPER

Robert A. Jones, Warren, Ohio, assignor to The Wean Engineering Company, Inc., Warren, Ohio, a corporation of Ohio

Filed Apr. 16, 1964, Ser. No. 360,325
15 Claims. (Cl. 72-148)



1. A belt wrapper comprising a frame, spaced apart parallel pivots carried by the frame, two arms respectively pivotally carried by the pivots, one arm by each pivot, each arm being swingable about the pivot carrying it between a first position in which the arm extends generally away from the other pivot and a second position in which the arm extends generally toward the other pivot, two first belt guiding rollers, one carried by each arm at a portion thereof spaced from its pivot, two second belt guiding rollers respectively in the regions of the pivots, a take-up roller and an endless belt disposed about the take-up roller and passing from the take-up roller inside the second belt guiding rollers and thence to and

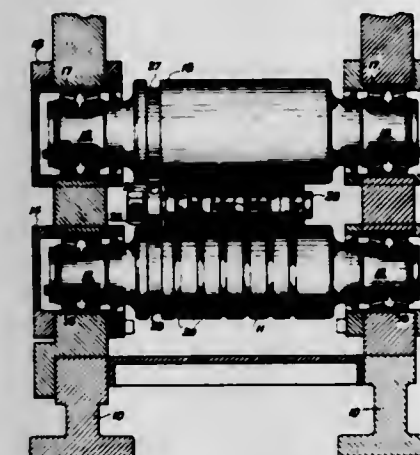
about the first belt guiding rollers so that when either of the arms is in its first position the corresponding second belt guiding roller reflects the belt between the take-up roller and the corresponding first belt guiding roller and when either of the arms is in its second position the corresponding pivot deflects the belt between the take-up roller and the corresponding first belt guiding roller, the pivots, arms and belt guiding rollers being substantially symmetrically arranged so that the belt wrapper may be used selectively to form an overwound or an underwound coil whose axis substantially intersects the axis of symmetry of the belt wrapper with a selected one of the arms in its first position and the other arm in its second position at the beginning of formation of the coil, the last mentioned arm progressively moving toward its first position during formation of the coil.

3,315,511

DEBURRING DEVICE FOR SLIT STEEL STRIPS

Douglas A. Turner, Box 109, Salem, Ohio

Filed Sept. 10, 1964, Ser. No. 395,493
6 Claims. (Cl. 72-221)



1. A deburring device for slit strips comprising an idler roll having a plurality of longitudinally spaced annular ribs thereabout, a plurality of supporting rolls for said idler roll, at least one of said plurality of supporting rolls having a smooth surface in engagement with the periphery of said ribs on said idler roll and at least another one of said supporting rolls having annular grooves therein for receiving said annular ribs on said idler roll and arranged to provide engagement of the areas of said grooved supporting roll between said grooves thereon directly with the areas of said idler roll between the annular ribs thereof, means positioning said supporting rolls in spaced relation and journalling the same for rotation, said device arranged to receive and engage slit strip sections to be deburred between said smooth surface supporting roll and the areas of said idler roll between said annular ribs thereon with the longitudinal edges of said slit strip sections in engagement with the sides of said annular ribs.

3,315,512

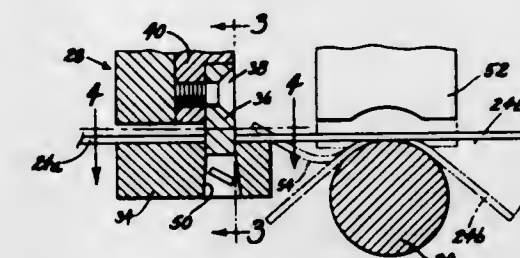
CUT-OFF MEANS IN WIRE OR STRIP FORMING MACHINE

Henry W. Maciorowski, Westfield, Mass., assignor to The Torrington Manufacturing Company, Torrington, Conn., a corporation of Connecticut

Filed Feb. 1, 1965, Ser. No. 429,292
5 Claims. (Cl. 72-330)

1. The combination in a wire or strip forming machine of a mandrel and a plurality of slides disposed in a hub-spoke arrangement about the mandrel, said slides carrying forming tools on contiguous ends thereof and being movable toward and away from the mandrel so that the tools

thereon can cooperate with the mandrel to form a wire or strip workpiece at the mandrel, a feed mechanism for advancing a continuous length of wire or strip to the mandrel along a longitudinal path of movement, a cut-off device disposed between the feed mechanism and the mandrel and adjacent the latter, said cut-off device including a cut-off tool and means for moving the same transversely in one and an opposite direction so as to cross the aforesaid longitudinal path of movement of said



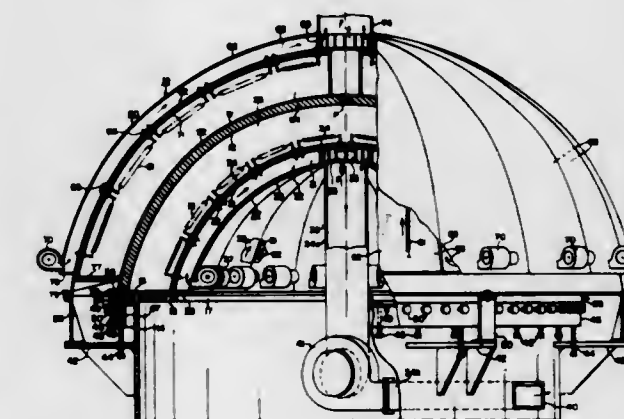
wire or strip, a transversely movable anvil having one position adjacent the path of movement of the wire or strip on a side thereof opposite said cut-off tool so as to cooperate therewith in severing the wire or strip to form a workpiece at the mandrel, and means for moving the anvil transversely between said one position and a second position remote from the path of movement of the wire or strip to allow for free transverse movement of the trailing end portion of a workpiece severed by the cut-off tool and anvil.

3,315,513

MATERIAL WORKING METHOD AND APPARATUS

George W. Ellenburg, Ardmore, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 15, 1964, Ser. No. 337,922
10 Claims. (Cl. 72-342)



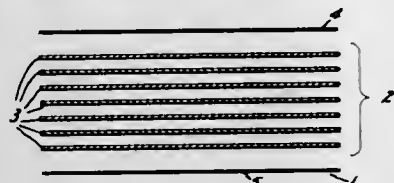
1. The method of truing an open end hollow cup-shaped workpiece having an annular marginal portion defining said open end and increasing in cross-section towards its open end, which method comprises the following steps:

- placing said cup-shaped workpiece in nesting abutment with a similarly but more precisely male mating mandrel formed of material having a larger coefficient of thermal expansion than said workpiece;
- drawing said workpiece into snugly fitting engagement with said mandrel to take up the slack in axial direction;
- securing said workpiece adjacent said marginal portion to hold the workpiece against axial movement; and
- heating said mandrel to a temperature at which the resulting thermal expansion of the mandrel is effective to distend and true said workpiece.

3,315,514 LAMINATED SHEET MATERIAL AND PROCESS FOR TREATING

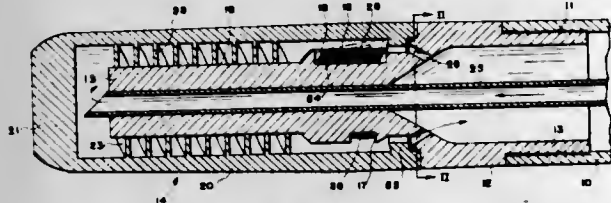
Leon V. Larsen and Louie P. Blanchet, Coshocton, Ohio, assignors to General Electric Company, a corporation of New York

Filed Jan. 28, 1964, Ser. No. 340,672
10 Claims. (Cl. 72-363)



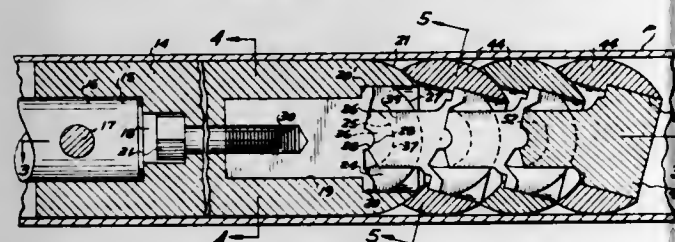
1. The process of treating laminated sheet material, said material being clad on each face with a metal, which comprises heat treating, flexing, reverse flexing, flattening and heat treating said sheet at least once.

3,315,515
REELER PLUG
James Arthur Milnes, 517 Zellenople Road,
Ellwood City, Pa. 16117
Filed Aug. 27, 1964, Ser. No. 392,465
5 Claims. (Cl. 72-463)



1. A plug assembly for the mandrel of a reeler stand of a seamless tube mill and adapted to be secured to the end of a hollow mandrel bar comprising a bar cap, said cap having an integral extended portion of reduced diameter, a bore through said extended portion adapted to slideably receive the free end of a water-conducting tube which extends concentrically through said bar, a hollow plug opened at one end received on said extended portion and having an integral spiraled rib overlying said extended portion of the cap and in contact therewith whereby said extended portion resists collapse of said plug while allowing water to circulate circumferentially and longitudinally within said plug, and said cap having a plurality of circumferentially spaced but longitudinally extending passages radially intermediate said extended portion and the cylindrical wall of the plug to permit cooling water to flow from the spiral passage formed by said rib back into the hollow mandrel bar outside of said tube.

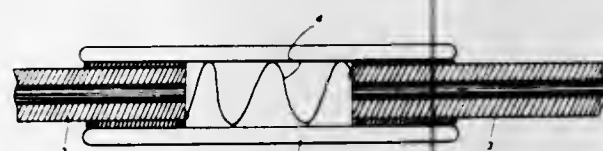
3,315,516
**FLEXIBLE MANDRIL FOR PIPE OR
TUBE BENDING**
Frank Sassak, Dearborn, Mich.
(1033 Vermont Ave., Detroit, Mich. 48216)
Filed Dec. 15, 1964, Ser. No. 418,457
5 Claims. (Cl. 72-466)



1. In a pipe and tube bending apparatus, a flexible mandril positionable within a pipe or tube to prevent buckling during bending;

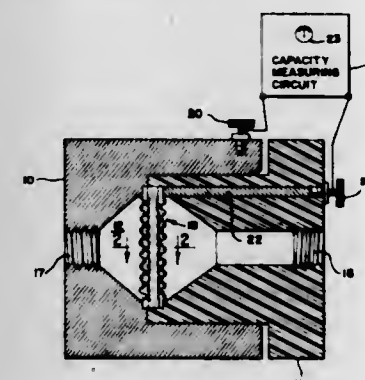
a stationary head of cylindrical form snugly and slidably positionable within a tube rearwardly of the portion to be bent and including a spherically shaped inner end of a radius substantially the same as the inner radius of the tube;
and a series of contacting and overlapping spheres of the same radius flexibly connected to each other in a line and to the inner end of said head respectively; each sphere having a bore, said bore terminating in an outwardly opening spherically shaped surface of the same radius cooperatively and guidably receiving the spherical end of said head and the series of spheres successively, the flexible connection between said spheres and head including a series of links; said head having a bore, each of said bores terminating in a counterbore defining a stop shoulder;
and said links extending into said bores;
an enlarged annular flange at one end of each link retainingly engaging said stop shoulders respectively; opposed laterally extending arcuate bosses at the other end of each link, except the first link, nested and retained within opposed arcuate undercut recesses formed in the one ends of adjacent links;
and means securing the first link within said head.

3,315,517
THERMAL CONDUCTIVITY DETECTOR CELL
Eberhard König, Überlingen (Bodensee), and Hans Egon Rödel, Sipplingen (Bodensee), Germany, assignors to Bodenseewerk Perkin-Elmer & Co. G.m.b.H., Überlingen (Bodensee), Germany
Filed Mar. 19, 1964, Ser. No. 353,098
Claims priority, application Germany, Apr. 10, 1963, B 71,471
8 Claims. (Cl. 73-27)



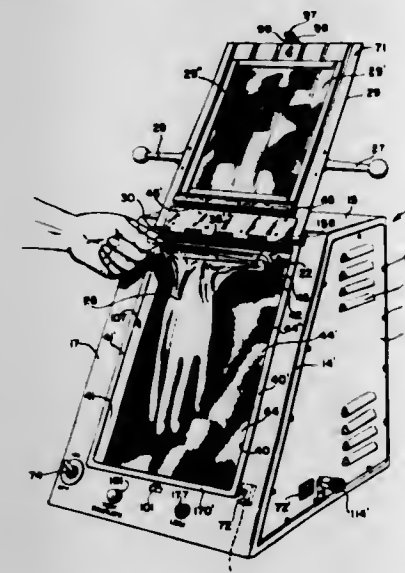
1. A heat conductivity detector for gas analysis, for use with a small diameter inlet tube and a small diameter venting tube, the exit end of said inlet tube and the entrance end of said venting tube being in closely spaced confronting relationship, comprising:
a small diameter, small volume, sleeve-shaped detector casing, having its opposite ends adapted to be sealed to the exit end of said inlet tube and the entrance end of said venting tube, respectively;
a heating element, a physical characteristic of which varies with temperature, in the form of a helical coil of wires arranged coaxially inside said sleeve-shaped casing;
the diameter of said coil being substantially as large as the internal diameter of said casing so that said coil is at least in close proximity to the inner surface of said casing;
said helical coil having a pitch of more than five times the diameter of said wire, so that the individual loops are widely spaced from each other as compared to said wire diameter;
the thermal conductivity of the gas inside said casing thereby affecting the heat transfer from said helical heating element to the exposed parts of the casing wall;
whereby the temperature and therefore said physical characteristics of said heating element varies according to the presence and concentration of certain components in said gas stream.

3,315,518
HUMIDITY SENSING DEVICES
Robert J. Carlson and Konrad J. K. Buettner, both of Seattle, Wash., assignors to Research Corporation, New York, N.Y., a non-profit corporation of New York
Filed Feb. 7, 1966, Ser. No. 536,488
6 Claims. (Cl. 73-29)



1. Apparatus for the measurement of the moisture content of a gas comprising a pair of spaced electrically conductive members, a fluid permeable body of a substrate having a large ratio of surface area to mass positioned between said conductive members and carrying a coating layer of a non-ionizing hygroscopic liquid, said substrate being fabricated of a non-hygroscopic, non-absorbent, polymeric solid having a dielectric constant below 4, gas inlet and outlet passages for passing a gas through said body and circuit elements including means responsive to changes in an electric parameter of said hygroscopic liquid layer electrically connecting said spaced conductive members.

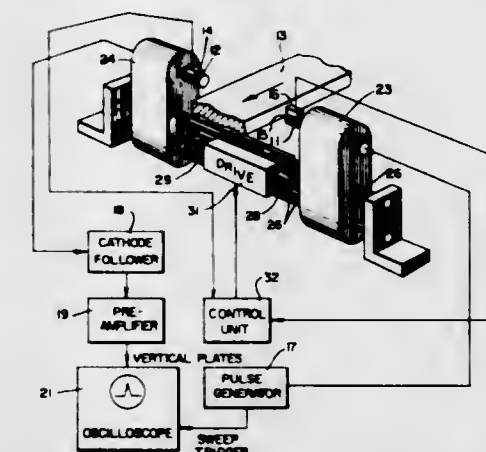
3,315,519
SURGICAL GLOVE LEAK TESTER
William C. Ferguson, Williamsville, N.Y., assignor, by mesne assignments, to American Sterilizer Company, Erie, Pa., a corporation of Pennsylvania
Filed Apr. 13, 1964, Ser. No. 359,119
14 Claims. (Cl. 73-40)



1. A surgical glove leak tester comprising a housing, a chamber in said housing for receiving a surgical glove having a cuff, a holder in said chamber for insertion into the cuff of said glove, means in said chamber for engaging outside portions of the cuff on said glove mounted on said holder to thereby effect an air-tight connection between said holder and said cuff of said glove, means operatively associated with said holder for conducting pressurized fluid through said holder for inflating said glove, and means in said chamber adapted to overlie to engage two opposite sides of the entire glove for confining said glove against expanding an amount which would normally

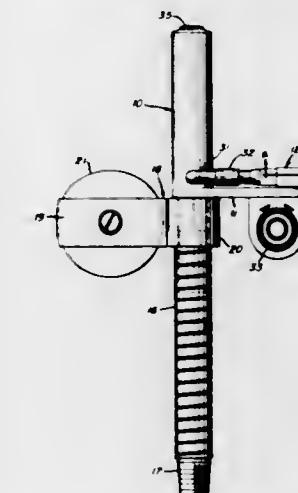
be commensurate with the pressure of the pressurized fluid supplied thereto which is sufficient to cause leakage through minute holes in said gloves.

3,315,520
ULTRASONIC MEASUREMENT APPARATUS
Edmund H. Carnevale, Beverly, and Lawrence C. Lynnworth, Waltham, Mass., assignors to Parametrix, Inc., Waltham, Mass., a corporation of Massachusetts
Filed Mar. 10, 1964, Ser. No. 350,705
10 Claims. (Cl. 73-67.5)



1. Apparatus for measuring the ultrasonic transmission characteristics of a material at high temperature comprising, a transmitting probe for generating ultrasonic waves, a receiving probe for generating output electrical signals in response to received ultrasonic waves; circuit means coupled to said transmitting and said receiving probes for comparing said output electrical signals to said generated ultrasonic waves; positioning means for establishing physical contact between each of said probes and said material to be tested, control means connected to said positioning means, said control means operating said positioning means to establish simultaneous contact for a predetermined period between each of said probes and said material to be tested and to withdraw said probes from said contact after elapse of said predetermined period.

3,315,521
TRANSDUCER HOLDER
Bernard Ostrofsky, Gary, and Jack N. Bergman, Hammond, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana
Filed Dec. 31, 1963, Ser. No. 334,773
5 Claims. (Cl. 73-71.5)



1. An apparatus adapted to hold a transducer and used for ultrasonically examining a solid material, said apparatus comprising in combination:

(A) a reservoir adapted to contain a fluid couplant;

- (B) first holding means;
 (C) transducer holding means;
 (D) pumping means adapted for dispensing couplant from said reservoir onto the surface of said material and between said surface and the face of said transducer upon contact of said pumping means with said surface, said first holding means being fixedly mounted on said reservoir and being adapted to maintain said transducer holding means and said pumping means in fixed spatial relationship; and
 (E) attaching means rotatably mounted on said reservoir and adapted for temporarily fixing the assembled apparatus to the surface of said material and adapted for ready separation from said surface, said attaching means being freely rotatable about the longitudinal axis of said reservoir, said apparatus being adapted to permit in sequence the engaging of said pumping means with said surface of said material, the dispensing of couplant by said pumping means between said face of said transducer and said surface, and the engaging of said face of said transducer with said surface when said reservoir is rotated about its longitudinal axis.

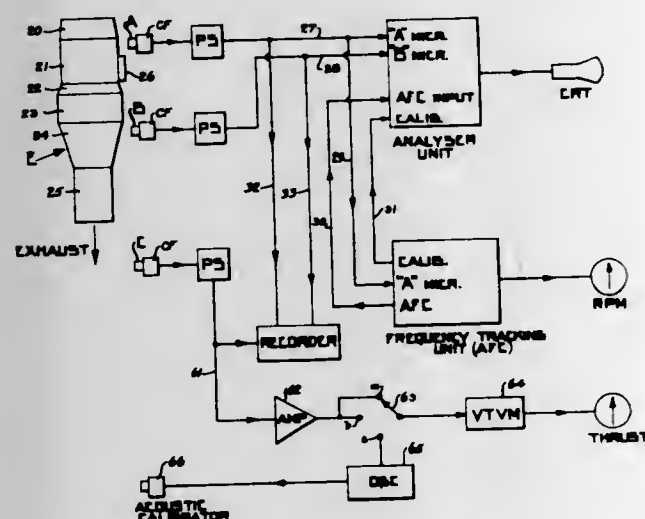
3,315,522

ACOUSTICAL ANALYSER FOR INDICATING COMPONENT MALFUNCTION OF HIGH-SPEED ENGINES AND THE LIKE

John L. Frarey, Saddle River, and Clarence J. Zabriskie, Mahwah, N.J., assignors to Curtiss-Wright Corporation, a corporation of Delaware

Continuation of application Ser. No. 443,755, Mar. 10, 1965, which is a continuation of application Ser. No. 227,483, Oct. 1, 1962. This application Jan. 21, 1966, Ser. No. 523,843

10 Claims. (Cl. 73-116)



1. An engine sonic analyser system for detecting mechanical faults in rotating parts of a high-speed engine running at or near a predetermined reference r.p.m., comprising acoustical means positioned in air-spaced, separately mounted relation to the engine for producing electrical signals representing sound spectrum energy radiated from one or more selected regions of the engine, said spectrum signals including an electrical reference signal of frequency that is characteristic of a given engine part rotating in direct relation to the engine r.p.m. and a discrete signal of frequency that is characteristic of an engine part selected for test, and electronic analysing means having no mechanical or electrical connection with the engine, for receiving all the aforesaid sound spectrum signals and producing information for representing the actual operative condition of the selected test part as compared with known data on a normal counterpart, said

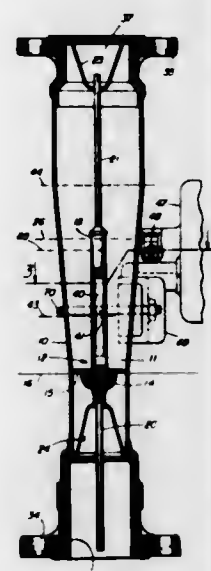
analysing means constituting electronic circuitry defining a data signal channel and a control signal channel for processing the sound spectrum signals, the data channel including a balanced modulator having a first input for the sound spectrum signals, the control channel constituting electronic circuitry interconnecting through a separate branch said acoustical means and a second input of said balanced modulator and having means for producing from the sound spectrum signals, including said signal representing actual r.p.m. of the engine, a tracking signal corrected for deviation of engine r.p.m. from the reference r.p.m. said tracking signal being fed to said second input of the balanced modulator for mixing with said first input spectrum signals, and an intermediate-frequency filter for selecting from the modulated balanced modulator signal output of the mixer a pure tone signal representing the discrete test signal corrected for r.p.m. deviation, and a display indicator responsive to said pure tone signal for visual manifestation of the operative condition of the selected test part as compared with a normal counterpart.

3,315,523

MAGNETIC COUPLING FOR A FLOWMETER

William C. Conkling, Essex Fells, N.J., assignor to Wallace & Tiernan Inc., Belleville, N.J., a corporation of Delaware

Filed Jan. 31, 1964, Ser. No. 341,606
 12 Claims. (Cl. 73-289)



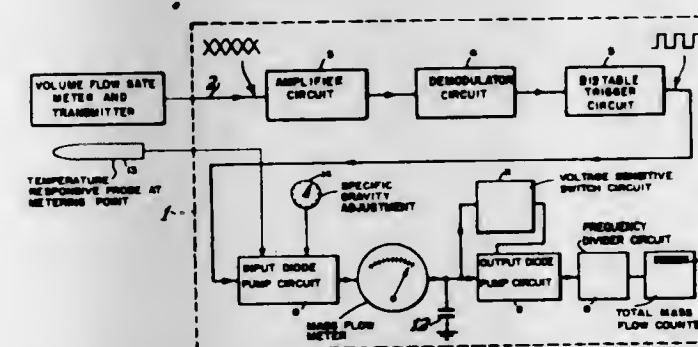
1. In apparatus for indicating the position of an element which is displaceable along a rectilinear path of ascertained length M, in combination, a first elongated and end-polarized magnet of length equal to at least about 0.3M, carried by said element for axially directed rectilinear movement therewith along a magnet path having said length M; and a second elongated and end-polarized magnet having a length between poles equal to between about 0.15 and about 0.67 times the length between poles of said first magnet, mounted for angular displacement about an axis of rotation extending through its midpoint and perpendicular to its magnetic axis so that its plane of rotation contains its magnetic axis, and disposed adjacent said magnet path in spaced relation thereto, with said axis of rotation lying in a plane perpendicularly bisecting said magnet path and said plane of rotation oriented at an angle of not more than about 60° to the line perpendicular to the axis of said magnet path drawn from said second-magnet midpoint, such that said second magnet is magnetically coupled to said first magnet to undergo angular displacement as aforesaid responsive to and in substantially linear proportion to displacement of said first magnet along said magnet path.

3,315,524

MASS-FLOW MEASURING DEVICE

Laurence Sidney Duffy, Redbourn, and Ian Carrodus Hutcheon, Luton, England, assignors to George Kent Limited, London, England, a corporation of the United Kingdom

Filed Jan. 6, 1964, Ser. No. 335,980
 Claims priority, application Great Britain, Jan. 11, 1963, 1,367/63
 20 Claims. (Cl. 73-231)



1. A system for converting one series of electrical pulses, having one mean pulse repetition rate, into another series of electrical pulses having another mean pulse repetition rate, the system comprising an input diode pump and an output diode pump, a reservoir capacitor connected as load to the input diode pump and as source to the output diode pump; means for connecting the input diode pump to a potential source; means for driving the input diode pump at a stroke frequency related to an input signal having the said one mean pulse repetition rate; and means for driving the output diode pump at a mean stroke frequency controlled by the voltage on the reservoir capacitor and for deriving therefrom an output signal of the output pump stroke frequency, which is the said other mean pulse repetition rate.

3,315,525

MEDICAL THERMOMETER AND CASING THEREFOR

Fredda S. Steve, 4 E. 70th St., New York, N.Y. 10021

Filed Oct. 15, 1965, Ser. No. 505,106
 24 Claims. (Cl. 73-374)



1. The combination of a medical thermometer and casing therefor, said thermometer comprising a tube having an upper portion and a lower portion, a liquid column in said tube and a magnetic slug disposed within said tube above the liquid column in close contact and sliding engagement with said tube, and said casing comprising a hollow cylinder adapted to receive said thermometer, a cap at each end of said cylinder for closing said cylinder, and a magnet secured within said cylinder at one end thereof, whereby the magnetic slug is drawn down to

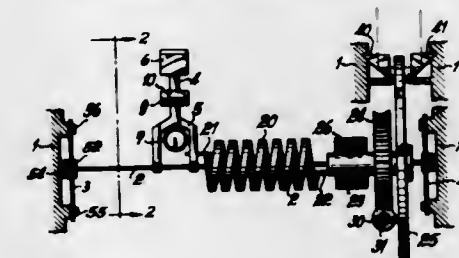
minimum position by inserting the upper portion of said thermometer into the magnet end portion of the cylinder and pushing said thermometer completely into said cylinder.

3,315,526

HORIZONTAL-SUSPENSION GRAVIMETER

Reinhard Schulze, Berlin-Lankwitz, Germany, assignor to Continental Elektroindustrie A.G. Askania-Werke, Berlin-Mariendorf, Germany, a corporation of Germany

Filed Apr. 23, 1965, Ser. No. 450,345
 Claims priority, application Germany, Apr. 24, 1964, C 32,718
 2 Claims. (Cl. 73-383)



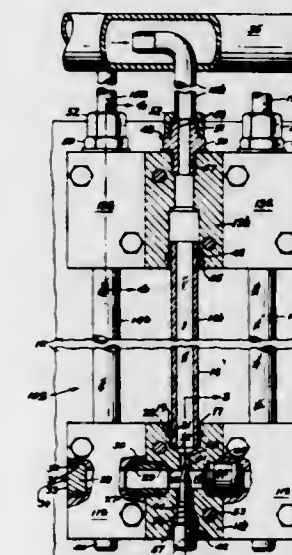
1. In a gravimeter, a housing, an elongated horizontal thread-like suspension having its ends secured to the housing, a weight assembly mounted on the suspension and extending radially therefrom, a tension spring having one end secured to the weight assembly and the other end secured to the housing, a hollow shaft surrounding an end portion of the suspension, a calibrated dial member mounted on the shaft to form a rotatable adjustment assembly, a helical torsion spring surrounding the suspension and having one end secured to the weight assembly and the other end secured to the adjustment assembly, and means for producing, in close adjacency, visual indications of the positions of the weight assembly and dial member.

3,315,527

MANOMETER APPARATUS

Richard W. Foster-Pegg, San Francisco, Calif. (402 Liberty St., Warren, Pa. 16365)

Filed Oct. 22, 1964, Ser. No. 405,767
 9 Claims. (Cl. 73-401)



5. A modular coupling device for supporting an array of transparent tubes containing indicator fluid coupled to a pressure tap line, a manometer apparatus comprising:
 a rectangular shaped block having flat opposite side faces and opposite end faces;
 a vertical passage extending downwardly from the upper end face for receiving one end of a rigid transparent tube associated with graduated indicia, and

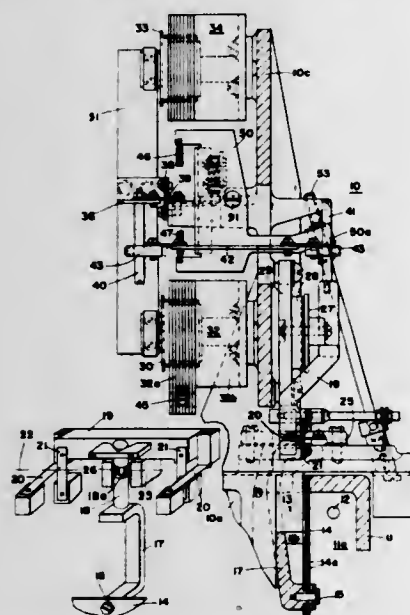
an O-ring seated within said vertical passage having an inside diameter slightly less than the outer diameter of the tube;

a transverse passage extending inwardly from said opposite side faces and intersecting said vertical passage within the block;

a removable tubular grommet member retained in said transverse passage, said grommet extending beyond the side face of said block for about one half of its length when fully lodged therein;

and O-ring means for providing a fluid tight seal around said grommet member.

3,315,528
FORCE BALANCE LEVER TRANSMISSION WITH SHAFT SEAL
Richard M. Hickox, Glenside, Pa., assignor to Leeds & Northrup Company, a corporation of Pennsylvania
Filed Feb. 23, 1965, Ser. No. 434,566
5 Claims. (Cl. 73-407)

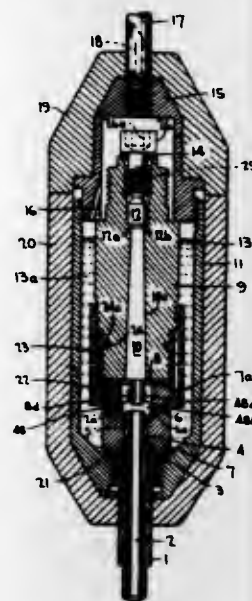


1. In a pressure responsive measuring instrument of the force balance type, a hollow housing, a flexible diaphragm disposed in said housing, a lever extending into said housing and connected at one end to said diaphragm, low friction pivot means supporting said lever and providing a pivot therefor exterior of said housing, and sealing means connecting said lever and said housing to prevent flow of fluid around said lever while avoiding the introduction of an error torque in the instrument, said sealing means comprising an O-ring of elastomer material surrounding said pivoted lever and forming a seal on its inner circumference with said housing, the center line of said O-ring being common to the axis of said pivot means.

3,315,529
METHOD AND APPARATUS FOR TAKING SAMPLES FROM MELTS IN ORDER TO OBTAIN THE GASES EVOLVED DURING SOLIDIFICATION
Heinrich Felchtiger, Holzbrunnstrasse 22, Schaffhausen, Switzerland
Filed Dec. 16, 1964, Ser. No. 418,755
Claims priority, application Switzerland, Dec. 20, 1963, 15,569/63
20 Claims. (Cl. 73-421.5)

1. Method for taking samples from liquid melts in order to quantitatively recover all gases evolved when the melt sample solidifies, comprising the steps of: conducting the melt sample into an ante-chamber of a mold, passing said

melt sample from said ante-chamber through a narrow location provided internally of the mold into an inner compartment of the mold, said inner compartment being sealed by a closure element, allowing the melt sample within said ante-chamber and inner compartment to solidify, thereby forming a tight seal at the region of said narrow location to prevent any backflow of gases



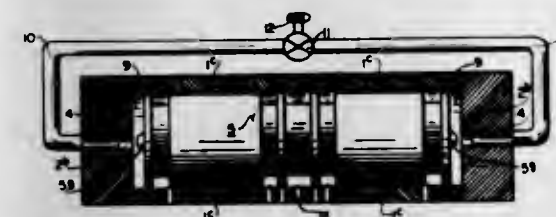
evolved during solidification in a direction opposite the direction of conducting the melt sample into said ante-chamber, collecting gases evolved during solidification of the melt sample in the inner compartment of the mold, and withdrawing the collected gases from said inner compartment of the mold via the closure element, so that the withdrawn gases can be checked.

3,315,530
FIBER SAMPLING APPARATUS
James Lamar Woodley, Jr., Winston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 12, 1965, Ser. No. 447,235
2 Claims. (Cl. 73-423)



1. An automatic sampling device for obtaining periodic samples from a stream of fluid material which comprises a housing adjacent said stream, a hollow probe reciprocally mounted in said housing, said hollow probe having one end open and the other terminating in a probe tip which culminates in a circular section having a fluid pervious screen attached thereto, said probe tip having an included angle with the axis of said hollow probe in the range of from 80° to 90°, a sample collection box adjacent said housing, a bumper mounted in said housing in the path of said hollow probe, reciprocating means to move said hollow probe into said stream and back to said bumper at a variable, predetermined rate and means to supply air to said hollow probe whereby the air supply creates a vacuum in said probe tip to attract a sample which vacuum turns into a positive pressure to blow said sample from said probe tip into said sample collection box when the open end of said hollow probe contacts said bumper.

3,315,531
ACCELEROMETER
Charles J. Grimland, Garland, Tex., assignor to The Geotechnical Corporation, a corporation of Delaware
Filed May 28, 1964, Ser. No. 371,005
14 Claims. (Cl. 73-515)



1. A sensitive inertial instrument having a floating mass supported on a film of escaping fluid introduced from an external fluid pressure source, said instrument comprising:

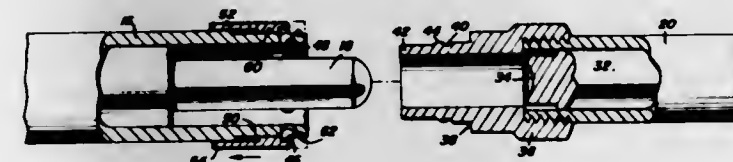
(a) a closed housing having a bore therewithin and having walls at least some of which include ducts extending therethrough and communicating with said bore;

(b) an inertia-sensitive mass in the bore of diameter sufficient to leave an annular clearance space to provide a sliding fit therewithin;

(c) said ducts including bearing ducts located in the walls of the housing for introducing fluid pressure into said clearance space, and further including exhaust ducts extending radially through the walls of the housing near the ends of the bore and so located with respect to the ends of the mass when centered in the bore that annular edges of the mass partially overlie and restrict the exhaust ducts, whereby displacement of the mass off-center in either direction will reduce the exhaust duct flow on the displacement side of the mass and increase the exhaust-duct flow on the other side; and

(d) said housing having other exhaust ducts disposed axially of the bore, and said mass having throttling members attached to its opposite ends and located in axial alignment with the latter exhaust ducts in the housing so that when the mass is displaced toward an exhaust duct the adjacent member throttles said duct and reduces flow therethrough in proportion to displacement thereof.

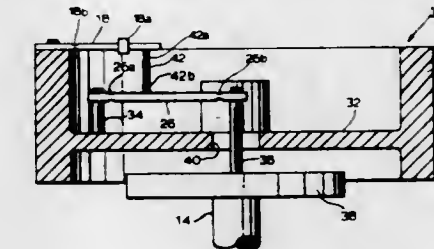
3,315,532
CYLINDER EXTENSION COUPLING DEVICE
Joseph Carnesecca, Jr., and Egidio C. Carnesecca, both of R.F.D. 1, Springville, Utah 84663
Filed Sept. 18, 1964, Ser. No. 397,496
3 Claims. (Cl. 74-1)



1. In combination with a cylinder device having a power operated piston element projecting from an open end thereof, an elongated tubular member, a tool element mounted on one end of said tubular member, a reciprocable operating member slidably mounted in said tubular member and connected to said tool element, said operating member having an end face engageable by the piston element adjacent the other end of the tubular member, and disconnectable coupling means rotatably mounting said other end of the tubular member in axially fixed relation to the open end of the cylinder device for guided projection of the piston element into engagement with said end face.

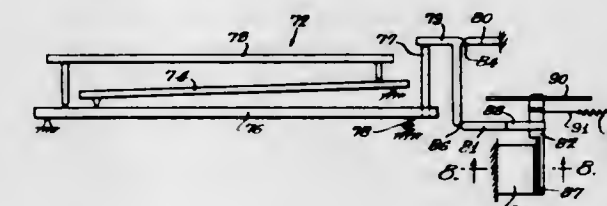
837 O.G.—42

3,315,533
QUADRATURE TORQUE COMPENSATION FOR FLEXURE SPRING SUSPENDED GYRO
Fred D. Litt, Towaco, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Dec. 27, 1963, Ser. No. 333,945
7 Claims. (Cl. 74-5)



1. In a gyroscopic device wherein a rotor is coupled to a rotatable drive member by a flexible stem which enables deflection of the plane of rotation of the rotor relative to the drive member and means responsive to centrifugal force are provided to exert on the rotor a compensating torque opposing the restorative force exerted on the rotor by the flexible stem, the improvement which consists in a mechanical linkage for shifting the site of application of the compensating torque with respect to the axis of deflection of the said plane of rotation whereby a portion of said compensation torque acts about an axis normal to said axis of deflection to compensate for quadrature torques.

3,315,534
LINKAGE
Walter B. Whippo, Park Ridge, Ill., assignor to Victor Comptometer Corporation, Chicago, Ill., a corporation of Illinois
Filed July 16, 1964, Ser. No. 383,180
2 Claims. (Cl. 74-89.2)

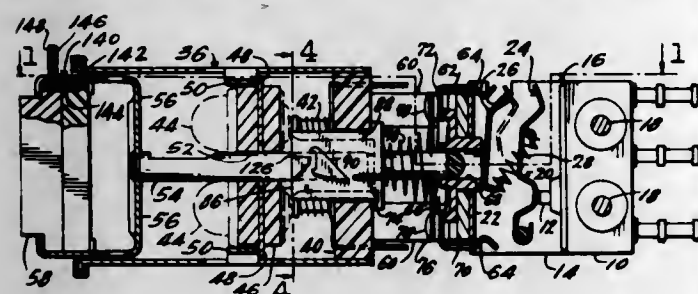


1. A linkage for conveying motion and force from an input element to an output element which includes a rotatable shaft, comprising a unitary member formed of a plastic material the predominant constituent of which is solid polypropylene, said member having a plurality of arms the cross-sectional area of which is at least adequate to transmit the motion and force from said input element, one of said arms being adapted to be connected to said input element, another of said arms being connected to said output element, and pivot portions connecting adjacent arms comprising said linkage, said pivot portions having substantially reduced thickness compared to the corresponding dimension of the adjacent arms, the molecular chains of the polypropylene comprising said pivot portions being stress-oriented, the said other arm being flattened over a portion of its length opposite its pivot, the end of said flattened portion being connected to said rotatable shaft and wound tightly therearound.

3,315,535
ALTERNATE ACTION SWITCH MECHANISM
Curtis R. Stevens, La Mirada, Calif., assignor to Master Specialties Company, Gardena, Calif., a corporation of California
Filed Feb. 10, 1965, Ser. No. 431,599
2 Claims. (Cl. 74-100)

1. An alternate action mechanism comprising: a support structure, a cam block guided for reciprocating

movement along a given path on said support structure between outer and inner positions, spring means having a pin projecting generally perpendicularly toward one side of said cam block, said spring means supporting said pin for movement generally transversely to the path of movement of the side surface of said cam block and yieldably biasing said pin to a normal position from which the pin can be moved transversely in opposite directions, there being an imaginary line on the block formed by the normal position of said pin when said block is moved along said path, cam means on said block positioned outwardly of said pin when said block is in its outer position, said cam means having a first pin engaging surface the innermost point of which is positioned transversely to one side of said imaginary line, said first surface being inclined outwardly to a second point on the opposite transverse side of said imaginary line, said cam means having a second pin engaging surface which is outwardly of said first surface and which proceeds from said second point

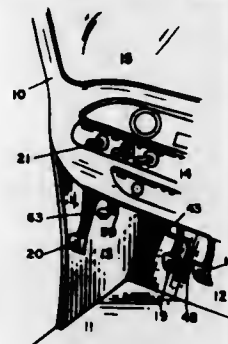


to a third point spaced inwardly of said second point by a distance at least equal to the diameter of said pin and then outwardly to a fourth point located to the same side of said imaginary line as said second point and at approximately the same distance outwardly of said block as said second point to provide a pin retaining lip, a third pin engaging surface proceeding from said fourth point to said first point, and a fourth surface outwardly of and between said second and fourth points and facing said second surface with its innermost portion approximately in a line connecting said second and fourth points, said fourth surface having a clearance with respect to said second surface at least as great as the diameter of said pin, and whereby said pin travels over said first, fourth and second surfaces to be retained by said pin retaining lip when said block is moved from said outer to said inner position and then a slight distance outwardly again, and said pin moves over said third surface when said block is subsequently moved inwardly and then to its outer position.

3,315,536
AUTOMOBILE BRAKE RELEASES
Remi G. Claeys, 925 Melrose Ave. E., Transcona,
Manitoba, Canada
Filed July 31, 1964, Ser. No. 386,528
2 Claims. (Cl. 74-480)

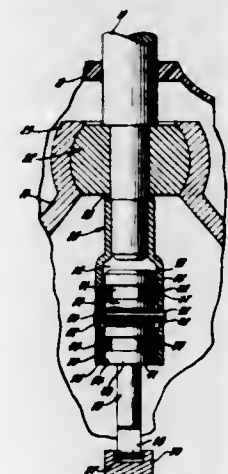
2. An emergency brake release attachment for an automobile, comprising: an elongated mounting panel for attachment to said automobile; a Z-shaped shaft rotatably mounted on said panel and presenting a crank at each end thereof; a bell-crank pivotally mounted on said panel, with one arm thereof linked to said shaft for end-shifting of same in the pivoting of said bell-crank; resilient means for end-shifting said shaft on said panel in one direction; one of said cranks adapted for rotation of said shaft by

contact with a driving control on said automobile, when said control is operated; means for operably connecting the other of said cranks and the opposite arm of said bell-



crank to members of the emergency brake of said automobile; and manual control means connected to said bell-crank for pivoting said bell-crank in a direction opposing said resilient means.

3,315,537
VIBRATION DAMPING CONNECTION
Robert C. Keller, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 12, 1965, Ser. No. 447,213
18 Claims. (Cl. 74-519)

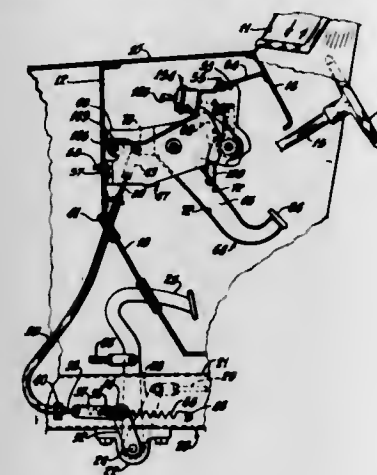


1. In a coupling for connecting relatively movable members, means on one of said members receiving a portion of the other of said members, vibration damping means between said first-mentioned means and said other of said members for holding said members together and providing a flexible connection therebetween while isolating said members from contact with each other, spaced rigid means on said other of said members for contacting opposed portions of said first-mentioned means subsequent to predetermined movement of one said member relative to the other said members, said rigid means providing an inflexible connection between said members to allow said members to be further moved as a one-piece member.

3,315,538
MECHANISM CONTROL
Norman N. Fender, Erie, Mich., assignor to Universal American Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 3, 1965, Ser. No. 429,974
6 Claims. (Cl. 74-531)

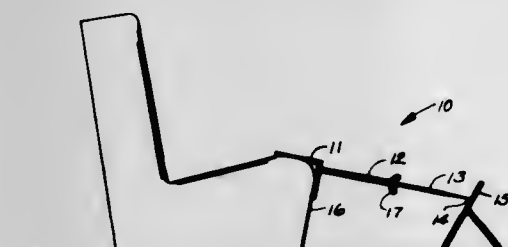
1. Mechanism for controlling parking brakes of a vehicle, in combination, support means, a brake actuator pivotally mounted by the support means for movement relative thereto, a rotatable member journaled for rotation on an axis spaced from the pivotal axis of the actuator, a rack portion integral with the actuator, a plurality of teeth on the rotatable member in constant engagement

with the teeth of the rack portion of the actuator whereby relative movement of the actuator effects rotation of the rotatable member, an element engaging the rotatable member normally locking the member in positions to



which it is moved by the actuator, means anchoring one portion of the element to the support means, and means mounted by the support means engageable with another portion of the member movable to release the member from locking engagement with the rotatable member.

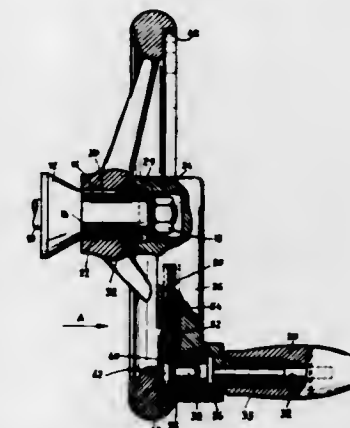
3,315,539
AUTOMOBILE IDLER
Loren C. Solberg, 1104 Platte Ave.,
Allamore, Neb. 69301
Filed May 10, 1965, Ser. No. 454,289
1 Claim. (Cl. 74-532)



An automobile idler device comprising, an L-shaped bracket, a telescoping shaft and sleeve for increasing engine speed, and adjustment means thereof, said externally threaded shaft being pointed at one end to non-slippingly engage a gas pedal and adjustment means for said idler device comprises a wing nut threadably received upon said shaft and said wing nut provides locking means for the position of said extending shaft of said device when said wing nut abuts with and jams against the end of said sleeve of said device.

3,315,540
HANDWHEEL FOR MACHINE TOOLS AND THE LIKE
Paul Baumgärtner, Munich, Germany, assignor to Hans Deckel, Munich, Germany, and Friedrich W. Deckel, Zug, Switzerland
Filed Dec. 28, 1964, Ser. No. 421,263
Claims priority, application Germany, Jan. 13, 1964, D 43,342
7 Claims. (Cl. 74-548)

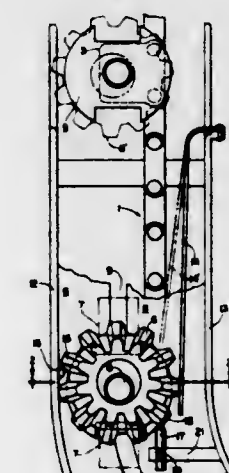
1. A handwheel assembly comprising a handwheel mounted for rotation and having a shoulder concentric with the axis of rotation of said handwheel, a crank mounted for rotation concentrically with said handwheel, a handle mounted on said crank for rotation relative to said crank about an axis offset from the axis of rotation of said crank, and a coupling member connected to said



handle to turn therewith relative to said crank and operated by rotation of said handle relative to said crank to engage said shoulder in driving relation thereto for

operatively connecting said crank to said handwheel so that rotation of said crank by force applied to said handle will rotate said handle with said crank.

3,315,541
GEAR ORIENTING DEVICE
Joseph B. Fortner and Joseph L. Oliver, Rochester, N.Y., assignors to The Gleason Works, Rochester, N.Y., a corporation of New York
Filed July 29, 1964, Ser. No. 386,021
4 Claims. (Cl. 74-660)

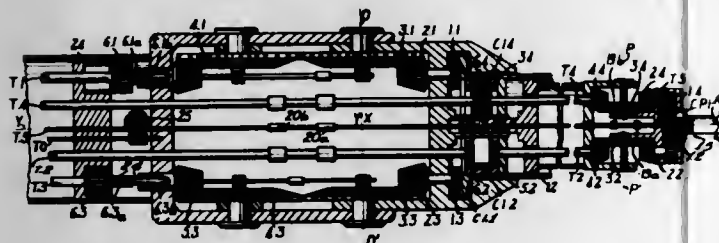


1. A gear orienting device for a stepwise-advancing gear conveyor, especially a conveyor having a carrier which supports a gear loosely, in a manner to allow it limited radial motion and rotary motion, having a fixed guide surface substantially parallel to the path of advance of the carrier and guidingly engageable by tips of the gear teeth, a spring guide surface also substantially parallel to the path of advance of the carrier and guidingly engageable with the tips of gear teeth substantially opposite, diametrically, to the teeth engaging said fixed guide surface, for pressing the gear against said fixed guide surface as the carrier draws the gear between said guide surfaces, and an abutment for engaging a gear being thus drawn between said guide surfaces, said abutment being so positioned adjacent said fixed guide surface as to be engageable by a gear tooth in contact with said fixed guide surface during a terminal phase of a step of

advance of the carrier, to rotate the gear on the carrier.

3,315,542

DEVICE FOR THE TRANSMISSION OF MOVEMENTS AND APPLICATION OF SAID DEVICE TO REMOTE HANDLING APPLIANCES
Antoine Fortin, Courbevoie, Marcel Fortin, Le Chesnay, and Jean Vertut, Paris, France, assignors to Commissariat à l'Energie Atomique, Paris, France
Filed Apr. 8, 1963, Ser. No. 271,337
Claims priority, application France, Apr. 25, 1962, 895,538, Patent 1,350,624
6 Claims. (Cl. 74-665)



1. In a motion transmitting device: first and second members; a pair of spaced parallel shafts journaled on each member; said members being rotatably connected together for rotary movement relative to each other about an axis to different positions in one of which a respective shaft of each pair is in alignment with a shaft of the other pair and in the others of which said shafts are out of alignment; transmission means drivingly connecting said shafts that are in alignment in said one position, each of said transmission means comprising a gear train and including a gear concentric to and journaled for free rotation about said axis; rotatable driving means drivingly connected to both shafts of one pair and rotatable driven means connected to both shafts of the other pair, whereby said members may be relatively rotated about said axis without rotating said driving or driven means and whereby said driving means may rotate said shafts and driven means in any relative position of said members about said axis.

3,315,543

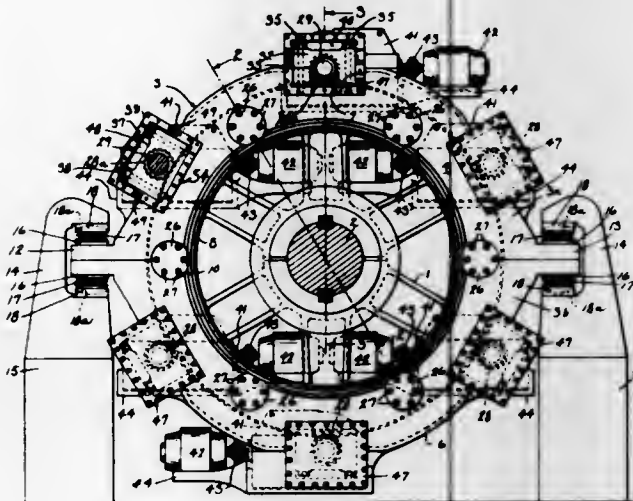
HOUSING FOR MULTIPLE-PINION GEAR DRIVES

Ralph Wiken, Bayside, Wis., assignor to The Falk Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed June 24, 1964, Ser. No. 377,540
6 Claims. (Cl. 74-665)

1. In a gear drive of the type including a gear mounted on a shaft, a plurality of pinions for driving the gear, and a speed reducer and motor associated with each pinion for driving the same, the improvement comprising:

- (1) a housing surrounding the teeth and portions of each side of the gear,
- (2) a plurality of rollers journaled in the housing and having roller surfaces contacting the sides of the gear, some of the rollers contacting one side of the gear and the others contacting the opposite side of the gear, said rollers being enclosed within the housing;
- (3) means for restricting rotation of the housing during operation of the gear drive including, on each side of the housing, a member projecting from the housing and a stationary support member for receiving each such projecting member, said stationary support members being independent of the shaft on which the gear is mounted;

(4) mounting members attached to the housing and to which the motor and speed reducer associated with each pinion are attached; and wherein



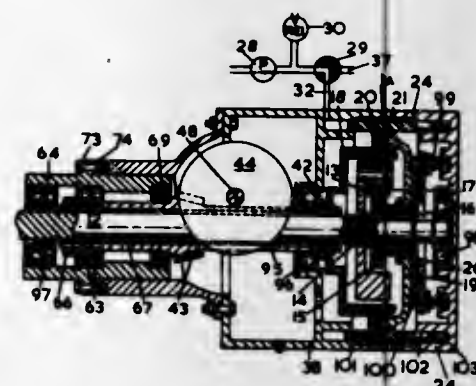
(5) each pinion is supported in the housing and connected to its associated speed reducer.

3,315,544

VEHICULAR DRIVING AXLE

Axel C. Wickman, Sarasota, Fla., and Randle Leslie Abbott, Leamington Spa, England, assignors to Axel Wickman Transmissions Limited, Coventry, Warwickshire, England

Filed Dec. 7, 1964, Ser. No. 416,297
8 Claims. (Cl. 74-695)



1. An axle, for driving road wheels of a motor vehicle, including an axle casing, a driving gear, a driven gear meshing with said driving gear, bearing means supporting said driving gear and said driven gear for rotation about their respective axes, said bearing means arranged for the axis of rotation of said driving gear to lie in a plane at right-angles to a plane containing the axis of rotation of said driven gear whereby said driving gear and said driven gear constitute a right-angle gear drive, said driven gear adapted to drive the said road wheels, the axis of rotation of said driving gear spaced from the axis of rotation of said driven gear, a two-speed epicyclic gearing carried by said axle casing, a power input shaft to said epicyclic gearing, a power output member from said epicyclic gearing, driving means interconnecting said power output member from said epicyclic gearing to said driving gear, said power output member from said epicyclic gearing and said driving gear formed with a coaxial bore, said power input shaft extending through said bore, one end of said power input shaft adapted to be driven from a power source, the other end of said power input shaft adapted to drive said epicyclic gearing, and said epicyclic gearing arranged on the opposite side of the driven gear to the said one end of the power input shaft.

3,315,545
GEAR DRIVEN SCREWDRIVER
Earl L. Schnobelen, P.O. Box 8471, Allandale, Fla. 32023
Filed Dec. 2, 1964, Ser. No. 415,270
4 Claims. (Cl. 74-789)



1. A gear-driving mechanism comprising a driving element, a driven element, means interconnecting said driving and driven elements for relative rotary movement about a common axis, a driving gear fixed coaxially to the driving element for rotary movement therewith, a driven gear fixed coaxially to the driven element for rotary movement therewith, a transmission housing rotatably carried by said mechanism for normally free rotation about said common axis with respect to both of said elements, transmission gearing disposed in said housing for rotation about a second axis spaced from and parallel to said common axis, said transmission gearing comprising a pair of axially aligned gear members interconnected for rotation together about said second axis, and respectively intermeshing with said driving and driven gears, a gear latch carried by said housing and selectively operable to immobilize said transmission gearing whereby to establish a direct driving connection between said driving and driven members, said transmission gear members being of relatively different diameters, said gear latch comprising a stud guided within the housing for axial movement and projecting radially inwardly of the housing toward said second axis for axial movement into and from interlocking relation between adjoining gear teeth of the larger diameter transmission gear member, said latch terminating short of the path of rotation of said teeth of the smaller diameter gear member, whereby to permit rotation of said gears when positioned axially abreast of said smaller diameter gear member.

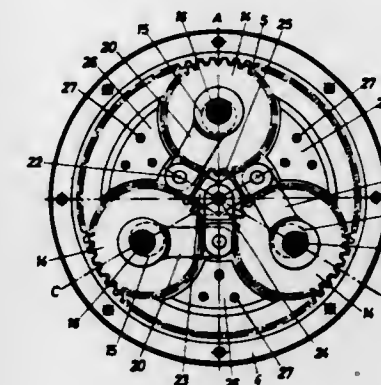
3,315,546

EPICYCLIC GEAR

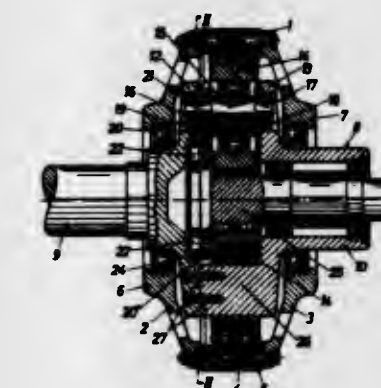
Felix Fritsch, Vienna, Austria, assignor to Simmering-Graz-Pauker Aktiengesellschaft für Maschinen-, Kessel- und Waggonbau, Vienna, Austria
Filed Sept. 28, 1964, Ser. No. 399,625
Claims priority, application Austria, Sept. 26, 1963, A 7,737/63
1 Claim. (Cl. 74-801)

An epicyclic gear, comprising a sun wheel, a plurality of planet wheels grouped around and meshing with said sun wheel, a hollow wheel surrounding and meshing with the planet wheels, a planet wheel carrier, eccentric pins freely rotatably mounted in said planet wheel carrier, the planet wheels being freely rotatably mounted on said eccentric pins, each of said eccentric pins being connected to one end of a lever and means for operatively coupling the free ends of the levers, said means including radially extending links, each of said links being connected at one end to the free end of one of said levers and all said links being articulatedly interconnected at

their other end in a single point, one of said links being forked at its end remote from the lever and said fork receiving the ends of the others of said links, said other links being offset.



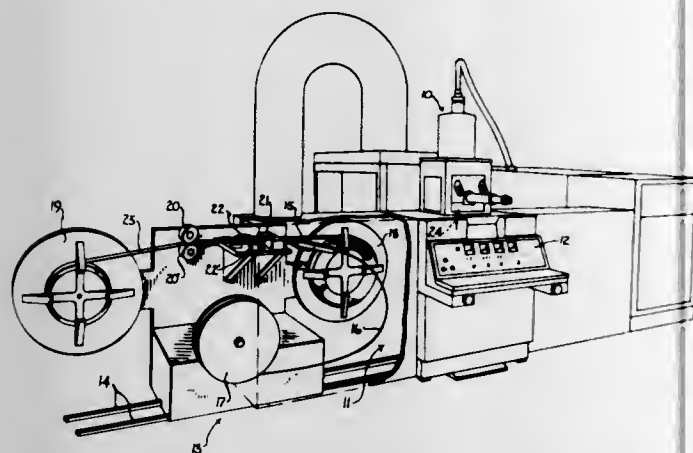
3,315,547
EPICYCLIC GEARS
Felix Fritsch, Vienna, Austria, assignor to Simmering-Graz-Pauker Aktiengesellschaft für Maschinen-, Kessel- und Waggonbau, Vienna, Austria
Filed Sept. 28, 1964, Ser. No. 399,760
Claims priority, application Austria, Sept. 26, 1963, A 7,736/63
1 Claim. (Cl. 74-801)



An epicyclic gear, comprising a sun wheel, a plurality of planet wheels grouped around and meshing with said sun wheel, a hollow wheel surrounding and meshing with the planet wheels, a planet wheel carrier, eccentric pins freely rotatably mounted in said planet wheel carrier, the planet wheels being freely rotatably mounted on said eccentric pins, each of said eccentric pins being connected to one end of a lever, and a disc for operatively coupling the free ends of the levers, the disc extending transversely to the axis of the gear and freely movable in its plane, the gear including a first pin parallel to the gear axis and pivotally interconnecting the disc and the free end of one of the levers, said pivotal connection being operative to permit relative rotational movement between said disc and said one lever but being operative to preclude relative lineal movement therebetween, and other pins extending parallel to the gear axis and secured to the disc and engaging longitudinal slots formed in the free ends of the other levers, the center lines of the longitudinal slots being at substantially a right angle with the radius extending through the associated pin.

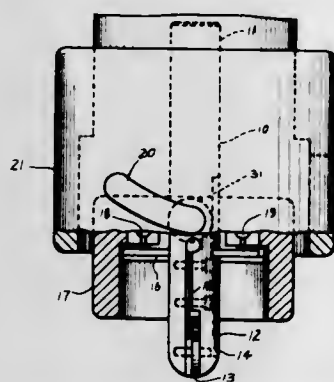
3,315,548

METHOD OF MAKING BAND SAW BLADE
 Royal A. Anderson, Barrington, Ill., and Eugene N. Conroy, Minneapolis, Minn., assignors to Contour Saws, Inc., Des Plaines, Ill., a corporation of Illinois
 Filed Dec. 7, 1964, Ser. No. 416,367
 4 Claims. (Cl. 76—112)



- The method of making a band saw blade wherein
 - a wire of high speed cutting tool steel is welded directly to one edge of a flexible alloy steel band of substantially uniform width and thickness to form a bimetal band, and
 - after straightening and annealing, the resulting bimetal band has teeth of the desired size and shape formed in the edge thereof at which the tool steel wire is located to form a saw blade in which only the tips of the teeth are formed of the tool steel, said method being characterized by:
 - the use of an electron beam to weld the high speed steel wire to the edge of the band; and
 - simultaneously developing in the tool steel tooth tips the metallurgical characteristics of classically heat treated high speed steel along with maximum hardness, and bringing the remainder of the saw blade to a hardness on the order of 44-45 Rockwell C by
 - passing the saw blade lengthwise once through the muffle of a heat treating furnace in which the final muffle temperature is maintained at a substantially constant level and at a selected value in the range of 2150°-2275° F.; and
 - thereafter tempering the saw blade.

3,315,549
DEVICE AND METHOD FOR GENERATING INTERNAL SPHERICAL SURFACES
 Theo Malschner, 394 Park St., New Britain, Conn. 06051
 Filed Jan. 5, 1965, Ser. No. 423,485
 21 Claims. (Cl. 77—58)

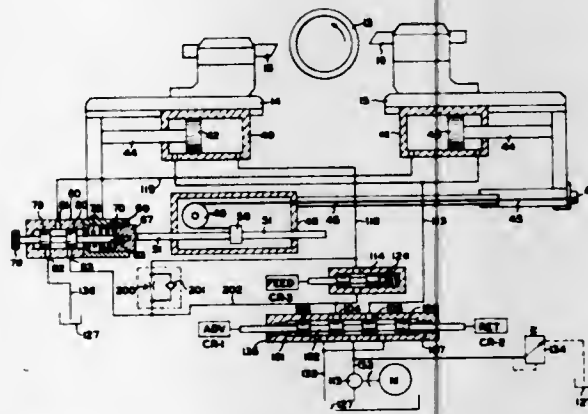


- A rotatable device for generating an internal spherical surface in a workpiece comprising: a body member, said body member having a shank portion at a first end adapted to be received and held by machine

means and a second end configured to receive a pivotable cutting tool holder; a cutting tool holder adapted to adjustably support at least one cutting tool extending therefrom; means pivotably supporting said cutting tool holder at said second end of said body member, said supporting means having a pivot axis normal to the major axis of said body member for continuous pivotal movement of said cutting tool holder through at least 90° from the rotational axis of said device; a cutting tool adjustably supported on said cutting tool holder and having its cutting portion on the outer radial edge thereof; and means carried by said device and operatively connected with said cutting tool holder for controllably pivoting said cutting tool holder about said pivotal axis fixed with respect to said major axis of said body member during and independently of rotation of the device and the workpiece relative to each other.

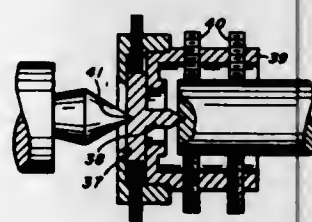
3,315,550
CUTTING-OFF LATHE WITH OPPOSED SYNCHRONIZED TOOL SLIDES

Henrik O. Kylan, Aurora, Ohio, assignor to Bardons & Oliver, Inc., Cleveland, Ohio, a corporation of Ohio
 Filed Sept. 25, 1964, Ser. No. 399,235
 9 Claims. (Cl. 82—21)



- In a machine tool, a rotating work carrier, a pair of tool carrying slides disposed for movement in directions substantially transverse to the work carrier, hydraulic motor powering means for each slide, hydraulic means for establishing direction and rate of movement to one of said slides, hydraulic means for establishing direction of movement to the other of said slides, hydraulic means associated with the movement of the two slides whereby the rate of movement established in the one slide is equal to the rate of movement in the other slide.

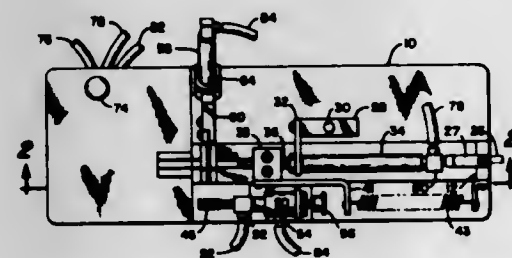
3,315,551
LATHE TOOL
 John La Marca, 1312 Dormont Ave., Pittsburgh, Pa. 15216
 Original application Mar. 3, 1965, Ser. No. 436,815.
 Divided and this application Oct. 5, 1966, Ser. No. 584,461
 4 Claims. (Cl. 82—45)



- A tool for attachment to a workpiece to be turned in a lathe, comprising,
 - a hollow body portion having side walls, spaced outer and inner walls at one end with an opening

- through at least the outer end wall, and an open end for receiving the end of a workpiece between the side walls,
- means mounted on the body for clamping the work piece between the side walls,
- a plate slidably disposed in the space between the outer and inner end walls with an opening in the plate smaller than and registering with the opening in the outer end wall, and
- means for adjusting the plate in all directions transversely of the longitudinal axis of the workpiece while maintaining registry of the end wall and plate openings.

3,315,552
TUBE HANDLING APPARATUS
 Wilson R. Roach, St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
 Filed Apr. 27, 1965, Ser. No. 451,200
 6 Claims. (Cl. 83—78)



- In a tubing dispensing severing and assembling device, the device comprising in combination:
 - a base means;
 - a tubing guide means supported by said base;
 - adjustable feed means including as portions thereof an actuator means and a contact member and a mount therefor, said adjustable feed means being operatively secured to and cooperating with the base means;
 - a stop assembly means operatively secured to the base means, said stop assembly means including a movable mount means supporting a first valve means;
 - a bridging means operatively extending from said mount to the valve means;
 - a severing assembly means secured to the base means and operatively connected to said valve means whereby actuation of said actuator means causes said contact member to advance a predetermined length of tubing and whereby actuation of the valve means by said bridging means causes the severing means to sever a predetermined length of tubing and is capable of forcing a priorly cut length of tubing to be assembled over a conductor means disposed in line with said cut tubing.

3,315,553
STOCK FEEDING AND BLANK EJECTING APPARATUS FOR PUNCH PRESSES
 Milton E. Handler, Evanston, and Irwin J. Ferdinand, Glencoe, Ill., assignors to S. A. Hirsh Mfg. Co., Skokie, Ill., a corporation of Illinois
 Filed Sept. 16, 1964, Ser. No. 396,866
 14 Claims. (Cl. 83—82)

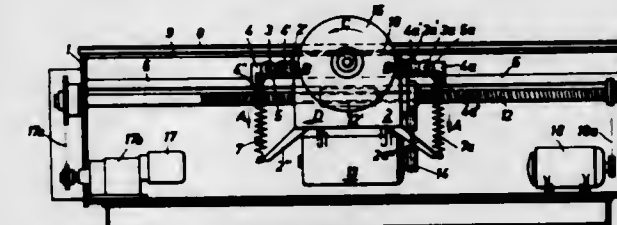
- In a shelf forming apparatus the combination of a punch press having a die arrangement defining a cavity within its work area, a feed stop for locating the leading edge of feed stock properly in the work area, means for feeding stock against said feed stop, a feed stock clamp ahead of said work area arresting feed movement of the feed stock, said feed stop including a movable element displaced by the leading edge of the feed stock for activating said clamps, a work piece ejecting means disposed in said cavity including a continuous running wheel whose

working location is above the level of a severed work piece during the back stroke of the dies and an idler wheel disposed in its retracted portion below the level of the work piece and movable towards and against the running wheel within the work area, means actuated upon the back stroke for the dies for moving said idler wheel from its retracted position into pressure contact with a work piece and with said running wheel for raising the leading



edge of the work piece clear of said feed stop and releasing said movable element, a pair of ejection rollers beyond said feed stop engaging and rapidly ejecting the work piece from over said feed stop ahead of the following leading edge of the feed stock, and means actuated upon clearance of the ejection rollers by the leading edge of the work piece for returning said idler wheel to its starting position and deactivating said clamp.

3,315,554
SAWING APPARATUS
 Leopold Jaeger, Munsterfeller Str. 115, Euskirchen, Germany
 Filed Feb. 12, 1965, Ser. No. 432,094
 15 Claims. (Cl. 83—588)

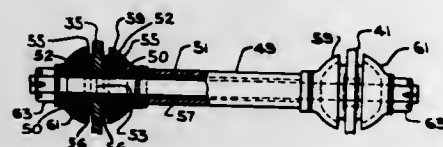


- A sawing apparatus comprising, in combination, support means including an elongated support plate having a plane face against which a workpiece is to be sawn is adapted to abut and face opposite said plane face, said support plate being formed with a longitudinally extending slot therethrough; a pair of guide means fixed to said opposite face and extending in longitudinal direction of said support plate facing away from said plane face thereof and being parallel thereto; a rotary saw blade extending with a portion thereof through said slot; supporting means supporting said saw blade turnably about its axis and movable in longitudinal direction of said slot, said supporting means having guide portions engaging said guide means and said supporting means including biasing means for constantly biasing said guide portions into engagement with said guide means; drive means operatively connected to said saw blade for rotating the same about its axis; and reciprocating means operatively connected to said means for supporting the saw blade for reciprocating said supporting means and the saw blade carried thereby in longitudinal direction of said slot.

3,315,555
ANCHOR LINK
 James C. Travilla, Ladue, Mo., assignor to General Steel Industries, Inc., Granite City, Ill., a corporation of Delaware
 Original application Oct. 23, 1961, Ser. No. 146,969, now Patent No. 3,254,611, dated June 7, 1966. Divided and this application Feb. 16, 1966, Ser. No. 527,842
 6 Claims. (Cl. 85—1.5)

- An anchor link adapted to connect two relatively movable elements having substantially parallel plate-like webs formed with aligned apertures, comprising a rod

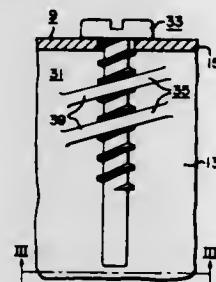
adapted to extend between the webs and through the apertures therein, a tubular spacer surrounding the rod between the webs, inner cups mounted on the rod adjacent the ends of the spacer with their concave sides toward the webs, outer cups mounted on the end portions of the rod on the opposite sides of the webs from the inner cups with their concave sides toward the webs, bodies each formed with substantially hemispherical and flat surfaces and a central aperture normal to the flat



3,315,556 FASTENING MEANS AND ENCLOSURE STRUCTURE

Willis A. Speck, Trumbull, Conn., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 23, 1965, Ser. No. 450,303
2 Claims. (Cl. 85-32)

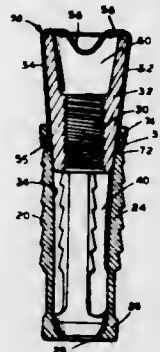


1. A fastening means comprising a sheet-metal member having a flat planar main surface and a plurality of slanted parallel elongated lance members protruding from said flat planar main surface, said sheet-metal member comprising a generally planar end surface, said lance members being slanted relative to said generally planar end surface such that a mean line lengthwise through each of said lance members will form an angle with the plane of said generally planar end surface which angles are substantially equal in dimension, a screw member comprising a threaded shank having a lead angle substantially equal to each of said angles of said lance members, said threaded shank and said sheet-metal member being constructed such that each of said lance members fits between opposite flanks of said threaded shank with adjacent lance members being spaced such that between each set of adjacent lance members there is at least one convolution of said threaded shank that does not receive a lance member and with the crest of said threaded shank engaging said flat planar main surface and with said threaded shank being captured between said lance members and said flat planar main surface such that upon rotation of said screw member said screw member will be moved axially in a direction generally normal to the plane of said generally planar end surface.

3,315,557 EXPANSION SHELL ASSEMBLY

Frederick P. Dickow, Auburn, N.Y., assignor to The Eastern Company, Naugatuck, Conn., a corporation of Connecticut

Filed June 23, 1965, Ser. No. 466,372
3 Claims. (Cl. 85-75)

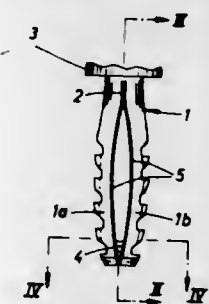


1. An expansion shell and wedge assembly comprising a shell having an annulus at one end, through which the threaded end of an expansion bolt may be projected, and a plurality of shell segments in the form of two opposite pairs of expansion fingers arranged in hollow cylindrical formation and integral with said annulus, each of said fingers having an internal wedge engaging face, and exterior rock engaging gripping teeth and a reduced section portion adjacent said annulus, an expansion wedge having wedge surface means in partial engagement with the wedge engaging faces adjacent the free ends of said fingers and a threaded bolt aperture, the two fingers of one opposite pair each having a circumferentially extending rectangular aperture adjacent the free ends, and a U-shaped strap disposed over the end and part way along the opposite sides of the wedge, said straps having side portions partially received within grooves of the inside face of the respective fingers, and having its ends projected outwardly through the apertures at the end of said grooves and hooked back exteriorly of the apertured fingers and received within outside recesses.

3,315,558 EXPANSION PLUG

Artur Fischer, Tumlingen, Kreis Freudenstadt, Germany

Filed Oct. 16, 1964, Ser. No. 404,368
Claims priority, application Germany, Nov. 5, 1963, F 24,817
6 Claims. (Cl. 85-80)



4. A resilient expansion plug comprising a head; a pair of elongated deformable tongues defining between themselves an elongated slot, said tongues having first end portions integral with said head, second end portions distant from said head, and said tongues being oppositely bowed to define outwardly bulging median portions located intermediate said first and second end portions, at least said median portions being provided with external protruberances; an integral connecting web of less width than said tongues extending across said slot between the second end portions of said tongues; and a pair of arcuate elongated leaf springs of a width no greater than that of said tongues received in said slot and conforming to the bowed configuration of said tongues for biasing the median por-

tions of said tongues away from each other, said springs having end portions provided with recesses being open at their lower ends for accommodating said web.

3,315,559 ELASTIC BRAID CONSTRUCTIONS

Lester Cohen, Providence, R.I., assignor to International Stretch Products, Inc., New York, N.Y., a corporation of Delaware

Filed June 10, 1964, Ser. No. 374,083
8 Claims. (Cl. 87-2)



8. An elastic braid comprising
(a) a plurality of spaced, generally parallel, longitudinally extending elastic warp elements, and
(b) a plurality of interbraided weft elements extending from one side to the other of the braid strip and passing alternately over and under adjacent warp elements,
(c) said weft elements being formed of clear, transparent monofilament polymer plastic,
(d) said before-mentioned weft elements supporting said warp elements in spaced-apart relation at a distance substantially greater than the thickness of the weft elements,
(e) said weft elements being comprised in first part of running pairs of monofilaments and in second part of dyed multifilament yarns,
(f) said multifilament yarns being in proportion of about one to one or less to the monofilament pairs.

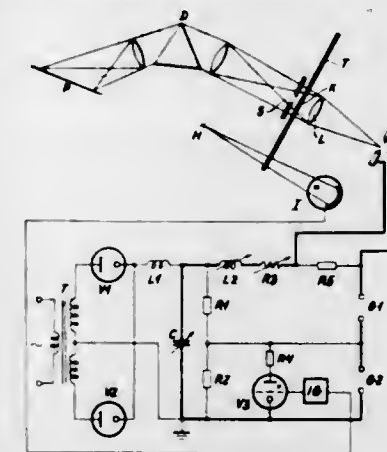
3,315,560 SPECTRUM ANALYSIS WITH TIME-RESOLVED SPARK SPECTRA

Arpad Bardocz, 28-30 Attila Korut, Budapest, Hungary

Original application June 16, 1958, Ser. No. 742,360.
Divided and this application Jan. 10, 1962, Ser. No. 168,303

1 Claim. (Cl. 88-14)

Spectrographic apparatus comprising, in combination, a periodic light source; a spectrograph having a collimating slit; and a substantially circular screen disk, rotatable in synchronism with the activation of said light source, positioned in the path of light rays from said source to said spectrograph collimating slit and formed with aperture means, said aperture means including at least one aperture in said disk adjacent the periphery thereof and extending generally radially of the disk and cyclically moveable across such path and each aperture in said disk comprising at least a pair of adjacent openings therein which are spaced at different distances radially of said disk and angularly of said disk so that one opening immediately

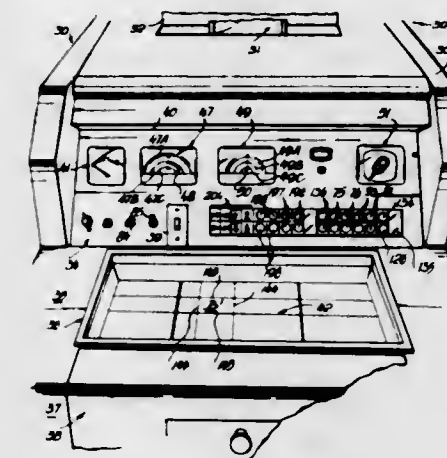


chronism with said screen disk, effective to activate said light source cyclically at precisely timed intervals for precisely timed period of light duration.

3,315,561 PHOTO-COMPOSING MACHINE

Hector S. Garcia Boutigue, 3325 Bahia Blanca St., Buenos Aires, Argentina

Filed Nov. 30, 1964, Ser. No. 414,561
20 Claims. (Cl. 88-24)



1. A photo-composing machine, comprising a holder carriage for originals to be photo-composed, a lens carriage having lens means defining an optical axis and facing said holder carriage, means for causing relative movement between said carriages along the optical axis, one of said carriages being movable at least in two directions substantially perpendicular to each other and substantially perpendicular to the optical axis, the other of said carriages being movable at least in a direction substantially perpendicular to the optical axis, a bracket for a film, a view-finder, said film bracket and view-finder being optically coupled to each other and to said lens carriage, and mask means for masking part of said view-finder and film bracket.

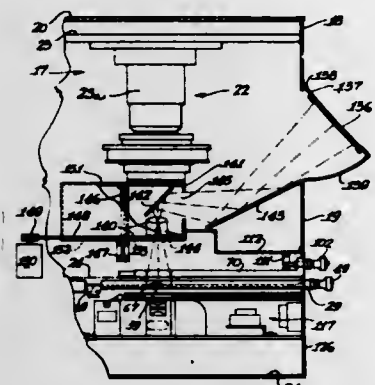
3,315,562 BATHYTHERMOGRAPH DATA RECORDS PRODUCTION

Charles D. Sauer, Ernest H. Bowler, and Arthur B. Forward, Ottawa, Ontario, Canada, assignors to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a corporation of Canada

Filed Feb. 12, 1965, Ser. No. 432,269
14 Claims. (Cl. 88-24)

1. A method of producing a bathythermograph record card having a microfilm portion which comprises superimposing a transparent plate having thereon a calibration grid on and in substantially surface contact rela-

tion with a transparent plate having a bathythermograph trace thereon, projecting an image of said trace with said grid superimposed thereon onto a screen, while viewing said image adjusting the position of said grid with respect to said trace by at least one of the steps consisting of rotatively adjusting one of said plates relative to the



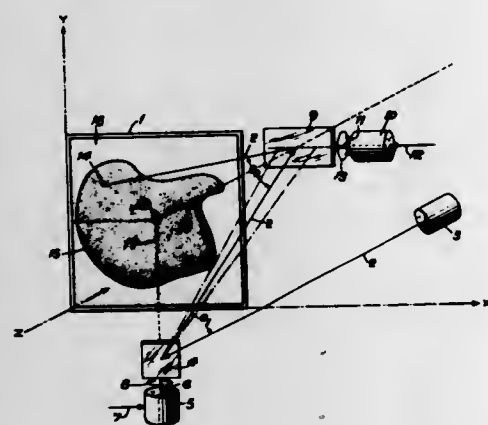
other, moving one of said plates relative to the other in a lateral direction, and moving one of said plates relative to the other in a direction normal to said lateral direction to position said grid and trace in accurate relation with respect to each other, and photographically reproducing said adjusted grid and trace into said microfilm portion of said card.

3,315,563

TWO-AXIS DISPLAY SYSTEM

Rabun B. Harper, Chatsworth, and Eugene B. Johnston, Jr., Northridge, Calif., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed July 8, 1965, Ser. No. 470,396
5 Claims. (Cl. 88-24)



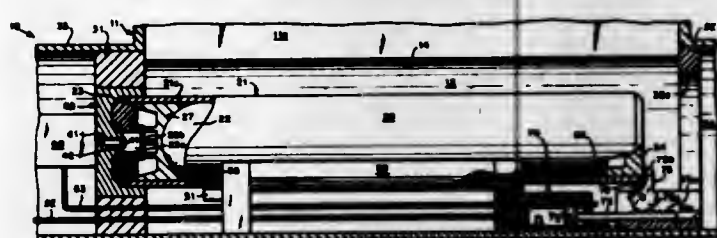
1. A two-axis display system to display information represented by sources of first and second signals comprising:

- a screen;
- means providing a light beam for projecting as a spot onto said screen;
- a first movable reflector adapted to reflect said light beam and cause said spot to move across said screen in a given direction, said first reflector being located adjacent the edge of said screen for movement about an axis, the projection of which lies in the plane of said screen;
- a second movable reflector adapted to reflect said light beam to cause said spot to move across said screen in another direction, said second reflector being disposed laterally of said screen for movement about another axis which is parallel to the plane of said screen; and
- means responsive to said first signals to control movement of said first reflector and means responsive to said second signals to control the movement of said second reflector.

3,315,564

STORE LAUNCHER

William H. Hazlett, Jr., Warrington, and Curtis K. Baker, Warminster, Pa., assignors to the United States of America as represented by the Secretary of the Navy
Filed Oct. 29, 1965, Ser. No. 505,772
8 Claims. (Cl. 89-1.5)

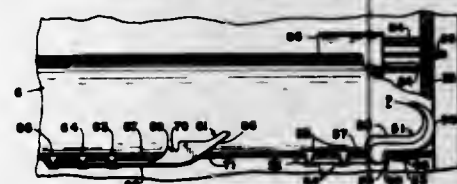


1. A launching mechanism for ejecting a store from its shipping, storage and launching container and for subsequently ejecting the empty container, the container including a shearable end-cap at the forward end thereof and a cap at the aft end thereof having means located thereon for receiving a source of launching pressure and including a fangible seal which is ruptured when a predetermined pressure source is applied thereto, comprising:
 - a chamber;
 - a slot in said chamber providing the container with access to said chamber;
 - breech block means at one end of said chamber for positioning the aft end of the container and for providing an ejection force thereto;
 - a force exerting means at the other end of said chamber for engaging the forward end of the container and urging the aft end thereof against said breech block means;
 - and launching tube means communicating with said other end of said chamber.

3,315,565

AIR-BORNE ROCKET LAUNCHERS

John J. Nash, Ferguson, Mo., assignor to Chromcraft Corporation, St. Louis, Mo., a corporation of Missouri
Filed Jan. 15, 1965, Ser. No. 425,773
3 Claims. (Cl. 89-1.807)



1. A rocket launcher comprising an outer metallic tubular shell rigidly provided at each end with a transverse bulkhead, a plurality of rocket tubes mounted at their opposite ends in and extending axially between said bulkheads within the shell in spaced parallel relationship, said tubes opening at each end externally through said bulkheads, a spring-detent projecting into each rocket tube and being adapted to shift radially outwardly under the propulsive forces exerted by the rocket when it is fired and a hook-like stop member rigidly mounted at the rear end of each rocket tube and comprising a mounting-plate portion fixedly secured to the wall of the tube and an integral, inwardly offset neck portion extending in longitudinal continuation thereof and proceeding longitudinally-rearwardly along the inner wall of the tube and terminating at its rearward end in a hook-like portion which curves rearwardly therefrom and thence forwardly into the tube interior, said hook-like portion having gradually diminishing section whereby it has limited resiliency and terminating in a point which is substantially coincident with the longitudinal centerline of the tube and is adapted to be contacted by the rear end of the rocket inserted therein, the inwardly facing surfaces of the neck portion

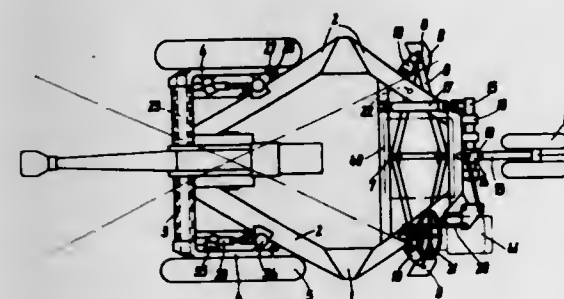
and the forwardly facing surfaces of the hook-like portion being feathered down to a thin edge so as to cause minimum interference and turbulence within the rearwardly blasting jet stream from the rocket when fired.

3,315,566

GUN-CARRIAGE

Hans Klapdohr, Erkrath, Franz Horn, Osterath (Lower Rhine), and Erich Zielinski, Dusseldorf, Germany, assignors to Firma Rheinmetall G.m.b.H., Dusseldorf, Germany

Filed July 26, 1965, Ser. No. 474,579
Claims priority, application Germany, July 28, 1964,
R 38,474
16 Claims. (Cl. 89-40)



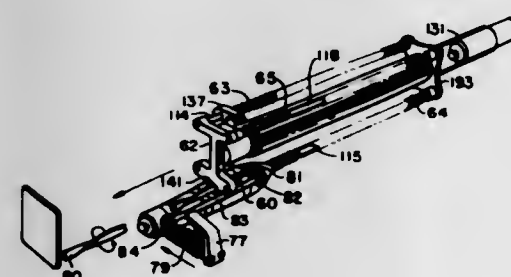
1. A gun carriage comprising an axle, ground engaging wheels and spring supported arms with the axle supported on the wheels, a frame of approximately rhomboidal shape mounted on the axle, a ground engaging spur provided at each side of the frame, each spur being mounted on an arm which is supported on the frame for pivotal movement about a shaft whose axis extends longitudinally relative to the frame.

3,315,567

AUTOMATIC LAUNCHER FOR ROCKET-BOOSTED AMMUNITION

Kenneth J. J. McGowan, Richmond, Ind., assignor to Avco Corporation, Richmond, Ind., a corporation of Delaware

Filed Aug. 10, 1965, Ser. No. 478,570
6 Claims. (Cl. 89-183)



1. In an automatic rocket launcher of the type which includes a receiver formed with a firing chamber, the improvement which comprises, in combination:
 - a bolt mounted for reciprocal movement relative to said firing chamber, the bolt advancing forwardly into battery to chamber a round of ammunition and retracting rearwardly to permit a new round to be placed in position to be chambered;
 - releasable locking means for locking the bolt in battery position;
 - operating means comprising a plurality of spaced members constituting a trombone-like slide and mounted in reciprocal movable relation to and symmetrically

and externally disposed relative to said bolt, said operating means retracting rearwardly to actuate said releasable locking means to unlock said bolt;

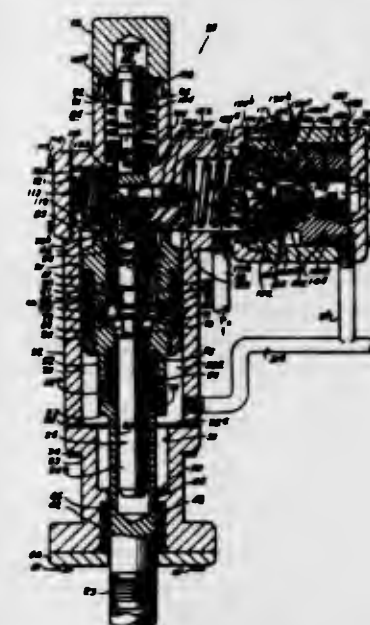
compressible means mechanically intercoupling said bolt and said operating means, said compressible means being compressed when the operating means retracts rearwardly, whereby to store energy to retract the bolt when the bolt is released;

and strainable means mechanically intercoupling said operating means and said receiver, the strainable means being strained when the operating means retracts rearwardly, whereby to store energy to advance the operating means and the bolt.

3,315,568

OPERATOR DEVICES

John V. Fredd, Dallas, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Filed May 28, 1965, Ser. No. 459,843
18 Claims. (Cl. 91-44)



1. Fluid actuated apparatus including: main cylinder means; main piston means reciprocable within said cylinder means; means for conducting fluid into opposite ends of said cylinder for supplying fluid under pressure to displace said main piston means to opposite end positions; piston rod means connected with said main piston means and extending through one end of said cylinder means; means for releasably locking said main piston means at opposite end positions; and pressure differential controlled releasable second locking means for releasably locking said means for releasably locking said main piston means at said opposite end positions against releasing movement.

3,315,569

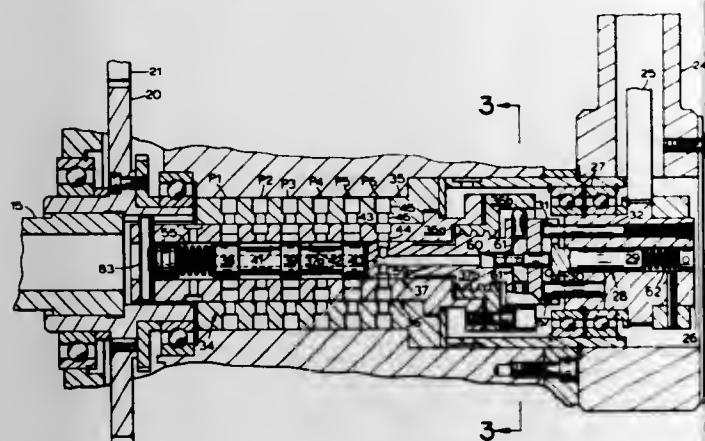
CONTROL MECHANISM FOR MACHINE TOOL
Lewis A. Dever, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio

Filed June 24, 1965, Ser. No. 466,540
8 Claims. (Cl. 91-378)

5. In a machine tool having a movable member:
 - (a) a hydraulic valve comprising a first rotatable valve unit and a second rotatable valve unit, said first and second valve units in threaded engagement, said valve operable to move said movable member in response to relative axial movement between the valve units,
 - (b) means selectively to lock said units together to render said valve ineffective to move the movable member,
 - (c) means to rotate one of said valve units to effect relative axial movement between the valve units in

one direction when the valve units are not locked together,

(d) means responsive to movement of the movable member to rotate the other of said valve units to effect relative axial movement between the valve units in



the opposite direction when the valve units are not locked together, and

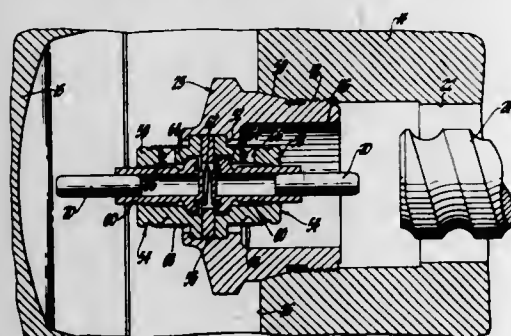
(e) means to move said movable member independently of said hydraulic valve when said valve units are locked together.

3,315,570

PRESSURE RELIEVING MEANS

Lee M. Brewer and Robert P. Rohde, Saginaw, and William B. Thompson, Frankenmuth, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Jan. 7, 1965, Ser. No. 423,974
6 Claims. (Cl. 91-401)



1. In a servo system, the combination comprising, a power cylinder, a piston in said cylinder reciprocable to and from a predetermined end-stroke position, means controlling pressure supply and exhaust to and from opposite sides of said piston for said reciprocation thereof, pressure relief means in said cylinder operable to relieve pressure from one side of said piston to the other, adjustable actuating means operable to actuate said pressure relief means, and means operable upon movement of said piston to said end-stroke position thereof to adjust said actuating means for pressure relief upon subsequent movement of said piston to said end-stroke position thereof.

3,315,571

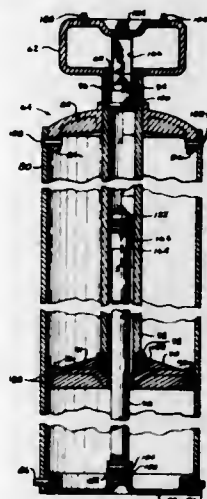
JACKING UNIT AND METERING VALVE THEREFOR

Ion V. K. Hott and Robert J. Haddix, Dayton, Ohio, assignors of one-third to said Hott, one-third to C. Huston Brown, and one-third to Warren E. Webster, all of Dayton, Ohio

Filed Mar. 25, 1965, Ser. No. 442,629
7 Claims. (Cl. 92-8)

1. A jacking unit comprising: an air cylinder having an internal cavity, a piston slidably mounted within said cylinder, said piston separating said internal cavity into two chambers, an air intake and exhaust port located in

one of said chambers and means for introducing air under pressure into said one of said chambers, the other of said chambers being relieved to ambient atmosphere, a hollow piston rod connected to said piston and extending through an end wall of said cylinder, said piston rod being filled with a liquid, and metering valve means within said piston rod limiting the flow of said liquid within said piston rod as the air pressure within said one of said chambers is increased or decreased to move said piston relative to said cylinder, said metering valve means including a first metering valve housed in and supported by



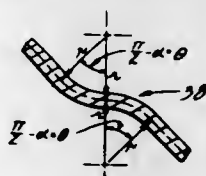
said piston rod and a second metering valve housed in said piston rod and supported by said cylinder, each of said valves having a valve element occupying a substantially open position permitting a relatively high flow of liquid through the valves and a substantially closed position permitting a relatively small flow of liquid through the valves, bias means biasing one of said valve elements into its substantially closed position, bias means biasing the other of said valve elements into its substantially open position, both of said valve elements being movable in response to liquid pressure within said piston rod to restrict the movement of said piston.

3,315,572

ROLLING SEAL DEVICES AND DIAPHRAGMS

John F. Taplin, 15 Sewall St., West Newton, Mass. 02165

Filed Mar. 8, 1965, Ser. No. 437,844
6 Claims. (Cl. 92-99)



1. A rolling seal diaphragm with a rolling wall including a longitudinally intermediate portion with a centerline including a pair of arcs of the same length and of radii of the same length, the radii being struck from centers on opposite sides of said wall.

3,315,573

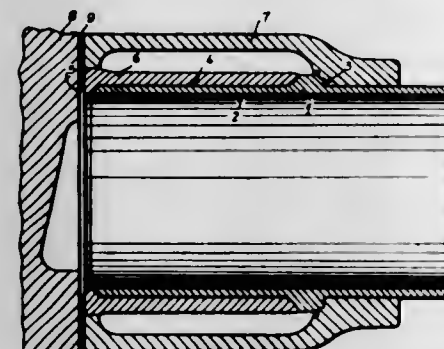
REMOVABLE CYLINDER LINERS FOR INTERNAL COMBUSTION ENGINES

Gaetan de Croy de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Seine, France, a French works

Filed Mar. 26, 1965, Ser. No. 442,913
Claims priority, application France, Apr. 1, 1964, 969,400, Patent 1,398,468
1 Claim. (Cl. 92-171)

A removable liner for internal combustion engines more particularly for engines comprising a cylinder block cast form a light metal and onto which a cylinder head

is fixed and inside of which pistons slide, said liner comprising an active ferrous metal cylindrical segment, said cylindrical segment having a length greater than the piston stroke and being mounted in said cylinder block and contacting said piston, a light metal belt molded on the exterior of said ferrous metal cylindrical segment to adhere perfectly thereto, said light metal belt extending over the entire cylindrical segment included between the end adjacent the cylinder head and a ridge formed on the



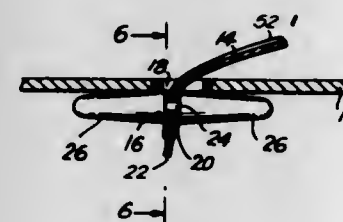
segment in such a manner that, once the light metal belt has been fitted, the liner is restrained in the cylinder block between the cylinder head and a surface corresponding to said ridge and provided in the cylinder block, said light metal belt bearing directly against a corresponding surface in the cylinder block at a point adjacent said cylinder head, said light metal belt having a length substantially equal to the length of the piston stroke whereby the relative expansion between said liner and said cylinder block is kept to a minimum.

3,315,574

PACKAGE HANDLE

Allen I. Field, 147 Valley Stream Road, Larchmont, N.Y. 10538, and Sidney P. Field, 266 Beach 134th St., Belle Harbor, N.Y. 11694

Filed Nov. 10, 1964, Ser. No. 410,109
7 Claims. (Cl. 93-1)



1. The method of making a package handle which includes making anchor pins, cutting a desired length of a uniform strip of material from a quantity of such strip and punching anchor holes therethrough near the ends of the strip, and forcing an anchor pin in each hole to anchor the pin across the strip.

3,315,575

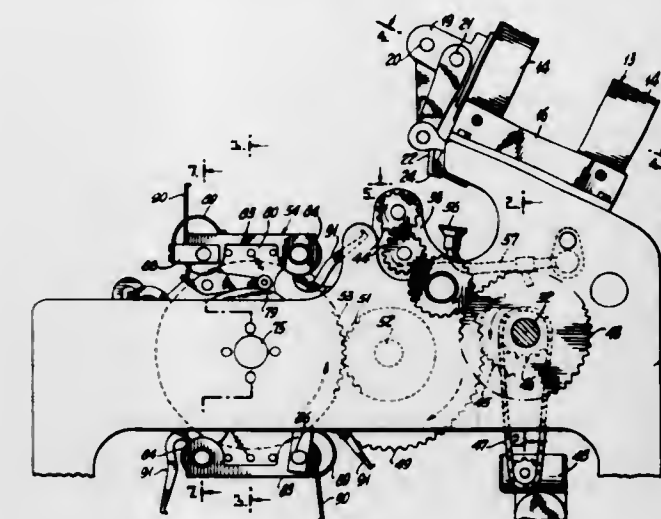
CARTON ERECTING AND FEEDING

Albert A. Pinto, White Plains, N.Y., assignor to National Biscuit Company, a corporation of New Jersey

Filed Apr. 14, 1964, Ser. No. 359,697
14 Claims. (Cl. 93-53)

1. A machine for setting up prefolded cartons in rectangular form comprising, in combination, a magazine in which said cartons are stacked flat, means for withdrawing single cartons from the bottom of the stack, rotary carton feeding means presenting a plurality of table faces, means for feeding the withdrawn cartons singly to each of said table faces in succession, said cartons each pre-

sented exposed corner portions, clip means on the rotary feeding means for engagement with said exposed corner portions to secure the cartons to their respective table faces, detent blade means at one edge of each table face, carton opening blade means at one edge of each table face and opposite said detent blade means, and cam con-



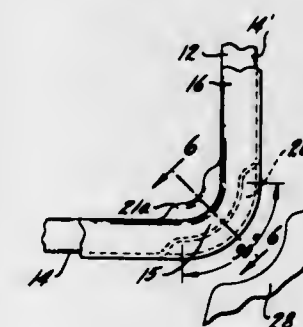
trolled means for each of said clip means, detent blade means and carton opening blade means for controlling the operation thereof in synchronism for erecting the cartons, reversely folding the same after initial erection, and releasing the set-up cartons, respectively from the carton feeding means during the rotation thereof.

3,315,576

METHOD OF MAKING A SIDEWALL FOR A SHIPPING CONTAINER

Paul Bracht, deceased, late of Porz-Westhoven, near Cologne, Germany, by Maria Herres Bracht, sole heir, Porz-Westhoven, near Cologne, Germany, assignor to Inland Steel Company, Chicago, Ill., a corporation of Delaware

Filed Jan. 4, 1965, Ser. No. 423,398
14 Claims. (Cl. 93-55.1)

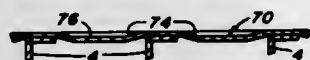


1. The method of forming an internal continuous peripheral rib in the sidewall of a polygonal container made of deformable material and having a plurality of substantially flat sides interconnected by rounded corners comprising the steps of deforming the rounded corners of the sidewall material at a given distance from one extremity of the sidewall during one forming stage by forming externally disposed curved grooves therein with such curved grooves defining the curved portions of the internal rib, and deforming the flat sides of the sidewall material at said given distance from said one extremity of the sidewall during another forming stage by forming externally disposed straight grooves therein with such straight grooves defining the straight portions of the internal rib.

3,315,577

PORTABLE DECK

William A. Box, Fullerton, Calif., assignor to United States Steel Corporation, a corporation of Delaware
Filed Apr. 7, 1966, Ser. No. 541,012
6 Claims. (Cl. 94—13)

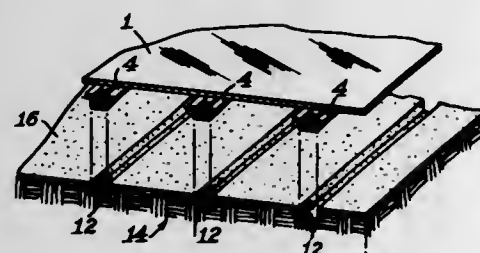


1. A mat comprising a plurality of metal plates, means connecting said metal plates to form a plurality of cellular openings, the top of said plates being in a common plane and the bottom of said plates being in a second common plane, said plates having horizontal flanges at the top thereof, a metal top cover sheet having flat surfaces resting on said flanges with adhesive therebetween, said top cover sheet having a plurality of concave depressions therein with downwardly and inwardly tapering sides, each of said depressions being within one of said openings, the top of each depression being generally co-extensive with its associated opening, the bottom of said top cover sheet at said depressions extending below the top of said plates, and a metal bottom cover sheet secured to the bottom of said plates.

3,315,578

METHOD OF LAYING A PREFABRICATED ROADWAY

Ludwig Wesch, Glucksburg-Ostsee, and Martin Ostermann, Hamburg-Hochkamp, Germany, assignors to Albert, Jean, Pierre CALS, Paris, France
Filed Sept. 29, 1964, Ser. No. 400,100
1 Claim. (Cl. 94—22)



A method for laying a prefabricated assembly for the rapid construction of roadways and other load-bearing surfaces on a sandy or clay-type soil, comprising the steps of providing cover panels having transverse strengthening beams on the undersurfaces thereof, forming grooves in said soil corresponding to said beams, soaking said soil with an artificial resin, laying said cover panels onto said soil with said beams being received in said grooves before said resin hardens, and allowing said resin to set.

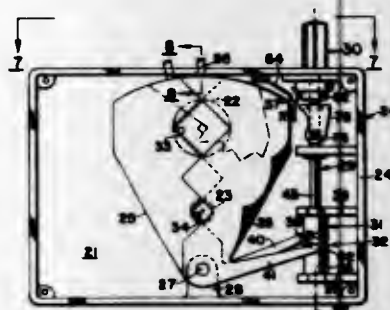
3,315,579

DUAL MODE CONTROL MEANS

Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Apr. 13, 1964, Ser. No. 359,114
19 Claims. (Cl. 95—10)

1. In a comparison photometer, the combination of:
(a) an electrical circuit that includes a lamp and a switch closable to cause said lamp to be illuminated;
(b) a first light source whose brightness is functionally dependent upon the intensity of light from said lamp;
(c) a second light source;
(d) a photometer head for bringing both light sources into a common field so that the relative brightness of said sources can be compared;

(e) first means manually operable to change the relative brightness between said sources; and

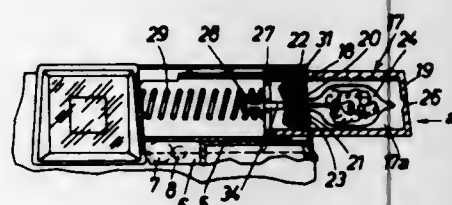


(f) second means operatively connected to said first means and responsive to manual operation of said first means for automatically closing said switch.

3,315,580

CAMERA WITH FLASH APPARATUS

Artur Fischer, Tumligen, Kreis Freudenstadt, Black Forest, Germany
Filed Jan. 30, 1963, Ser. No. 254,877
Claims priority, application Germany, Feb. 6, 1962, F 35,948
18 Claims. (Cl. 95—11)



1. In a camera, in combination, a camera housing having an upper wall; a hollow enclosure carried by said upper wall of said camera housing and defining a chamber with said upper wall of said camera housing; a reflector forming part of a flash apparatus; and support means supporting said reflector for movement with respect to said enclosure into said chamber to an inoperative position and out of said chamber to an operative position, said flash apparatus including, in addition to said reflector, a plurality of stationary components operatively connected to each other and among which are a battery, a lamp holder, a condenser, and a resistor, at least some of said components being located in said chamber and at least one of said components extending into said reflector when the latter is in said inoperative position thereof.

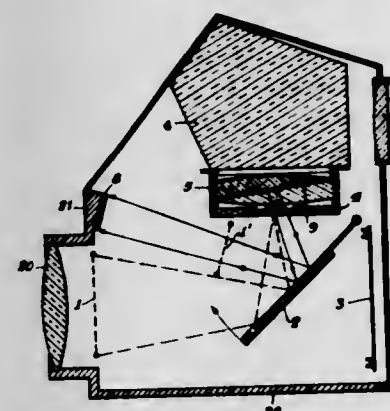
3,315,581

SINGLE LENS MIRROR REFLEX CAMERA PROVIDED WITH EXPOSURE METER

Hans Rühle and Josef Schwahn, Stuttgart, Germany, assignors to Zeiss Ikon Aktiengesellschaft, Stuttgart, Germany
Filed Sept. 22, 1964, Ser. No. 398,196
Claims priority, application Germany, Oct. 4, 1963, Z 10,394
3 Claims. (Cl. 95—42)

1. In a single objective lens mirror reflex camera having a camera chamber, a viewfinder, a viewfinder ocular, a pivotally mounted flap mirror for deflecting the light rays passing through the camera objective into the focusing plane of said viewfinder when the latter is in its operative position, a focussing plate to receive light rays from the exit pupil of said objective, a photoconductive element mounted in said chamber offset from said objective for an exposure meter, said photoconductive element

being arranged within said camera to be illuminated by a portion of the light rays which are deflected by said flap mirror into said viewfinder, a partially transmissive reflecting layer adjacent said focussing plate, said portion of the light rays being deflected onto said photoconductive element by said partially transmissive reflecting layer being arranged fixedly in rear of said focussing plate, said partially transmissive reflecting layer being combined with a field lens which forms a part of said viewfinder and

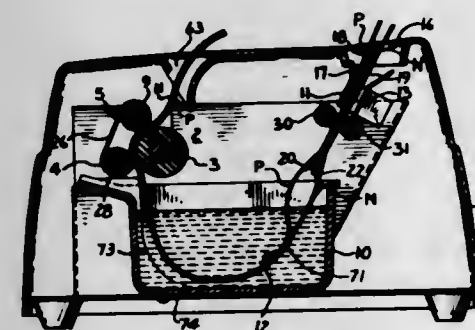


is arranged between said focussing plate and said penta roof edge prism, said field lens being divided by a section arranged inclined to the optical axis into two parts, and said partially transmissive reflecting layer being arranged on one surface of one of said two parts of said field lens, whereby light rays from the exit pupil of said objective will be reflected from said partially transmissive layer back to said flap mirror and onto said photoconductive element.

3,315,582

PHOTOCOPY DEVELOPER

Burton D. Elsner, Highland Park, and Leo D. Sacre, Prospect Heights, Ill., assignors to American Photocopy Equipment Company, Evanston, Ill., a corporation of Illinois
Filed June 28, 1962, Ser. No. 205,973
10 Claims. (Cl. 95—89)

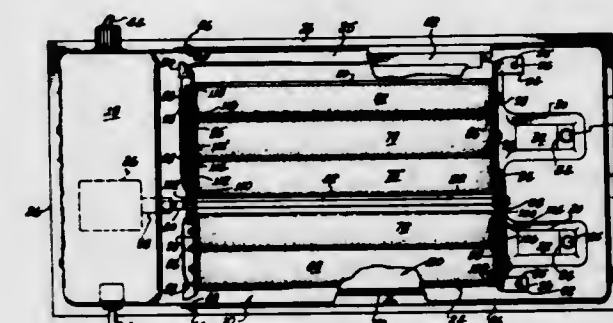


10. A device for developing exposed photographic sheet material and for transferring an image onto an unexposed transfer sheet material by moistening the materials with a developer liquid and by subsequently pressing the materials into contact one with the other, said device comprising a developer tank adapted to hold developer liquid therein, a roller-belt arrangement positioned adjacent the exit and of said developer tank for pressing said materials into an extended plane of contact with one another, and guide means positioned adjacent the opposite end of said developer tank and arranged above the level of the liquid for directing said sheet materials in diverging paths into the liquid in said developer tank whereby said sheet materials will be wetted with a sufficient amount of developer liquid before coming into contact with each other, the bottom of said developer tank arranged to guide both said sheet materials only after they have come into con-

tact with each other and to direct said sheets to the point of tangency of said roller-belt arrangement, the bottom of said developer tank having positioned therein a plurality of spaced substantially U-shaped ribs.

3,315,583

PHOTOGRAPHIC PROCESSING APPARATUS
Charles J. Hunt, Orange, Calif., assignor to Beattie-Coleman, Inc., Anaheim, Calif., a corporation of California
Filed Oct. 15, 1964, Ser. No. 404,045
2 Claims. (Cl. 95—94)



1. In a photographic processing apparatus for applying processing liquid to sheets of print stock to develop latent images thereon, the combination of:

container means having an input end and an output end with the container means forming a receptacle adjacent its input end for an activating solution and forming a receptacle near its output end for a stabilizer solution;

a series of upper rollers above the liquid level of the processing liquid and a series of lower rollers co-operative therewith to engage the sheets and transport the sheets from the input end of the container means to the output end across the processing liquid above the level thereof;

the rollers of both series being relatively close together and forming a substantially continuous bank of rollers from the input end of the container means to the output end to keep the sheets under close control including relatively short sheets and sheets of limp fabric,

some of the lower rollers being partially immersed in the processing liquid to apply the processing liquid to the under surfaces of the sheets,

a final lower roller on the output end being above the liquid level of the processing liquid and cooperating with a corresponding upper roller to squeeze the sheets,

said rollers being divided into a first group above the activating solution and a second group above the stabilizer solution;

power means;

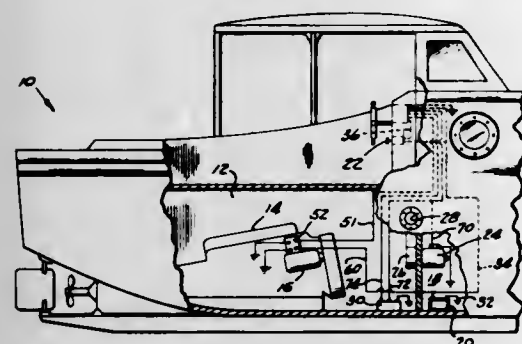
a drive shaft connected to the power means and extending between the two groups of rollers parallel thereto, and means including gearing for actuation of the rollers by the drive shaft, said gearing including two gear trains on opposite sides, respectively, of the container means for driving the two groups of rollers respectively,

said drive shaft having two gears on its opposite ends which are members of the two gear trains respectively,

alternate gears of each of the two gear trains being unitary with the rollers respectively of the series of lower rollers,

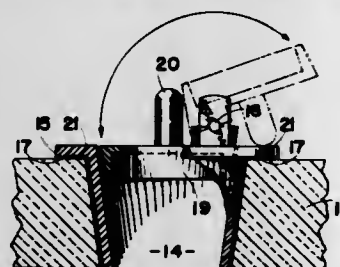
said gear trains being separate from each other to prevent migration of the activating solution along the gearing to the stabilizer solution.

3,315,584
STARTING SYSTEM FOR MOTOR BOATS
 Cornelius W. Van Ranst, 15692 Woodland,
 Dearborn, Mich. 48120
 Filed Nov. 16, 1964, Ser. No. 411,386
 7 Claims. (Cl. 98-1)



1. In a motor boat having an engine compartment enclosing an internal combustion engine, a safety engine-starting system comprising an electric starter motor for starting said engine, a source of electrical energy, a normally open starter motor switch connected in circuit with said starter motor and said source, an electrical time delay means coupled to said starter motor switch for closing said starter motor switch a preset time period after said time delay means has been energized, a normally open starting switch connected in circuit with said source and said time delay means for energizing the time delay means when the starting switch is closed, a normally open gas sensing switch device positioned in said compartment and adapted to close so as to be electrically conductive when a predetermined amount of hydrocarbon gas is present in the ambient atmosphere, and electrically operated blower positioned to ventilate said compartment and connected in a normally open electrical circuit with said source, and a gas sensing control circuit including said gas sensing switch device and said starting switch and responsive to closing of said gas sensing switch device when said starting switch is closed for opening the circuit containing said time delay switch means and thereby maintaining open said starter motor switch and for closing the normally open circuit containing said blower and said source.

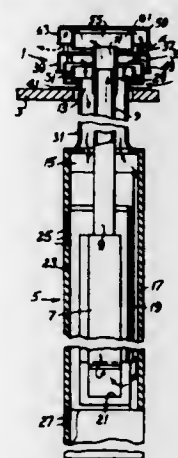
3,315,585
VENTED PANEL
 Thomas V. Hawkins, San Francisco, and Jerome W. Schutt, Sacramento, Calif., assignors to Aircoustic Company, Inc., San Francisco, Calif.
 Filed May 3, 1965, Ser. No. 452,833
 3 Claims. (Cl. 98-40)



1. A vent for a wall panel having an opening there-through comprising: a sleeve having a conical inner surface and a pair of opposed ends; a flange secured to said sleeve and disposed in surrounding relationship to one of the open ends thereof, said sleeve adapted to be positioned in said panel opening with said flange in proximity to one outer face of the panel; a pair of spaced brackets mounted on and extending outwardly from said flange; a pivot rod pivotally mounted at its ends on said brackets with the pivot rod spaced outwardly from the flange, said brackets being disposed to position the pivot rod in intersecting relationship to said one open end of the sleeve;

a closure secured to said pivot rod for pivotal movement therewith, said closure being movable from a first position permitting fluid flow through the sleeve to a second position blocking said fluid flow through the sleeve, said closure having an arm on the outer surface thereof for engaging the flange when the closure is in said first position to thereby limit the pivotal movement of the closure in one direction, said pivot rod being disposed to define a space between the pivot rod and the proximal portion of said one open end of the sleeve when the closure is in said first position whereby a moving member may be inserted into the sleeve from the opposite end thereof and can extend through said space into forcible engagement with one side of the closure to initiate the pivotal movement thereof from said first position toward its second position, the opposite side of the closure disposed to be forcibly engaged by said moving member when the closure is in said second position whereby the moving member may initiate the pivotal movement of the closure from the second position toward said first position.

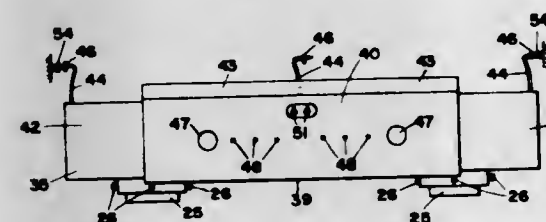
3,315,586
VENT AND AIR INLET ASSEMBLY
 Marius W. Marrapese, Bedford, Ohio, and Edgar W. Wirth, New Athens, Ill., assignors to Autocrat Corporation, New Athens, Ill., a corporation of Illinois
 Filed June 3, 1965, Ser. No. 460,928
 4 Claims. (Cl. 98-62)



1. A vent and air inlet assembly for a sealed combustion chamber gas furnace, the assembly being mountable on the exterior of a structure containing the furnace and comprising an elongate flue for exhausting combustion products from the furnace combustion chamber to the atmosphere, an elongate conduit surrounding and spaced from the flue, the conduit being coaxial with the flue and defining with the flue a passage for primary air for the furnace combustion chamber with the outer end of the conduit comprising the inlet of the passage, the outer end of the flue projecting beyond the outer end of the conduit, an air passage cover engaging the periphery of the flue and overlying but spaced from the outer end of the conduit, the cover having an annular rim depending from its periphery, a first tubular deflector surrounding the inlet end of the passage and positioned between the inlet end of the passage and the rim of the cover, the cover rim being coaxial with and spaced from the conduit, means supporting the deflector in spaced relation to the exterior of the structure and the cover with an intermediate portion of the deflector being in radial alignment with the inlet of the passage whereby atmospheric air traverses a tortuous path beneath the cover and around the deflector before entering the air passage, a second tubular deflector supported above the cover and surrounding the outlet end of the flue, a second cover overlying and spaced from the outer end of the flue, the second deflector being spaced from the flue and both covers, the first deflector including a series of ports, the deflector ports being sub-

stantially in radial alignment with the inlet end of the passage, and a third tubular deflector located between and spaced from the first tubular deflector and the conduit.

3,315,587
WINDOW-MOUNTED VENTILATING APPARATUS
 John J. Horan, 420 Quigley Ave.,
 Willow Grove, Pa. 19090
 Filed June 28, 1965, Ser. No. 467,272
 9 Claims. (Cl. 98-94)

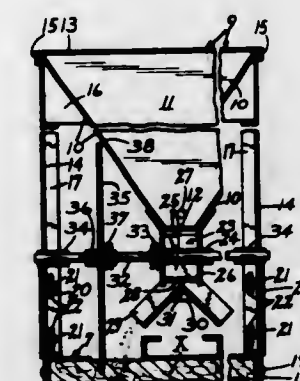


1. A ventilating apparatus adapted for adjustably fitted installation in window openings within a predictable range of widths, said apparatus having a relatively flat upper surface portion upon which a bottom edge of a vertically sliding window may rest, said apparatus comprising at least one centrifugal fan assembly and a baffle casing, said fan assembly containing: an electric motor having a vertical axis; a centrifugal fan driven by said motor and rotating in a horizontal plane; and an enclosure including a discharge opening therein, a bulkhead portion of said enclosure and the peripheral portion of said fan having a clearance gap therebetween, said bulkhead portion constricting said gap adjacent one boundary of said discharge opening, whereby substantial movement of air from said discharge opening into said gap is prevented, said bulkhead portion continuing around said fan in the direction of rotation thereof and terminating at a coacting boundary of said discharge opening, said enclosure being open below the interior zone of said centrifugal fan, whereby air may be sucked up from below into the said interior zone and expelled from said fan through said discharge opening via said gap, said fan assembly and baffle casing being arrayed side-by-side for placement across such openings, the proximate sides of said baffle casing and said fan assembly being mutually joined, said apparatus further comprising adjustment means for selectively varying the effective width of said baffle casing relative to said fan assembly, whereby said baffle casing constitutes an adjacent housing adjustably supplementing the width of said fan assembly to fit window openings within said range.

3,315,588
PRESERVATIVE APPLICATOR FOR FORAGE BALES AND THE LIKE
 Donn H. Lorenz, % Lorenz Manufacturing Co.,
 Benson, Minn. 56215
 Filed Aug. 16, 1965, Ser. No. 479,789
 4 Claims. (Cl. 99-235)

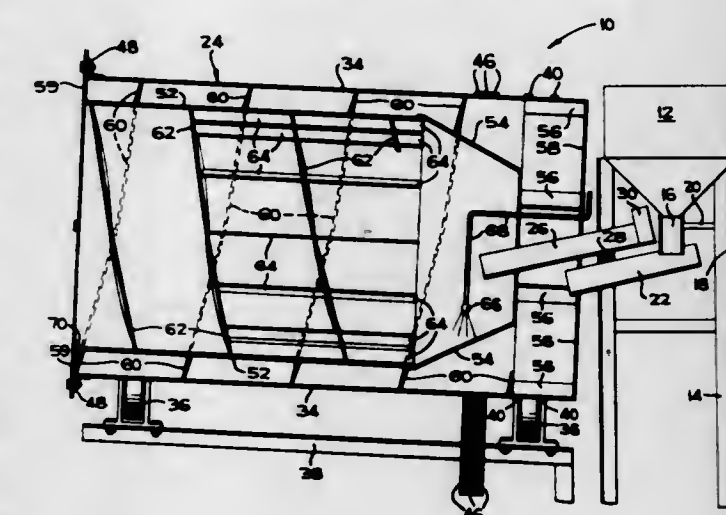
1. A preservative applicator for forage bales and the like, comprising: (a) a hopper having downwardly tapering side and end walls defining a discharge opening at the bottom of the hopper,

(b) hopper supporting means for mounting said hopper on a forage baling machine in overlying relation to a bale case portion of the baling machine, (c) a rotary shaft journaled in said hopper mounting means on a horizontal axis below said discharge opening,



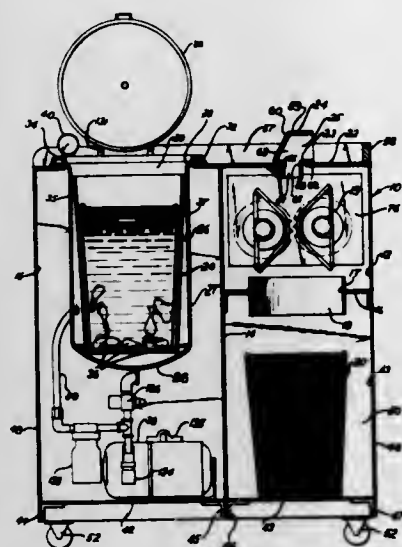
(d) a rotary dispensing element mounted on said shaft and positioned below said discharge opening to dispense measured quantities of preservative material from said hopper to forage being moved through the bale case portion of said baling machine, (e) and a rotary actuator mounted on said shaft for common rotation therewith and having a peripheral portion disposed in the path of travel of forage being moved through said bale case portion of the baling machine, when said hopper is mounted thereon, to be rotated responsive to movement of forage through said bale case portion.

3,315,589
PELLET FORMING APPARATUS
 Katsuji Hirahara, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
 Filed Oct. 21, 1965, Ser. No. 499,173
 8 Claims. (Cl. 99-235)



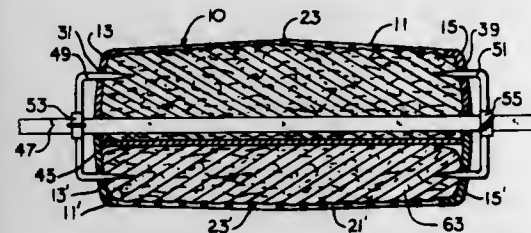
1. Pellet forming apparatus comprising respectively perforate and imperforate inner and outer hollow cylinders, means mounting said cylinders for rotation about a common inclined axis, said cylinders defining therebetween an annular chamber arranged to receive pellets small enough to pass outward through the perforations in said inner cylinder and downward along the inclined interior surface of said outer cylinder, feed means for introducing random size pellets into said inner cylinder, and means including said feed means and carried by said outer cylinder for recirculating the pellets collected at the lower end of said chamber by reintroducing the pellets into said inner cylinder.

3,315,590
MEAT PROCESSING EQUIPMENT
 Thomas C. Payne, Rte. 1, Rockton, Ill. 61072
 Filed Aug. 6, 1965, Ser. No. 477,685
 15 Claims. (Cl. 99—254)



1. Meat processing equipment comprising, in combination, a cabinet having a top and walls defining three compartments, two of which compartments are vertically aligned and the third of which is at one side of those that are vertically aligned, said vertically aligned compartments being separated by a wall having a relatively large opening in the mid-region thereof, said cabinet having a relatively small opening in the top at a position above the mid-region of said relatively large opening, meat piercing means including a pair of motor driven cylinders having radially projecting tines thereon mounted in the upper of said vertically aligned compartments between said openings for piercing holes in pieces of meat dropped thereon through said relatively small opening and from whence said pieces of meat drop through said relatively large opening, a foraminous container in the lower of said vertically aligned compartments for receiving pieces of meat dropped through said relatively large opening, a vacuum chamber in said third compartment of a size for receiving said foraminous container, and vacuum pump means for evacuating air from said vacuum chamber.

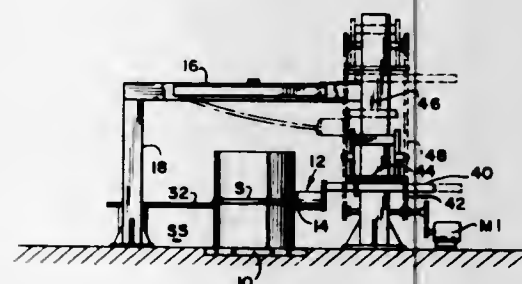
3,315,591
BARBECUE DEVICE
 Herbert A. Elliott, 604 Middle St.,
 Webster City, Iowa 50595
 Filed Mar. 30, 1964, Ser. No. 355,624
 7 Claims. (Cl. 99—421)



1. In a barbecue device, an elongated, substantially cylindrical basket comprised of first and second basket portions hingedly secured together intermediate their length, said first and second basket portions each comprised of spaced apart end members having a plurality of bar members extending therebetween, a plurality of rib members secured to said plurality of bar members extending transversely thereto,

each of said end members being semi-circular in shape and having an arcuate edge portion and a straight edge portion, each of said straight edge portions having a semi-circular cutaway area therein substantially in the center of their length, and a hole in each of said end members between said cutaway area and the center of the length of said arcuate edge portion.

3,315,592
METHOD OF AND APPARATUS FOR TIGHTENING AND STRAPPING INVOLUTELY WOUND SHEET METAL COILS
 Peter Lems, Wilmette, Ill., assignor to Signode Corporation, Chicago, Ill., a corporation of Delaware
 Filed Oct. 14, 1965, Ser. No. 495,931
 16 Claims. (Cl. 100—3)

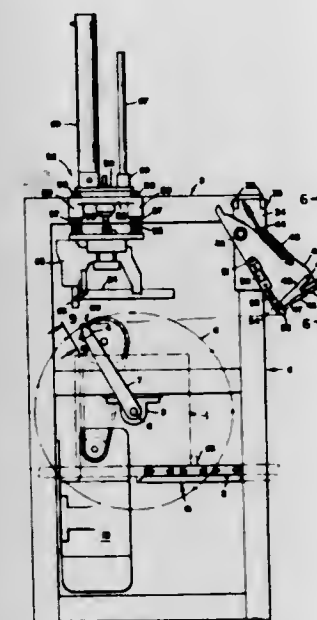


16. The method of tightening and strapping an involutely wound coil of sheet metal having loose outer coil convolutions which comprises: encircling the coil with a length of strapping material to provide a substantially closed loop having overlapping end portions and an auxiliary fold of excess strapping intermediate said end portions, drawing one of said end portions in a coil-tightening direction to shrink the closed loop upon the coil and draw the excess strapping of the auxiliary fold progressively into the closed loop while simultaneously frictionally restraining said excess strapping from entering the closed loop until such time as all of the excess strapping has been drawn into the closed loop, continuing the drawing of said one end portion in a coil tightening direction to fully tighten the closed loop about the coil, fixedly securing said end portions together, and finally severing said one end portion of the loop from the remainder thereof.

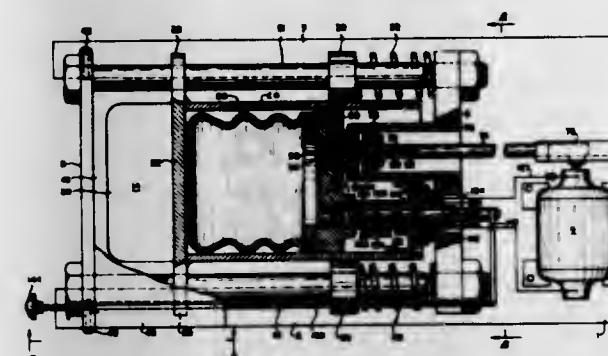
3,315,593
TYING MACHINE
 Wright A. Scoville, P.O. Box 2429,
 White City, Oreg. 97501
 Filed Dec. 3, 1965, Ser. No. 511,466
 7 Claims. (Cl. 100—27)

1. A tying machine comprising:
 (a) a stationary frame;
 (b) a gripping member adapted to releasably grip one end portion of a cord to be wrapped around an article to be tied;
 (c) means supporting said gripping member on said frame for movement through a distance greater than 360° in a generally circular path for wrapping a section of said cord about an article positioned within the space enclosed by said path and for positioning the ends of said section in side by side lapping relation;
 (d) cord securing means on said frame operable for movement from a position spaced from said path to a position against a side of said article and against said lapping ends of a section of said cord for stapling said lapping ends together and to said article;

(e) means for so moving said cord securing means against said lapping ends for stapling them to said article;
 (f) a pivotally mounted cord tensioning means mounted on said frame and being normally positioned in the same plane as the path in which the gripper member travels;

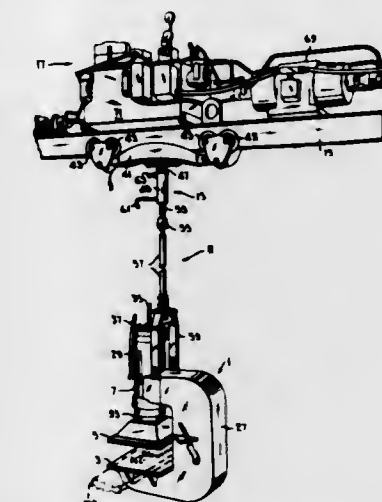


3,315,594
MACHINE FOR CRUSHING CANS, BOTTLES AND THE LIKE
 Herbert H. Simshauser, Rte. 2, Ravenna, Ohio 44266
 Filed Oct. 13, 1964, Ser. No. 403,732
 6 Claims. (Cl. 100—52)



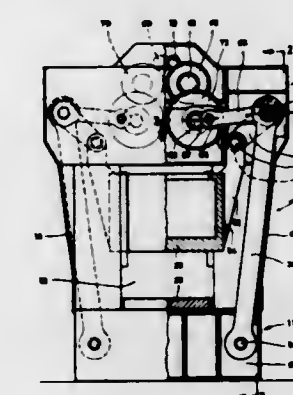
1. A machine for crushing an article such as a can, bottle or the like, comprising a fixed wall, a movable wall parallel to and normally spaced from the fixed wall to provide an article receiving compartment between them, means for moving the movable wall toward the fixed wall to crush an article in said compartment, a movable cover for said compartment, means operable by closure of said cover to cause movement of the movable wall toward the fixed wall, means operable at a predetermined position of the movable wall in its movement toward the fixed wall for moving the movable wall in a direction away from the fixed wall, and means operable upon such retracting movement of the movable wall to open the cover for the article receiving compartment.

3,315,595
SUSPENSION FOR PRESS OR THE LIKE
 Walter G. Moehlenpach, Ladue, and George E. Pallme, Jr.,
 St. Louis County, Mo., assignors to Hydro-Air Engineering, Inc., St. Louis, Mo., a corporation of Missouri
 Filed Oct. 15, 1965, Ser. No. 496,473
 17 Claims. (Cl. 100—214)



4. Apparatus for fabricating wood trusses and the like comprising a fluid-operated press for driving nailing plates into opposing surfaces of substantially fixed abutting wood members, said press having an upper and a lower platen relatively movable toward and away from one another and hydraulic power means for moving the platens together, an overhead carrier, means for suspending said press from said carrier for movement to a position wherein the platens are located respectively above and below nailing plates to be driven into said wood members, the press suspending means including means for varying the distance between the press and the carrier in response to the load carried by the press suspending means, and means for supplying fluid under pressure to said power means and simultaneously actuating the distance varying means.

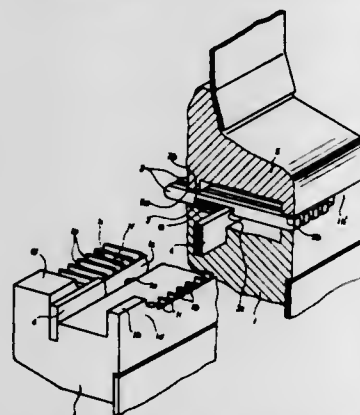
3,315,596
PRESS
 Leonhard Peters, Schwabisch Gmund, Germany, assignor to May-Pressenbau G.m.b.H., Strassdorf, near Schwabisch Gmund, Germany
 Filed June 28, 1965, Ser. No. 467,618
 Claims priority, application Germany, July 21, 1964, M 61,808
 5 Claims. (Cl. 100—282)



1. In a press, a plunger, frame means guiding said plunger for vertical movement, a stationary pivot carried by said frame means at an elevation lower than said plunger, a long lever pivotally carried by said pivot and extending upwardly therefrom to an elevation higher than said plunger, said lever having an upper free end, a second pivot carried by said lever at its upper free end, a short lever pivotally connected to said plunger and said

second pivot, a connecting rod pivotally connected to said second pivot and situated at an upper part of said frame means, and a rotary crank situated at said upper part of said frame means and operatively connected to said connecting rod for reciprocating the latter to swing said long lever about said stationary pivot while moving said second pivot along part of a circle whose center is in said stationary pivot, the swinging movement of said second pivot being transmitted through said short lever to said plunger for moving the latter vertically with respect to said frame means.

3,315,597
PRINT MEMBER GUIDE AND RETURN MEANS FOR SELECTIVE PRINTING MACHINES
Hans Elsner, Wilhelmshaven, Germany, assignor to Olympia Werke AG, Wilhelmshaven, Germany
Filed Jan. 13, 1965, Ser. No. 425,309
Claims priority, application Germany, Jan. 24, 1964, O 9,906
4 Claims. (Cl. 101-109)



1. In a printing apparatus, in combination, supporting means having a plurality of parallel guideways, each guideway having a portion with a curved recess; a plurality of printing hammers disposed in said guideways, respectively, for longitudinal movement, each printing hammer having a cutout bounded by one engaging portion and another engaging portion arranged longitudinally spaced from each other; a stop member extending transverse to said guideways across said printing hammers through said cutouts between said engaging portions of each printing hammer; means for moving any of said printing hammers during the printing phase into a position in which said other engaging portion of said printing hammer is spaced from said stop member; and a plurality of spring means, each spring means engaging said stop member and one of said engaging portions of said printing hammers, respectively, to bias the respective printing hammer for movement along the respective guideway to a position of rest in which the other engaging portion of the respective printing hammer abuts said stop member, each said spring means being located in said portion of the respective guideway so as to be received by said curved recess in a bent and compressed condition while said other engaging portion is spaced from said stop member.

3,315,598
COPYING OF GRAPHIC ORIGINALS
Richard Owen, North St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed July 28, 1960, Ser. No. 45,987
6 Claims. (Cl. 101-149.2)

1. The method of preparing a reproduction of a differentially radiation-absorptive graphic original, comprising: subjecting a heat-sensitive copy-sheet to localized heating at areas corresponding to image-forming areas of said original by a thermographic process to provide a visible reproduction of said image-forming areas, said copy-sheet including a visibly heat-sensitive coating on a

flexible carrier; placing said copy-sheet with its coated surface in pressure-contact with the heat-activatable surface of a normally non-tacky adhesive receptor sheet and heating at least the portions of said heat-activatable sur-



face corresponding to said image-forming areas to provide adherent bonding between said coating and said surface while avoiding visible change at background areas of said copy-sheet; and removing said carrier by stripping.

3,315,599
PROCESS FOR THE PREPARATION OF PRINTING PLATES AND MATERIAL FOR USE THEREIN
Erwin Lind, Wiesbaden, Germany, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.
No Drawing. Filed June 28, 1963, Ser. No. 291,238
Claims priority, application Germany, June 30, 1962, K 47,122
16 Claims. (Cl. 101-149.2)

1. A process for hydrophilizing the non-image areas of an electrophotographic material having a fixed image thereon which comprises treating the surface of the material with an aqueous solution including a compound selected from the group consisting of boric acid and salts thereof, a hydrophilic organic acid of high molecular weight, and at least one additive selected from the group consisting of a moisture-conserving agent, a wetting and swelling agent, and a hydrophilic film-forming substance.

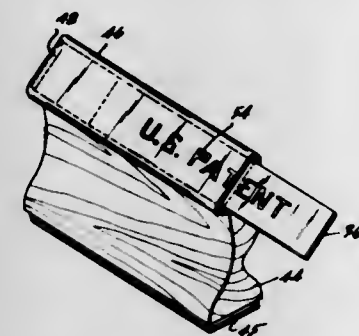
3,315,600
PROCESS AND MATERIAL FOR THE PREPARATION OF PRINTING PLATES
Martha Tomanek, Wiesbaden-Blebrich, Germany, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.
No Drawing. Filed Sept. 18, 1964, Ser. No. 397,639
Claims priority, application Germany, Sept. 20, 1963, K 50,878
22 Claims. (Cl. 101-149.2)

1. A process for preparing a printing plate which comprises forming a fusible powder image on an electrophotographic plate, transferring the powder image to a covering layer which is stable to heat and is on a support having a hydrophilic surface, fusing the image by heat treatment, and removing the covering layer in the non-image areas by treatment with an aqueous solvent which does not dissolve the hydrophilic surface on the fused powder image.

3,315,601
HAND PRINTER AND METHOD OF MAKING SAME
Joseph Borack, Beverly Hills, Calif., assignor to Com-Tech, Incorporated, a corporation of Delaware
Filed Jan. 11, 1965, Ser. No. 424,710
6 Claims. (Cl. 101-368)

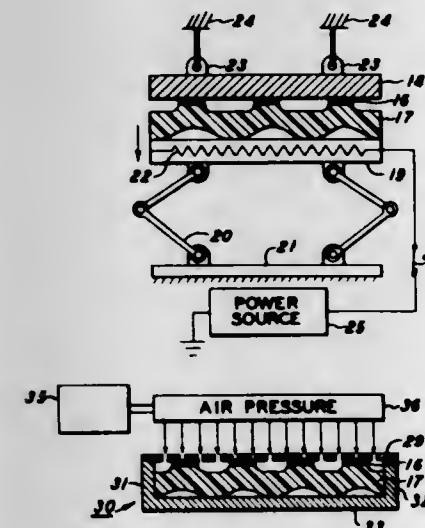
1. A printing structure for carrying ink to a printing medium, to print predetermined true symbols thereon, comprising:
printing type means including a layer of embossable material set to provide raised symbols in mirror image form and having an ink retentive surface, said symbols coinciding to said predetermined symbols in true image form;
a handle block providing a pair of substantially flat surfaces at opposed ends thereof;
means fixing said printing type means on one of said flat surfaces whereby said ink retentive surface is externally exposed;

an identification means including a layer of embossable material set to provide lowered symbols in true image form and having a size such that the lowered symbols on said identification means and the raised sym-



bols on said printing type means can fit snugly together; and
means fixing said identification means on the other of said flat surfaces.

3,315,602
FORMING OF PRINTING PLATES
Harold E. Clark, Penfield, and Robert W. Gundlach, Victor, N.Y., and Lewis E. Walkup, Columbus, Ohio, assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Dec. 16, 1964, Ser. No. 418,720
11 Claims. (Cl. 101-401.1)



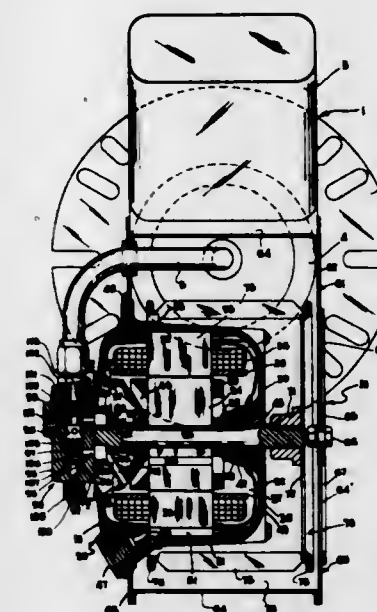
1. The method of forming a stereotype image plate comprising the sequential steps of:
(a) bonding a layer of deformable plate forming material in image configuration to a rigid support;
(b) causing said plate material to be permanently deformed away from said rigid support in the unbonded areas thereof; and
(c) removing the deformed plate material from said support.
11. The method of forming a stereotype image plate comprising the sequential steps of:
(a) bonding a layer of deformable plate forming material in image configuration to a porous rigid support;
(b) applying a gas pressure through said support against said plate material causing said plate material to be permanently deformed away from said rigid support in the unbonded areas thereof; and
(c) removing the deformed plate material from said support.

3,315,603
INITIATOR AND TEMPERATURE MONITOR FOR DETONATING SQUIB
William G. Amey, North Wales, Donald I. Finch, Glenside, and Donald Robertson, Ambler, Pa., assignors to Leeds and Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 19, 1965, Ser. No. 497,769
14 Claims. (Cl. 102-28)



1. An electrically detonatable squib having a single bridging circuit comprising two dissimilar electrically conductive metals of small cross section joined to form a thermocouple junction.

3,315,604
OIL BURNER ASSEMBLIES
Eugene A. Roeske, St. Louis, Mo., assignor to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed Mar. 29, 1965, Ser. No. 443,441
2 Claims. (Cl. 103-6)



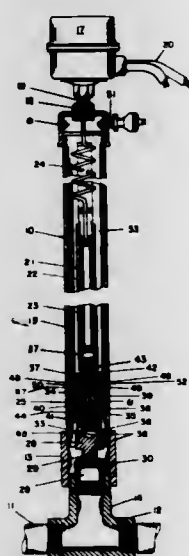
1. An oil burner assembly comprising an electric motor having a wound stator, a rotor including a rotor shaft, a motor housing including an end shield in heat transfer relation to the wound stator, a pump having an impeller, a pump housing, and suction and discharge manifold ports in said housing, a major portion of said pump housing being integral with said end shield, said impeller being connected to be driven by said rotor shaft, said motor

housing having an oil chamber within it, in heat transfer relation to said wound stator, whereby fuel oil in said chamber is heated by said wound stator when the motor is in operation, said chamber communicating with one of said manifold ports, a blower housing encompassing the said motor and spaced radially from said wound stator to define therewith a passage, and a blower wheel mounted to embrace said wound stator, connected to be driven by said rotor shaft, and arranged to blow air through said passage.

3,315,605

STANDPIPES FOR WATER SUPPLY SYSTEMS
Neil C. Lien, Evansville, Wis., assignor to Baker Manufacturing Company, Evansville, Wis., a corporation of Wisconsin

Filed June 22, 1965, Ser. No. 465,931
1 Claim. (Cl. 103—6)



In a water supply system having a pressure tank, a pump for supplying water to said pressure tank, a motor for driving said pump, and a pressure switch for controlling the operation of said motor, the improvement comprising:

- a device for sensing the pressure in the pressure tank of said water supply system and for controlling the operation of said pressure switch,
- casing means forming a substantially fluid-tight chamber about said pressure sensing device,
- an air valve mounted on said casing means for introducing air into said chamber, and
- a check valve mounted on said pressure sensing device within said casing means for permitting the passage of air from said chamber through said pressure sensing device into the pressure tank of said water supply system and for blocking passage from said pressure tank into said chamber.

3,315,606

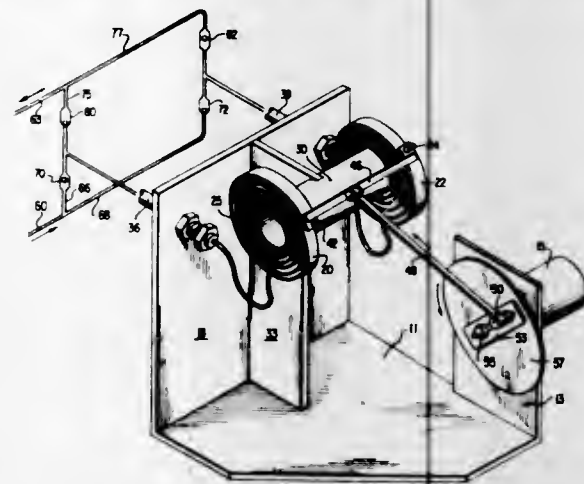
PUMP APPARATUS

John J. Piro, Homewood, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

Filed Dec. 24, 1964, Ser. No. 420,926
7 Claims. (Cl. 103—37)

1. A positive displacement pump having an inlet means and an outlet means, a first conduit and a second conduit each connected at one end by a valve system to said inlet and outlet means and at the other end to the interior of a first and a second coiled tube, respectively, at the fixed ends of said tubes, the first of said coiled tubes having a free end wound clockwise around said

fixed end, the second of said coiled tubes having a free end wound counterclockwise around said fixed end, said



free ends being fixedly attached to a single source of reciprocating motion.

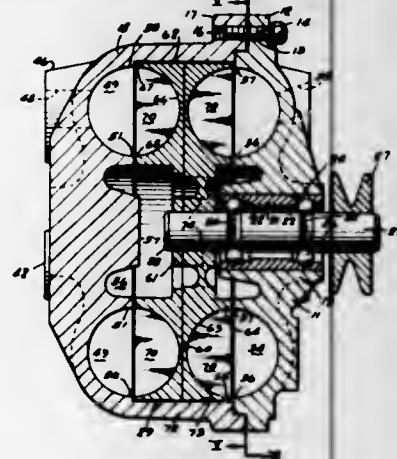
3,315,607

MULTI-STAGE DRAG PUMP

Hugh MacInnes, Richmond Heights, Ohio, assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio

Filed June 4, 1965, Ser. No. 461,415

12 Claims. (Cl. 103—108)



1. A fluid compressor of the drag type comprising, casing means forming two pumping chambers constituting a first stage and a second stage, each having an inlet and an outlet, and an impeller rotor journaled for rotation in said casing means, and having a centrally disposed hub, a disk extending radially outwardly therefrom, and oppositely disposed vanes outwardly of correspondingly opposite sides of said disk for acting on fluid in each respective stage of said two pumping chambers, and an internal passage formed in and extending axially through said disk of said rotor and interconnecting said outlet of said first stage with said inlet of said second stage.

3,315,608

HIGH EFFICIENCY WEAR-COMPENSATING GEAR PUMP

Otto Eckerle, Am Bergwald 3, Malsch, Kreis Karlsruhe, Germany

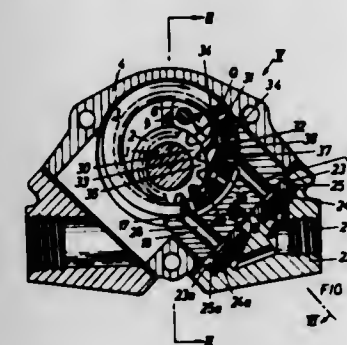
Filed Aug. 23, 1966, Ser. No. 574,340

Claims priority, application Germany, Aug. 23, 1965, E 29,948

13 Claims. (Cl. 103—126)

1. A wear compensating high efficiency gear pump for pumping fluid, comprising: a sealed housing; a drive shaft

mounted through the housing; a pinion gear fixedly mounted coaxially on said drive shaft; a ring gear having internal teeth of a shape and spacing permitting meshing of its teeth with the teeth of said pinion gear; said ring gear having a pitch circle substantially larger than that of said pinion gear and surrounding said pinion within said housing; a filling piece situated between said pinion gear and said ring gear; said piece shaped for sealing engagement with the tips of the teeth of the gears when the gears are in mesh; pivoting and moving means to make said piece pivotable about an axis fixed in the piece and parallel to said drive shaft and to make said axis movable; a piston means to push the ring gear into mesh with the pinion



gear, thereby forming a meshing zone, and to cause the ring gear to move the filling piece into sealing engagement with the ring gear and the pinion gear; sealing means to seal laterally a pressure chamber bounded peripherally by the gears and the filling piece before the meshing zone; the piece pivoting axis movable in a direction substantially perpendicular to that of the resultant force of fluid in the pressure chamber on the filling piece; said axis located in said filling piece substantially in intersection with the direction of the resultant force of fluid in the pressure chamber on the filling piece; fluid inlet means from without the housing to the chamber bounded peripherally by the gears and the filling piece after the meshing zone; and fluid outlet means to the pressure chamber.

3,315,609

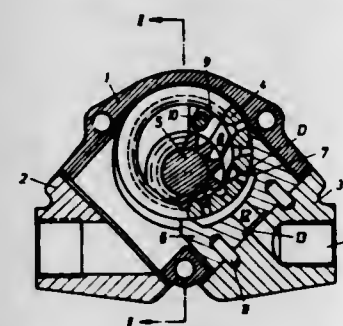
WEAR-COMPENSATING HIGH EFFICIENCY GEAR PUMP

Otto Eckerle, Am Bergwald 3, Malsch, Kreis Karlsruhe, Germany

Filed Aug. 25, 1966, Ser. No. 575,111

Claims priority, application Germany, Aug. 31, 1965, E 30,008

11 Claims. (Cl. 103—126)



1. A wear compensating high efficiency gear pump for pumping fluid, comprising: a sealed housing; a pinion shaft laterally displaceably arranged through the housing; a pinion gear fixedly mounted coaxially on said drive shaft; a ring gear having internal teeth of a shape and spacing permitting meshing of its teeth with the teeth of said pinion gear; said ring gear having a pitch circle substantially larger than that of said pinion gear and surrounding said pinion within said housing; a filling piece situated between said pinion gear and said ring gear; said

piece shaped for sealing engagement with the tips of the teeth of the gears when the gears are in mesh; said piece mounted pivotably about an axis parallel to said pinion shaft, displaceably substantially radially from said pinion shaft, and fixedly relative to rotation with said pinion shaft; pinion fluid pressure bearing means to urge said pinion into mesh with said ring gear, thereby forming a meshing zone, and into engagement said filling piece; ring gear fluid pressure bearing means to reduce the bearing force of said ring gear on said housing; sealing means to seal laterally a pressure chamber bounded peripherally by the gears and the filling piece before the meshing zone; fluid inlet means from without the housing to the chamber bounded peripherally by the gears and the filling piece after the meshing zone; and fluid outlet means from the pressure chamber.

3,315,610

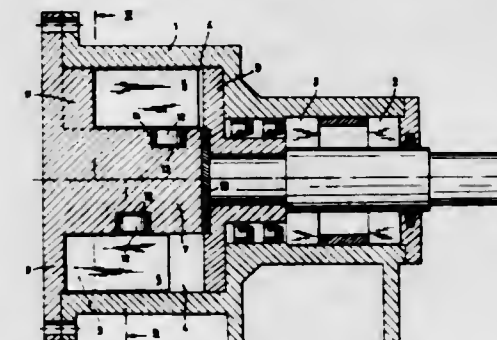
ROTATING VANE PUMP

Paavo Salminen, Topellusgatan 3BA17, Helsingfors, Finland

Filed June 29, 1965, Ser. No. 467,863

Claims priority, application Finland, Sept. 29, 1964, 2,055/64; Mar. 15, 1965, 630/65

6 Claims. (Cl. 103—139)



1. A vane pump comprising a pump body, a rotor mounted for rotation within said pump body, said rotor having slots arranged therein, vanes mounted within said slots for axial sliding movement therein, said rotor and pump body defining a pump chamber adapted to contain the fluid to be pumped, said pump body having an inlet and an outlet in communication with said chamber for the passage of fluid to and from said chamber, a portion of said vanes normally lying within said pump chamber, said vanes serving to move the fluid from said fluid inlet towards said fluid outlet, a partition wall in said chamber for separating said fluid inlet and said fluid outlet, said pump body including a stationary central axially protruding plug portion within said rotor, each vane having an inner side edge portion facing said plug portion, guide means on each vane at said inner side edge portion thereof, and cam means on said plug portion cooperating with said guide means such that movement of the vanes with respect to said cam means causes said vanes to be guided over the partition wall.

3,315,611

PORTABLE VACUUM AND PRESSURE LIQUID TANK TRUCK

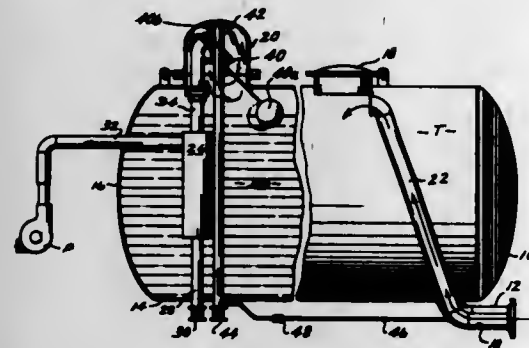
David L. Thompson, Long Beach, Calif., assignor to Thompson Tank and Manufacturing Co. Inc., Long Beach, Calif., a corporation of California

Filed June 28, 1965, Ser. No. 467,200

3 Claims. (Cl. 103—235)

1. Portable vacuum and pressure liquid tank apparatus, comprising:
a tank;
a dome on said tank;
a power-driven pump adapted to supply either air pressure or a vacuum to the interior of said tank;

pipe means connecting said pump to the dome of said tank;
 a float valve controlling fluid flow into the upper end of said pipe means;
 a bleeder conduit connecting the atmosphere with the interior of said dome;
 a second valve controlling flow through said bleeder conduit;

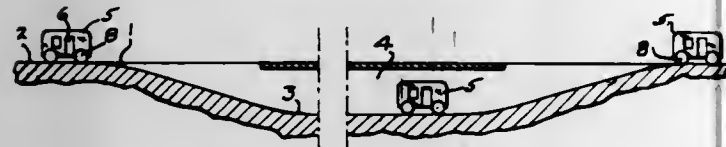


an inlet conduit through which liquid is admitted to said tank;
 a discharge conduit through which liquid is exhausted from said tank;
 an aerating pipe connecting said bleeder conduit with said discharge conduit; and
 a third valve controlling flow through said aerating pipe.

3,315,612

TRANSPORTATION SYSTEM

Walter D. Reid, Box 66, Cullowhee, N.C. 28723
 Filed June 16, 1965, Ser. No. 464,354
 12 Claims. (Cl. 104-25)



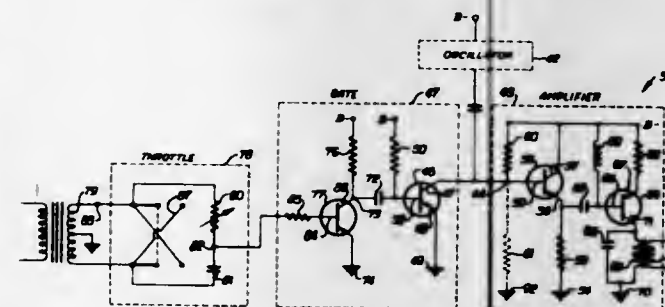
1. A transportation system comprising:
 - (a) a plurality of stations arranged at spaced intervals;
 - (b) a track following a predetermined path past said stations, said track having first sections extending from predetermined first points as the track approaches said stations to predetermined second points as the track leaves said stations and second sections extending respectively from said second points to said first points between said stations, said second sections being at a lower level than said first sections, said first sections including sloping portions joining said second sections;
 - (c) a plurality of cars on track adapted for movement therealong, the sloping portions of each first section of said track at the approach to the associated station being at such an angle with the horizontal that a car will slow down under the influence of gravity as it approaches the station and the sloping portion of each first section of said track as the track leaves the station being at such an angle with the horizontal that a car leaving a station will speed up under the influence of gravity on said sloping portion;
 - (d) first and second driving means, common to said cars, extending longitudinally beneath said track, said first means adapted to be driven at a predetermined low speed and said second means at a predetermined high speed;
 - (e) engaging means on each car operative in a forward direction only for engaging said driving means to permit said cars to be moved forward by said driving means;

- (f) means for maintaining said first driving means out of engagement with said engaging means on a car which is travelling on one of said second sections of said track between stations and to maintain it in engagement with said engaging means when said car is travelling on one of said first sections of said track at said stations; and
- (g) means for maintaining said second driving means out of engagement with said engaging means on a car which is travelling on a first section of said track at a station and to maintain it in engagement with said engaging means on a car which is travelling on a second section of said track between stations.

3,315,613

REMOTE CONTROL FOR MODEL TRAIN SYSTEM

Donald J. Leslie, % Leslie Research Co., 267 S. Fair Oaks Ave., Pasadena, Calif. 91105
 Filed July 22, 1963, Ser. No. 296,590
 5 Claims. (Cl. 104-151)



1. For use in a model vehicle control system of the class in which a track system, energized by alternating current provides a common source for a number of polarity sensitive vehicle motors each having tuned receiver circuits for switching the motors on for the remainder of the half cycle of the source following the application to the track system of a high frequency pulse to which the corresponding receiver circuit is tuned: a number of remote control circuits, each including an oscillator, an amplifier circuit for the oscillator, and gating means for passing the oscillator signals to the amplifier circuit for a short interval during a selected portion of the source cycle; each of said gating means including a controllable device having alternate states; means causing the amplifier to be insensitive to the oscillator signals when the device is in one of its states and sensitive to the oscillator signals when the device is in the other of its state; a bias circuit for said device and causing it normally to be in its said one state; a condenser; switching circuit means providing alternate charging and discharging circuits for said condenser; throttle means for causing the switching circuit means to operate at the frequency of the source and at a selected phase angle with respect thereto; and means deriving pulses from said condenser as the switching circuit means is operated for momentarily changing the bias circuit to cause said gating device to assume its other state for a short interval during each cycle.

3,315,614

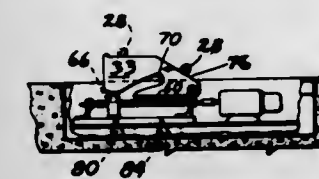
TOWLINE CART STOPPING DEVICE

Edwin C. Braun, Jr., Smithsburg, Md., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

Filed Nov. 10, 1964, Ser. No. 410,215
 4 Claims. (Cl. 104-172)

1. In a system of the kind described, a device for effecting stopping of carts which comprises a cam, means adapted to be disposed below a floor to movably support said cam, means comprising a roller for withdrawing said cam into a floor and raising said cam above a

floor, said cam having a cam edge to be engaged by a member carried by a cart and having a cam slot, means for pivoting said cam on an axis below floor level, said roller being mounted for movement into said slot, and a secondary shed located centrally of each compartment and extending parallel to said sills, a pair of doors disposed side-by-side in the bottom of each compartment, hinge means at the lower edges of the secondary sheds

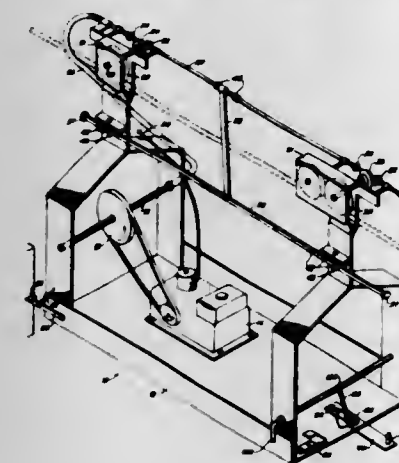


means for actuating said roller whereby movement of said roller into said cam slot effects pivotal movement of said cam below floor level and whereby movement of said roller in an opposite direction effects movement of said cam above floor level.

3,315,615

MAIL TRANSPORT SYSTEM

Paul F. Nydegger and Paul W. Nydegger, both of 4331 N. Frankfort, Tulsa, Okla. 74106
 Filed Nov. 5, 1964, Ser. No. 409,225
 5 Claims. (Cl. 104-177)



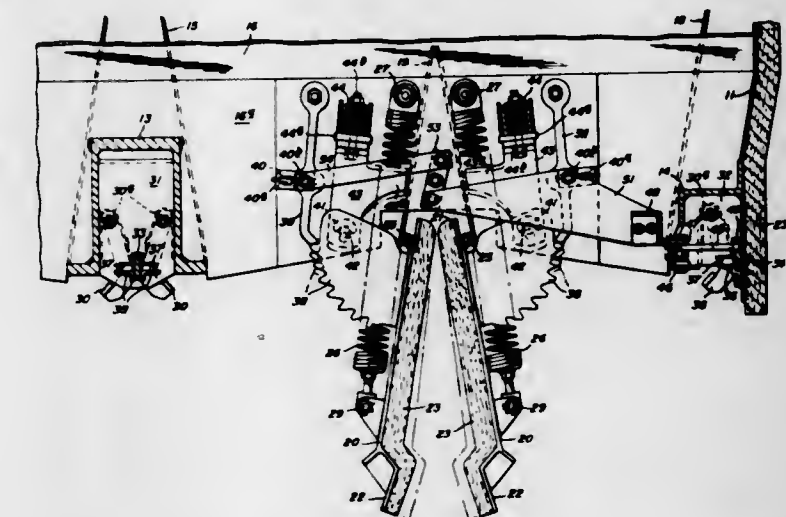
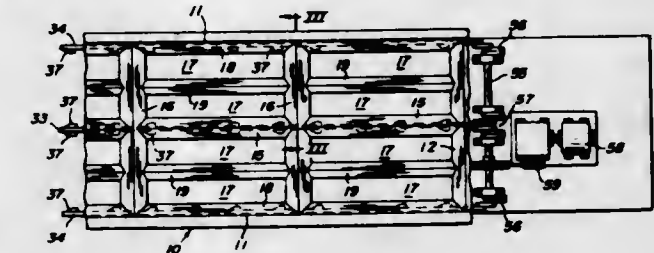
1. A transport system comprising, in combination, a cable secured at one end to a control station and at an opposite end to a remote station, a motor unit having reversible drive means rollably carried upon said cable, a carrier unit rollably carried upon said cable between said motor unit and said remote station, releasable latch means detachably securing said motor unit and said carrier unit together for propulsion along said cable by said motor unit, releasable anchor means carried by said carrier unit for releasable connection to an anchor bracket on said remote station, a push rod carried by said motor unit for reversing said drive means, and control rods carried by said carrier unit adapted to act upon said push rod and said latch means upon impact with said remote station to simultaneously reverse said drive means and release said latch means, said anchor means securing said carrier unit to said anchor bracket upon contact therewith and said motor unit being adapted to return to said control station.

3,315,616

MOTOR ACTUATED DROP-BOTTOM HOPPER CAR DOORS

Charles A. Beaver, Greenville Township, Mercer County, and Rodney E. Murdock, Hempfield Township, Mercer County, Pa., assignors to Bessemer and Lake Erie Railroad Company, a corporation of Pennsylvania
 Filed Feb. 24, 1964, Ser. No. 346,655
 8 Claims. (Cl. 105-248)

1. The combination with a car body including sides and ends and a supporting frame therefor including spaced center and side sills, of longitudinal and transverse sheds dividing the car bottom into compartments,

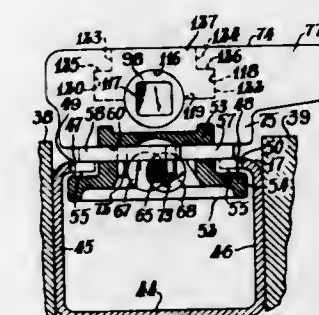


pivotal mounting the doors on their adjacent edges and pivoted latches depending from said sills, respectively, adapted to engage the edges of said doors opposite said adjacent edges.

3,315,617

RETRACTABLE WINCH-TYPE LADING TIE-DOWN APPARATUS

Phillip D. Schwiebert, Glencoe, and Joseph Kuchar, Chicago, Ill., assignors to MacLean-Fogg Lock Nut Co., Mundelein, Ill., a corporation of Delaware
 Filed May 19, 1965, Ser. No. 456,912
 15 Claims. (Cl. 105-369)



1. Retractable winch-type lading tie-down apparatus comprising, in combination, a channel having opposed sides connected by a bottom web and having flanges extending inwardly from the tops of the sides in spaced and

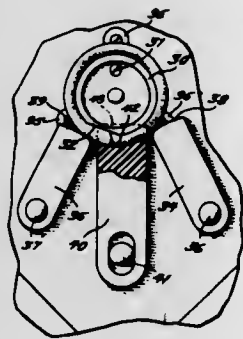
opposed relationship to one another, said flanges having notches therein spaced longitudinally of the channel, an anchor device including a base and a winch and means supporting the winch on the top of the base for rotational movement relative thereto, said base being wider than the space between said flanges on the channel and movable longitudinally of the channel between the sides thereof, said base also having teeth thereon and projecting therefrom for engagement in said notches in the flanges of the channel for holding the anchor device in a fixed position along the channel, means on the base for engagement with a portion of the channel for releasably retaining the base in position laterally of the channel when said teeth are engaged in said notches, said winch being narrower and longer than the space between said channel and of a height to rest within the height of the channel when the base is seated on the channel web and the said base and winch are longitudinally aligned, and said winch including a drum supported for rotation about an axis extending across the winch.

3,315,618

METHOD AND APPARATUS FOR FORMING GENERALLY ANNULAR PRETZELS

Edwin I. Groff, West Reading, Pa., assignor to Quinlan Pretzel Company, Inc., Reading, Pa., a corporation of Pennsylvania

Filed Jan. 13, 1965, Ser. No. 425,258
14 Claims. (Cl. 107-8)



1. A mechanism for forming generally annular pretzels, said mechanism comprising a support plate having a working face, a mandrel projecting from said working face for medially engaging a dough strip to support the latter in inverted generally U-shaped configuration, a pair of bending elements mounted on said working face spaced from said mandrel for movement toward the latter for bending the legs of said dough strip inwardly against said mandrel, and a closure element mounted on said working face spaced between said bending elements for movement toward said mandrel to press the inwardly bent ends of said dough-strip legs together and against said mandrel.

3,315,619

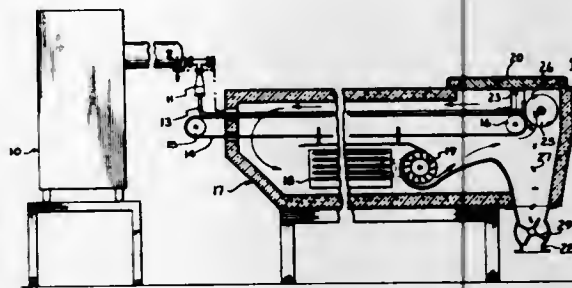
APPARATUS FOR THE PRODUCTION OF FOOD PRODUCT

Lyle Slaybaugh, Battle Creek, Mich., assignor to Kellogg Company, Battle Creek, Mich., a corporation of Delaware

Filed Sept. 14, 1964, Ser. No. 396,225
2 Claims. (Cl. 107-69)

1. Apparatus for the production of a sliced frozen fruit product comprising means for extruding a partly frozen plastic fruit dough in continuous strip form including an extruder head formed with a plurality of spaced openings each of substantially the cross-sectional contour of a slice of the original fruit, means for receiving therefrom and for further freezing said strip material to substantially rigid condition comprising a substantially

horizontally disposed elongated refrigeration chamber and an endless conveyor belt disposed therein, and means disposed endwise of said conveyor and within said chamber for continuously severing said further frozen strip material in a transverse direction into pieces of desired thick-



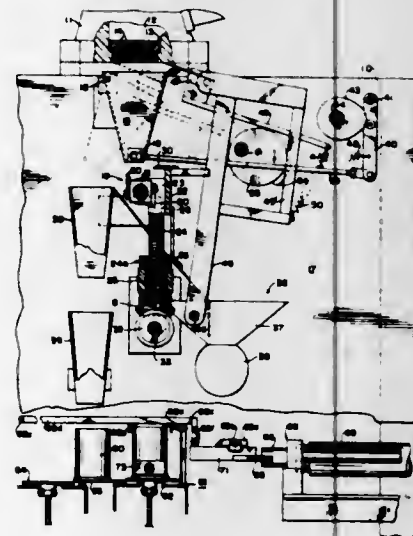
ness comprising a plurality of spaced rotatable discs and a plurality of spaced knives secured to the peripheries of said discs in a substantially tangential direction, and air lock exit means for discharging said pieces from said chamber.

3,315,620

ALIMENTARY PASTE PRODUCTS CAN FILLING MACHINE AND METHOD

Ignatius Bontempli, Douglaston, N.Y., assignor to De Francis Machine Corporation, Brooklyn, N.Y., a corporation of New York

Filed Sept. 2, 1965, Ser. No. 484,695
29 Claims. (Cl. 107-49)

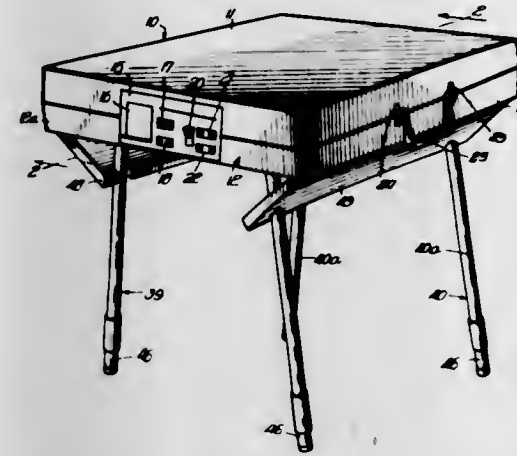


4. In an alimentary paste products forming and can filling apparatus including means for extruding paste downwardly through a die to form depending strands and further including cutting means cooperating with said die for cutting away said depending strands, the combination comprising trimming means spaced a predetermined distance below said die to trim the leading ends of said depending strands, means positioned below said die and laterally displaced from said trimming means for receiving said trimmed strands on being cut by said cutting means, strand-guiding means positioned below said die and above both said trimming means and said strand-receiving means and movably mounted for guiding said depending strands, and means for positioning said strand-guiding means to guide said depending strands first to said trimming means and then over said strand-receiving means whereby said strands are first trimmed, and then guided over said receiving means to fall into said receiving means upon being cut by said cutting means.

3,315,621

STAND OR THE LIKE

Oleg Szymber, Chicago, Ill., assignor to Sawyer's, Inc., Portland, Oreg., a corporation of Oregon
Filed Mar. 23, 1964, Ser. No. 353,907
8 Claims. (Cl. 108-34)

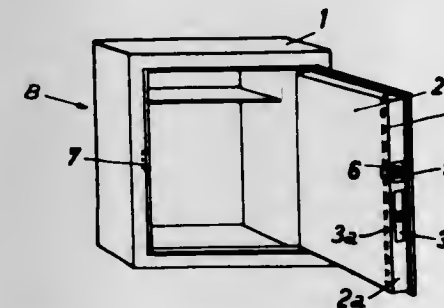


1. A stand or the like comprising a generally rectangular planar surface having a side wall depending from each edge thereof, a pair of U-shaped leg units swingably supported from said stand adjacent respective opposite side walls thereof for swinging movement between an extended position and a folded position closely spaced from the underside of said planar surface, the other side walls of the stand each having at its lower edge a hingedly connected flap, which flaps extend for substantially the entire length of the associated side walls, said flaps being provided with generally U-shaped notches in the side edges thereof opposite the edges hinged to said other side walls, and said flaps being movable between a closed position in substantial parallel relation with said planar surface and an inclined open position, the flaps being adapted in their open position to have the notches thereof receive said leg units for bracing the latter in their extended position and the flaps in their closed position being adapted to overlie portions of said leg units for holding the latter in their folded position, said flaps serving as the sole means for bracing said leg units and for holding the same in their folded position.

3,315,622

VAULT

Vittorio Cornaro, Via Sole 9, Castagnola, Switzerland
Filed May 10, 1965, Ser. No. 454,468
Claims priority, application Switzerland, May 13, 1964, 6,223/64
4 Claims. (Cl. 109-59)



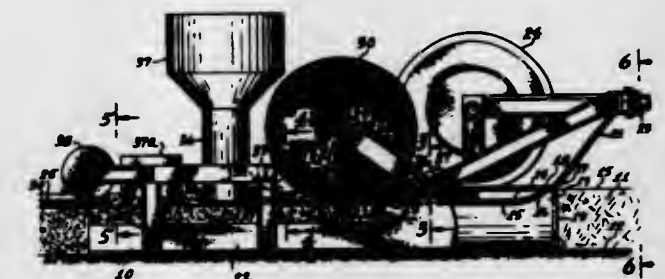
1. A vault to be used by a random changing circle of persons as hotel, room-, and ship's-cabin-safe deposit box, comprising a vault housing having a wall-portion, a locking device carried by said vault housing for locking said vault by means of an exchangeable bolt actuating mechanism, said wall-portion being provided with a recess for the insertion of said exchangeable bolt actuating mechanism, an exchangeable bolt actuating mechanism insertable

in and removable from said recess of said wall-portion of said vault in the unlocked condition of said locking device, said wall-portion having at least one vault bolt permanently carried therein, said exchangeable bolt actuating mechanism being actuable by means of an insertable key, said bolt actuating mechanism upon being inserted in said wall portion being operably associated with said vault bolt, and additional lock means operable independently of said exchangeable bolt actuating mechanism and said vault bolt.

3,315,623

FILM LAYER AND PLANTER

Jay Tschudy, Jr., 7000 Belinder Road, Shawnee Mission, Kans.
Filed Mar. 30, 1964, Ser. No. 355,684
2 Claims. (Cl. 111-1)



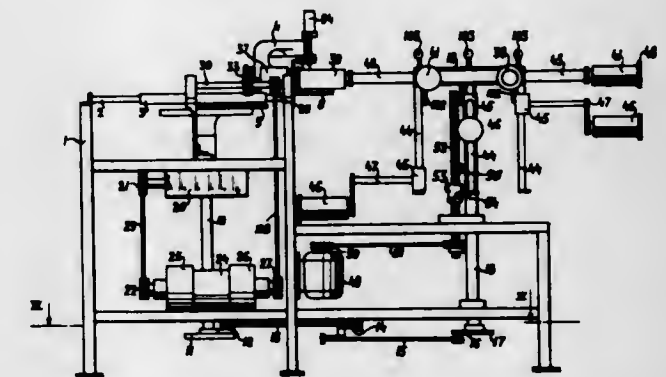
1. The method of preparing a plant row comprising: (a) forming a depressed shallow trough extending longitudinally of the plant row, (b) laying a thin sheet of moisture-impervious plastic film longitudinally on the bottom surface of said trough, (c) planting seeds in the bottom surface of said trough at longitudinally spaced intervals beneath said sheet, and (d) back filling said trough with soil so as to uniformly cover the entire plastic film with a thin layer of soil.

3,315,624

METHOD AND ARRANGEMENT FOR SEWING READY-MADE APPAREL

Vojtěch Lebovitz, Alois Tomáš, Ladislav Vavřinec, Adolf Kurka, Lubomír Tkál, and Jindřich Macháček, Teplice, Dragoš Andrášek, Kostany, and Antonín Eichler, Velvety, Czechoslovakia, assignors to Zavody Bozeny Nemcove, Plantainy, narodni Podnik, Teplice, Czechoslovakia

Filed June 30, 1964, Ser. No. 379,133
Claims priority, application Czechoslovakia, July 5, 1963, 3,901/63
16 Claims. (Cl. 112-262)



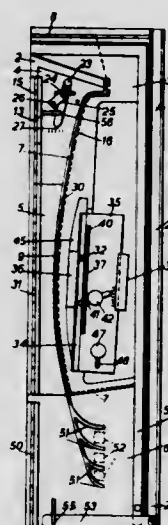
1. A method of sewing fabric parts comprising the steps of moving the parts to be sewn in a first direction from a loading station to an operating station; stretching the portions of said fabric parts to be sewn together at least while said fabric parts are at said operating station;

moving a sewing device in a second direction from a rest position to an operating position ready for sewing fabric parts located in said operating station; thereafter moving the fabric parts at said operating station in a third direction, with at least said portions to be sewn together maintained in stretched condition, past said sewing device while the latter is driven to perform the sewing operation; and moving after the sewing operation has been performed the sewing device back to its rest position and the fabric parts back to the loading station to be exchanged for new parts to be sewn.

3,315,625 METHOD AND APPARATUS FOR STITCHING MATERIALS

Michael N. Bennison, Bardsey, Leeds, England, assignor to W. J. Clarkson Limited, Leeds, England, a British company

Filed Mar. 5, 1965, Ser. No. 437,479
Claims priority, application Great Britain, Mar. 12, 1964, 10,487/64; Sept. 15, 1964, 37,600/64
12 Claims. (Cl. 112—262)



1. Method of providing fullness in at least one layer of superposed layers for the stitching of the layers together, consisting in locating layers of material in a template with at least one interposed plate between the layers, grasping said one layer at two spaced locations and while so grasped creating at least one substantially ripple-like formation in said layer of material by shortening the distance between the grasping locations whereby to provide fullness in said one layer in the area between said grasping locations and then stitching the layers together across the ripples to join them together and retain the fullness, said stitching being caused to follow a predetermined path.

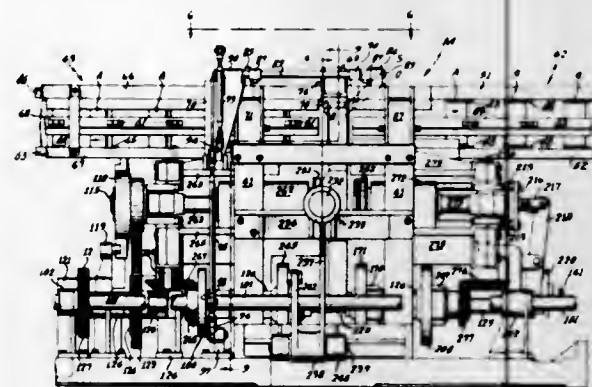
3,315,626 APPARATUS FOR PRODUCING COLLAPSED BEADS IN CAN BODIES

Karl Bofinger, Barrington, and Harold Richard Vitense, Mundelein, Ill., assignors to American Can Company, New York, N.Y., a corporation of New Jersey

Filed July 23, 1964, Ser. No. 384,629
14 Claims. (Cl. 113—1)

1. An apparatus for producing a collapsed bead in a can body, comprising a turret having spaced pockets for holding can bodies, means for intermittently rotating said turret to move its pockets successively into and through a plurality of stations disposed adjacent said turret, a feeding mechanism disposed at one of said stations for feeding a can body endwise into and out of the pockets of said turret, beading instrumentalities located at another of said stations for producing a pair of adjacently disposed reversed annular beads in the side wall

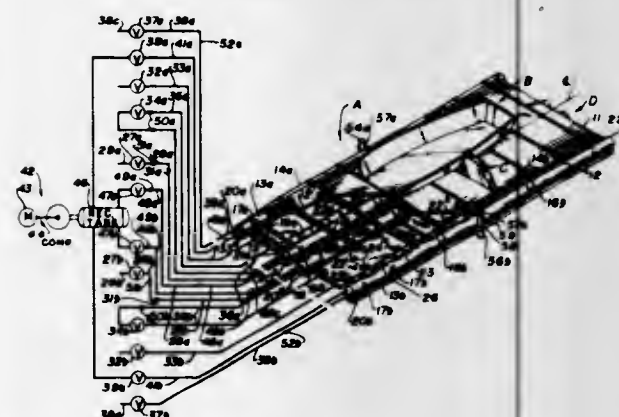
of can bodies in said turret pockets, and bead collapsing elements disposed at another of said stations for exerting an endwise pressure on can bodies in said turret



pockets to bend and turn said reversed beads into a collapsed partially overlapping position to produce a collapsed bead in said can bodies.

3,315,627 PNEUMATICALLY OPERATED FLOATING DRY DOCK

Harold Roberts, 3600 21st St.,
San Francisco, Calif. 94114
Filed Oct. 24, 1965, Ser. No. 504,538
8 Claims. (Cl. 114—45)

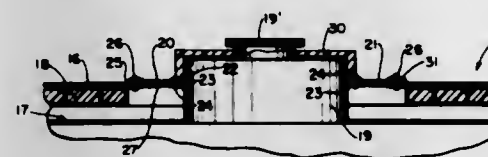


1. In a submergible dock to lift and support a vessel out of water, said dock having a rigid hollow ballast compartment secured to the underside thereof, first means to convey water into and out of said compartment, and second means in fluid communication with the atmosphere and said compartment to pump air into the compartment and expel water contained therein through said first means, the improvement comprising, in combination: an inflatable bag collapsible to a deflated condition; fastener means to secure said bag in the inflated and deflated condition to the underside of said dock; valve means connected in fluid communication with said bag to expel air therefrom when said dock is being submerged and block air from being expelled when the dock is being refloated and floating; and means in fluid communication with the atmosphere and said inflatable bag to pump air into said bag and expand the bag to its inflated condition, said inflated bag, ballast compartment and water displacing portions of said dock being selected to have a combined volume at least as great as a volume of water having a weight equal to said dock, including said rigid ballast compartment and bag, and the vessel supported thereon; whereby said dock may be submerged and the inflatable bag deflated when water is conveyed by said first means into said ballast compartment, and refloated to lift and support a vessel thereon when the water is expelled from said ballast compartment by said second means and the inflatable bag is filled with air by said means in fluid communication with the atmosphere and the inflatable bag.

3,315,628 CRYOGENIC TANKER CONSTRUCTION

Paul T. Gorman, Chatham, and Augustus B. Small, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Feb. 24, 1965, Ser. No. 434,777
1 Claim. (Cl. 114—74)

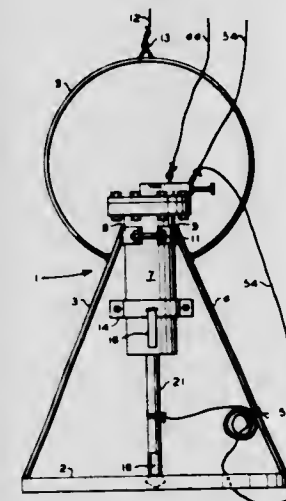


In combination, a tanker vessel and a cryogenic cargo tank, said tanker vessel having a deck including an access opening, said cargo tank including a dome projecting upwardly from said tank through said access opening, said access opening being substantially larger than the outside dimension of said dome thereby producing an annular clearance space therebetween, an annular sealing gasket between the access opening and said dome, said gasket being of substantially elastomeric flexible foam sheet material, said sheet material having predetermined optimum thermal insulating characteristics when unstressed, said dome being alternatively displaceable between a predetermined elevated position when said tank is in an unloaded condition and a lowered position when said tank is in a loaded and cryogenic temperature condition, a first clamping means provided on the edge of said deck around the periphery of said access opening, a second clamping means circumferentially disposed on said dome such that the clamping surface of said second clamping means is substantially coplanar with the clamping surface of said first clamping means when said dome is in its lowered position, said annular sealing gasket having its outer perimeter fastened to said first clamping means and its inner perimeter fixed to said second clamping means whereby said sealing gasket forms an unstressed substantially coplanar extension of said deck across said annular clearance space when said dome is in its lowered position.

3,315,629 UNDERWATER ANCHOR GUN DEVICE

James A. Standridge and Brian D. Nicholson, Lafayette, La., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Nov. 30, 1964, Ser. No. 414,581
5 Claims. (Cl. 114—206)



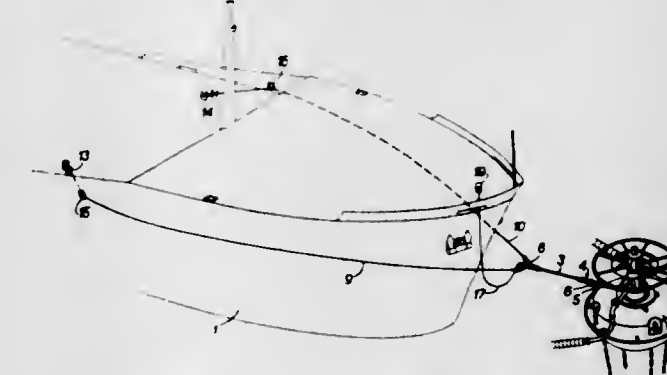
1. Apparatus for anchoring a buoy to the earth beneath a body of water comprising: a frame assembly; means connected to said frame assembly for lowering said frame assembly through said body of water and for retrieving said frame assembly after said buoy has been anchored;

a housing secured to said frame assembly, said housing having a chamber; an explosive charge positioned within said chamber; an anchor carried by said housing in register with said explosive charge; detonating means secured to said housing for detonating said explosive charge to propel said anchor into the earth, said detonating means including a firing pin positioned in register with said explosive charge, a hammer mounted to strike said firing pin, a spring-biased bolt member having a block portion and a rod portion, said block portion being positioned to strike said hammer, a removable safety pin positioned through said block portion of said spring-biased member to prevent accidental detonation of said explosive charge, and a release pin positioned through said rod portion of said spring-biased bolt member adapted to be removed from said rod portion to allow said detonating means to detonate said explosive charge; and means connecting said buoy and said anchor for holding said buoy after said anchor has been propelled into the earth.

3,315,630 MOORING ARRANGEMENT FOR SHIPS

Kenneth William Hopkins, Long Ditton, Surrey, England, assignor to BP Tanker Company Limited, London, England, a corporation of England

Filed Aug. 23, 1965, Ser. No. 481,543
Claims priority, application Great Britain, Sept. 7, 1964, 36,568/64
5 Claims. (Cl. 114—230)



1. In a single point mooring which comprises a buoy floating on or near the surface of the sea and a buoy anchoring system which anchors said buoy to the sea bed, said buoy including a buoyancy chamber and a mooring member external to said buoyancy chamber, said mooring member being rotatable about a vertical axis, the combination of: two mooring lines, a link-line, and a link-member comprising a collar and an axle, the collar being rotatably mounted upon the axle, the two mooring lines being attached to the collar, and the link-line being attached at one end to one end of the axle and the other end of the link-line being attached to the mooring member; the dimensions of the mooring lines being such that, when a ship is moored, the mooring lines may be connected to the ship substantially abaft the bow, one line to the port side and the other to the starboard side.

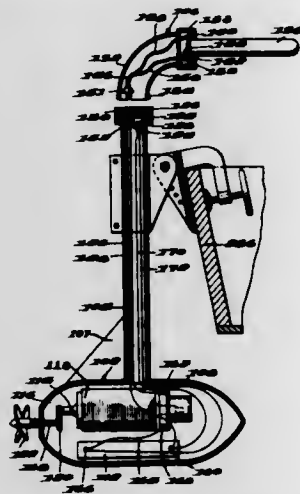
3,315,631 ELECTRIC OUTBOARD MOTOR

Jack E. Bass, 706 Berkshire St., Clinton, Miss. 39056
Continuation of abandoned application Ser. No. 313,309, Oct. 2, 1963. This application Nov. 18, 1965, Ser. No. 516,822

4 Claims. (Cl. 115—18)

1. An electric outboard motor having upper and lower ends, tubular column means interposed between said upper and lower ends, motor bracket means pivotally receiving said tubular column means for 360° rotation about a vertical axis, adjustable means vertically adjustably fixing said tubular column means within said motor bracket means, boat bracket means adapted to be connected to a

boat, connecting means pivotally connecting said motor bracket means to said boat bracket means for pivotal movement about a horizontal axis, steering assembly means including handle means projecting from said upper end of said outboard motor, sealed housing means adjacent said lower end of said outboard motor, battery powered motor means positioned within said housing means, marine propeller means adjacent said lower end of said outboard motor, reduction gear and shaft means drivingly connecting said motor means to said propeller means, rechargeable battery means positioned in said housing means, first conductor means positioned within said housing means electrically connecting said battery means and said motor means, second conductor means extending from said battery means to a location adjacent said upper end of said outboard motor and terminating in electrical



connector means positioned in said tubular column means for recharging said battery means from an external power source, said steering assembly means being releasably connected to said column means adjacent said electrical connector means to permit access to said electrical connector means, and adjustable resistance means adjacent said upper end of said outboard motor and interposed between said battery means and said motor means in said first conductor means for varying the speed of said motor means, said steering handle means being rotatably mounted about a longitudinal axis and being operatively connected to said adjustable resistance means for adjusting the resistance thereof by rotation of said handle means, whereby a self-contained electric outboard motor is provided wherein said battery means and said first and second conductor means are sealed therein.

3,315,632

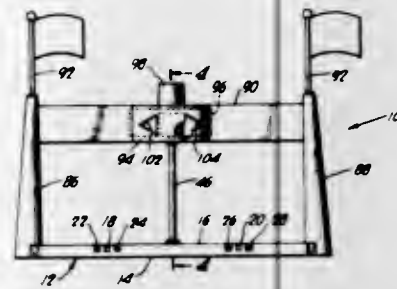
FINISH LINE WINNER INDICATOR

Irwin Frederick Hyden, San Jose, Calif., assignor to Eldon Industries, Inc., Hawthorne, Calif., a corporation of California

Filed Oct. 20, 1965, Ser. No. 498,213
7 Claims. (Cl. 116-114)

1. A finish line winner indicator for a road race car set, said finish line winner indicator comprising:
 - a track section forming the base for said finish line winner indicator, said track section having a top surface and having first and second slots therein formed to extend below said top surface, first and second trigger links movably secured to said track section, said first trigger link being movably positioned so as to occupy a first position in the path of said first slot in one position of said trigger link and a position away from said first slot in another position of said trigger link, said second trigger link being arranged to occupy a position in the path of the second slot path in one position and occupy a position away from the path of said second slot when in another position, a sear on each of said trigger links;

an actuator plate, said actuator plate being positionable in a central position and in first and second side positions, first and second stops on said actuator plate, said first and second stops being engageable by first and second sears on said first and second



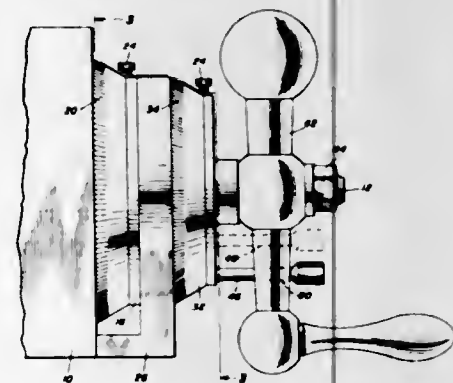
trigger links to maintain said actuator plate in its central position, said actuator plate being arranged to move away from its central position when one of the trigger links is moved so as to move its sear away from said corresponding stop on said actuator plate.

3,315,633

METRIC, ENGLISH CONVERTER FOR MACHINE TOOLS

Jacob Rabinow, 6920 Selkirk Drive, Bethesda, Md. 20034

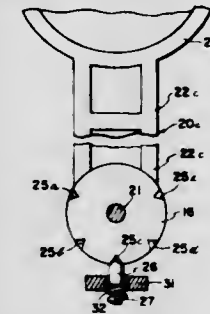
Filed Oct. 29, 1963, Ser. No. 319,771
4 Claims. (Cl. 116-115.5)



1. In combination, a machine tool having
 - (a) a rotatable shaft,
 - (b) first scale means having unit marks thereon and a cooperating pointer,
 - (c) a direct driving connection between said shaft and said scale means for moving the scale means to indicate an integral unit distance on the scale means when the shaft moves a complete revolution,
 - (d) second scale means having different unit marks from the first scale means and a cooperating pointer,
 - (e) gear train means mechanically interconnecting said shaft and said second scale means, the gear ratio being such that the shaft moves a complete revolution when said second scale means moves a unit distance on the second scale means,
 - (f) manual driver means for said shaft,
 - (g) selectively operably coupling means between said driver means and the shaft,
 - (h) said coupling means having two operative conditions
 - (1) in one of said conditions coupling said driver means directly to the shaft to move the shaft in unison with motion of the driver,
 - (2) in the other of said conditions coupling the driver means to said second scale means to move the shaft through said gear train with motion of the driver.

3,315,634
LOOM FLAG

John Bisaner Sherrill, Drawer 578, Gastonia, N.C. 28052
Filed Oct. 23, 1965, Ser. No. 503,271
3 Claims. (Cl. 116-132)



1. A signalling device comprising a support stand bifurcated at its upper end to define spaced ears and a transverse wall joining the ears, a plurality of flag assemblies journaled on a common axis between the ears, each flag assembly including a staff, a flag at one end of the staff and an index wheel formed integral with the other end of the staff, said index wheel being rotatable about said axis and having a plurality of peripheral notches, a spring pressed detent assembly associated with each index wheel and each of said detent assemblies including a spring and a pin, the springs in each detent assembly being confined beneath said transverse wall and normally urging their respective pins into engagement with a corresponding index wheel, and there being a sufficient number of peripheral notches in each index wheel to permit each flag assembly to be moved to a different angular relationship with respect to the remaining flag assemblies.

ERRATUM

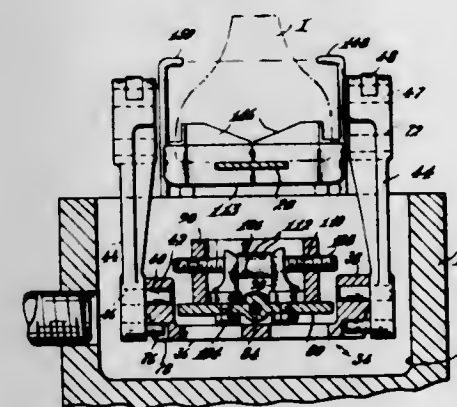
For Class 116-135 see:
Patent No. 3,315,746

3,315,635

AUTOMATICALLY-OPERABLE ADHESIVE APPLICATOR

Jacob S. Kamborian, 133 Forest Ave., West Newton, Mass. 02165

Continuation of application Ser. No. 269,533, Apr. 1, 1963. This application Mar. 30, 1966, Ser. No. 538,869
8 Claims. (Cl. 118-1)



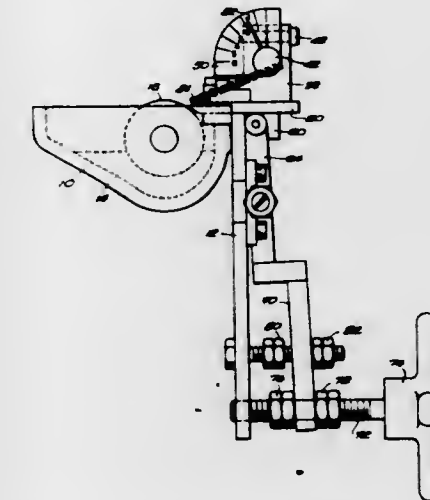
1. A device for applying adhesive to a component part of a shoe comprising: a well for holding a quantity of the adhesive; a support, extending over the well above the body of adhesive, for supporting said part; a pair of spaced hangers extending downwardly into the well on opposite sides of the support; a cradle extending between the hangers and pivoted to the hangers for limited tilting movement about a first horizontal axis; a table mounted to the cradle for limited tilting movement about a second horizontal axis that is at right angles to said first

axis; an applicator mounted to and extending upwardly of the table; and drive means to raise the hangers, cradle, table and applicator from a lower position wherein the applicator is immersed in the body of adhesive to a position of engagement of the applicator with said part.

3,315,636

WORK GUIDE AND DOCTOR DEVICE FOR APPLICATOR ROLL

Frank H. G. Lester, Beverly, and John J. Decoulos, Peabody, Mass., assignors to Boston Machine Works Company, Lynn, Mass., a corporation of Massachusetts
Filed Feb. 12, 1963, Ser. No. 257,892
7 Claims. (Cl. 118-246)



1. In a machine for applying a liquid coating, a receptacle having a rim, a roll mounted in said receptacle to rotate on a horizontal axis, a table extending over a portion of said rim with an edge near to the surface of the roll, means for adjusting said table horizontally toward and from said roll to vary the clearance between the roll and the adjacent edge of the table and for holding said table in any adjusted position, a compressible cellular gasket strip compressed between said table and the portion of said rim under the table and subject to shearing distortion when the table is horizontally moved to vary said clearance, said gasket being of sponge rubber and having a thin Teflon tape covering the edge surface of said gasket nearest the roll, a sheet metal gasket retainer fixed to the receptacle and engaging said edge surface of the gasket, said means for adjusting the table comprising a rockable yoke having arms pivotally connected to said table near the end thereof and a downwardly extending leg, and means operable to impart slow adjustive movement to said leg whereby to rock said yoke and shift said table.

3,315,637

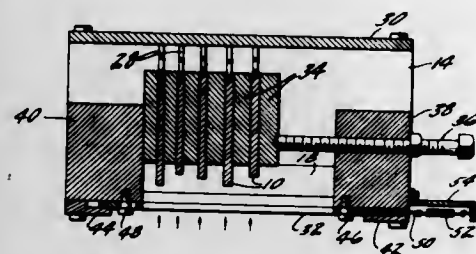
SELF-CENTERING, PROPORTIONATING WAFER FIXTURE

James E. Taylor, Windsor Locks, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Apr. 10, 1963, Ser. No. 272,140
1 Claim. (Cl. 118-503)

- Apparatus for fixturing articles for the deposition of vapor thereon comprising:
- a first side wall having at least a portion thereof tapered inwardly,
 - a second side wall displaced from and facing said first wall and having at least a portion thereof tapered inwardly,
 - means for supporting the articles centrally between said walls with edges thereof resting on opposite tapered wall portions,

means for urging the supported articles against the tapered wall portions,
a first end wall extending between and affixed to first ends of the side walls,
a second end wall extending between and affixed to the second ends of the side walls,
an apertured mask,



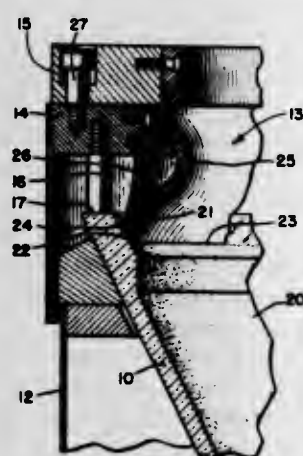
means on the bottom of said first end wall for supporting said apertured mask, and
means on the bottom of said second end wall for slidably supporting said mask and including spring means for applying tension to the apertured mask whereby upon elevated temperatures of vapor deposition warping of said mask is inhibited.

3,315,638

MASKING DEVICE

Thaddeus J. Hajduk and Raymond J. Pekosh, Chicago, Ill., assignors to The Rauland Corporation, Chicago, Ill., a corporation of Illinois

Filed Mar. 29, 1965, Ser. No. 443,358
5 Claims. (Cl. 118—505)



1. Apparatus for use in the application of a conductive coating to the interior surface of a cathode-ray tube envelope comprising:

- a bifurcated member of resilient material comprising a pair of divergent leg portions connected by a bight portion having leading and trailing edges and adapted for contacting said surface throughout a predetermined area thereof;
- and means for applying said bight portion to said surface while differentially stressing said leg portions to compress said bight portion against said surface throughout said predetermined area with a greater contact pressure at said leading edge than at said trailing edge.

3,315,639

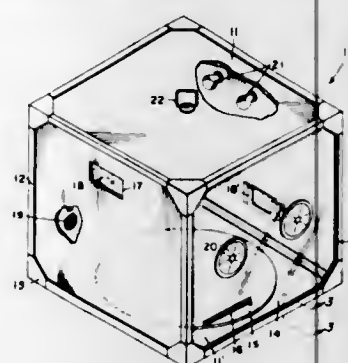
PORTABLE PAINT BOOTH

George M. Close, 5939 Hollister Drive,
Speedway, Ind. 46224

Filed May 3, 1965, Ser. No. 452,746
7 Claims. (Cl. 118—642)

1. A collapsible spray-painting booth comprising: a plurality of corner means having recesses; a plurality of L-shaped means having recesses; a plurality of sides detachably positioned within said recesses of said corner

means and said recess of said L-shaped means in such a manner so as to form a spray-painting booth having a paint chamber, one of said sides including a plurality of means for permitting access to said paint chamber, said one side formed of optically clear plastic for visual observation of said paint chamber; a floor for said spray-painting booth, said floor including a rotatable work support means journaled to said floor, said rotatable means



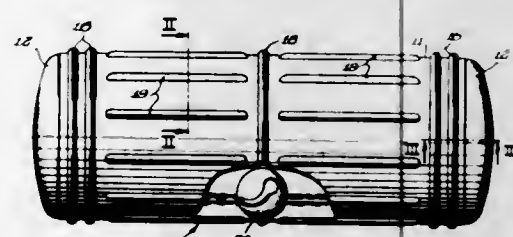
for seating an object to be painted; said access means enabling spray-painting means to be inserted into said chamber and said rotatable means to be manually displaced for moving said object as it is being sprayed; means for drying said object within said paint chamber after said object is painted; intake air filter means for filtering air as said air flows into said paint chamber; and an exhaust air filter means for filtering paint chamber air as air is exhausted from said paint chamber.

3,315,640

PUSH AND PULL SOUNDING TOY FOR ANIMALS HAVING PAWS

Anna C. Gamble, 2423 W. 123rd St.
Blue Island, Ill. 60406

Continuation of application Ser. No. 272,354, Apr. 10, 1963. This application Dec. 28, 1964, Ser. No. 425,660
6 Claims. (Cl. 119—29)



6. A push-toy for activation by the paws of an animal, comprising in combination:

- (a) an imperforate body having a hollow elongated cylindrical center portion with closed ends;
- (b) a pair of radially outwardly projecting beads extending circumferentially about said cylindrical portion, said beads respectively being disposed at opposite ends of said cylindrical portion;
- (c) a series of parallel spaced axially extending elongated paw-gripper formations extending along the outer surface of said center portion between said projecting beads and being directed radially inwardly from the outer surface of said cylindrical portion;
- (d) and a rollable noisemaker cooperating with said inwardly directed beads.

3,315,641

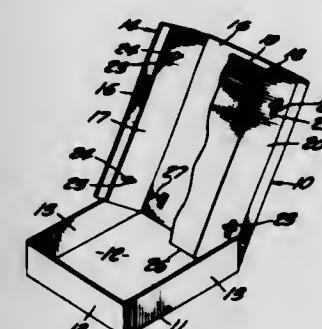
PORTABLE AUTOMATIC FEED BIN

Waldo W. Cochran, 4668 N. Maxson,
El Monte, Calif. 91732

Filed Oct. 23, 1965, Ser. No. 503,467
6 Claims. (Cl. 119—53)

1. An automatic feed bin for dispensing hay or the like, comprising:

a tray, said tray having the outer edges thereof located in a plane elevated relative to the bottom face of said tray; and
an enclosed, substantially rectangular chute attached to said tray in angular relationship therewith, said chute having one end thereof disposed so as to open onto



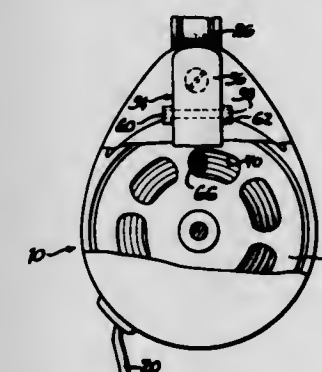
said tray, said chute being attached to said tray so that the axis thereof is at an acute angle relative to the tray, one side of said chute being adjustable in a direction normal to the axis of the chute; and
outwardly and downwardly projecting means provided on the internal surface of the chute for gripping hay or the like.

3,315,642

EXTENSIBLE ANIMAL LEASH

Philip S. Rogers, 3283 Salem, Trenton, Mich. 48183,
and Glenn H. Gault, deceased, late of Ashland, Ohio,
by Inez B. Gault, executrix, Ashland, Ohio; said Inez B. Gault, assignor to said Philip S. Rogers

Original application Oct. 21, 1963, Ser. No. 317,830, now Patent No. 3,233,591, dated Feb. 8, 1966. Divided and this application Oct. 22, 1965, Ser. No. 507,981
2 Claims. (Cl. 119—109)

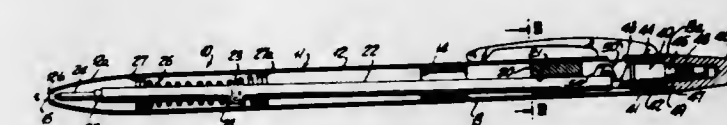


1. In an extensible animal leash including a casing, a reel rotatably mounted in the casing, a leash wound on the reel, said casing having an opening through which the leash extends, a spiral spring in the casing, said spring being secured to the reel to drive the reel in a direction to wind up the leash, the improvement comprising a brake lever pivotally mounted on the casing, said casing having an opening beneath one end of the lever, said reel having a plurality of circumferentially spaced oblong openings in one wall thereof, said oblong openings having their major axes positioned in a circle, a pin depending from said one end of the brake lever, said pin being of smaller size than each oblong opening for reception therein in abutting relationship with one end thereof to lock the reel against rotation, the end portions of the oblong openings which about the pin having a configuration matching the configuration of the abutting portion of the pin, said brake lever being actuatable to project said pin through said opening in the casing and into one of the oblong openings in the reel to lock the reel against rotation.

3,315,643

WRITING IMPLEMENT MECHANISM

Rose R. Eratico, 63 E. 9th St., New York, N.Y. 10003
Filed Sept. 9, 1963, Ser. No. 307,605
7 Claims. (Cl. 120—42.03)



1. Writing implement comprising an elongated barrel having open upper and lower ends, an elongated cap having an open lower end and releasably mounted on the upper end of said barrel in axial alignment therewith, a bushing fixed in said cap and having a bore offset from the common axis of said barrel and cap, a replaceable tube extending slidably through said bushing and said barrel and having lower end writing means of the type described, an impeller having a shank extending axially in said cap above said tube and turnable about said axis, said shank having means accessible externally of said cap for manipulation to turn said shank in either direction, said impeller also having a helix depending from said shank coaxially therewith, said helix having an edge surface engaging the upper end of said tube, and spring means coupling said tube and said barrel and urging said tube upwardly against said helix edge, said helix operative upon turning thereof in one direction to extend the lower end of said tube out of said barrel and in the other direction to retract said lower tube end into said barrel, said helix also having first positive stop means thereon engaging the side of said tube upon extension of said tube to prevent further turning of said helix in tube extending direction so that the tube can be retracted only when the barrel is rotated in said other direction and second stop means on said helix engaging the side of said tube upon retraction of said tube to prevent further turning of said helix in tube retracting direction.

3,315,644

PEN NIB

Helmuth Riepe, Hamburg, Germany, assignor, by mesne assignments, to Rapidograph, Inc., Bloombury, N.J., a corporation of New Jersey

Filed Dec. 20, 1965, Ser. No. 515,013
Claims priority, application Germany, Dec. 24, 1964,
R 39,540
4 Claims. (Cl. 120—44)



1. A pen nib adapted to be removably mounted in a pen holder and comprising an elongated tubular body having an open end and an opposed end provided with

an end wall formed with an axial bore through which the interior of said body can communicate with the exterior, an elongated tubular fitting carried by said body in said bore of said end wall thereof, an elongated capillary wire slidable in said tubular fitting and extending therefrom into the interior of said tubular body, an elongated weight situated in said tubular body and freely movable therein along the axis thereof, said weight being fixedly connected with said capillary wire so that the latter moves with said weight, and guard means carried by said tubular body at said open end thereof for guarding against falling of said weight out of said tubular body, said guard means being of a U-shaped configuration and having a pair of opposed side arms respectively connected to and extending beyond said body at said open end thereof and a transverse arm distant from said open end of said body and extending between and connected to said side arms, said transverse arm extending across an end of said weight which is directed away from said end wall of said tubular body, said side arms terminating a distance from said transverse arm in a pair of outwardly directed end portions, said tubular body being formed with openings respectively receiving said end portions of said side arms, said tubular body being formed in its interior with a pair of opposed axially extending grooves extending from said open end of said tubular body to said openings thereof and receiving said opposed side arms.

3,315,645

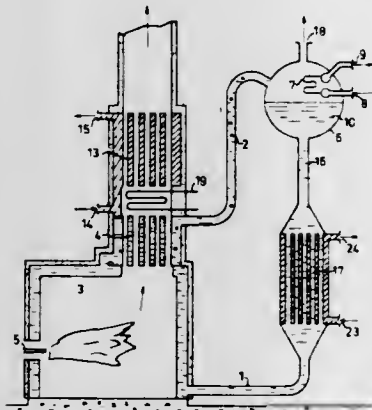
HOT WATER BOILER

Sven Olof Linnersten, Jonkoping, Sweden, assignor to Aktiebolaget Gustavsbergs Fabriker, Gustavsberg, Sweden, a corporation of Sweden

Filed Mar. 8, 1965, Ser. No. 437,857

Claims priority, application Sweden, Mar. 9, 1964, 2,911/64; Mar. 19, 1964, 3,405/64

7 Claims. (Cl. 122-33)

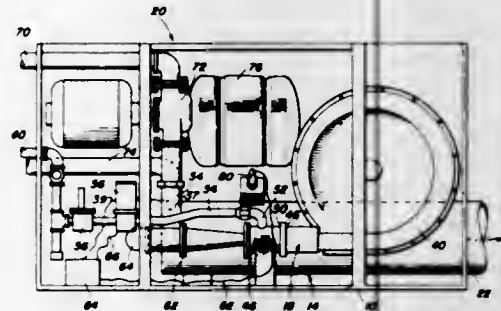


1. A hot water boiler for remote heating systems comprising a combustion chamber having a water jacket and a firing apparatus, a flue connected to said combustion chamber, a steam generating convection part in said flue and connected to said water jacket, a steam dome having a free water surface, said steam dome being connected to said steam generating convection part by a pipe discharging above the free water surface therein, a condensing heat exchanger in contact with the steam in said steam dome, said condensing heat exchanger having an inlet and an outlet adapted to be connected to a remote heating system, a steam outlet in said steam dome, a downcomer connecting said steam dome with said water jacket, a second heat exchanger inserted in said downcomer, and water connections from said second heat exchanger adapted to be connected to a remote heating system.

3,315,646

BOILER

Wilson J. Witten, Jr., Louisville, Ky., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 22, 1965, Ser. No. 427,325
10 Claims. (Cl. 122-235)



1. A boiler comprising: a hollow cylindrical burner of porous refractory cloth including an open and a closed end; a heat exchanger including a plurality of mutually parallel finned hollow tubes circumferentially disposed about said burner, an interconnecting header means connected to the first ends of said tubes and including a fluid passageway for providing a fluid path from a first group of said tubes to a second group of said tubes, and an inlet-outlet header means connected to the second ends of said tubes, said inlet-outlet header means including a fluid inlet, a fluid outlet and partition means so that said first group of said tubes is conduity connected to said fluid inlet and said second group of said tubes is conduity connected to said fluid outlet; a cylindrical enclosure coaxially disposed about said heat exchanger and extending axially beyond the latter to provide an exhaust flue; means for feeding a combustible gas-air mixture under pressure to the open end of said burner; and a boiler jacket enclosing said burner, said heat exchanger, said cylindrical enclosure and said feeding means, said boiler jacket being provided with openings for conduit access to the fluid inlet and fluid outlet of said inlet-outlet header and for conduit access to said feeding means, and a further opening through which extends the portion of said cylindrical enclosure extending beyond said heat exchanger.

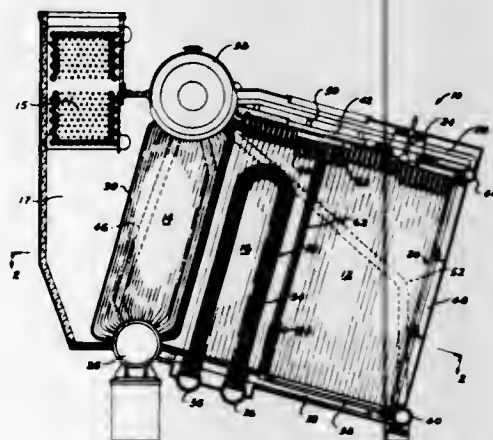
3,315,647

MARINE STEAM GENERATOR HAVING FLUID COOLED FURNACE

Leonard E. Triggs, West Simsbury, Conn., assignor to Combustion Engineering Inc., Windsor, Conn., a corporation of Delaware

Filed June 29, 1965, Ser. No. 467,908

10 Claims. (Cl. 122-478)



7. A vapor generator including a boiler bank operatively associated with a furnace chamber; said furnace chamber comprising rectangularly disposed tubular front

and side walls and a tubular roof; upper and lower header means connected in the fluid system of said vapor generator defining the terminal ends of said walls; each of said walls comprising a plurality of preformed, tubular panels bonded together in side-by-side relation; said panels each comprising a plurality of tubes bonded in parallel relation with the ends thereof adapted to connect between said upper and lower header means; said side walls including first, substantially vertically straight panels having the tubes therein extending between and connecting substantially vertically aligned upper and lower header means, and second, angularly offset panels having the tubes therein containing a laterally offset portion overlying the top of said furnace chamber to form the roof thereof with the ends of said tubes extending between and connecting diagonally opposed upper and lower header means.

3,315,648

INTERNAL COMBUSTION ENGINE

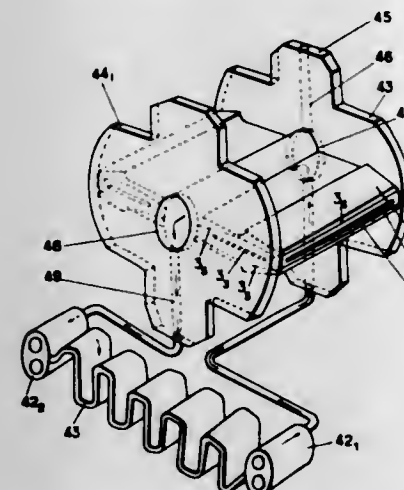
Jacques Marc Georges Drake del Castillo,

1 Rue du Marechal Foch, Nantes, France

Filed Oct. 8, 1964, Ser. No. 402,595

Claims priority, application France, Oct. 11, 1963, 950,348; Apr. 10, 1964, 970,564; July 20, 1964, 982,337

10 Claims. (Cl. 123-18)

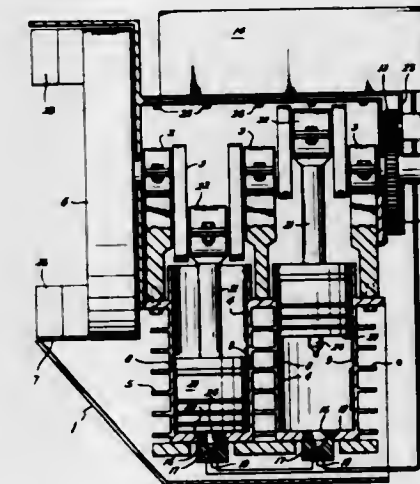


1. An internal combustion engine comprising a housing defining at least one cylindrical sector volumetric enclosure, at least one hollow oscillating piston pivotally mounted on a drive shaft within said housing forming a movable partition which moves in an arcuate path within said volumetric enclosure dividing said enclosure into two adjacent combustion chambers of a volume which is variable in relation to movement of said piston, said piston being secured to a shaft, crank means associated with said shaft to change oscillating motion to reciprocating motion, a set of linear seals arranged on the edge of the lateral walls of the piston and sliding on the transverse walls of the housing and outer sealing means resting on the top of said piston sliding on the upper part of the combustion chamber, oil pumps for lubricating and cooling the engine located in a housing provided with cooling fins, conduit means to interconnect said pumps having a large number of undulations acting as a heat exchanger to permit cooling of the lubricant flowing between the two pumps, a lubricating circuit passing successively from one of the pumps through one of the side plates formed in said enclosure and through the bearings of the drive shaft of the engine thereby lubricating said bearings, the return of the lubricant from said shaft flowing through an opposite side plate to the second pump and to the heat exchanger, thus forming a flow within the housing and the shaft which assures adequate cooling and lubrication of the engine.

3,315,649

ENGINE

Addison T. Lincecum, Box 823, Freeport, Tex. 77541
Filed Jan. 25, 1965, Ser. No. 427,697
7 Claims. (Cl. 123-27)



1. In an engine, a cylinder, a piston in said cylinder, a fuel receptacle at one end of said cylinder, a check valve controlling the flow of fuel into said receptacle, a combustion chamber in said receptacle and a projection on said piston formed to fit closely in said chamber to complete compression and induce combustion at the end of the compression stroke of the piston, openings in the sidewalls of said cylinder to exhaust the residue after combustion and to admit air upon compression stroke prior to combustion.

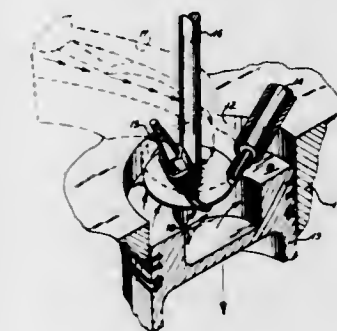
3,315,650

INTERNAL COMBUSTION ENGINE COMBUSTION PROCESS

Irving N. Bishop, Farmington, Laszlo Hideg, Dearborn Heights, and Aladar O. Simko, Detroit, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Sept. 17, 1965, Ser. No. 490,774

17 Claims. (Cl. 123-32)



1. A method of operating an internal combustion engine of the spark-ignition type at all load levels comprising inducing a charge of essentially unthrottled air into a combustion chamber with a swirl motion around the chamber essentially concentric with the cylinder axis and uniform to the extent that there are essentially no large scale disturbances of the flow pattern and the pattern is repeatable from cycle to cycle, injecting fuel as a liquid into a portion of the air in the combustion chamber and completing the injection before the end of the compression stroke, injecting at such low injection pressures and particle velocities and through such wide cone angles that the fuel enters the air in the cylinder bore in a spray

of relatively large size liquid droplets sufficiently dispersed to result in a relatively slow induced spray air current that produces a slow dispersion and vaporization of the fuel droplets, to effect the formation of a fuel droplet/air mixture cloud having a low average air/fuel ratio and one that rotates slowly with the air in the chamber around the cylinder axis to slowly increase the average air/fuel ratio and the quantity of fuel vapor in said cloud, continuing the rotation of the mixture cloud around the cylinder axis without ignition past the point where the slow continuous vaporization of the fuel has increased the fuel vapor/air ratio of the cloud to a stage where the cloud is ignitable so that the average air/fuel ratio of the mixture cloud also further increases past the value at which the cloud is initially ignitable, and producing a spark ignition of the mixture cloud after the continuing vaporization of the fuel has increased both the fuel vapor/air ratio and the average air/fuel ratio of the mixture to predetermined values past the value permitting initial ignition of said cloud, so that a sufficient time period is established for the slow dispersion through said cloud of the flame resulting from ignition whereby the fuel in said cloud further vaporizes to a point providing a stable flame core and a subsequent rapid combustion of the mixture of a scheduled order.

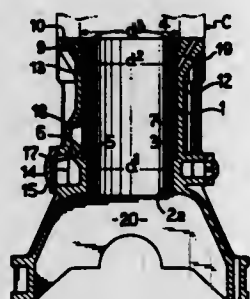
3,315,651

CYLINDER BLOCK FOR AN INTERNAL COMBUSTION ENGINE AND AN ENGINE INCLUDING SAID BLOCK

Marcel Dangauthier, Paris, France, assignor to La Publicite Francaise, Paris, France, a corporation of France
Filed May 12, 1965, Ser. No. 455,278

Claims priority, application France, June 11, 1964, 977,896

5 Claims. (Cl. 123—41.28)



1. A die-cast cylinder block for an internal combustion engine comprising a cylinder formed in the block and a detachable wet and freely expansible liner mounted in the cylinder, the cylinder having an inner cylindrical face, a lower inwardly extending shoulder at the bottom of the cylindrical face, an upper rebate adjacent the top of the block and located at the top of the cylindrical face, the liner having a recess on the outer face of the liner, an upper outer flange at the top of the recess, a lower outer flange at the bottom of the recess, a lower annular seal interposed between the lower flange and the lower shoulder, the upper flange being supported by the rebate, a cooling liquid chamber defined by the recess of the liner and the cylindrical face of the cylinder, a cooling liquid supply manifold in the cylinder block, a cavity in the cylindrical face of the cylinder, an aperture in the block putting the cavity in communication with the manifold, the aperture and the cavity extending in an oblique direction relative to the axis of the cylinder, said obliquity being such that extensions of the generatrices of the aperture and the cavity are within the contour of the rebate, whereby the core of the casting die employed for producing the cylinder block can be easily withdrawn after casting.

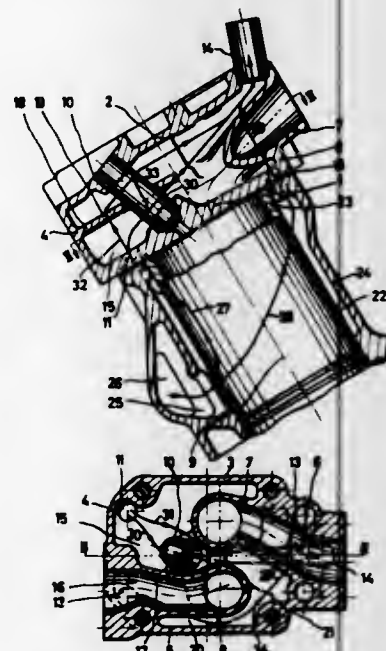
3,315,652 CYLINDER FOR A WATER-COOLED INTERNAL COMBUSTION ENGINE

Erich Ries and Rolf Muth, Mannheim, Germany, assignors to Motoren-Werke Mannheim AG, vorm. Benz ABT. Stat. Motorenbau, Mannheim, Germany

Filed Jan. 3, 1966, Ser. No. 518,306

Claims priority, application Germany, Jan. 5, 1965, M 63,698

7 Claims. (Cl. 123—41.31)



1. A cylinder for a water-cooled internal combustion engine, comprising a cylinder body, portions of said body defining a substantially cylindrical working space therein, a hollow cylinder head at an upper end of said cylinder body, a base plate of said cylinder head bounding an upper end of said working space, portions of said cylinder body defining a cooling jacket chamber extending around said working space and to the region of said base plate for cooling said cylinder body with cooling water, portions of said base plate defining first and second transfer openings disposed to one side of the working space axis and extending through said base plate and in communication with said chamber for leading through said base plate cooling water from said chamber, other portions of said base plate defining an outlet valve port and an inlet valve port extending through said base plate and disposed to respective opposite sides of said axis, a tubular gas inlet duct and a tubular gas outlet duct of said cylinder head extending to the inlet valve port and the outlet valve port respectively and having their interiors in communication with the respective ports, portions of said inlet duct and said outlet duct defining a gap therebetween, portions of said cylinder head remote from said cylinder body defining an outlet opening to the side of said axis opposite to said one side for leading cooling water out of said cylinder head, a housing in said cylinder head in the region of the middle of said cylinder head for receiving an injection nozzle first portions of said cylinder head defining first conduit means extending transversely of said axis and leading from said first transfer opening via the outside of said housing to said gap and thence to said outlet opening for conducting cooling water from said first transfer opening into heat-exchange contact with said housing and thence to said outlet opening via said gap, second portions of said cylinder head defining second conduit means extending transversely of said axis and leading from said second transfer opening to said outlet opening via the outside of said outlet duct for conducting cooling water from said second transfer opening into heat-exchange

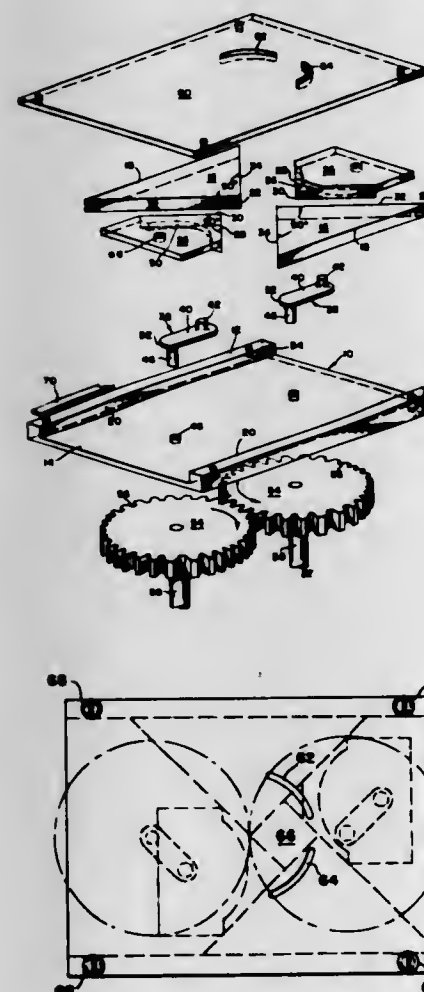
contact with said outlet duct and thence to said outlet opening, portions of said first portions of said cylinder head including portions of an upper major surface of said base plate defining in said cylinder head a first receiving chamber which covers about a quarter of the area of said major surface and into which opens the first transfer opening for receiving cooling water from said first transfer opening, portions of said second portions of said cylinder head including further portions of said major surface defining in said cylinder head a second receiving chamber which covers about a quarter of the area of said major surface and into which opens the second transfer opening for receiving cooling water from said second transfer opening, partition wall means separating said first receiving chamber from said second receiving chamber, and further wall means of said cylinder head covering almost completely each of the receiving chambers and disposed in the region of the middle of the dimension of said cylinder head in a direction of said axis.

3,315,653 INTERNAL COMBUSTION ENGINE

Ricardo Chicurel, 703 Palmer Drive, Blacksburg, Va. 24060

Filed Sept. 27, 1965, Ser. No. 490,238

16 Claims. (Cl. 123—77)



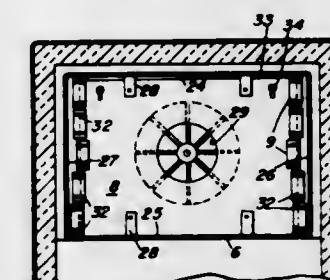
1. A four-cycle fuel-operated combustion engine comprising: a motor housing; compression chamber defining means within said housing including follower means and actuator means in engagement and slidably and sealably cooperating to continuously vary the volume of said chamber; ignition means selectively operable within said chamber; a drive shaft having means operable within said actuator means to impart rotation to said shaft; a cover plate removably retaining and sealing said follower and actuator means within said housing; said plate having

3,315,654 HIGH VELOCITY OVEN

Richard T. Keating, 1210 W. Van Buren St., Chicago, Ill. 60607

Filed Mar. 15, 1965, Ser. No. 439,851

9 Claims. (Cl. 126—21)



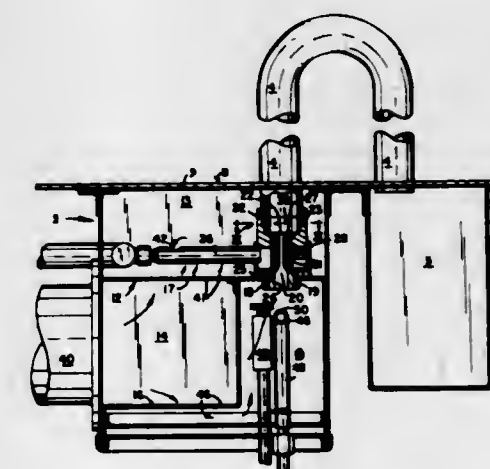
1. A muffled oven comprising, a sheet-metal cabinet positioned within a heated insulated housing, a transverse baffle having a central opening positioned in the cabinet adjacent one wall thereof to form a fan compartment with the lateral edges of the baffle being predeterminedly spaced from the opposed walls of the cabinet, a fan impeller disposed in the fan compartment, means for driving said impeller, and a plurality of juxtaposed elements adjustably mounted on the baffle along the lateral edges thereof for varying the area between the lateral edges of the baffle and the opposed cabinet walls for regulating the air-flow from the fan compartment into and through the oven inwardly of the baffle.

3,315,655 FIRING MECHANISM FOR MULTIPLE BURNER HEATING APPARATUS

Theodore F. Stone, Syracuse, and Ozbek Duzey, Liverpool, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

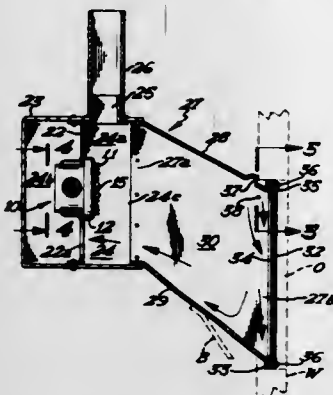
Filed June 1, 1965, Ser. No. 460,328

8 Claims. (Cl. 126—91)



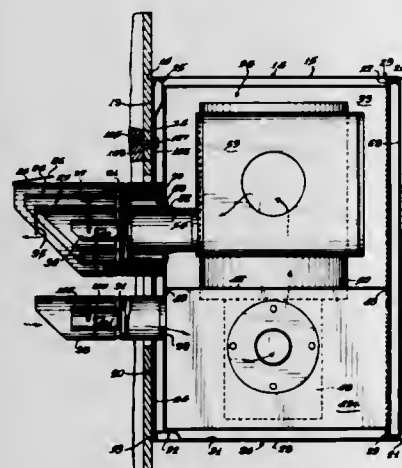
2. Heating apparatus according to claim 1 in which each of said burners includes an open ended passage substantially coaxial with said combustible mixture vortex, said conduit means comprising a tube-like part spacedly positioned adjacent each of said burners, said part having an opening therein opposite and substantially coaxial with each of said burner passages, said part communicating with said combustible mixture so that upon lighting of the combustible mixture in said part said pilot flame protrudes from each of said openings through said burner passages into said combustible mixture vortex.

3,315,656
HEATING DEVICE
 John E. Elchenlaub, 9321 W. Franklin Ave.,
 Minneapolis, Minn. 55426
 Filed Oct. 27, 1964, Ser. No. 406,759
 20 Claims. (Cl. 126—92)



1. Fuel burning apparatus directing heat into a space, comprising a fuel fired source of radiant heat, means defining an enclosure encompassing said fuel fired source of radiant heat and having a combustion gases discharging vent, said enclosure also having an inclined top wall with a lower edge and a heat reflective inner surface, said enclosure also having an imperforate radiant heat transmissible panel extending transversely of said top wall and downwardly below said lower edge, said panel having an upper edge portion adjacent the lower edge of said top wall and also having a lower portion, said enclosure also having an air inlet opening adjacent the lower edge of said top wall for supplying air for combustion and for sweeping by convection downwardly across said panel and toward the lower portion thereof for cooling the panel, and means securing said fuel fired source of radiant heat within the enclosure in generally confronting relation with said panel for directing radiant heat therethrough and in a predetermined relation with said top wall for causing heat radiated against the top wall to be reflected outwardly through the panel.

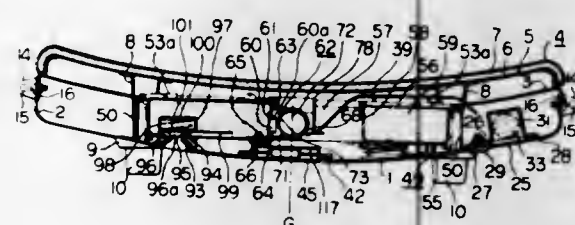
3,315,657
AIR HEATER
 Kenneth S. Jenson and Frederick W. Suhr, Wisconsin Rapids, Wis., assignors to Preway, Inc., a corporation of Wisconsin
 Original application Dec. 31, 1963, Ser. No. 334,693, now Patent No. 3,274,989, dated Sept. 27, 1966. Divided and this application Mar. 1, 1966, Ser. No. 530,849
 2 Claims. (Cl. 126—116)



2. An air heater comprising a housing; an air heating chamber within said housing adapted for passing air there-through; a furnace system defined by a walled conduit

extending through said air heating chamber in heat exchange therewith, said furnace system including a combustion chamber having wall means in heat exchange with the air heating chamber, burner means for burning fuel in said combustion chamber in the presence of air, air intake means for drawing air into said burner means, outlet means for discharging combustion gases from said combustion chamber, separate conduit means communicating with said air intake and outlet means, projecting through a wall of said housing and adapted for installation through a wall structure for communication with air on the other side of such wall structure, each of said conduit means comprising a plurality of tubular conduit members of different diameters positioned one within the other in spaced-apart relation, and means for holding said conduit members in spaced-apart relation including a pair of rods at approximately right angles to each other and each extending diametrically of and loosely through openings in the walls of the tubular members, the rods being of a length to have the rod ends extending beyond the outer perimeter of the outermost tubular member whereby the angular relation of the rods holds the tubular members in associated relation and the rods can be manipulated externally of the conduit, and means on the rods engageable with the outermost tubular member for holding the rods in position.

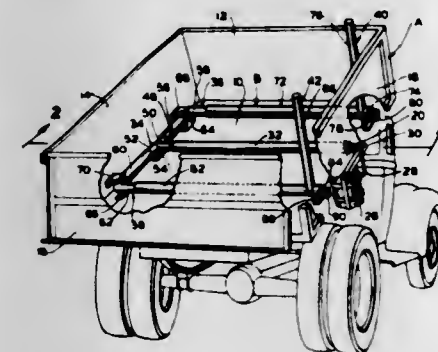
3,315,658
BODY WARMERS
 Jiichi Kamitani and Kanau Kawauchi, both of Osaka, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
 Filed Dec. 27, 1965, Ser. No. 516,614
 Claims priority, application Japan, Sept. 1, 1965, 40/54,166
 10 Claims. (Cl. 126—208)



1. A body warmer of the type in which liquid fuel is burned with the aid of a platinum catalyst comprising: a rectangular casing generally arcuate in transverse cross section and largely open at the top with an elongated combustor-element exchange opening formed in the bottom wall of said casing and extending medially thereof; a closure member detachably secured to said casing to close the top opening thereof; a flattened cylindrical oil tank mounted in said casing and having a tunnel-like through hole in a central position opposite to said combustor-element exchange aperture with a gasified-fuel feed port formed in one of the walls defining said central through hole in said oil tank; a combustor unit including a combustor-element holder coveringly connected with said gasified-fuel feed port and a platinum-asbestos element held in said holder; an ignition wick arranged adjacent to said gasified-fuel feed port in said one of the walls defining said tunnel-like through hole; an ignition unit including a hood of sheet metal opening toward the bottom wall of said casing and toward said combustor-element holder and carrying an ignition heater; a closure plate detachably secured to said combustor-element exchange opening with an auxiliary cover plate pivotally mounted thereon and an extinguisher plate mounted on said auxiliary cover plate for movement into and out of a position opposite to the side of said hood facing toward the casing bottom; an ignition switch assembly mounted on the bottom wall of said casing inside thereof and operable to

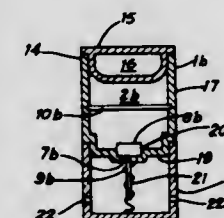
open and close an ignition circuit including said ignition heater; and fuel feed means including a fuel-replenishing port formed in the bottom wall of said casing, a normally closed fuel inlet port formed in the bottom wall of said oil tank in conjunction with said fuel-replenishing port, and means for conducting fuel from said fuel inlet port to said gasified-fuel feed port.

3,315,659
LOAD HEATERS
 Francis J. Schmitz, St. Louis County, Mo.
 (8905 Russell, Brentwood, Mo. 63117)
 Filed Sept. 1, 1965, Ser. No. 484,199
 6 Claims. (Cl. 126—343.5)



1. In combination, a truck bed which includes a deck and a plurality of surrounding panels, and a load heater comprising a first heat conduit secured to one of said panels and extending across the bed in slight vertical separation therefrom, a second heat conduit extending across the bed in slight vertical separation therefrom, said second conduit extending substantially at right angle with respect to the first conduit, adjustable means for selectively altering the distance separating the longitudinal axis of the second conduit and the panel to which the first conduit is secured, means for convectively coupling together said first and second conduits, exhaust means convectively coupled to the second heat conduit, and heat supply means operatively connected to the first heat conduit for supplying heated gas through the first and second conduits to the exhaust means.

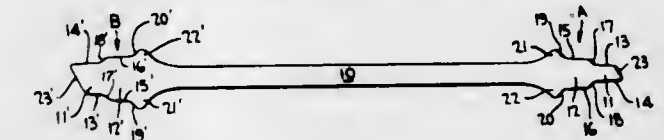
3,315,660
CAPSULE FOR INSERTION IN THE DIGESTIVE TRACT
 Carlos A. Abella, Blvd. Artigas 428,
 Montevideo, Uruguay
 Filed Aug. 8, 1963, Ser. No. 300,773
 2 Claims. (Cl. 128—2)



1. A capsule for insertion into the digestive tract for examination and treatment of the latter and comprising a wall of self-sealing elastic material penetratable by a needle, a chamber having a passage to the outside thereof, a magnetically responsive valve for closing said passage, a spring in the capsule for urging the valve into passage-closing position, and a magnetizable member carried by the capsule close to but spaced from the valve in such a position that it will open the valve against the

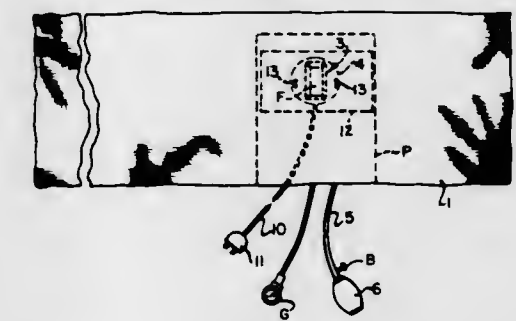
force of the spring upon application of a magnetic field from without, but will permit the spring to return the valve to passage-closing position upon removal of the magnetic field.

3,315,661
CERVICAL SCRAPERS
 Richard A. Groat, Box 6536, Greensboro, N.C. 27405
 Filed Sept. 24, 1964, Ser. No. 399,026
 5 Claims. (Cl. 128—2)



5. A cervical scraper comprising an elongated shank, a flat blade at one end of said shank adapted for insertion into the lower cervical canal of a human body, said blade comprising a blade portion of predetermined width greater than that of the cervical canal in which it is to be inserted; said blade portion having its longitudinal axis aligned with that of said shank; said blade portion having a pair of laterally outwardly directed side scraping edges extending longitudinally rearwardly thereof from its leading end, symmetrically to said longitudinal axis, and terminating at its distal end in a rectilinear scraping edge extending diagonally to said longitudinal axis, and rearwardly diverging continuations of said side edges projecting outwardly from a common longitudinal location spaced from the leading end of said blade portion, whereby insertion of the blade portion into said cervical canal of lesser width than the blade portion will stretch the cervix in the plane of said blade so that inherent elasticity of the cervical tissue will press the cervical mucosa against the side scraping edges of said one blade portion, to provide a resistance against which an effective scraping action may be exerted incident to twisting of the scraper about its longitudinal axis, the diverging edge continuations of said one blade portion limiting the insertion thereof into the cervical canal and exerting a scraping action on the external os incident to said twisting of the scraper, the stretching action of the said one blade meanwhile supporting the os for firm scraping engagement by said diverging edge continuations.

3,315,662
OSCILLOMETRIC MONITORING SYSTEM FOR SPHYGMOMANOMETERS
 Marvin A. Buffington, 1061 Lauder Road,
 Cleveland, Ohio 44124
 Filed Jan. 16, 1964, Ser. No. 338,240
 7 Claims. (Cl. 128—2.05)



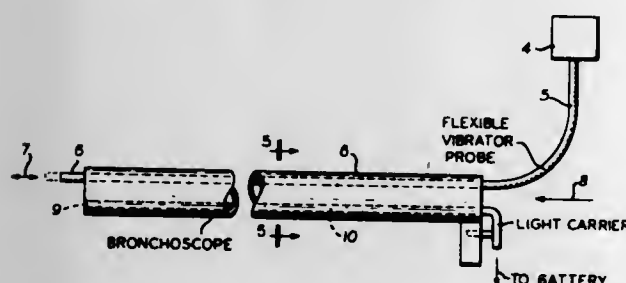
1. Apparatus for monitoring vascular pressure variations, comprising constricting means encircling a portion of a vascular subject, said constricting means comprising a retaining member, an inflatable bag member within the retaining member and means for inflating the inflatable bag member,

a transducer element positioned within said constricting means between the bag member and the retaining member and responsive to fluid flow variations to emit a signal proportional thereto,
a focusing element positioned adjacent said transducer element on the side of said transducer element remote from the inflatable bag for reflecting energy from the flow variations to said transducer element, and
indication means operably connected to said transducer element and responsive to signals emitted therefrom to provide an indication of the fluid flow variations.

3,315,663

BRONCHOSCOPE HAVING MEANS FOR PRODUCING MECHANICAL VIBRATIONS IN THE BRONCHIAL TRACT

Herman Goldfarb, 1616 160th St.,
Whitestone, N.Y. 11357
Filed Apr. 2, 1964, Ser. No. 356,918
9 Claims. (Cl. 128-4)

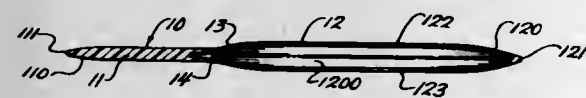


1. A bronchial insert comprising an elongated viewing tube dimensioned to be received in the bronchi of an individual, said tube having proximal and distal ends and permitting visual observation of its distal end from said proximal end,
said proximal end having vibratable means associated therewith for causing vibrations to be produced throughout the entire length of said tube including said distal end and the space adjacent thereto, so as to cause mucus accumulated in said space to reduce its viscosity.

3,315,664

MULTI-PURPOSE TONGUE BLADES

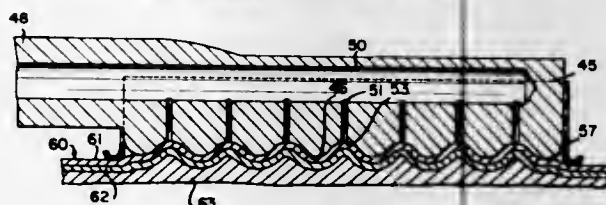
Edward J. Hill, Bloomfield Hills, Mich., assignor to
Edward Weck & Company, Inc., Long Island City,
N.Y., a corporation of Delaware
Filed May 7, 1964, Ser. No. 365,607
9 Claims. (Cl. 128-15)



1. A multi-purpose tongue blade formed of a tough pliable yet relatively stiff plastic material including
a thin generally flat solid tongue depressing portion at one end thereof and a thicker hollow combination tongue depressor and bite portion at the other end thereof,
both end portions being tapered to provide relatively thin blunt end and side edges,
said thicker hollow tongue depressor and bite portion having relatively thin upper and lower walls enclosing air at a pressure sufficient to withstand normal bite pressure whereby to provide resilient resistance to a patient's bite and prevent damage to the patient's teeth.

METHOD AND APPARATUS FOR THERAPY OF SKIN TISSUE

Norman A. MacLeod, 1330 N. Fullerton Road,
La Habra, Calif. 90631
Filed Oct. 11, 1963, Ser. No. 315,570
6 Claims. (Cl. 128-24.5)

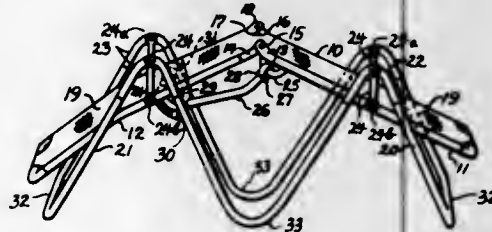


2. An appliance for therapeutic treatment of the skin by flexing the skin tissues by applying elevating and depressing stresses thereto comprising an applicator having a part adapted for direct contact with the skin tissue, said part being configured to have spaced areas for contacting the skin with depressed areas between the spaced areas and means to simultaneously produce contiguous areas that are depressed and elevated relative to the normal level of the skin, said applicator being movable whereby to cause said depressed and elevated areas to traverse laterally as respects the skin.

3,315,666

COMBINED RECLINING, EXERCISING AND MASSAGING DEVICE

John W. Sellner, 10246 Silverton Ave.,
Tujunga, Calif. 91042
Filed Dec. 16, 1963, Ser. No. 331,025
2 Claims. (Cl. 128-25)



1. A combination body supporting, exercising and massaging device comprising a pair of pivotally interconnected body supporting frame members, a longitudinally adjustable base member, flexible members mounted pivotally on each side of said base member and securing said body supporting member within said base member, a massaging device comprising a supported curved member extending below and rigidly secured to each side of one of the body supporting members, an arched member below the other body supporting member and extending between the two sides of the other body supporting member, spring members connecting the ends of the arched member to the sides of the other body supporting member, a rigid rod having one end rigidly connected at one end to said arched member and at the other end pivotally connected to said curved member, a plurality of soft rubber balls of varying sizes mounted within said arched member and so arranged as to massage a human body resting upon the body supporting members when the device is actuated.

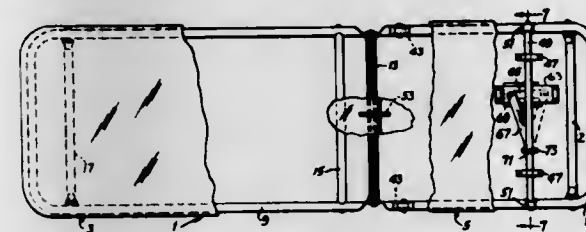
3,315,667

ORTHOPEDIC DEVICE

Stanley W. Yoder, 1823 E. 17th St.,
Little Rock, Ark. 72202
Filed June 17, 1964, Ser. No. 375,801
3 Claims. (Cl. 128-74)

1. A back stretcher comprising, in combination, a frame, a first couch section mounted on said frame, a second couch section, support means movably supporting

said second couch section on said frame for arcuately transversal movement thereof relative to said first couch section, and resilient means connected to adjacent portions of said first and second couch sections to permit limited



relative movement therebetween, said support means including a shaft having rollers mounted thereon and engaging said frame, and a bearing mounted on said second couch section and slidably receiving said shaft.

3,315,668

CATTLE HORN TRAINING DEVICE

Bluford V. Kellner, Kanorado, Kans. 67741
Filed Oct. 20, 1965, Ser. No. 498,266
1 Claim. (Cl. 128-76)



A cattle horn training device comprising:

- a freely flexible open link chain of sufficient length to extend between the horns and depend forwardly of the face of an animal;
- a pair of clamping elements mounted on the terminal link at each extremity of said chain;
- means for clamping the elements of each pair of clamping elements toward each other against opposite sides of an animal's horn;
- a side flap extending outwardly from each of said elements; and
- a lug formed on each of said side flaps, the lugs of each pair of clamping elements being aligned with and facing each other so that when the elements of each pair of clamping elements are clamped together the lugs of that pair will be similarly clamped together in a terminal link of said chain to lock said pair thereon, said chain being relatively heavy to tend to cause the horns to which said pairs are attached to uniformly grow downwardly and forwardly.

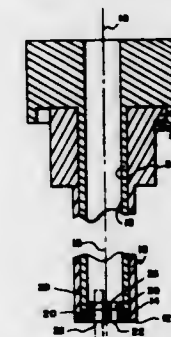
3,315,669

SHEARING DEVICE FOR BONE HOLDING PINS

William A. Rhodes, 4421 N. 13th Place,
Phoenix, Ariz. 85014
Filed June 15, 1964, Ser. No. 375,160
8 Claims. (Cl. 128-83)

1. In a shearing device for bone holding pins the combination of: a first elongated hollow tubular shearing die holder having an extended end; a second elongated die holder rotatably mounted about a longitudinal axis

and in said first hollow tubular die holder; a shearing die means carried by said extending end of said first die holder; a second shearing die means adjacent said first shearing die means and carried by said second die holder; said first and second shearing die means having pin receiving openings disposed eccentrically and radially out-

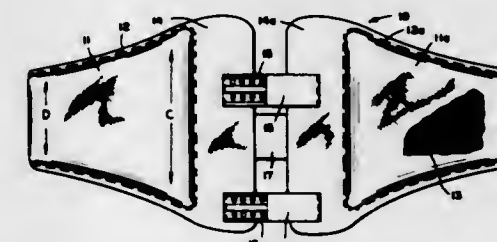


ward from said longitudinal axis, said openings of both die means disposed to register and align with each other to receive a pin therein; and first and second handles connected to said first and second die holders to effect manual rotation of said first and second die means relative to each other about said longitudinal axis to effect shearing of a pin in said openings in said dies.

3,315,670

MATERNITY BELT

Judith G. Fumea, 4300 Leeds Ave.,
Baltimore, Md. 21229
Filed May 19, 1965, Ser. No. 457,064
2 Claims. (Cl. 128-95)



1. A maternity belt adapted to be worn by a pregnant woman while in a recumbent position, comprising a pair of triangular, wedge-shaped resilient pad members respectively arranged with their base ends directed forwardly adapted to contour to the shape and support both sides of the stomach, an elastic and adjustable waist band member attached to and connecting the small ends of said pad members adapted to encircle the small of the back of the wearer, and a pair of spaced, elastic and adjustable strap members attached to the respective base ends of said pad members to connect said base ends in fixed spaced relationship adapted to position and retain said pads on both sides of the stomach of the wearer.

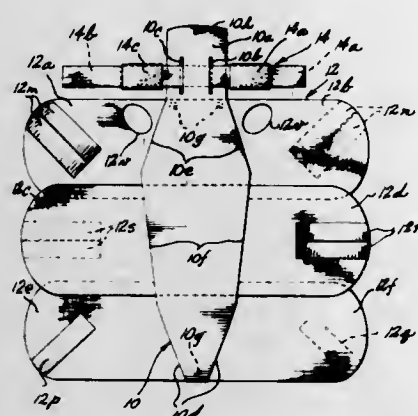
3,315,671

CHILD-RESTRAINING DEVICE FOR PHYSICIAN'S USE

Raymond C. Creelman, 532 5th St.,
Bremerton, Wash. 98310
Filed Mar. 17, 1965, Ser. No. 440,412
9 Claims. (Cl. 128-134)

1. A child-restraining device for physician's use comprising a generally flat and elongated panel adapted to supportingly contact the dorsal side of a child, said panel including a head portion and a body portion joined thereto and having opposite side edges which at the end adjacent the head portion converge mutually toward the head portion and at the opposite end converge mutually in the opposite direction, a headband connected with the head

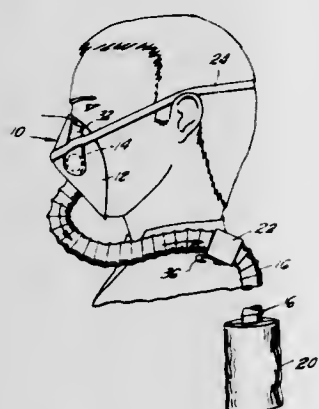
portion and adapted for holding the child's head against said head portion, and a flexible girdle sheet assembly separably fastened to the back side of said body portion with three sets of flaps freely projecting laterally beyond the opposite side edges of the body portion, the flaps of



said three sets being independently adapted to be drawn into overlapping relationship and to be interconnected cooperatively encircling respectively the child's upper torso, lower torso and legs, with said upper torso encircling flaps having armholes therein adjacent said panel.

3,315,672 SURGICAL MASK

Frank W. Cunningham, 5007 Sharynne Lane, Torrance, Calif. 90505, and James V. Luck, 515 S. Rimpau Blvd., Los Angeles, Calif. 90005
Filed July 10, 1964, Ser. No. 381,622
2 Claims. (Cl. 128-139)



1. A surgical mask for excluding nasopharyngeal bacteria from an operative field and comprising:

an air impermeable shield adapted to cover the nose and mouth and define a breathing chamber for receiving expired air;

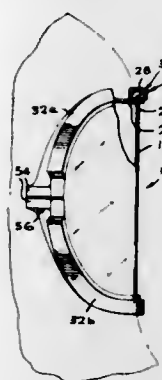
one-way air intake means having an intake opening to said chamber to afford communication between said chamber and the atmosphere outside said shield on inspiration, and blocking said communication on expiration, said intake means further including means defining an elongated, vertically oriented reflux air passage having an outlet located adjacent said intake opening and an inlet located above said intake opening and adjacent the upper terminus of said shield, the length of said passage being sufficient to accommodate any backflow of air through said intake opening on transition from inspiration to expiration;

and an elongated, flexible air exhaust conduit coupled at one extremity to said shield for communication with said chamber and having sufficient length to terminate at its opposite extremity at a point remote from said operative field.

3,315,673 RETAINING MEANS FOR FACE MASKS

William D. Morton, Jr., Arcadia, Calif., assignor to Sierra Engineering Co., Sierra Madre, Calif., a corporation of California

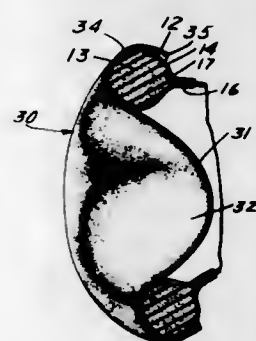
Filed July 13, 1964, Ser. No. 382,121
5 Claims. (Cl. 128-141)



1. A face mask comprising: a face enclosure having a lens opening and a resilient bead integral with the wall of said enclosure and encircling said opening, a transparent lens positioned within said opening, said bead having an inwardly opening groove receiving the peripheral edge of said lens, opposite inside and outside side walls of the bead having flat exterior surfaces of uninterrupted continuity, a split retainer ring encircling said bead and having an inwardly opening channel receiving the bead, said ring having side walls with smooth interior surfaces spaced apart a distance slightly less than the distance between said outside side walls of the bead, each half of said retainer ring having terminal flanges which extend rearwardly relative to said lens and in generally parallel relationship, and bolts extending through said flanges for drawing the two halves of said ring together about said bead and lens to firmly retain the latter in said opening.

3,315,674 FILTER MASK FACELET

Aaron Bloom, Pasadena, and John D. Olt, Sierra Madre, Calif., assignors to Sierra Engineering Company, Sierra Madre, Calif., a corporation of California
Filed Dec. 28, 1964, Ser. No. 421,435
3 Claims. (Cl. 128-146.4)



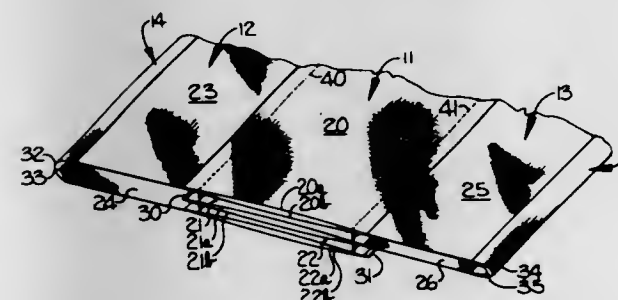
1. In a mask face piece for application to the face of a wearer in a position covering the nose and mouth, a face fitting rim on the face piece and a relatively yieldable sealing bead on said rim for sealing engagement with the face when the mask is in position thereon, the combination of a filter facelet comprising a sheet filter medium comprising multiple layers of separately felted fibers pervious to the passage of air therethrough at negligible resistance, a rim on said facelet adapted to conform with

the outline and contour of the sealing bead, said rim having a substantially continuous self-sustaining pocket having a wall surrounding said sealing bead, said facelet having an opening on one side, said facelet having a self-sustaining mid portion extending toward the open side of said pocket to positions clear of the wearer's nose and mouth.

3,315,675 DIAPER HAVING MULTI-LAYER AND SINGLE LAYER FABRIC SECTIONS WITH SIMILAR WARP END COUNT

Norman L. Seltzer, Princeton, N.J., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts

Filed Mar. 10, 1964, Ser. No. 350,845
7 Claims. (Cl. 128-284)



1. In a prefolded multiple layer woven diaper having a total warp end count, total filling pick count, yarn sizes and over-all weight within the corresponding ranges of conventional gauze diapers, said diaper being characterized by the layers thereof being formed of fabric of greater density than conventional gauze diaper fabric and being further characterized by having substantially greater wearability and greater absorbency in at least the central area of the diaper than conventional gauze diapers; said diaper comprising a plurality of juxtaposed, warpwise extending panels including a central panel defining the central area of the diaper and comprising a plurality of superposed multi-layer fabric sections, and side panels connected to opposite sides of said central panel and comprising upper and lower single layer fabric sections, the filling yarns in the respective multi-layer central panel sections extending through the single layer side panel sections, the warp end count in each of the layers of the central panel sections and of said side panel sections being substantially the same and being materially above the warp end count range of 32-48 of conventional gauze diaper fabric, the filling pick count in each of said single layer fabric sections being materially above the filling pick count range of 32-52 of conventional gauze diaper fabric, the filling pick count in at least the outer layers of the central panel being no less than the quotient obtained by dividing the filling pick count of a side panel section by the number of layers in a central panel section, and all of said fabric sections being woven in a float-type weave to provide increased softness of the fabric sections.

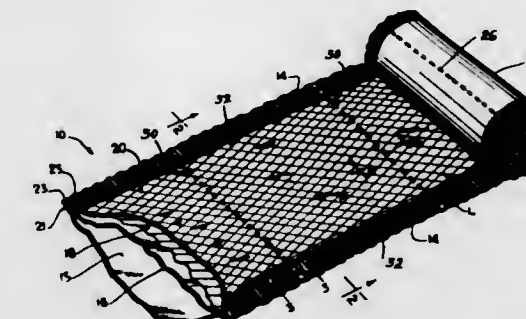
3,315,676 DISPOSABLE DIAPER

Abraham Cooper, 419 Miller Ave., Freeport, N.Y. 11520

Filed Sept. 16, 1963, Ser. No. 309,029
2 Claims. (Cl. 128-287)

1. An infant's diaper or sheeting for cribs, beds and the like, comprising a laminated structure of extended length, said structure including a bottom layer of smooth paper, a film of moistureproof nonporous plastic covering said bottom layer, a pad of moisture-absorbing fibrous material covering said plastic film, and a top layer of

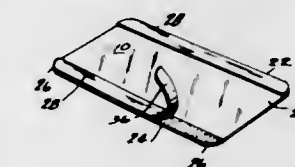
porous paper covering the pad, said top, plastic and bottom layers having opposite lateral edges disposed in registration, crimped and heat sealed to each other, and



spaced transverse lines of perforations formed in said structure to facilitate tearing said structure into rectangular sections, said pad being quilted with diagonally intersecting ridges and grooves.

3,315,677 DISPOSABLE SHIELD HAVING TRANSFER TAPE ALONG SIDE EDGES

Wallace B. Tyrrell, Jr., Venice, Fla., assignor to Tyrrell Industries, Inc., Venice, Fla., a corporation of Florida
Filed Jan. 29, 1964, Ser. No. 340,888
7 Claims. (Cl. 128-288)

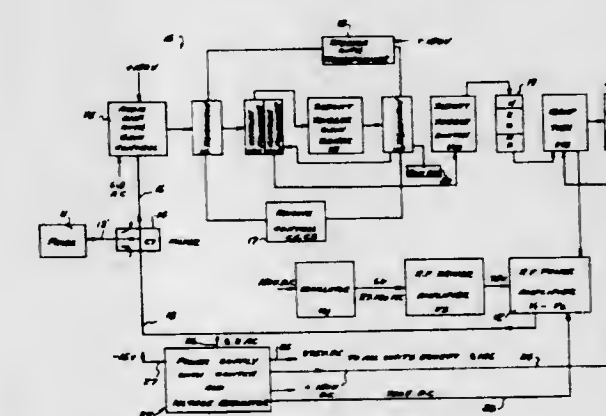


1. A disposable shield intended to be worn in the crotch of an undergarment, said shield comprising an elongated assembly of an absorbent ply superimposed on a water resistant ply and having side and end margins, the water resistant ply having, adherent to the exposed surface which is lowermost in the use of the shield, strips of transfer tape extending longitudinally along its side margins.

3,315,678 EPILATING MACHINE AND CONTROL CIRCUIT

Arthur W. Donelson, Flint, Mich., assignor to Epilatron, Inc., Detroit, Mich.

Filed July 17, 1964, Ser. No. 383,318
11 Claims. (Cl. 128-343.18)



1. In an epilating machine, a needle probe, an RF source with an RF power amplifier including control tubes having screen grids, and a coaxial cable interconnecting the amplifier tubes and probe; the invention comprising: an automatic intermittently operable quick acting control circuit including a power supply and voltage regulator;

an audio amplifier with gain control in said circuit connected to said probe amplifying the small voltage received by the probe when it contacts the human body;

a normally non-conductive thyatron tube connected to the audio amplifier intermittently rendered conductive by said amplified voltage for delivering a timed voltage;

a normally non-conductive Schmitt trigger connected to the thyatron for delivering an intermittent voltage pulse upon termination of the timed voltage from said thyatron;

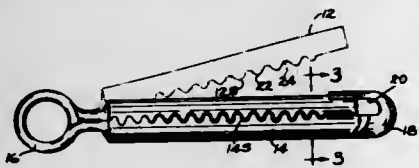
and a normally conductive clamp tube interconnected between said Schmitt trigger and the screen grids of said RF power amplifier and including a control grid connected to said Schmitt trigger, current flow in the tubes of the power amplifier being normally cut-off;

said voltage pulse from the Schmitt trigger to the clamp tube grid cutting off flow through said clamp tube to intermittently activate the control tubes of said RF power amplifier, to deliver through said coaxial cable a momentary surge of RF power to said probe.

3,315,679

UMBILICAL CORD CLAMP

John B. Sarracino, U.S. Army (34 Medical General Hospital, A.P.O. 58, New York, N.Y. 09058)
Filed Jan. 13, 1964, Ser. No. 337,256
2 Claims. (Cl. 128—346)



1. A clamp for closing an umbilical cord stump on a newborn infant comprising: a pair of elongate members having complementary surface portions thereon for engaging the cord stump therebetween, said surface portions being arcuately configured so as to avoid injury to a cord engaged therebetween, a resilient coil portion having at least two substantially complete turns therein so that said surface portions are adapted to confront one another adjacent said coil, one said elongate member having means on the end thereof opposite said coil forming a hooked portion thereon, the end of the other said elongate member opposite said coil portion being formed to be engaged by said hook portion so as to retain said complementary surface portions closely confronting one another along the entire length thereof, said hook portion affording relative movement of said elongate members in a direction parallel to the longitudinal axes thereof, whereby relative resilient movement between said surface portions is afforded so as to accommodate the clamp for secure and substantially uniform engagement with the umbilical cord stump throughout the length of contact between said cord stump and said complementary surface portions.

3,315,680

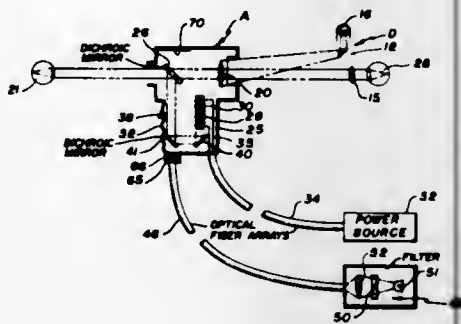
OPTICAL CAUTERIZER

Norman Silbertrust and Norman A. Peppers, San Carlos, Calif., assignors to Optics Technology, Inc., Palo Alto, Calif.

Filed June 16, 1965, Ser. No. 464,408
1 Claim. (Cl. 128—395)

Photocoagulator apparatus for use by a physician in conjunction with a head mounted light source and a head mounted biocular magnifying eyepiece, said apparatus comprising: a lightweight housing adapted to be hand-held by the physician, said housing having a channel

formed therethrough for defining an optical path, an objective lens mounted in the housing on the optical path and disposed for biocular viewing by the physician and for illumination by the head mounted light source, a plurality of flexible optical fibers having a first end attached to said housing and in light communication with said optical path obliquely thereof, said optical fibers forming a flexible optical energy conveying cable and having a second end remote from said housing, first means mounted in light communication with said second end for selectively exciting said optical fibers with coherent light energy, second means mounted in light communication with said second

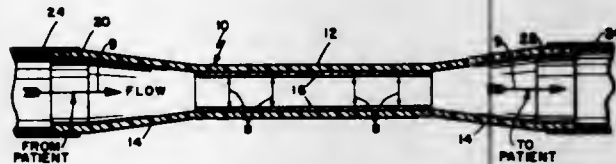


end for exciting at least some of said optical fibers with visible light energy having an energy level insufficient to damage eye tissue, means mounted in said housing within the optical path for deflecting light energy from the first end of the optical fibers along the axis of said path in a direction opposite from said objective lens, said deflecting means being adapted to bidirectionally transmit only visible light along said optical path to afford illumination of a patient's eye by light directed on said objecting lens from the head mounted light source and creation of an image of the patient's eye on the objective lens, and means mounted in said housing for affording selective energization of said coherent light-exciting means by the physician.

3,315,681

MEANS AND TECHNIQUES USEFUL FOR CHANGING TEMPERATURE OF FLUIDS, PARTICULARLY BLOOD

Heinz F. Poppendiek, 8686 Dunaway Drive,
La Jolla, Calif. 92037
Filed Aug. 17, 1964, Ser. No. 391,066
8 Claims. (Cl. 128—399)



1. A liquid heater system comprising: a longitudinal chamber having an inlet and an outlet whereby an electrolytic liquid may flow through said chamber; a pair of spaced-apart electrodes adapted to be connected to a source of A.C. potential; said electrodes being positioned in said chamber so that liquid flowing between said electrodes may be heated by the current resulting from a potential applied to said electrodes; and a source of alternating current of audio frequency greater than 200 cycles per second connected to said electrodes.

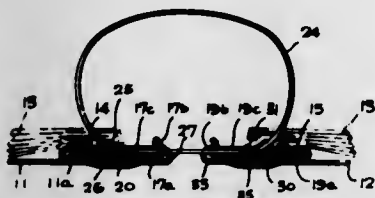
5. A method of heating blood which comprises: circulating blood through a chamber between spaced electrodes; and applying an audio A.C. potential having a frequency greater than 200 cycles per second across said electrodes.

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Jose M 3354 Ave.,

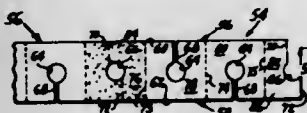
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3,315,682
LOOSE LEAF NOTEBOOK BINDER
 David H. Bachman, Chatsworth, Calif.
 (5344 W. Freemont Place, Littleton, Colo. 80120)
 Filed Feb. 3, 1965, Ser. No. 430,013
 4 Claims. (Cl. 129-1)



1. A loose leaf notebook binder comprising:
 cover means;
 clip means attached to said cover means;
 a binder ring passing through and adjustable in its circumferential direction relative to said clip means;
 said ring having ends which are separable to condition said ring for receiving and discharging perforated loose leaf pages;
 coupling means releasably joining said ring ends;
 said clip means including clamping means for releasably clamping said ring against circumferential movement through said clip means in a fixed position wherein said pages may be moved about said ring without encountering said ring ends, said ring being circumferentially adjustable through said clip means when said ring clamping means are released, thereby to permit removal and insertion of any page without removal of the remaining pages; and
 said clip means having a recess to receive said ring coupling means when said ring occupies said fixed position.

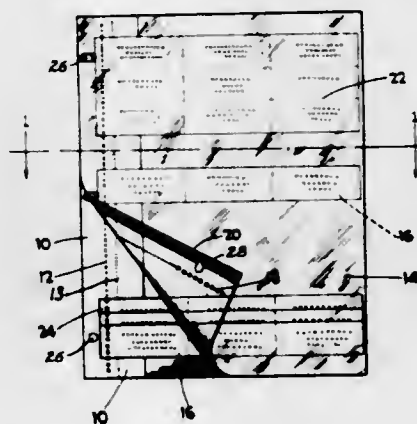
3,315,683
SLIT-RIM LINERS
 Jose M. Rodriguez, 439 W. Overbrook St., Largo, Fla. 33540, and Amelia R. Soneira, 245 Fort Washington Ave., New York, N.Y. 10032
 Filed Dec. 10, 1965, Ser. No. 513,008
 2 Claims. (Cl. 129-1)



1. A slit rim liner comprising a segment of material having an adhesive substance on a side thereof for connecting said segment to a sheet of material, said segment having first and second openings extending transversely therethrough with said openings being spaced from one another along a lengthwise dimension of said segment, first and second slots extending transversely through said segment and communicating, respectively, between said first and second openings and the periphery of said segment, a first fold line spaced equi-distant between said openings and extending transverse to said lengthwise direction to allow said segment to be folded thereon to align said first and second openings with one another and to provide a pair of lateral edges extending generally in the direction of said lengthwise direction, said first and second slots extending transversely of said lengthwise dimension toward opposite lateral edges, said segment having second and third fold lines formed therein and extending transverse of its lengthwise dimension and spaced on opposite sides of said openings from said first fold line dividing

said segment into four sections, the outer sections providing end edges transverse to the lengthwise dimension and an arcuate cutout communicating with each end edge, the end edge including a first portion spaced from the center of the arcuate cutout away from the openings and a second portion spaced toward the openings, said first portion on one edge being diagonal from the first portion of the other edge, the first portion of each end edge intersecting the same lateral edge as the nearest slot.

3,315,684
FILING SYSTEMS
 Henry J. Karl, 462 Washington St., Bristol, Conn. 06010
 Filed Oct. 13, 1965, Ser. No. 495,532
 1 Claim. (Cl. 129-21)

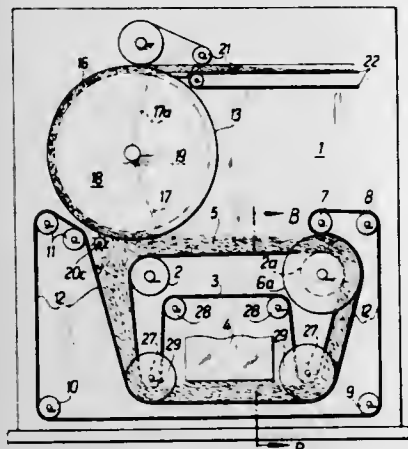


- A listing device comprising,
 a narrow flexible plastic holding member,
 a series of short spaced studs outstanding from the upper surface and extending along a longitudinal edge of said holding member,
 removable strips of flexible material extending beyond said holding member and engaging said studs adjacent one end,
 indicia on said strips disposed laterally beyond said holding member, and
 an enclosing flexible transparent plastic member having a panel attached to the under surface of said holding member and another panel integral therewith and extending over said holding member and strips, said second panel having openings engaging said studs adjacent its free edge and having its free edge beyond said openings folded under the outer edge of the holding member.

3,315,685
METHOD OF PRODUCING A CONTINUOUS TOBACCO ROD
 Willy Richter, Hamburg-Bergedorf, Germany, assignor to Hauni Werke, Korber & Co., K.G., Hamburg-Bergedorf, Germany
 Continuation of application Ser. No. 853,273, Nov. 16, 1959. This application Jan. 25, 1963, Ser. No. 253,886
 Claims priority, application Germany, Nov. 21, 1958, H 34,865
 13 Claims. (Cl. 131-84)

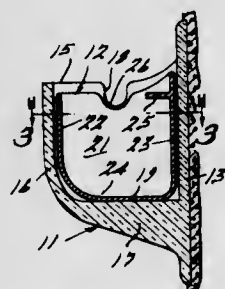
3. A method of producing a continuous wrapped tobacco rod, comprising the steps of forming a continuous tobacco layer having an upper, a lower and an intermediate portion and moving the layer in an elongated path, by separating some of said portions by suction and directing the intermediate and the upper portion of said layer in a first path and the lower portion in a second path, whereby the intermediate and the upper portion form a continuous tobacco stream wherein the intermediate portion becomes the lower part with respect to

said upper portion and is excess with respect to the desired quantity of tobacco in said rod, removing said lower excess part from said stream and directing it into



said second path, and returning said separated lower portion and said excess to the location where said continuous tobacco layer is formed.

3,315,686
WALL-MOUNTABLE ASH RECEPTACLE
 Roland J. Farhood, Wayne County, Mich.
 (3844 Harvard, Detroit, Mich. 48224)
 Filed Dec. 31, 1964, Ser. No. 422,588
 4 Claims. (Cl. 131-235)

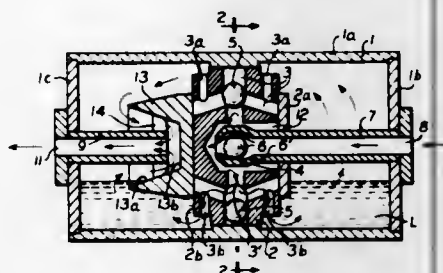


2. A wall mounted ash receptacle comprising a support having a plurality of interconnected upstanding walls defining an upwardly opening recess and a bottom wall forming a closure for the lower end of said recess, at least one of said upstanding walls having a surface spaced from said recess and adapted to be affixed to a wall for disposing said recess outwardly of the wall and for supporting said receptacle upon the wall, an ash receiving tray removably received in said recess and having an ash receiving opening defined by a plurality of upstanding walls, the upstanding walls of said ash receiving tray being complementary in shape to the shape of the recess defined by the upstanding walls of said support, the ash receiving opening of said tray being closed at its lower end by an integral bottom wall supported upon the bottom wall of said ash receptacle and complementary in shape thereto and complementary aligned notches formed in adjacent upstanding walls of said support and said tray arranged to engage and support a cigarette with its lit end extending over and into said ash receiving opening.

3,315,687
FILTER INSERT FOR CIGARETTE HOLDERS AND THE LIKE
 Curt Menges, 9 Schmidtgasse, Gelnhausen, Germany
 Filed July 14, 1964, Ser. No. 382,537
 Claims priority, application Germany, Mar. 5, 1964, M 60,166
 4 Claims. (Cl. 131-261)

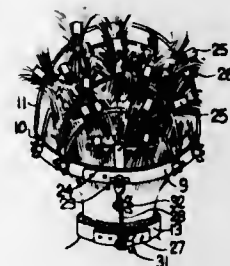
1. A disposable filter cartridge for placement in the stem of a cigarette or cigar holder or a pipe comprising a hollow liquid and smoke impervious casing having a

side wall and opposing closed inner and outer end walls and within which a quantity of filtering liquid is sealingly contained for use as a filtering medium through which smoke must pass, a solid smoke and liquid impervious block member mounted transversely in the casing and spaced from the end walls, said inner end wall having a smoke intake opening, said block having an inner side facing the inner end wall and an outer side facing the outer end wall, said inner side being formed with a chamber, passage means connected sealingly with the intake opening and having an end portion communicating with the chamber for the delivery of smoke from the intake opening directly to the chamber, check valve means in said passage means adapted to close off the passage means



when said casing is in substantial vertical positions with the inner end facing downwardly, said block having passageways extending radially in directly opposing directions from communicating relation with the chamber to the exterior of the block and to communication with the interior of the casing, gravity controlled check valve means operatively disposed in said passageways, said passageway check valve means being opened or closed dependent upon whether its associated passageway is facing upwardly or downwardly, said outer end wall having a smoke outlet opening and outlet means connected between the outlet opening and the outer side of the block for the direct exit of smoke from the casing after the smoke has passed from the chamber through one of the passageways into and through the filtering liquid.

3,315,688
ACCELERATION HAIR SUSPENSION HOOD
 Ralph A. Sbarra, 347 Graham Ave.,
 Brooklyn, N.Y. 11211
 Filed Oct. 5, 1964, Ser. No. 401,406
 5 Claims. (Cl. 132-9)

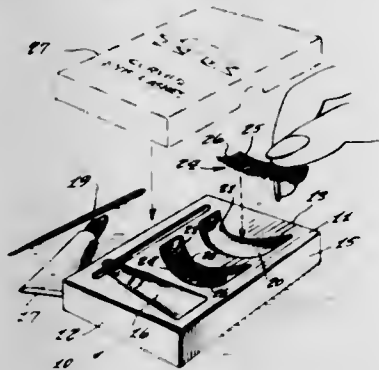


1. An acceleration hair suspension hood of the character described, comprising a circular band adapted to be placed over a lady's head substantially about the hair line; and a plurality of substantially semi-circular shaped tubes having their ends secured to the said circular band and their mid-portion extending upwardly to form an arc; and a plurality of clamps mounted on said tubes for securing the outer end of the hair of a lady's head to the said tubes; and additional structure adapted to hold the said hood in place on a lady's head when the said additional structure is clamped to the back of a chair.

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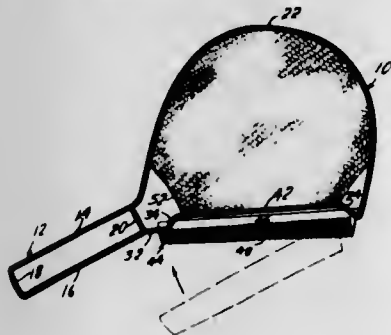
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3,315,689
**DEVICE FOR RETAINING ARTIFICIAL EYE-
 LASHES IN PROPER NORMAL SHAPE**
 Mehron Melik, Elmhurst, N.Y. (% Mehron, Inc.,
 150 W. 46th St., New York, N.Y. 10039)
 Filed Nov. 15, 1963, Ser. No. 324,022
 1 Claim. (Cl. 132-79)



A plastic holder for a pair of artificial eyelashes, each having an adhesive strip, a tube of adhesive and a stick for applying the adhesive, comprising a rectangular main upper side, a rectangular vertical flange depending from the edges of the main upper side to form therewith an inverted boxlike structure, a pair of transversely arcuate recesses disposed in longitudinally spaced relationship to one another in the main upper side each adapted to hold an artificial eyelash, and each of the arcuate depressions having a concavely formed bottom engaged by the hairs of the artificial eyelash held therein, each recess having a corresponding transverse arcuate upper edge surface to which the adhesive strip of an artificial eyelash is to be attached which is disposed substantially normal to the main upper side for maintaining the hairs of an eyelash in contact with the concavely formed bottom of the recess and for retaining the curl of the hairs, a longitudinal elongated recess adjacent one longitudinal edge of the main upper side which receives the adhesive applying stick, and a transverse recess adjacent one transverse side of the main upper side for receiving the tube of adhesive, each transverse arcuate recess having opposed end walls normal to said main upper side to keep the eyelashes from lateral spreading, said longitudinal stick receiving recess and said transverse adhesive tube receiving recess being respectively complementary to the shape of said stick and tube, one end of said tube receiving recess intersecting the longitudinal recess, and the bottoms of all of said recesses lying above the terminal lower edge of said rectangular flange.

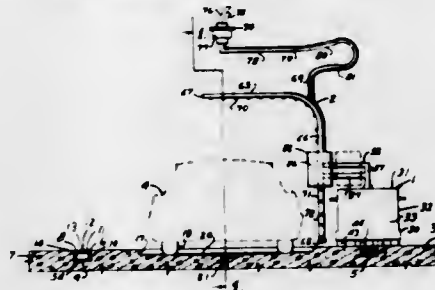
3,315,690
COMB AND HAIR NET
 Wilson S. Graves, 11460 124th Ave. NE.,
 Kirkland, Wash. 98033
 Filed June 22, 1964, Ser. No. 376,798
 3 Claims. (Cl. 132-148)



1. A comb and hair net comprising:
 - (a) a frame defining a central open area;
 - (b) a hair net covering said central open area;
 - (c) said frame connecting with a handle;

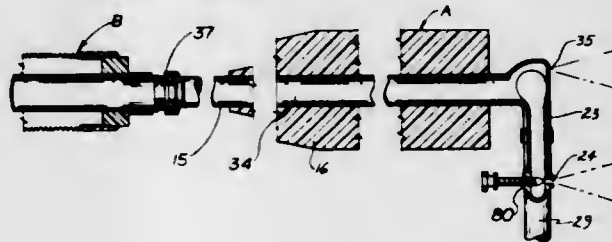
- (d) a comb; and,
- (e) said frame having a clamping means to position said comb.

3,315,691
VEHICLE POWER WASHING APPARATUS
 James E. Widner, Prairie Village, Kans., assignor to Robo-Wash, Inc., Kansas City, Mo., a corporation of Missouri, and Citation Manufacturing Company, Inc., Siloam Springs, Ark., a corporation of Arkansas
 Filed Nov. 13, 1964, Ser. No. 410,875
 10 Claims. (Cl. 134-57)



10. A vehicle washing apparatus consisting of,
 - (a) a closed track on a supporting surface extending around a position of a vehicle to be washed,
 - (b) a mobile frame having a plurality of wheels operatively engaging said supporting surface and forming the support for said frame, certain of said wheels being steerable and certain of said wheels being power driven, the steerable wheels being swingable about a vertical axis, said frame including a depending guide means movably engaged in said track and operatively connected with said steerable wheels to steer the mobile frame in a path defined by said track,
 - (c) a spray unit rotatably mounted on the mobile frame and having an arrangement of a plurality of spray nozzles with one portion being generally upright and disposed alongside of the wash position and a second portion spaced above and extending partly across the vehicle in the wash position, said spray unit being adapted to successively spray detergent and rinse water under pressure on a vehicle for cleaning same as the mobile frame is moved in the path defined by the track,
 - (d) and means connected to said spray unit and operable in response to swinging movement of the steerable wheels to turn the spray unit through an angle of rotation in accordance with the relative swinging movement of the steerable wheels as it moves in a path defined by said track.

3,315,692
FLOATING HOSE POOL CLEANER
 Howard M. Arneson, San Rafael, Calif., assignor to Arneson Products, Inc., San Rafael, Calif., a corporation of California
 Filed Jan. 25, 1965, Ser. No. 427,815
 2 Claims. (Cl. 134-167)



1. A pool cleaner comprising a transport head, float means mounted on said head to maintain floating buoyancy therefor, a high-pressure water source located adjacent the side of said pool, a transport hose connected to

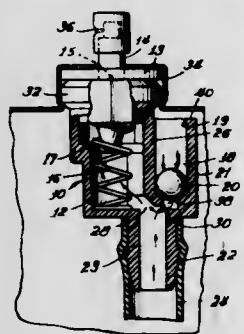
said water source, a sleeve mounted over said hose formed in accordion-like cylindrical configuration of larger diameter than said hose, means creating an air-seal in the space between the inner wall of said sleeve and said hose to provide flotation buoyancy for said hose throughout its length, said hose means mounted on a first end of said head, jet means mounted on the opposite end of said head and under the water surface to direct a water jet stream in a direction opposite said first end, and pendant flexible non-floating hose means connected to said head in fluid communication with said transport hose means, said jet means and said hose means.

3,315,693

ANYSIDE-UP TYPE AEROSOL VALVE

Arthur R. Braun, Cary, Ill., assignor, by mesne assignments, to Seaquist Valve Company, division of Pittsburgh Railways Company, Cary, Ill., a corporation of Pennsylvania

Filed Apr. 10, 1964, Ser. No. 358,757
9 Claims. (Cl. 137-43)



1. A valve comprising a valve housing a tubular valve body affixed thereon, a valve stem reciprocally operable within said body, valve stem biasing means to bias said stem outwardly of said valve body, and valve sealing means mounted between said valve housing and said valve body, said sealing means being positioned to seal said valve when said stem is biased against said sealing means, a by-pass chamber adjacent to and having a side wall in common with said valve body, one end of said by-pass chamber being open and positioned adjacent said valve housing, the opposite end of said by-pass chamber comprising an orifice in communication with the interior of said valve body, and means loosely disposed in said by-pass chamber capable of sealing said orifice when said valve is disposed in a position whereby said means will tend to be adjacent said orifice.

3,315,694

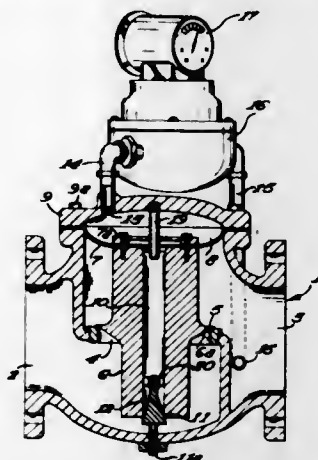
PILOT OPERATED METERING DEVICE

Harry W. Addison, Jr., 206 W. Marshall,
Marshall, Minn. 56258

Filed Feb. 11, 1964, Ser. No. 343,983
14 Claims. (Cl. 137-110)

10. A pilot operated indicating apparatus comprising, a main control valve having an inlet and an outlet with a valve seat therebetween and a valve closure member co-operating therewith to control a main flow through the apparatus, a passage in the valve closure member of the main control valve, a pilot divider valve including in part the passage in the main control valve and controlling a pilot flow from the main flow through the passage in the main control valve, said pilot divider valve being controlled by the relationship between the valve closure member and the valve seat of the main control valve and operated in proportion to the operation of the main control valve, means including conduit means connecting the outlet of the main control valve and the passage in the main control valve and responsive to the pressure at the outlet of the main control valve to operate the main

control valve and effect control of the main flow there-through, an indicator means positioned in the conduit



means and operated in accordance with the pilot flow through the passage in the main control valve.

3,315,695

VALVE EXTENSION

Ralph K. Boyer, Cleveland, Ohio, assignor to Eaton Manufacturing Company, Cleveland, Ohio, a corporation of Ohio

Filed Sept. 3, 1964, Ser. No. 394,269
2 Claims. (Cl. 137-232)



1. In a valve extension for a valve of the type found on an automobile tire wherein the valve is provided with a housing, an externally threaded portion extending from the housing, and a valve actuating stem disposed within the threaded portion,

a generally cylindrical casing having a longitudinal bore with an enlarged bore portion adjacent one end thereof, said casing having internal threads in a reduced diameter portion thereof adjacent said enlarged bore portion, said internal threads being adapted to be structurally operatively associated with the threaded valve portion to mount said casing on the valve portion, said one end of said casing being adapted to contact the valve housing when said casing is mounted on the valve portion, said casing having an annular seat extending inwardly into said bore adjacent the other end thereof, an elongated valve actuating member movably disposed within said casing bore and comprising a shaft portion of smaller diameter than said bore and adapted to engage the valve stem, and a closure member formed integral with one end of said shaft portion and being disposed adjacent said other end of said casing,

said closure member comprising a radially enlarged outer knob portion having a shoulder formed there-around intermediate the ends of said enlarged portion of smaller diameter than the interior surface of said casing defining said bore and of larger diameter than said seat, one end of said knob portion being adapted to extend through and outwardly of said

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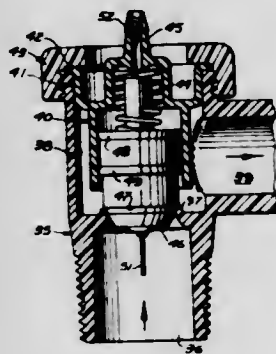
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annular casing seat, said shoulder being adapted to contact the inner surface of said seat, and the other end of said knob portion being disposed in said bore inwardly of said seat,
 a resilient coil spring closely surrounding said shaft portion of said valve actuating member and being freely disposed within said casing bore, said bore, shaft and spring being of such diameters that lateral movement of said spring and shaft within said bore is substantially eliminated by engagement of said shaft with said spring and said spring with said bore, respectively,
 said coil spring having the outer end thereof in contact with said other end of said knob portion to urge said shoulder of said knob portion into engagement with said casing seat.

3,315,696 METERING PISTON VALVE WITH CLEANING MEANS

Edwin J. Hunter, Riverside, Calif., assignor to Moist O'Matic, Inc., Riverside, Calif., a corporation of Minnesota

Filed Aug. 24, 1964, Ser. No. 391,802
2 Claims. (Cl. 137-244)



1. A valve, comprising:

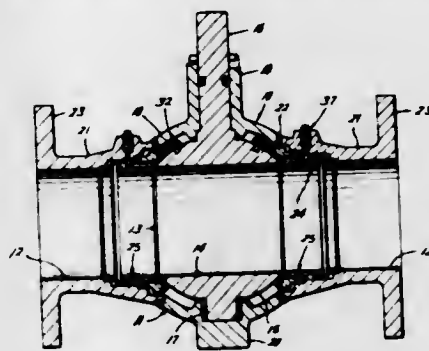
- a valve body structure including a fixed annular valve seat, a confronting coaxially disposed valve cylinder, an inlet port upstream from said valve seat and an outlet port downstream from said valve seat said valve cylinder having a bleed port at its end remote from said fixed valve seat;
- a piston valve slidable in said cylinder and engagable with said fixed valve seat, said piston valve forming with said cylinder a pressure chamber of greater area than said fixed valve seat, and having a meter port of small diameter extending there-through to receive fluid from upstream of said fixed valve seat;
- a meter pin anchored in said cylinder and extending through said meter port to form therewith a passage smaller than said bleed port;
- and means for causing said piston valve to reciprocate between its fully open position and a near-open position to maintain a wiping action between said meter port and said meter pin.

3,315,697 LUBRICATED VALVE WITH MEANS TO RELIEVE SEALANT PRESSURE

John P. Oliver, Houston, Tex., assignor to Cameron Iron Works, Inc., Houston, Tex., a corporation of Texas
 Filed Apr. 22, 1964, Ser. No. 361,646
 4 Claims. (Cl. 137-246.22)

1. A valve, comprising a body having a flowway there-through, a valve member movable within the body for opening and closing the flowway, an annular seat within the flowway on one side of the valve member, said seat comprising an annular body having a groove about its

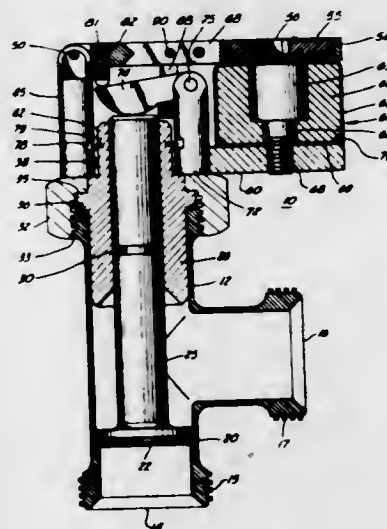
inner end, a passageway in the valve body connecting the exterior thereof with the flowway, a passageway in the seat body connecting the exterior thereof with the groove, seal rings engaging between the flowway and the exterior of the seat body on opposite sides of the connections of the passageways with the flowway and seat body exterior, respectively, to confine the flow of lubricant from the valve body passageway through the seat body passageway into the groove and provide an outwardly facing area



on the seat body which is responsive to the lubricant pressure for urging the inner end of the seat against the valve member, one of said seal rings being movable out of sealing engagement between said flowway and seat body to relieve lubricant from between said seal rings, and means for urging said one of said seal rings into said sealing engagement and yieldable to permit it to move out of said sealing engagement when the pressure of the lubricant reaches a predetermined value.

3,315,698 RELIEF VALVE HAVING CONVERTIBLE RESET MEANS

Oren B. Harmes, Box 148, Algona, Iowa 50511
 Filed Nov. 20, 1963, Ser. No. 324,914
 5 Claims. (Cl. 137-269)



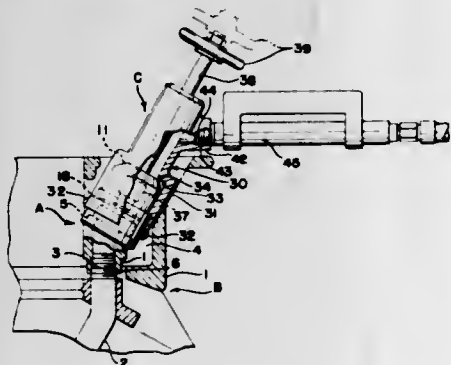
1. A pressure relief valve comprising, a valve body having a pair of ports therein, a valve seat positioned within said valve body intermediate said ports, a valve closure member including shaft means extending through said valve body with said valve closure member cooperating with said valve seat to control flow of fluid through said valve body between said ports, flange means mounted on said valve body and extending transversely therefrom, a pivoted lever member pivotally mounted on said flange means and movable relative thereto, a circular magnetically permeable element threaded in an aperture in said pivoted lever member remote from the pivot of said lever member, a magnet means mounted on said flange means and positioned adjacent to and in cooperating relationship with said magnetic permeable element on said pivoted

lever, an intermediate lever pivotally mounted on said flange means and engageable with the shaft means of said valve closure member, and a coupling linkage mounted in said pivoted lever member and engaging said intermediate lever at a point remote from the pivot of the intermediate lever and engagement of said shaft with said intermediate lever, said coupling linkage being operative to transmit movement of said shaft means through said intermediate lever to the pivoted lever member to move said magnetic permeable element relative to said magnet means, one of the port means of said body being adapted to be connected to a primary conduit having fluid under pressure therein with the fluid applying a pressure differential across said valve closure member to exert a force on said shaft means and upon said intermediate lever with the intermediate lever applying said force through said coupling means to said pivoted lever member which force is counteracted by the force of the magnetic association between the magnetic permeable element and the magnet means on said flange means to hold said valve closure member on said valve seat for normal pressure conditions in the primary conduit, said valve closure member when exposed to a pressure in the primary conduit in excess of said normal pressure being moved to an open position as a result of the force on said shaft means overcoming the force of magnetic association between said magnet means and said magnetic permeable member on said pivoted lever member.

3,315,699

AIR VALVE

Heinrich J. Wurgler, Alliance, and George W. Stambaugh, Akron, Ohio, assignors to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Oct. 9, 1963, Ser. No. 314,973
3 Claims. (Cl. 137—321)



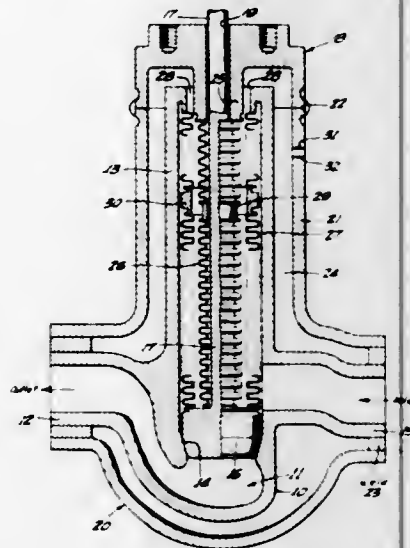
1. In combination, a valve for sealing fluid under pressure in an enclosed chamber, said valve having a housing comprising a base (5) and an outwardly projecting peripheral wall (9) with an intermediate portion (8) of reduced diameter below the upper portion (11) of said peripheral wall and spaced inwardly from said peripheral wall, said valve having an axially movable valve unit in said housing comprising an upright central shaft (16) with an upper tool-receiving portion (17), a tubular elastic sealing member (20) having an internal surface shaped to fit the external surface of said shaft and slidably mounted on said shaft below said tool-receiving portion, radially extending means (18) on the upper end of said shaft for limiting upward axial movement of said tubular sealing member, a coil spring (19) mounted on said base in a position surrounding said intermediate portion (8) of reduced diameter and disposed between said base and said radially extending means (18) to bias said sealing member upwardly from a lower position within said portion of reduced diameter to an upper open position within said peripheral wall above said portion of reduced diameter and below the upper portion (11) of said peripheral wall, a cam member (23) slidably and

rotatably mounted on said shaft below and adjacent said sealing member, and means (24) on the lower portion of said shaft engageable with said cam member for moving said cam member axially upwardly to bulge said sealing member radially outwardly in response to turning of said tool-receiving portion, whereby rotation of said tool-receiving portion is effective to bulge said sealing member radially outwardly into sealing engagement with said portion of reduced diameter to seal said chamber, detent means (26) for locking said valve unit in its sealing position, and locking means (32) for detachably connecting a pressure fitting (C) to said valve to hold said fitting in sealing engagement with the upper portion of said peripheral wall.

3,315,700

TUBULAR JACKETED DOUBLE BELLOWS VALVE

Eugene C. Greenwood, 413 Poinsettia,
Corona del Mar, Calif. 92625
Filed Feb. 3, 1964, Ser. No. 342,211
4 Claims. (Cl. 137—375)



1. A valve comprising a valve body having inlet and outlet chambers and a valve seat therebetween, a valve member movable toward and away from said seat, a cylinder communicating with one of said chambers, a piston rod for said valve member reciprocable in said cylinder, a bellows surrounding said piston rod having its ends sealed to said valve and the remote end of said cylinder, a static chamber surrounding said cylinder and valve chambers communicating with said cylinder, a second bellows surrounding said first bellows in spaced relation thereto, there being a port in said cylinder interconnecting said static chamber and the space between said bellows.

3,315,701

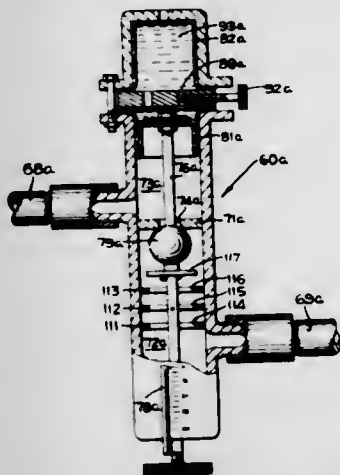
FLOW TIMING DEVICE

Robert E. Stilwell, Santa Clara, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Aug. 13, 1962, Ser. No. 216,442
5 Claims. (Cl. 137—624.18)

1. A flow timing device comprising a valve member having a flow passage therethrough with spaced inlet and outlet ports, a valve plate having an opening therein positioned in said passage between said spaced ports, a control rod movable longitudinally within said valve member and extending through said opening, closure means carried by said rod and adapted to be moved by said rod between a first position in spaced relation to the opening and a second position closing the opening to halt flow through the valve member, a flexible element attached to said rod and adapted to be moved therewith, said element being capable of yielding relative to said rod under excessive fluid pressure, a baffle positioned

in said passage to cooperate with said flexible element in momentarily blocking flow through the passage and temporarily reducing the outflow pressure when said element is moved into alignment therewith and until the

operating means providing slidable sealing engagement for the spool valve member, the valve operating means each having in encircling relation to the bushing a chamber within which one of the pistons is movable for selectively establishing fluid communication between the bore of the spool valve member and one side of a piston to control the movement of the spool valve member.

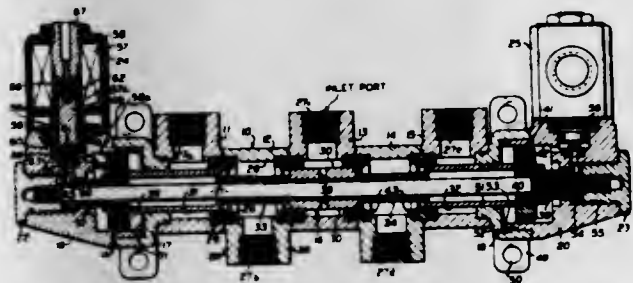


increased upstream fluid pressure causes said flexible element to yield and unblock said passage, and timing means connected to said rod for controlling the movement thereof.

3,315,702 MULTI-WAY VALVE HAVING ROTATABLE PORT SECTIONS

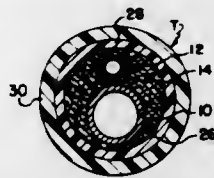
Charles Passaggio, Dumont, N.J., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut

Filed Apr. 2, 1964, Ser. No. 356,890
2 Claims. (Cl. 137-625.64)



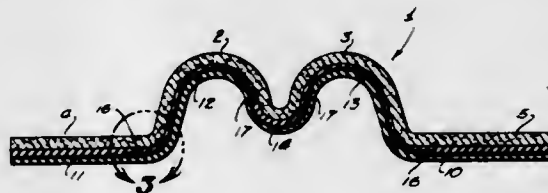
1. A multi-way fluid control valve comprising a body consisting of a plurality of identical axial aligned body sections, each having parallel flat end faces, a bore therethrough and a port leading from said bore and normal thereto, the bores through the body sections being in axial alignment and an axially displaceable hollow spool valve member having axially spaced peripheral lands and grooves movable within the said aligned bores to control the fluid flow through said ports, mounting means at each end of the body, valve operating means supported by each mounting means, resilient means providing fluid-tight seals with adjacent body sections and also sealing engagement with the lands on the valve member, a tie-rod extending through the hollow spool valve member, the mounting means and the valve operating means for releasably clamping said body sections, mounting means, valve operating means and sealing means in assembled relation, the body sections being selectively adjustable around the axis of the bores to position said ports in any angular relation to one another by merely temporarily loosening said tie rod, and wherein the port in one body section is the inlet port and the bore of said body section encircles in spaced relation a part of the spool valve member which has a port open to the inlet port and to the bore of the spool valve member which latter bore is of larger diameter throughout its length than the tie rod extending therethrough, a piston at each end of the spool valve member in fixed encircling relation thereto, a bearing bushing of larger diameter than the tie rod supported in each valve

3,315,703
COMPOSITE TUBING PRODUCT
Richard A. Matthews, Chagrin Falls, and Hans A. Johansen, Mantua, Ohio, assignors to Samuel Moore and Company, Mantua, Ohio, a corporation of Ohio
Filed Sept. 30, 1965, Ser. No. 491,803
15 Claims. (Cl. 138-111)



1. A deformable, composite tubing product of uniform construction throughout its length, adapted for use as sampling tubing, for transferring fluid from a point of sampling to a point of use, comprising, heat conducting sampling line means, heat conducting heating line means, a heat control sheath surrounding and in engagement with at least one of said line means, the said heat control sheath being disposed throughout its length in heat transferring relation to the other said line means, said control sheath being of lesser heat conductivity than said heating line means, a thermo-barrier layer encompassing said line means and control sheath, and a flexible plastic outer sheath covering said thermo-barrier layer.

3,315,704
FLEXIBLE BELLOWS
Harold Shire, Los Angeles, Calif., assignor to General Connectors Corporation, Burbank, Calif., a corporation of California
Continuation of application Ser. No. 35,599, June 13, 1960. This application June 17, 1963, Ser. No. 288,327
4 Claims. (Cl. 138-121)

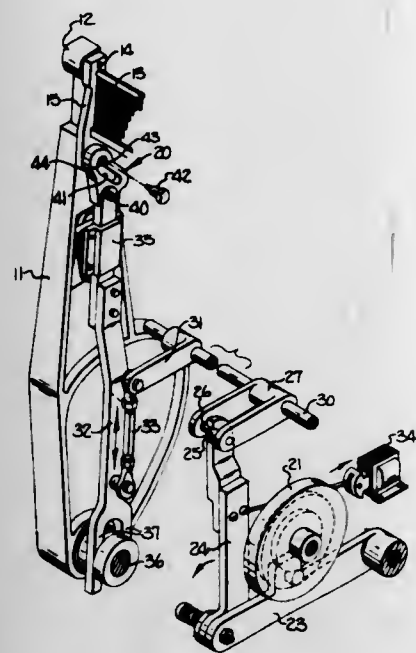


3. A fire resistant bellows, comprising:
(a) a tubular barrier wall including a series of flexible semi-toroidal stainless steel rings, having alternately radially outwardly and radially inwardly facing open sides, the margins of said rings being disposed in radially overlapping relation;
(b) and a high temperature resistant covering on both sides of said barrier wall.

3,315,705
**LOOM REED SHIFTING CAM WITH
LOCKING MEANS**
Douglas P. Burgess, Woodleaf, N.C., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina
Filed Aug. 19, 1965, Ser. No. 480,902
4 Claims. (Cl. 139-26)

1. In a terry loom having an oscillatable lay, a reed, and means for shifting the reed between full and partial beat-up positions relative to the lay including a substantially vertically and linearly reciprocating cam having a

diagonal slot therein and a follower fixed to the reed and engaging the slot, the improvement comprising a locking surface formed at one end portion of said slot and extending substantially parallel with the path of reciprocation of



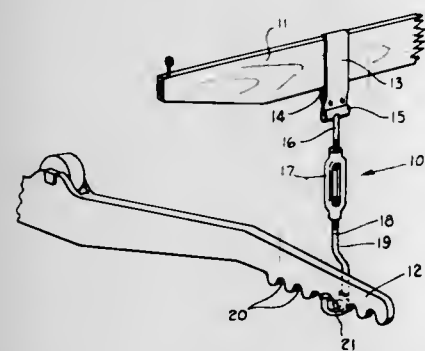
said cam and arranged to engage said follower so the follower cannot move transversely relative to the slot cam and to prevent relative movement between the reed and the lay during each full beat-up of the reed against the fell of the cloth being woven.

3,315,706

TREADLE HOOK INSERT

Charles C. Butler, Greenville, S.C., assignor to Loom Products Co., Inc., Greenville, S.C., a corporation of South Carolina

Filed Nov. 19, 1965, Ser. No. 508,800
1 Claim. (Cl. 139-38)



In a connector device and the like disposed between and connecting a jack stick and a treadle on a loom having a turnbuckle with a metal hook at one end for engaging the treadle, the improvement including, an insert constructed of synthetic polymeric material carried adjacent the inner surface of the metal hook, said insert having a medial portion for engaging the treadle, said medial portion having a first upwardly extending projection adjacent one end thereof engaging a shank portion of said hook, said medial portion having a second upwardly extending projection adjacent the other end thereof engaging a free-end of said hook, said upwardly extending projections being so constructed as to snugly engage the shank and the free-end of the hook, respectively, flanges carried by said medial portion and said upwardly extending projection extending outwardly thereof toward

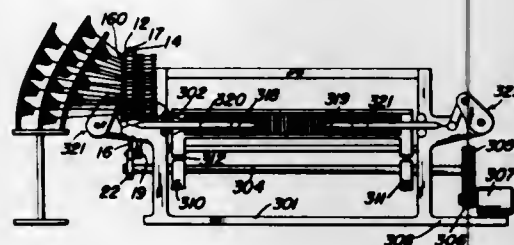
said U-shaped portion of said hook from the sides of said medial portion and said projections for embracing the U-shaped portion of the hook and securing said insert on said hook, said medial portion, said projections and said flanges defining a groove which is the complement of inner surface of the U-shaped portion of said hook, said free-end of said hook being spaced from the shank portion to provide an opening large enough to permit passage of said insert, whereby the insert can be passed through the opening and be secured on the U-shaped portion of the hook to provide a nonmetallic surface adjacent the U-shaped portion of said hook for avoiding wear on the hook and engaging surfaces.

3,315,707

WEFT THREAD CHANGING APPARATUS IN A SHUTTLELESS LOOM

Walter Scheffel, 53 Industriestrasse, Weissenburg, Bavaria, Germany

Filed Jan. 21, 1965, Ser. No. 426,891
4 Claims. (Cl. 139-122)



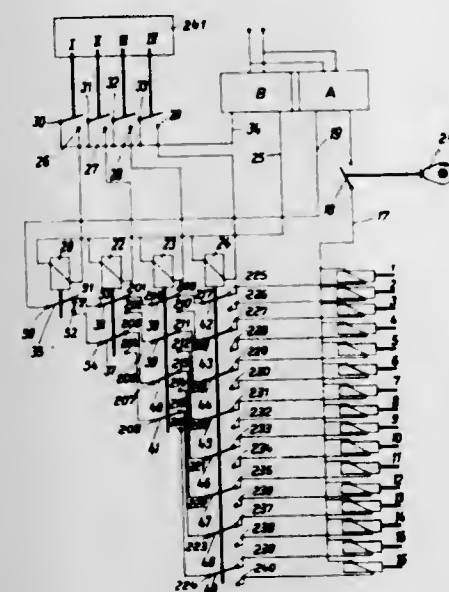
1. In a weft thread changing apparatus for a shuttleless loom having picking means for picking weft thread from a point at which selected wefts are positioned to be engaged by an inserting member to then be carried thereby into a shed in an associated loom, the weft thread changing apparatus being actuable to feed sequentially selected wefts to the point, the combination of, a supporting means, a plurality of individually movable thread guide arms each mounted in radial disposition on said supporting means with respect to the point, a plurality of linking levers each connected to and being pivotable for effecting movement of one of said thread guide arms along the respective radius, catch means mounted on each said linking lever, a slide, slide drive means reciprocating said slide along a line substantially in the direction of said linking levers, a plurality of transverse multiple cam plates mounted on said slide and reciprocable over a limited travel in a direction transverse to the direction of permitted movement of said slide, a plurality of catch levers each overhanging one of said multiple cam plates and underlying one of said catch means, hook means on each of said catch levers to engage with a respective said catch means, a plurality of linkage systems each mounted upon one of said multiple cam plates, each said multiple cam plate being provided with bases of differing pitch arranged with respect to the limited travel of each said multiple cam plate for the alignment of one base for each position of the respective said linkage system with the alignment position being beneath one of said catch levers and said catch lever tilting to engage its associated linkage means to said slide and to cause movement of the respective one of said thread guide arms toward the point in response to the movement of said slide, thread brake means comprising at least two brake plates, means loading said brake plates into contact, means connected to said linking levers and actuable on lever rotation to cause separation of said brake plates, and common thread brake plate displacing means actuable for unisonally displacing all said brake plates.

3,315,708

THREAD CHANGING APPARATUS FOR A SHUTTLELESS LOOM

Walter Scheffel, 53 Industriestrasse, Weissenburg, Bavaria, Germany

Filed Jan. 21, 1965, Ser. No. 426,953
11 Claims. (Cl. 139-122)



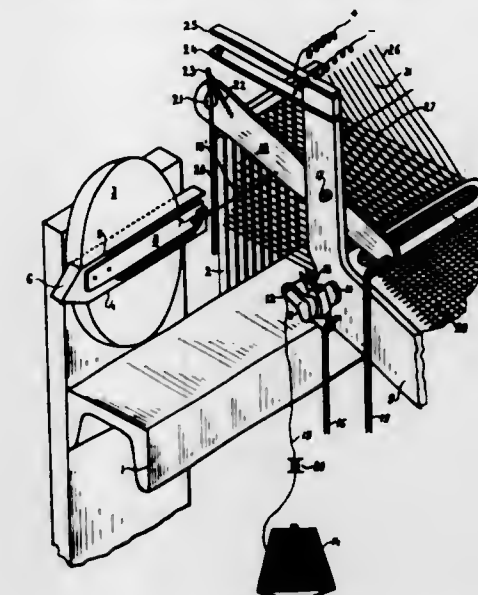
1. In a shuttleless loom including a picking means actuable to pick weft threads from a selecting point into warp threads located in the loom and a pattern programme means for controlling the weave pattern and being actuable to produce coded control signals via a certain number of two-state switches, a weft selecting apparatus comprising, a plurality of weft guide arms radially disposed relative to the selecting point, a thread holding eye mounted on each weft guide arm, means mounting each weft guide arm for movement between a first position wherein the respective thread holding eye is located remote from the selecting point and a second position wherein the respective thread holding eye is located at the selecting point, drive means for moving each said weft guide arm to its said second position, return means for returning each said weft guide arm to its said first position, a plurality of selector switches connected to the pattern programme means and being closable responsively to one state of an associated one of the switches and being releasable responsively to the other state of the associated one of the switches, a plurality of relays corresponding in number to the number of said selector switches and each being energizable on closing of an associated one of said selector switches and releasable on the releasing of the associated one of the said selector switches, a plurality of arrays of contacts corresponding in number to the number of said selector switches and connected in cascade associated with said relays and closable when said relays are energized with 2^n sets of contacts in the n th array where $1 < n < x$, 2^x shift magnets each being connected to one contact of a set of contacts of the x th array of contacts, a power source connected to said first array of contacts, said shift magnets being connected in parallel to said power source, each said shift magnet being connected to said drive means and being actuable to move a corresponding one of said weft guide arms and initiating its movement to said second position when said shift magnet is energized.

3,315,709

METHOD OF AND DEVICE FOR FEEDING WEFT THREAD INTO THE GRIPPER OF GRIPPER LOOMS

Vladimír Svátý, Liberec, Czechoslovakia, assignor to Eli-tex, Sdružení podniků textilního strojírenství, Liberec, Czechoslovakia

Filed Mar. 5, 1965, Ser. No. 437,506
Claims priority, application Czechoslovakia,
Mar. 10, 1964, 1,367/64
8 Claims. (Cl. 139-125)



6. In a weaving loom for weaving a fabric, in combination, a shuttle having a forward end and a trailing end and adapted to be moved between opposite end positions on opposite sides of said fabric and having a gripping mechanism located in the region of said trailing end; a pair of turnable shuttle supports respectively mounted on opposite sides of said fabric, adapted to receive said shuttle in the respective end position thereof and each adapted for turning with a shuttle therein between a receiving position in which the shuttle is located in said turnable shuttle support with the gripping mechanism adjacent said fabric and a discharging position with the gripping mechanism remote said fabric; a pair of weft thread supply bobbins located on opposite sides of said fabric; guide means located each side of said fabric and associated with a respective one of said turnable shuttle supports for respectively guiding a portion of a weft thread from the respective supply bobbin into the gripping mechanism of said shuttle when said shuttle is located in said associated turnable shuttle support with its gripping mechanism adjacent said fabric; and cutting means operating in conjunction with each of said guide means for cutting the thread after the same has been gripped by the gripping mechanism.

3,315,710

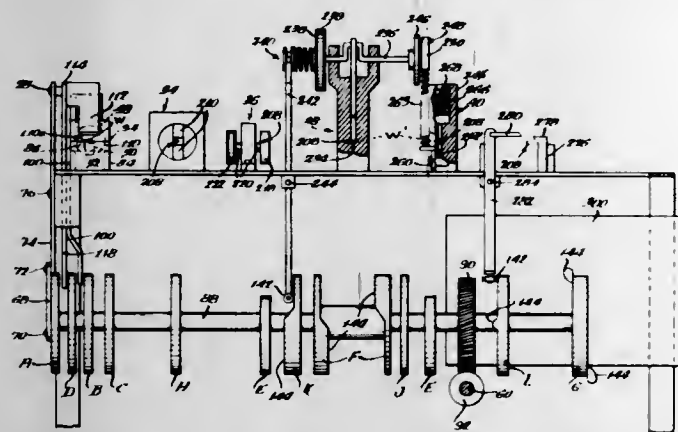
MACHINE FOR MAKING LOOPING POINTS

John Senjuta, 630 Waveland Ave., Chicago, Ill. 60613

Filed May 25, 1964, Ser. No. 370,024
17 Claims. (Cl. 140-1)

1. A system for making looping points for use in looping machinery, which system comprises a wire receiver including means for cutting the wire to size, means forming an orienting bend at the end of each cut wire segment, swaging means at a swaging station for shaping the end of a piece of wire to a blunt point, grinding means at a grinding station for grinding a rounded end on the blunt point, punch means at a grooving station for punching a groove lengthwise in the wire, bending means at a bending station for bending the wire to looping point shape and cutting means at a cutting station

for cutting the looping point shape from the remainder of the wire, and means for transferring said wire from said forming means to said swaging, grinding, punching,

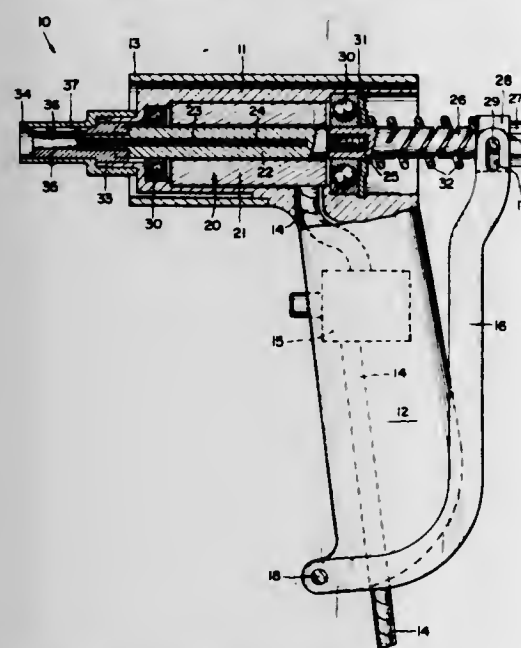


bending and cutting stations while maintaining said wire properly aligned during working at each of said stations by orienting said wire relative to said bend.

3,315,711 WIRE WRAPPER

Edward L. Allen, Ulster, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey

Filed Feb. 28, 1964, Ser. No. 348,228
6 Claims. (Cl. 140—112)



1. A wire wrapper comprising:
 - a casing;
 - a spindle rotatably mounted in said casing;
 - a wire wrapping bit operatively connected to said spindle and adapted to receive a terminal and a wire to be wrapped around said terminal;
 - means for rotating said spindle and bit for wrapping said wire around said terminal; and
 - electrically energizable means disposed in said casing adjacent said bit for heating said bit to soldering temperature when energized.

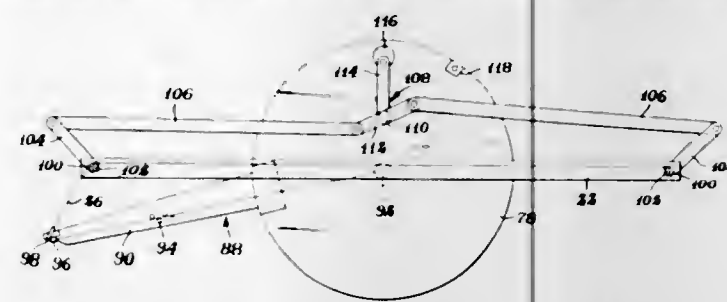
3,315,712 WIRE WELDING MACHINE

Durward Kenneth Hopkins, Peoria, Ill., assignor to Sommer Products Co., Peoria, Ill., a corporation of Illinois

Filed Aug. 19, 1964, Ser. No. 390,651
12 Claims. (Cl. 140—112)

1. Apparatus for welding a continuous stay wire to a plurality of line wires in order to form wire mesh, said apparatus comprising a frame, stationary welding die

means mounted on said frame, movable welding die means mounted on said frame and being in alignment with said stationary welding die means, means on said stationary die means for receiving said stay wire and retaining it in a loop transverse to the line wires, means rotatably carried by said frame for wrapping said continuous stay wire in a loop on said receiving means in a

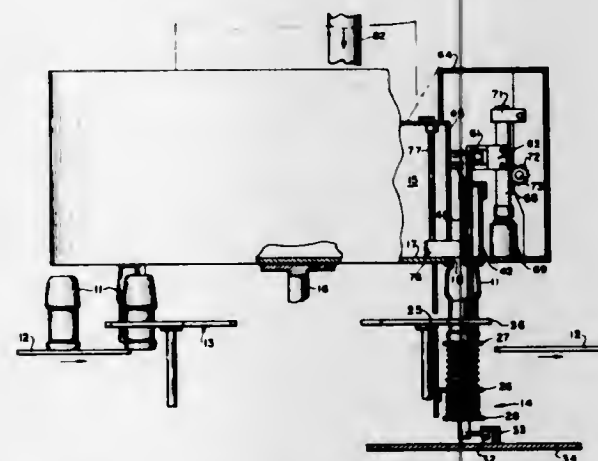


position transverse to said line wires, means for moving said movable die means toward said stationary die means for maintaining said stay wire and said line wires between said die means during the welding operation, and means operated by said rotatable means to release the stay wire from said receiving means after the movable die means has been moved toward the stationary die means.

3,315,713 CONTAINER FILLING METHOD AND APPARATUS

Daniel Horace Kincaid, Walnut Creek, Calif., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

Filed Oct. 26, 1964, Ser. No. 406,460
16 Claims. (Cl. 141—1)



1. A method of filling a container with a desired volume of non-liquid fluent material which comprises the steps of depositing said material within a moving reservoir having a discharge opening, coupling a container of known volumetric capacity to said opening, inserting a probe of known volume within the container, completely filling said container and leveling off said material at the mouth of said filled container, withdrawing said probe leaving within the container a known volume equal to said volumetric capacity minus the known volume of said probe within the container and separating the filled container from said reservoir opening.

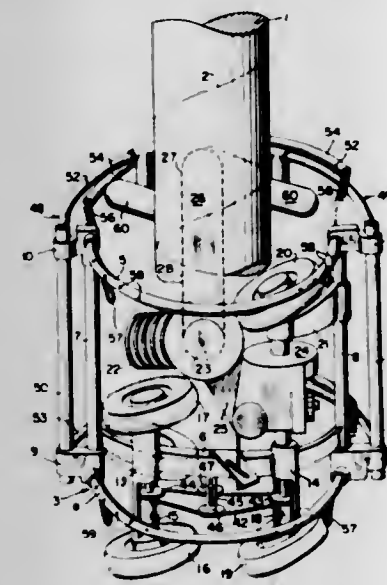
3,315,714 CLIMBING MACHINES ADAPTED TO CUT OFF THE BRANCHES OF STANDING TREES

Paul Meier, Munchenstein, Switzerland, assignor to Hans Held, Basel, Switzerland

Filed Nov. 25, 1964, Ser. No. 413,923
14 Claims. (Cl. 143—32)

14. A climbing machine adapted to cut off the branches of an unfelled tree by climbing along the latter, comprising a frame including two vertical stays, two arcuate tubes

adapted to engage one side of a tree trunk and rigidly interconnecting the upper and lower ends of the stays respectively, a flatter arcuate member connected across the two stays above the lower arcuate tube and securing arms pivotally secured to said arcuate tubes and adapted to be angularly shifted between an outer inoperative position and an operative position engaging the side of the tree trunk opposed to that engaged by the arcuate tubes, means urging elastically said securing arms towards their operative position, carrier rollers revolvably carried by said securing arms and adapted to engage the tree trunk and to roll along helical lines over the latter, a shaft revolv-



ably carried by said arcuate member in parallelism with the stay, an arrangement revolvably carried by said shaft and including a power unit, a sawing device controlled by the latter and a reversing gear operatively connecting the power unit with the shaft, said arrangement being shiftable between an inoperative position for which the sawing device lies at a distance from a tree engaged by the frame and an operative position for which the sawing device engages said tree, and climbing rollers controlled by the power unit, revolvably carried by the power unit and adapted to move along said tree trunk, along helical lines having the same pitch as the above-mentioned helical lines.

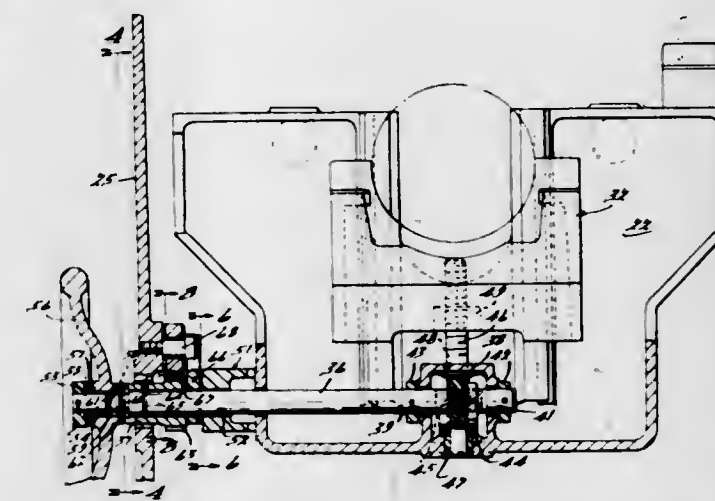
3,315,715 TILTING ARBOR SAW

Lawrence B. Mytinger, Port Huron, Mich., assignor to Moak Machine and Foundry Company, Port Huron, Mich., a corporation of Michigan

Filed May 17, 1965, Ser. No. 456,129
9 Claims. (Cl. 143—36)

4. In a tilting arbor saw, a frame having a forward wall, an apron rockably mounted on said frame, an arbor carriage, ways on said apron slidably supporting said arbor carriage, an arcuate slot in said forward wall, a shaft extending through said arcuate slot and into the lower portion of said apron, means on said apron rotatably but non-slidably supporting said shaft, a lead screw, means on said apron rotatably but non-slidably supporting said lead screw, gears connecting said shaft and said lead screw, a clutch element on the portion of said shaft forwardly of said wall and having axially extending teeth, a hand wheel rotatably mounted on said shaft rearwardly of said clutch element and having a first set of clutch teeth extending toward said first-mentioned clutch teeth, whereby rotation of said hand wheel when said two sets of clutch teeth are engaged with the hand wheel in a first position will permit raising or lowering of said carriage with respect to said apron, a pinion rotatably but non-slidably mounted on said shaft rearwardly of said

wall and having a hub portion extending forwardly through said slot, axially extending clutch teeth on said hub portion, a second set of axially extending clutch teeth on said hand wheel engageable with said pinion clutch teeth when said hand wheel is shifted rearwardly on said shaft from said first position, a standard straight machined steel rack disposed against the rear surface of said forward frame wall, a pivotal trunnion connection between one end of said rack and said forward wall per-

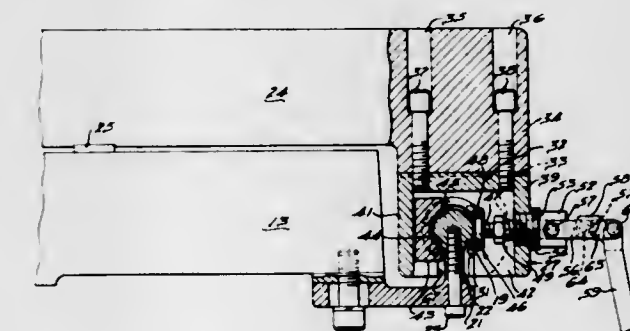


mitting free rocking of said rack, the teeth of said rack facing downwardly and engaging said pinion, an L-shaped follower having a first arm rotatably mounted on said shaft rearwardly of said pinion and a second arm extending over said rack, a shoe disposed between said second arm and said rack and engageable with the flat upper surface thereof, and means for adjusting the spacing between said second arm and said shoe, whereby backlash between said rack and said pinion may be minimized.

3,315,716 FENCE FOR TILTING ARBOR SAW

Lawrence B. Mytinger, Port Huron, Mich., assignor to Moak Machine and Foundry Company, Port Huron, Mich., a corporation of Michigan

Filed May 17, 1965, Ser. No. 456,247
5 Claims. (Cl. 143—174)



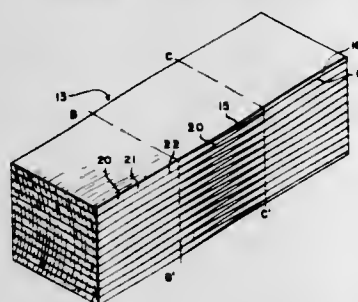
5. In a guiding and clamping means for the fence of a tilting arbor saw table, a bar of circular cross section fixedly secured to the front of said table, an elongated housing on said bar having a central section and a pair of side sections on opposite sides of the central section, said central section having a flat upper wall and front and rear side walls extending downwardly therefrom to form an open-bottomed compartment, a central groove in said upper wall for securing one end of a fence thereto, a clamping block secured to said rear wall within said central section compartment, said clamping block having a notch with inclined sides facing said bar so that said inclined sides have line contact with the bar when in engagement therewith, the clamping block having a height considerably greater than the diameter of said

bar, an apertured portion in said front wall, a smooth-bored guide secured within said apertured portion, a cylindrical rod slidably mounted in said guide and having a portion inside and a portion outside said compartment, a screw threadably mounted in the portion of said rod within said compartment, a lock nut on said screw engageable with said rod, an enlarged flat head on said screw capable of line contact engagement with said bar, a link having a pair of vertical sides connected by an upper web, one end of said link being connected to the forward end of said guide, an elongated handle pivotally connected to the other end of said link, extensions on said handle pivotally connected to the end of said rod outside said compartment, said link, extensions and rod forming a toggle linkage whereby said screw head will be forced against said bar when the handle is in one position and withdrawn therefrom when the handle is in another position, and first and second bearings in each said side compartments, said bearings permitting rotational and axial movement of said housing with respect to said bar but prohibiting any lateral movement thereof, said first and second bearings, screw, clamping block and fence all having a common plane of symmetry.

3,315,717

SEMI-SPLIT SHAKE

John H. Hughes, 6321 Central Park Drive, Aberdeen, Wash. 98520
Filed Jan. 18, 1965, Ser. No. 426,254
7 Claims. (Cl. 144—326)



1. The method of making a semi-split shake of the character described comprising providing a shake bolt of predetermined length, directing a dividing cut into the bolt transversely thereacross at a distance from one end of the bolt equal to the length of the weather end portions of the shake to be made, and at a sharp acute angle toward the opposite end of the bolt, terminating said cut at a corresponding distance from the opposite end of the bolt, then reversing the direction of the cut and continuing it at the same downward angle and to the same length as the first cut, then splitting the weather end portion of the shake from and as defined between the spaced ends of said angular cuts, from the bolt.

3,315,718

PACKAGING DEVICE AND METHOD OF MAKING SAME

Charles H. Berman, 453 W. 43rd St., Chicago, Ill. 60609
Filed May 13, 1964, Ser. No. 367,018
6 Claims. (Cl. 150—5)



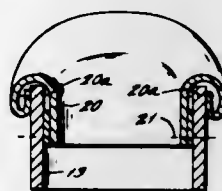
1. A packaging device comprising: a full sheet of material; an insert member substantially contiguous with said full sheet of material and coacting therewith to define a border thereabout, said insert member having a

pair of spaced generally parallel slots defined therein transversely thereof; a partial sheet of material bonded to said full sheet of material at a portion of said border in common therewith and through said slots; and a pre-formed container member having an outreaching flange, a portion of said flange extending between said partial sheet and said insert member, the remainder of said flange being bonded to the portion of said border of said first sheet not in common with said partial sheet.

3,315,719

GOLF BAG CUFF

Michael Kish, Jr., Hightstown, N.J., assignor to Atlantic Products Corporation, Trenton, N.J., a corporation of New Jersey
Filed Mar. 24, 1965, Ser. No. 442,255
5 Claims. (Cl. 150—1.5)

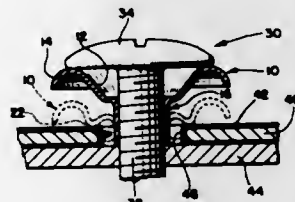


1. A golf bag cuff comprising a cylindrical support body and a bumper secured about one end of said cylindrical support body; said bumper having a first surface and a second surface, said bumper having an inwardly folded end section, at said end section said first surface being positioned adjacent the outer surface of said cylindrical support body; connection means for connecting said inwardly folded support section to said cylindrical support body along an annular securement line; said bumper bending upwardly and over said annular securement line and extending over the end of said cylindrical support body and extending inwardly of said cylindrical support body, said second surface of said bumper being adjacent the interior surface of said cylindrical support body.

3,315,720

NON-CRAZING SPRING WASHER

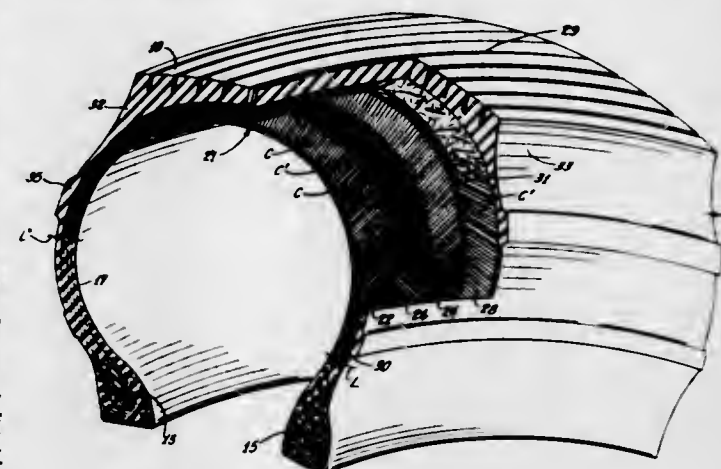
Charles E. Gutshall, Roselle, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Oct. 20, 1965, Ser. No. 498,647
4 Claims. (Cl. 151—38)



1. A fastener unit including a washer and a headed rotary threaded fastener which is preassembled with said washer, said fastener unit adapted for use with an apertured workpiece of a predetermined thickness which is subject to crazing, said washer including an inverted generally flared body portion which terminates at its larger upper end in a reversely directed lip portion of smaller axial height than said body portion, said lip portion terminating in a substantially smooth continuous annular surface, said body portion having integral with its lower end a generally axially directed annular hub portion of sufficiently smaller predetermined diameter than the aperture provided in said workpiece so as to be freely accepted therein but said hub being of sufficient diameter to internally accept at least a part of said hub

portion and the area in the vicinity of said hub and flared body portions being collapsible when the reversely directed lip portion and the lower terminus of said hub portion are compressed by opposing forces presented by the head of said rotary threaded fastener and an opposed work surface means to enable said hub portion to initially absorb the opposing forces prior to bringing said reversely directed lip portion into engagement with said workpiece, the axial height of said hub portion being at least as great as the predetermined thickness of said workpiece to prevent engagement of said rotary threaded fastener with all portions surrounding the workpiece aperture, said axial height of said hub portion being sufficient to cause the upper end thereof to engage the undersurface of said rotary fastener head and prevent complete compression of said hollow portion and its reversely directed lip portion, the head of said rotary threaded fastener having a diameter at least equal to the termination of said upper end of said flared body portion whereby said head engages the washer over a broad area, the terminal edge of said reversely directed lip portion engaging said workpiece at an appreciable distance from the aperture thereof to distribute the pressure per unit area of said washer on said workpiece and thereby eliminate crazing.

said carcass and beneath said tread portion, said band being substantially laterally coextensive with said tread,

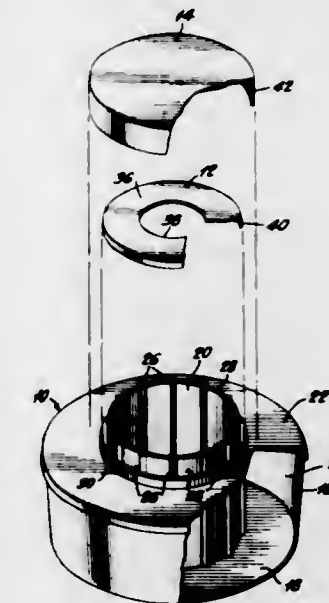


said band having embedded therein a plurality of randomly oriented chopped lengths of gathered filaments of glass in the form of cords.

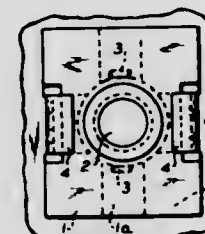
3,315,723

GROVE HEATERS AND THE LIKE

Harlan Eskey Snodgrass, Coral Gables, and Richard Baxter Wiley, Jr., Miami, Fla., assignors to Belcher Oil Company, Miami, Fla., a corporation of Florida
Filed Feb. 13, 1964, Ser. No. 344,765
3 Claims. (Cl. 158—91)



1. A heater especially adapted for outdoor use in the protection of orchards, groves and the like, comprising a fuel reservoir having side walls, a bottom wall and a top cover, said top cover having a central opening therein, said central opening constituting the sole opening in said top and said top fitting closely upon said reservoir, said reservoir being of continuous construction having no openings to the atmosphere in its walls; an upstanding burner tube, positioned in its working position on said bottom wall within said reservoir and centrally thereof, said tube extending through said opening to a point above the upper surface of said top, said tube being formed from a metal blank of a springy nature and having overlapping ends when in shaped tube form and in working position, said metal tube having upstanding flute-like portions in its walls to thereby provide restricted space about the periphery of said tube for passage of vapors generated in the fuel reservoir to a point above the level of said top, and



3,315,721
CLINCH NUT
Hans H. Koehl, Brooklyn, Conn., assignor to C.E.M. Company, Inc., Danvers, Conn., a corporation of Connecticut
Filed Feb. 7, 1966, Ser. No. 525,409
6 Claims. (Cl. 151—41.74)

1. A clinch nut, comprising a flange member having a centrally disposed hole, said flange member having oppositely disposed edges and oppositely disposed ends, two of said opposite edges of said flange member being bent over and under inwardly to assume an abutting relationship with the main portion of said flange member, and defining a slot therebetween, prongs extending axially downwardly from the edge of said hole so as to be disposed on the underside of said flange member and centrally disposed within said slot, and the latter in conjunction with said prongs locking said nut into sheet material, and two tabs extending centrally from the sides of said flange member so as to be disposed on the upper side of said flange member and comprising a securing member.

3,315,722

TIRE CONSTRUCTION WITH IMPROVED REINFORCEMENT

Alfred Marzocchi, Cumberland, and Alfred Winsor Brown, Woonsocket, R.I., assignors to Owens-Corning Fiberglass Corporation, a corporation of Delaware
Filed Apr. 26, 1965, Ser. No. 450,790
37 Claims. (Cl. 152—359)

1. A tire construction having a tread, side walls and carcass body, said construction featuring a reinforcing system comprising a circumferential band located proximate

generally into the area immediately adjacent the top of said tube, whereby said vapors are consumed as a result of ignition of oil undergoing combustion within the confines of the said tube; the spring force of said metal tending to open said tube and thereby hold it firmly in position against said top at the flute like portion; said space having its horizontal area predetermined in relation to vapor generation within said reservoir and effecting vapor pressure build-up within said reservoir substantially above atmospheric pressure and persistent flow of vapors therefrom.

3,315,724

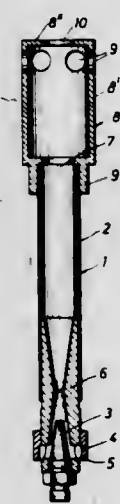
PILOT FLAME BURNER, PARTICULARLY FOR GASES OF LOW FLAMMABILITY

Horst Eggenstein, Erkrath, Germany, assignor to Stadt Dusseldorf, vertreten durch den Oberstadtdirektor, Dusseldorf, Germany

Filed July 12, 1965, Ser. No. 471,294

Claims priority, application Germany, July 21, 1964, St 22,434

1 Claim. (Cl. 158—115)



A pilot flame burner, particularly for gases of low flammability, comprising a mixer tube with respective gas and air inlet means at one end and a burner mouth at the other end, a substantially cylindrical hood having one axial and coaxially seated on said burner mouth front of said burner mouth a chamber for enveloping a pilot flame of predetermined maximum length to burn at said mouth, said hood being closed at the end remote and extending axially away therefrom so as to form in from said burner mouth and having waste-gas outlet openings in the form of bore holes located in said closed end and in the cylindrical wall near said closed end beyond the range of the predetermined maximum length of a pilot flame burnable at said mouth, said chamber being entirely enclosed by said cylindrical wall for a distance at least equal to said predetermined maximum length from said burner mouth.

3,315,725

PROCESS AND BURNER AND BURNER ASSEMBLY FOR LPG

Howard M. Katz and Robert C. Pryor, both of Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

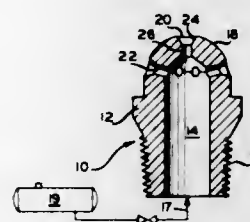
Filed Oct. 18, 1965, Ser. No. 497,055

15 Claims. (Cl. 158—116)

1. A burner for use in burning liquefied normally gaseous hydrocarbons which comprises:

- (1) a hollow body member providing an axial fuel passageway and having a convex face at the downstream end and means at the opposite end for attaching to a fuel conduit;

- (2) at least one orifice communicating with said fuel passageway thru said face, said orifice comprising a cylindrical hole having a maximum length of $\frac{1}{8}$ inch and a diameter in the range of $\frac{1}{32}$ to $\frac{1}{16}$ inch,



when only one orifice, same being axially disposed; and

- (3) a source of high pressure liquefied petroleum gas connected by a fuel conduit with the means of (1).

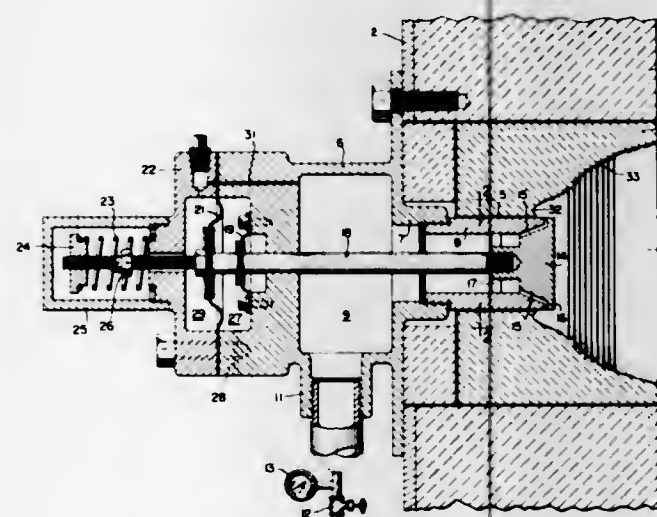
3,315,726

INDUSTRIAL BURNER

John Roger Williams, Ambler, Pa., assignor to Selas Corporation of America, a corporation of Pennsylvania

Filed Mar. 19, 1965, Ser. No. 441,241

3 Claims. (Cl. 158—117)



1. In an industrial burner, ceramic means forming a cup-shaped depression in which combustion is to take place, a hollow, cylindrical fuel discharge member extending into the base of said depression and in sealed relation thereto, said member having a fuel air mixture passage therein that flares outwardly in a conical shape at the end thereof, a frustoconical distributor tip received in and complementary to the flared portion of said passage, said tip having a cap thereon adapted to engage the end of said member, a rod extending axially through said member and attached to said tip and projecting beyond said member in a direction opposite to said passage, said tip being provided around its surface with channels through which fuel can flow, resilient means axially of and attached to the portion of said rod beyond said member for biasing said rod in a direction to move the head of said tip against said member, a pressure responsive element attached to said rod beyond said member, means to supply a fuel air mixture under pressure directly to the interior of said member, means to apply said fuel air mixture pressure to said element to move said rod axially against the bias of said resilient means, and means to vary the pressure of said fuel air mixture supply.

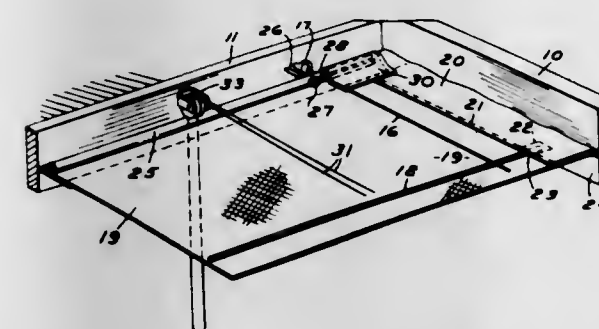
3,315,727

SUNSHADE FOR CEILING CONSTRUCTION

Morton L. Clark, 514 Manatee Ave. W., Bradenton, Fla. 33505

Filed Sept. 16, 1963, Ser. No. 309,083

12 Claims. (Cl. 160—84)



12. In a ceiling construction, the combination comprising a plurality of parallel generally horizontal frame members and transparent panels extending between said frame members, a retractable sun shade comprising a pair of guide wires fixed to said ceiling and extending between and along said frame members, a plurality of movable transverse rods having openings therein adjacent and spaced from the ends thereof to which said guide wires are trained, a flexible opaque reflective panel, means fastening said opaque panel to said rods comprising a plurality of pockets in the longitudinal edges of said opaque panel into which the ends of said rods extend, means engaging one endmost rod and fastening it to said ceiling, means engaging and moving the other endmost rod toward and away from said first-mentioned endmost rod to collapse and extend said sun shade, the width of said panel being greater than the distance between the frame members such that the longitudinal edges of said opaque panel frictionally engage the sides of said frame members of said ceiling when the opaque panel is in extended position thereby substantially sealing the edges against the frame members and preventing the passage of light to the interior through said transparent panels.

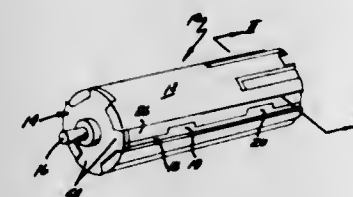
3,315,728

ADJUSTABLE TERMINAL FOR SHADE ROLLERS

James A. Anderson, Muskegon, and Jacob A. Ash, Muskegon Heights, Mich., assignors to Breneman-Hartshorn, Inc., Cincinnati, Ohio, a corporation of Ohio

Filed Sept. 10, 1965, Ser. No. 486,455

10 Claims. (Cl. 160—326)



1. An adjustable shade roller assembly, comprising: a shade roller having an open tubular end; a removable terminal plug insertable into said roller end; means associated with one of said roller and terminal plug defining a stop structure; a plurality of recesses formed in the other one of said roller and terminal plug; each of said recesses differing in lengthwise extent from each other by predetermined incremental amounts; each of said recesses arranged to be alignable with said stop structure to pass over the same; and each of said recesses having an end wall at its terminus for coming

into abutting contact with said stop structure to limit the telescopic engagement of the plug with the roller, whereby the overall length of said roller assembly may be varied by realignment of said recesses and stop structure.

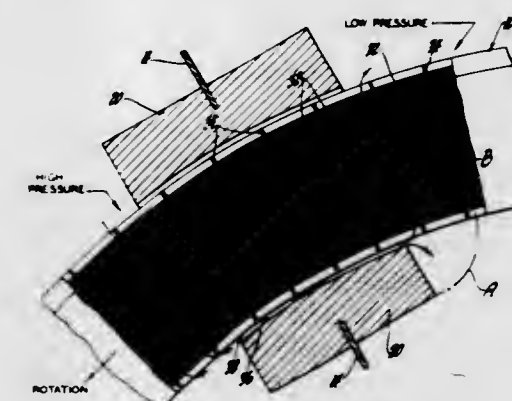
3,315,729

PURGING SEAL

James R. Mondt, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Jan. 14, 1965, Ser. No. 425,458

2 Claims. (Cl. 165—9)



1. A rotary regenerator comprising, in combination, a housing a bulkhead dividing the housing into two flow paths, a first flow path for a first fluid and a second flow path for a second fluid, the first fluid being at higher pressure than the second fluid a matrix rotatably mounted in the housing and rotating through said bulkhead, the matrix being disposed across both said flow paths so that both fluids flow through said matrix, one on each side of said bulkhead fixed seal means disposed in said bulkhead where the matrix moves from the second flow path into the first flow path the matrix and fixed seal means including means defining a labyrinth seal between the two flow paths at both the faces of the matrix through which the fluids flow the labyrinth seal at the face of the matrix which is upstream in the second path having a predetermined clearance sufficient to pass the first fluid from the first path to the second path along the said face of the matrix under the action of the pressure difference between the fluids in sufficient quantity to fill the matrix as it rotates through the seal the fluid so passed being carried into the matrix by the pressure differential across the matrix in the second path to fill the matrix with the first fluid and purge the second fluid from the matrix in the second path immediately ahead of the fixed seal means.

3,315,730

CONTROL SYSTEM FOR AUTOMOBILE AIR CONDITIONERS

Richard D. Weaver, Timonium, and John M. Miller and Michael Slavin, Towson, Md., assignors to The Bendix Corporation, a corporation of Delaware

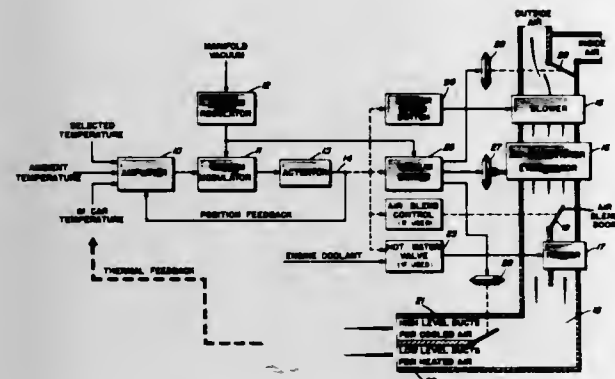
Filed Dec. 21, 1964, Ser. No. 420,061

11 Claims. (Cl. 165—23)

9. A vacuum modulator for use in a control system for an automobile air conditioner, comprising:

- a hermetic housing;
- a magnet within said housing;
- a coil reacting with said magnet to produce reciprocating motion of said coil;

first and second openings in said housing oppositely positioned along the line of motion of said coil; first and second needle valves respectively sealing said first and second openings, said valves terminating inwardly of said housing in flanged ends spaced from one another;

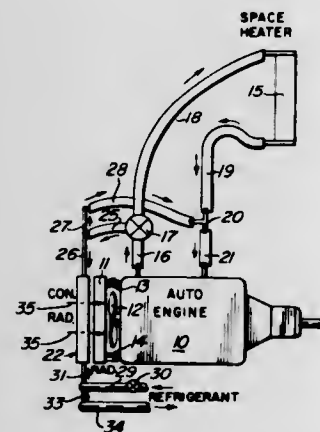


first and second members secured to said coil and slidably capturing said first valve and said second valve outwardly of the flanged ends thereof so as to open said valves alternately for alternate directions of motions of said coil; and spring means urging said first and second valves to a position to close said openings.

3,315,731

VEHICLE AIR CONDITIONER

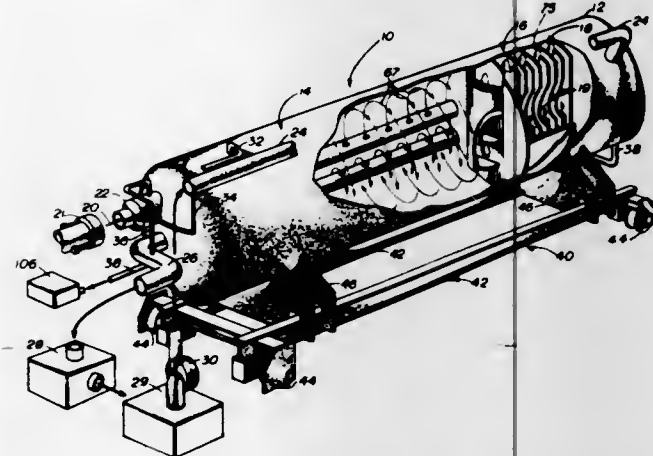
Arnold E. Jensen, Racine, Wis., and Grant H. Jacobson, Dallas, Tex., assignors to Modine Manufacturing Company, a corporation of Wisconsin
Filed May 4, 1965, Ser. No. 453,103
5 Claims. (Cl. 165-42)



4. In an automotive vehicle having an engine with liquid coolant and a cooling radiator for said coolant, apparatus comprising: an auxiliary radiator for said coolant; a refrigerant condenser for an air conditioning system for said vehicle; means for cooling said radiator, auxiliary radiator and said condenser; means for directing said liquid from said engine through said radiator; means for directing refrigerant as desired through said condenser; a hot liquid space heater; means for flowing coolant from said engine through said heater; means for flowing refrigerant through said condenser; and means for both discontinuing coolant flow through said heater and for flowing coolant from said engine through said auxiliary radiator during said refrigerant flow through said condenser, so that said auxiliary radiator supplements said radiator in cooling said coolant during cooling of said condenser.

3,315,732
HIGH ENERGY PARTICLE BEAM DUMP
AND HEAT SINK

Edward L. Garvin, Los Altos Hills, and Dieter R. Walz, and Joseph Jurow, Palo Alto, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Mar. 29, 1965, Ser. No. 443,725
12 Claims. (Cl. 165-47)



1. A beam dump for absorbing and dissipating the energy and radiation of a high energy particle beam comprising:

- (a) an elongated enclosed cylindrical vessel defining therein front and rear enclosed chambers;
- (b) a baffle plate assembly including a series of enclosed spaced parallel plates disposed within said rear chamber, said parallel plates having preselected portions removed therefrom to provide a counter current flow pattern for said fluid medium from an inlet to an outlet thereof;
- (c) fluid circulating pipe means disposed within said front enclosed volume in communication with the outlet of said baffle plate assembly and adapted to circulate said fluid medium within said front chamber in a rotating axially converging flow pattern;
- (d) primary coolant-fluid circulating means external of said tank interconnecting said rear chamber and said fluid circulating pipe means to circulate said fluid medium through said baffle plate assembly and said front chamber; and
- (e) window means disposed to allow axially oriented passage of said high energy particle beam into said front chamber to interact with said fluid in a region disposed along a path effectively within the cross sectional area of said baffle plate assembly.

3,315,733

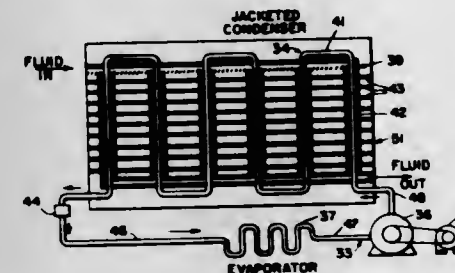
AIR CONDITIONING APPARATUS

Fred Jacobs, 59 Netto Lane, Plainview, Hicksville, N.Y. 11803
Filed July 2, 1965, Ser. No. 494,495
(Filed under Rule 47(b) and 35 U.S.C. 118)
4 Claims. (Cl. 165-48)

1. An air conditioning unit particularly adapted to be disposed in apparatus for conditioning air within any one or more of a plurality of enclosures irrespective of prevailing ambient conditions, whether the enclosure is interiorly or exteriorly located, and in the absence of requiring that a central chilling unit be used and said apparatus insulated because of the condensation resulting from the utilization thereof, and comprising:
- a housing having disposed therewithin a conduit for selectively translating a heat transfer medium there-through, and comprising:
 - a single coil defining a condenser and heating coil;
 - an evaporator coil;
 - a compressor;

guide means disposed in heat exchange relationship with respect to at least a portion of said condenser and heating coil, enabling a heat transfer fluid to be guided and disposed in heat exchange relationship with respect to said heat transfer medium;

said housing defining a plurality of paths therethrough for air to be conditioned, one of said paths causing the air to flow over the condenser and evaporator coil, enabling the air to be conditioned to be de-



humidified with only little cooling, or virtually no cooling, and further enabling the air to be conditioned to be heated, and another path causing the air to by-pass said condenser coil and flow only over said evaporator coil, enabling the air to be conditioned to be cooled and dehumidified,

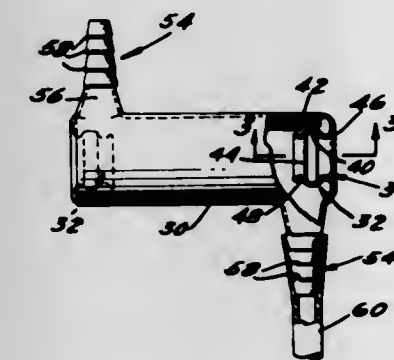
said paths each comprising:

- at least one entrance and exit defining an inlet and outlet, respectively; and
- means for selectively directing the air along said plurality of paths.

3,315,734

HEAT EXCHANGE JACKET WITH SEALING MEANS FOR SYRINGE

John P. Nadolny, Whittier, Calif., assignor to Hamilton Company, Whittier, Calif., a corporation of California
Filed Oct. 11, 1965, Ser. No. 494,444
12 Claims. (Cl. 165-80)



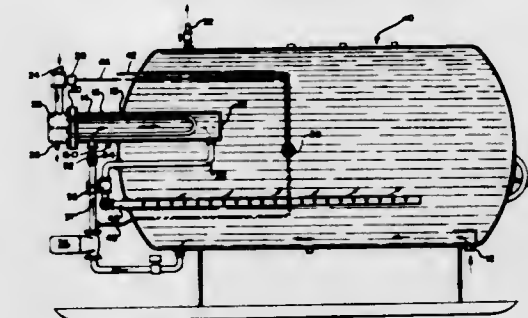
1. In a mantle for syringes and the like:

- (A) a hollow body;
- (B) an integral tubular syringe support at each end of said body in axial alignment with each other and of substantially smaller outside diameter at the greatest radial dimension than the inner diameter of the body, each syringe support means having
 - (a) an outwardly opening outer end,
 - (b) an annular groove intermediate the ends of said syringe supports, and
 - (c) a throat adjacent the inner end and a throat adjacent the outer end of the groove;
- (C) and a tubular fitting adjacent each end of the body and communicating with the interior of the body to thereby provide inlet and outlet means for fluid flow through said body.

3,315,735

CONTINUOUS WATER HEATER

William C. Stranko, Monroeville, Pa., assignor to The Patterson-Kelley Co., Inc., East Stroudsburg, Pa.
Filed Apr. 26, 1965, Ser. No. 450,838
4 Claims. (Cl. 165-109)

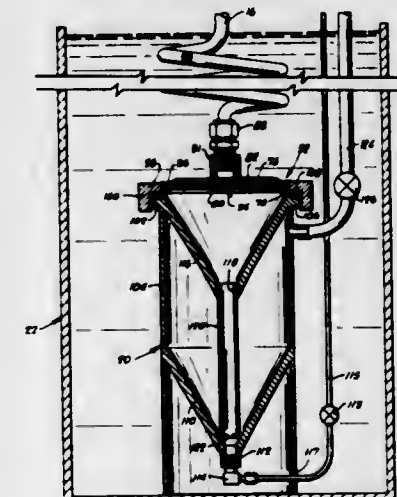


4. A water heating system comprising, a water storage tank, a plurality of emersion heaters extending into said tank, said emersion heaters each comprising a shroud extending into said tank and being open to the exterior of said tank and being closed at its inner extending end, a hot water outlet conduit connected in communication with the inner extending end portion of each of said shrouds and arranged to deliver into the body of said tank, detachable cover means normally closing the outer open end portion of each of said shrouds to provide each of closed vessel form, a heat supply device disposed within each said shrouds, a cold water inlet conduit connected for delivery into the outer end portion of each of said shrouds, a storage water circulation device comprising a pump drawing water from a water supply and delivering it through said inlet conduits into said shrouds and thereby forcing heated water to pass through said outlet conduits into said tank, and control means associated with said conduits and adapted to be regulated so as to electively isolate the interior of any one of said shrouds from fluid-flow communication with the interior of said tank.

3,315,736

CONDENSER IN SAMPLE FRACTIONATING SYSTEM

Alfred B. Carel, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Sept. 17, 1964, Ser. No. 397,142
11 Claims. (Cl. 165-111)



1. An article of manufacture comprising: a housing;

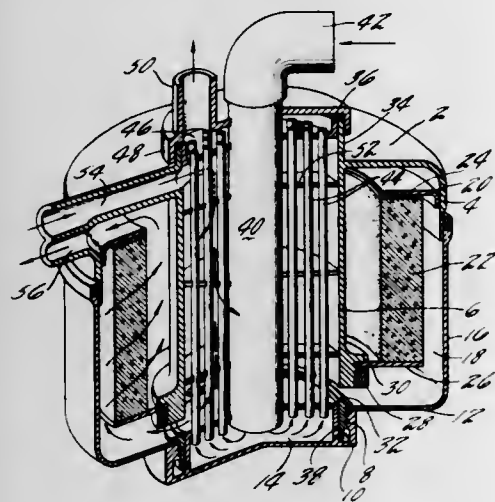
a floor mounted adjacent one end of said housing; and a closure mounted on said housing at the opposite end thereof, said closure comprising:
a porous plate adjacent the interior of said housing, and a cover having an inlet aperture formed therein, the portion of said cover surrounding said aperture being spaced from said porous plate to form a chamber therebetween,
means for maintaining the interior of said housing at a temperature below ambient temperature;
a fluid inlet communicating with said chamber through the inlet in said cover;
a vapor outlet communicating with the interior of said housing; and
a condensate outlet communicating with the interior of said housing at a point adjacent said floor.

3,315,737

OIL FILTER AND HEATER

Joseph J. Welch, Thompsonville, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Apr. 12, 1965, Ser. No. 447,252
5 Claims. (Cl. 165—119)



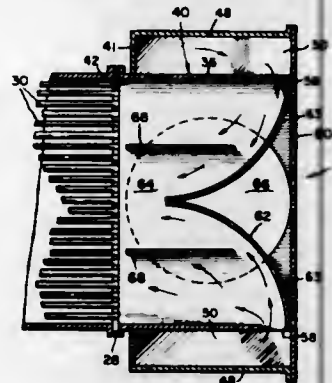
1. A filter and heating device including a head for a peripheral flange and a concentric inner sleeve, said sleeve being impervious, said flange and sleeve defining between them a filter space, a filter element positioned therein and radially spaced from said impervious sleeve, a base having a projecting peripheral flange in sliding engagement with the peripheral flange on the head and cooperating to close the filter space, said base having a central opening fitting over the inner sleeve, a cap fitting over the end of the sleeve for securing the base in position and defining therein a chamber at the end of the sleeve, an air inlet and an air outlet secured to said head, a plurality of tubes extending longitudinally through said sleeve and communicating with said chamber, at least one of said tubes communicating within the head with the air inlet and the remainder of the tubes communicating within the head with the air outlet thereby to establish a flow of air from the air inlet through the tubes connected therewith to the chamber and thence through the tubes connected with the air outlet and to the outlet, fuel inlet means on the head communicating with the interior of said sleeve, the fuel passing around the shell side of said tubes and being heated thereby, passages through the sleeve adjacent the cap for the flow of said heated fuel from within the sleeve through the passages to the external side of the filter within the filter space and thence through the filter into said radial space between said filter and said impervious sleeve, and into the filter space and a fuel outlet on the head communicating with said radial space adjacent the head end thereof.

3,315,738

INLET WATER BOX CONTAINING
BAFFLE MEANS

George T. Jones, Jr., Mountain Lakes, N.J., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey

Continuation of application Ser. No. 369,679, May 25, 1964. This application Feb. 9, 1966, Ser. No. 533,761
2 Claims. (Cl. 165—134)



1. In a surface condenser, the combination of:
a tube bundle including a plurality of tubes;
an inlet water box connected to said tube bundle for supplying water to the tubes of said tube bundle;
an inlet duct connected to said inlet water box for supplying water to said inlet water box;
first baffle means disposed within said inlet water box for partitioning the interior of said inlet water box into an inner portion which is peripherally enclosed by said first baffle means and an outer portion which extends peripherally around said first baffle means and communicates with said inlet duct to receive water therefrom;
said first baffle means including an open end for supplying water from said peripherally enclosed inner portion to said tube bundle in a direction substantially parallel to the longitudinal axes of the tubes of said tube bundle;
said peripherally enclosed inner portion communicating with said outer portion through at least two openings located on opposing sides of said inner portion such that water from said outer portion flows through said two opposed openings into said inner portion in a direction lateral to the longitudinal axes of the tubes of said tube bundle;
second baffle means disposed within said inlet water box and including at least two angled surfaces for receiving water flowing through said two opposed openings and directing such water towards said open end of said first baffle means in a direction substantially parallel to the longitudinal axes of the tubes of said tube bundle;
said second baffle means closing the end of said first baffle means opposite said open end thereof; and
vane means disposed within said peripherally enclosed inner portion intermediate said second baffle means and said open end of said first baffle means for directing water towards said open end in a direction substantially parallel to the longitudinal axes of the tubes of said tube bundle.

3,315,739

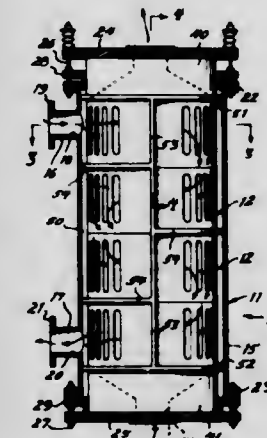
HEAT-EXCHANGER CONSTRUCTION

John G. Kearney, R.D., Annandale, N.J. 08801

Filed June 24, 1965, Ser. No. 466,645
3 Claims. (Cl. 165—145)

1. A heat-exchanger construction comprising a generally cylindrical casing side wall having side openings adjacent to opposite ends, said side wall being of generally constant internal cross section throughout its length, a pair of casing end walls secured across opposite ends of said

side wall and each having a thru opening, a plurality of generally cylindrical blocks of heat-exchange material and of a diameter less than the inside diameter of said side wall, a peripheral rib projecting longitudinally from one end of each block, the other end of each block being formed with a peripheral recess of a depth less than the projection of said rib, said blocks being arranged in end-to-end spaced relation concentrically within and spaced from said side and end walls with the rib of each block entering the recess of the adjacent block, endless sealing means in each recess in sealing relation with the adjacent rib to close the space therebetween, said blocks each having a plurality of end-to-end thru holes opening at opposite ends into the interblock space within said sealing means for communication with the end-to-end holes of the adjacent blocks, an end member interposed between



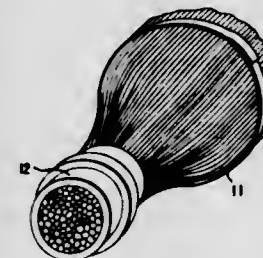
each end wall and the adjacent block and having passage means communicating between the adjacent end-wall opening and the end-to-end openings of the adjacent block, for through communication between said end-wall openings through said end-to-end holes, said blocks each having a plurality of parallel chordally extending thru holes isolated from the end-to-end holes and communicating with the spaces on opposite sides of said blocks within said casing, at least a pair of ribs extending longitudinally along and fixedly secured to each block on opposite sides thereof and projecting to said side wall, and a generally semi-circular rib fixedly secured to each block extending thereabout between one pair of adjacent ends of said pair of ribs and projecting to said side wall, whereby fluid passing between said sidewall openings is directed through said chordally extending holes.

3,315,740

FLEXIBLE PLASTIC TUBE BUNDLE AND
METHOD OF MAKING

Michael S. Withers, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Jan. 14, 1965, Ser. No. 425,507
22 Claims. (Cl. 165—172)



1. An article of manufacture consisting essentially of at least one relatively rigid sleeve having a thermoplastic internal surface and a bundle of a plurality of substantially parallel flexible thermoplastic tubes, at least one end portion of said bundle disposed within said sleeve,

the walls of said tubes at said end portion of said bundle being integrally bonded to the walls of adjacent tubes, the walls of the peripheral tubes of said bundle also being integrally bonded to the internal surface of said sleeve in a fluid-tight arrangement to a depth at least equal to the depth of bonding of said tubes to each other, the depth of bonding of said tubes to each other is at least 0.4 times the largest dimension of the cross-section of the bonded end of said bundle.

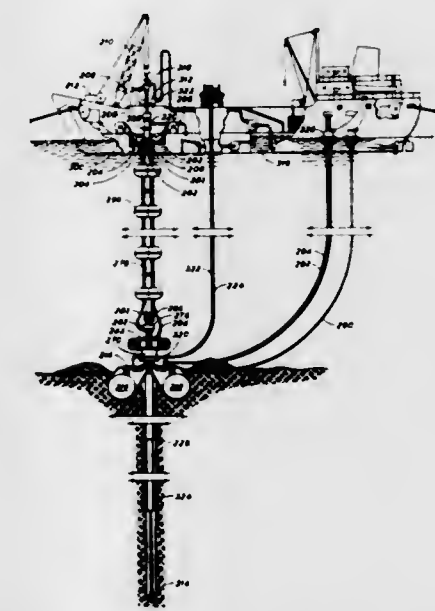
3,315,741

METHOD AND APPARATUS FOR DRILLING
OFFSHORE WELLS

William C. Triplett, Ingleside, Tex., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

Original application Apr. 15, 1957, Ser. No. 652,756.
Divided and this application June 14, 1966, Ser. No. 557,347

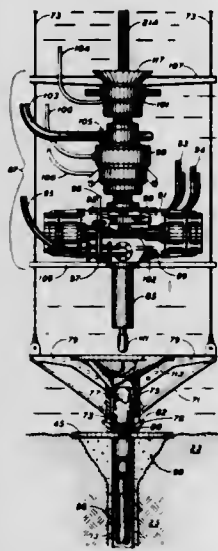
2 Claims. (Cl. 166—5)



1. An offshore structure for carrying out well operations generally above submerged wellhead means, said structure adapted to be positioned at a selected offshore location in a manner sufficiently stationary to carry out operations wherein pipe means projecting generally upwardly from submerged wellhead means may be engaged generally above said submerged wellhead means at two vertically displaced levels, said structure comprising:
an operating deck having a vertical first opening therethrough of a size sufficient to pass well tools and equipment therethrough,
an auxiliary lower deck positioned below said operating deck, having a vertical second opening therethrough of a size sufficient to pass well tools and equipment therethrough, and in general vertical alignment with at least a portion of said first opening,
first pipe-engaging means supported by said operating deck and arranged in general alignment with at least a portion of said first opening in said operating deck,
second pipe-engaging means, independent of submerged wellhead means over which said structure is adapted to be positioned, carried by said auxiliary deck, and adapted to be positioned in general alignment with at least a portion of said second opening in said auxiliary deck,
said second pipe-engaging means being movably positioned relative to said auxiliary deck for movement into and out of general alignment with at least a portion of said second opening in said auxiliary deck, and

platform means, interposed between said second pipe-engaging means and said auxiliary deck for supporting said second pipe-engaging means, said platform means being removable from placement extending at least partially across said opening.

3,315,742
OFFSHORE DEEP DRILLING METHOD FROM A FLOATING PLATFORM
Kingsley M. Nicolson, Santa Barbara, Calif., assignor, by mesne assignments, to Chevron Research Company, a corporation of Delaware
Continuation of applications Ser. No. 629,937, Dec. 21, 1956, now Patent No. 3,252,528, dated May 24, 1966, and Ser. No. 631,715, Dec. 31, 1956. This application Apr. 20, 1966, Ser. No. 543,887
2 Claims. (Cl. 166—6)



1. A method of preparing a well in a formation under water for well working operations, said method comprising:

- lowering conduit means from support means downwardly through the water and positioning said conduit means at least partially within an opening extending downwardly into an underwater formation with an upper end of said conduit means submerged beneath water;
- from said support means, conveying cementitious material to a zone exterior of said conduit means and within said opening;
- sealingly cementing at least a portion of said conduit means to wall means of the opening in said formation;
- guiding a well head assembly having a well apparatus passageway extending therethrough from said support means toward said conduit means by lowering said well head assembly in slidable engagement with flexible guide means extending downwardly from said support means;
- prior to said guiding of said well head assembly, providing said flexible guide means supported by said support means and extending to the general vicinity of said submerged upper end of said conduit means, with said upper end of said conduit means being exposed;
- axially converging and engaging portions of said well head assembly and said exposed upper end of said conduit means;
- interconnecting said well head assembly with said upper end of said conduit means and establishing said well apparatus passageway in sealed communication with the interior of said conduit means;
- mechanically and detachably interlocking said interconnected well head assembly and upper end of said conduit means to mechanically prevent disconnection of said well head assembly and said upper end of said conduit means;

tion of said well head assembly and said upper end of said conduit means;

mechanically and selectively maintaining said interlocking of said well head assembly with said upper end of said conduit means, with said interlocking being selectively maintainable until said well head assembly is to be disconnected from said end of said conduit means and raised in slidable engagement with said flexible guide means; and controlling the well apparatus passageway of said well head assembly from said support means whereby said well apparatus passageway may be selectively closed off or opened.

3,315,743
AQUEOUS SOLUTION FLOW IN PERMEABLE EARTH FORMATIONS
Milton K. Abdo and Peggy M. Dunlap, Dallas, Tex., assignors to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Dec. 8, 1964, Ser. No. 416,901
15 Claims. (Cl. 166—9)

1. In a method of treating a subterranean formation, the step comprising passing into said formation water having incorporated a copper cetyl tolyl ether sulfonate in a quantity sufficient to provide a solution which is viscoelastic and is also a shear hardening, positive non-simple liquid.

3,315,744
DUAL FUNCTION AQUEOUS SOLUTION FLOW IN PERMEABLE EARTH FORMATIONS
Peggy M. Dunlap, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Dec. 31, 1964, Ser. No. 422,547
26 Claims. (Cl. 166—9)

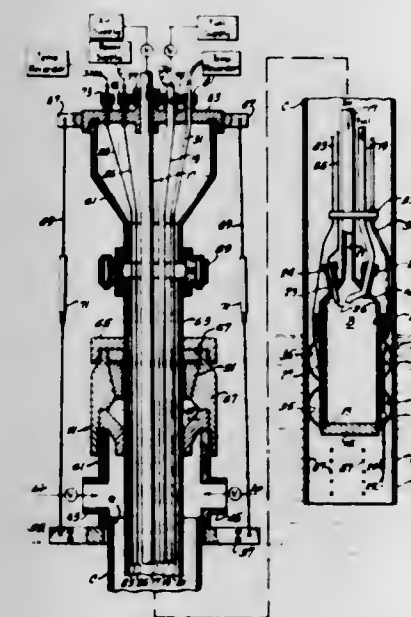
1. In a method for the treatment of a subterranean formation by injecting a fluid therein, the improvement comprising injecting into said formation an active solution comprising water having incorporated therein sufficient quantity of at least one additive to provide a solution which is viscoelastic and which is also a shear hardening, positive non-simple liquid, said additive being selected from the class consisting of:

- (a) M' alkyl aryl ether sulfonate, where M' represents a cation selected from the class consisting of H⁺, K⁺, Na⁺, NH₄⁺, Zn⁺⁺, anilino, toluidino, sec-butylamino, and ethylamino; alkyl represents an alkane radical containing 14 to 18 carbon atoms, inclusive; and aryl represents an aromatic radical selected from the class consisting of o-tolyl, p-tolyl, o-ethyl phenyl, p-ethyl phenyl, o-n-propyl phenyl, and p-n-propyl phenyl;
- (b) copper alkoxy aryl sulfonate, where alkoxy represents a radical selected from the class consisting of tetradecyloxy, pentadecyloxy, heptadecyloxy, and octadecyloxy; and aryl represents an aromatic radical selected from the class consisting of phenyl, tolyl, ethyl phenyl, and n-propyl phenyl;
- (c) M dialkoxy benzene sulfonate, where M represents a cation selected from the class consisting of H⁺, K⁺, Na⁺, NH₄⁺, Cu⁺⁺, Zn⁺⁺, anilino, toluidino, sec-butylamino, and ethylamino; and dialkoxy represents two radicals, each having an oxygen linkage on an alkyl radical containing 6 to 12 carbon atoms, inclusive, and together containing a total of 14 to 18 carbon atoms, inclusive; and

(d) M dialkoxy benzene disulfonate, where

M represents a cation selected from the class consisting of H⁺, K⁺, Na⁺, NH₄⁺, Cu⁺⁺, Zn⁺⁺, anilino, toluidino, sec-butylamino, and ethylamino; and dialkoxy represents two radicals, each having an oxygen linkage on an alkyl radical containing 14 to 20 carbon atoms, inclusive.

3,315,745
BOTTOM HOLE BURNER
Warren A. Rees, Jr., Corpus Christi, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed July 29, 1964, Ser. No. 385,893
9 Claims. (Cl. 166—59)

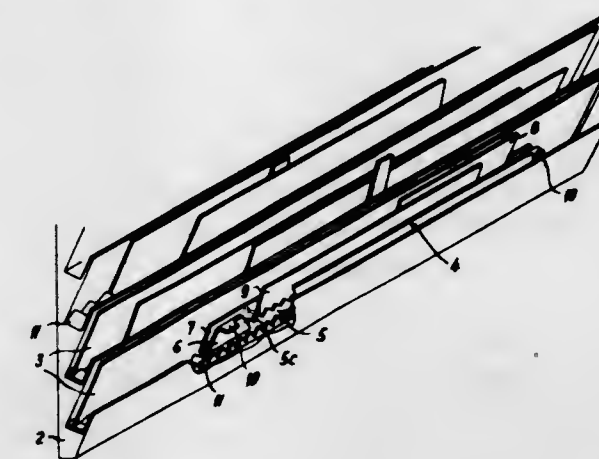


1. A bottom hole burner for introducing heat into an oil well comprising, in combination, a combustion chamber having an upper end and a lower end, a first and a second conduit each joined to said upper end of said combustion chamber for communication with supply sources on the surface of the earth, one of these conduits providing a fuel gas and the other thereof providing a combustion-supporting gas, means for igniting a combustible mixture positioned adjacent said upper end of said combustion chamber, a closure plug for said lower end of said combustion chamber positioned therein for disengagement therefrom by a predetermined pressure exerted from within said combustion chamber, said means for igniting comprising an electrode positioned adjacent but spaced from one of said conduits, means for supplying electrical current to said electrode, and means for conducting electrical current from said one of said conduits whereby a spark is created between said last mentioned conduit and said electrode.

3,315,746
STRIP-SHAPED OR RAIL-SHAPED INSERT ELEMENT FOR INDICATOR BOARDS
Heinz Wagner, Zurich, Switzerland, assignor to Rüegg-Naegeli & Cie. Aktiengesellschaft, Zurich, Switzerland, a corporation of Switzerland
Filed May 12, 1965, Ser. No. 455,166
Claims priority, application Switzerland, May 20, 1964, 6,545/64
8 Claims. (Cl. 116—135)

1. In combination, an indicator board provided with means defining at least one guideway extending lengthwise of the surface of the indicator board, at least one laterally displaceable indicator member received in said

guideway, an elongated substantially U-shaped insert element inserted in said guideway along with yet independently of said laterally displaceable indicator member, said insert element incorporating means defining a guide for displaceably receiving at least one indicator element, at least one indicator element displaceably



carried in said guide of said insert element, said insert element and said indicator element received therein being freely laterally displaceable relative to one another and collectively displaceable in said guideway of said indicator board both conjointly with or relative to said indicator member.

3,315,747
APPARATUS FOR USE IN A WELL BORE
David L. Farley and Burchus Q. Barrington, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Feb. 25, 1965, Ser. No. 435,151
9 Claims. (Cl. 166—206)



6. An apparatus for use in a well bore, said apparatus comprising:

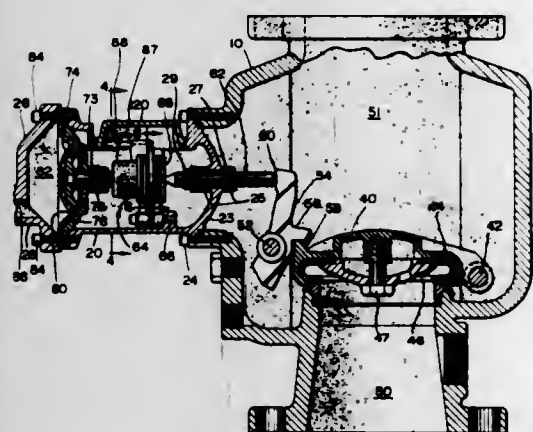
- first conduit means;
- second conduit means telescopically mounted in relation to said first conduit means;
- coupling means adapted to interconnect said first and second conduit means;
- said coupling means comprising annular cavity means between portions of said first and said second conduit means;
- said coupling means including first surface means projecting from said first conduit means generally toward said second conduit means;

second surface means projecting from said second conduit means generally toward said first conduit means;
 said first and second surface means being disposed within said cavity means and being axially engageable, with
 said first surface means being radially spaced from adjacent wall portions of said second conduit means, and
 said second surface means being radially spaced from radially adjacent wall portions of said first conduit means; and
 passage means extending through a portion of one of said conduit means and adapted to transmit pressurized fluid to said annular cavity means.

3,315,748

FIRE PROTECTION VALVE

Philip H. Merdinyan, East Greenwich, Gordon H. Milligan, Pawtucket, and Haik R. Kazarian, Providence, R.I., assignors to Grinnell Corporation, Providence, R.I., a corporation of Delaware
 Filed June 25, 1965, Ser. No. 466,941
 11 Claims. (Cl. 169-19)



10. An actuator for a valve comprising:
 (A) a substantially cylindrical container,
 (B) a pushrod extending longitudinally within said container and parallel to the axis of said container, said rod:
 (1) having one end extending from one end of said container and adapted to engage a latch mechanism,
 (2) having its other end extending from the other end of said container adapted to engage a pressure responsive device,
 (C) means intermediate the ends of said pushrod adapted to move longitudinally with said pushrod and transversely of said pushrod to permit inward movement of said one end of said rod,
 (D) explosive operable means for impelling said intermediate means transversely of said rod.

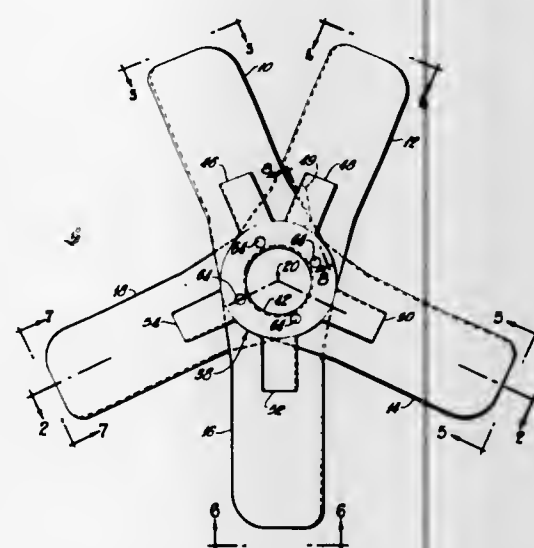
3,315,749

FAN CONSTRUCTION

Kenneth W. Parsons and Wilfred E. Walton, Toledo, Ohio, assignors to Universal American Corporation, New York, N.Y., a corporation of Delaware
 Filed July 1, 1965, Ser. No. 468,721
 7 Claims. (Cl. 170-159)

1. A fan construction including, in combination, a plurality of individual blades formed of sheet metal, each of said blades having an opening in an end region thereof defining a generally annular configuration, a hub member having a laterally extending circular flange of a shape to snugly fit into the openings in the blades, the annular regions of the blades defining the openings being

in stacked relation with the blades in radially-extending circumferentially-spaced relation and the circular flange of the hub member extending through the openings in

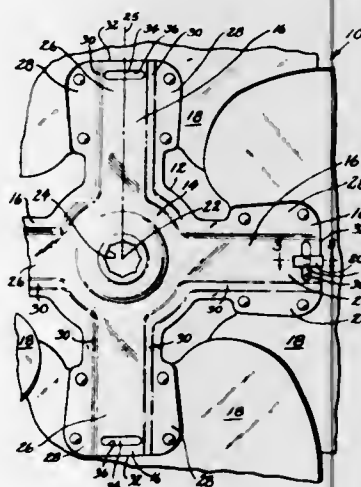


all of the blades, said hub member having integral radially-extending projections equal in number to the number of blades, said projections being aligned respectively with and engaging the blades for reinforcing said blades.

3,315,750

FAN BALANCING MEANS

Vincent N. Delaney, High St., New Hartford, Conn. 06057
 Filed Apr. 18, 1966, Ser. No. 543,428
 2 Claims. (Cl. 170-159)



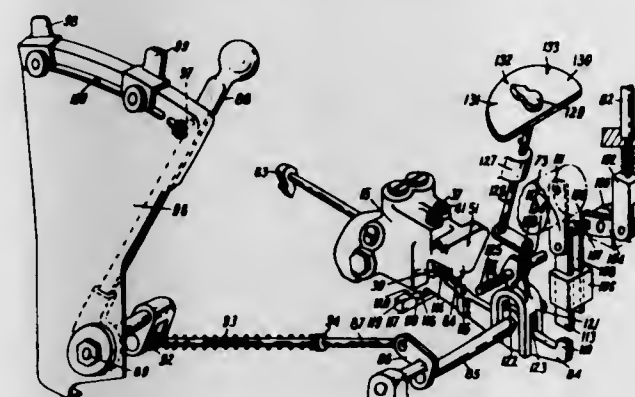
1. In a fan assembly the combination comprising a fan spider having a central hub portion and a plurality of similar radially extending circumaxially spaced arm portions, a plurality of fan blades equal in number to said arm portions of said spider and respectively secured to the front sides of said arm portions, each of said arm portions including a web section rearwardly spaced from an associated one of the said blades and having an opening therein, a balance clip slidably received on at least one of the said web sections and comprising a generally U-shaped member with elongated legs sprung into straddling relationship with the web section and with its legs in engagement with opposite surfaces thereof, said clip further comprising an integral tab struck from one of the legs and extending angularly into said web section opening so as to engage an outer portion of the wall of the opening and thereby to lock the clip on the web section,

and at least one of said clip legs having an outwardly flared end portion for ease of assembly of the clip on the web section.

3,315,751

HYDRAULIC POWER LIFT MECHANISMS FOR AGRICULTURAL TRACTORS

Charles Hartley Hull and Harry Horsfall, Huddersfield, England, assignors to David Brown Tractors (Canada) Limited, Toronto, Ontario, Canada
 Filed Jan. 31, 1964, Ser. No. 341,715
 Claims priority, application Great Britain, Feb. 8, 1963, 5,203/63
 13 Claims. (Cl. 172-9)

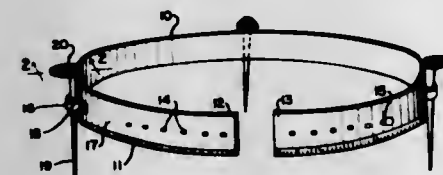


1. A hydraulic power lift mechanism for an agricultural implement adapted to be hitched to a tractor, said hydraulic power lift mechanism comprising a pump, a hydraulic actuator connected to said pump and being operative to raise and lower said implement, a control valve for regulating the flow of oil to and from said actuator, a pair of members, the first of which is movable by variations in the height of said implement relative to said tractor and the second of which is movable by variations in the draft force exerted by the tractor on said implement, a pivotally supported balance lever operatively associated at all times to said valve and being displaceable axially of its pivot to coact with at least a selected one of said members for controlling operation of said valve by angular displacement of said balance lever about its pivot, and a hand lever operatively connected to said balance lever for controlling operation of said valve by angular displacement of said balance lever.

3,315,752

FLEXIBLE STEEL BAND SOD CUTTER

Elbrando Pasquini, 538 Almena Ave., Ardsley, N.Y. 10502
 Filed Oct. 15, 1964, Ser. No. 404,129
 2 Claims. (Cl. 172-19)

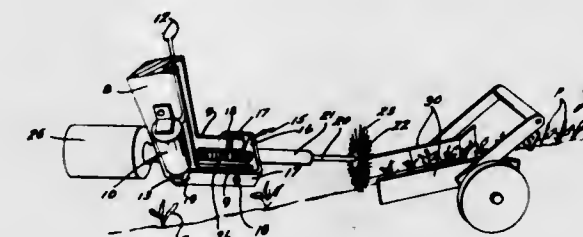


1. A sod cutting tool which includes an elongated flexible metal band provided with a cutting edge for cutting turf along the entire length of said band, said band provided with a plurality of apertures that are positioned in spaced relation longitudinally of the band at each end of the band and bolts to affix two ends together with a pair of apertures in alignment, said band provided on its face with guiding spikes affixed thereto, said spikes provided with enlarged pedal shaped heads.

3,315,753

CROP THINNER

Robert L. Propst, Ann Arbor, Mich., assignor to Herman Miller, Inc., Zeeland, Mich., a corporation of Michigan
 Continuation of application Ser. No. 363,451, Apr. 29, 1964. This application July 14, 1965, Ser. No. 475,311
 2 Claims. (Cl. 172-96)

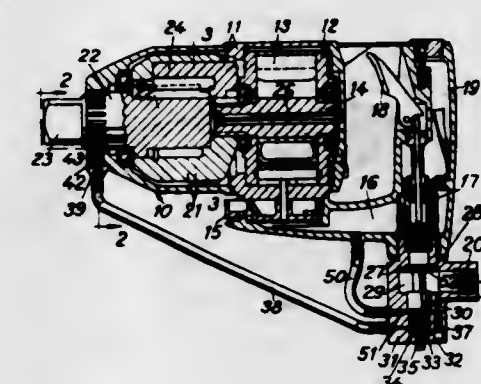


1. An apparatus for thinning plants from a crop row, comprising: a frame movable in a direction along a crop row; a cutting member; said cutting member comprising a hub mounted on a shaft supported in a bracket for rotation about an axis generally parallel to the crop row; said bracket being generally U-shaped, the right portion thereof rotatably supporting said shaft; powered means supported on said frame for continuous rotation of said shaft and said cutting member; a plurality of elongated elements extending from said cutting member adapted for rotation in a plane generally perpendicular to the crop row, said elements being wire-like and closely spaced to one another on said hub; said bracket pivotally secured to said frame; said shaft including a flexible coupling; and solenoid actuated means pivoting said bracket for raising and lowering said cutting member from the crop row for respectively selectively saving or destroying plants therein, said solenoid actuated means pivotally connected to a leg of said bracket.

3,315,754

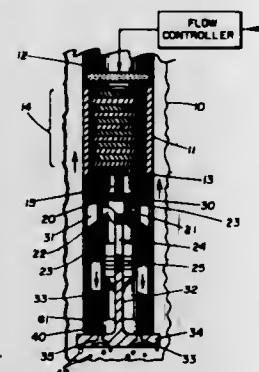
TORQUE LIMITING APPARATUS

Jan Kristian Holdo, Stockholm, and Bengt Arvid Westerlund, Klinton, Sweden, assignors to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
 Filed Nov. 18, 1964, Ser. No. 412,023
 16 Claims. (Cl. 173-12)



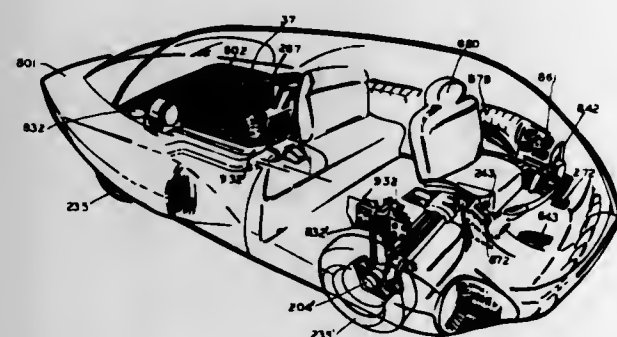
1. A torque limiting apparatus comprising in combination a rotary motor, a member connected to said motor for being rotated thereby, means for measuring the angular displacement per unit of time of said member, and automatic means for cutting of the supply of power to said motor, said measuring means operative upon the decrease of said angular displacement per unit of time to a predetermined value to cause actuation of said automatic means whereby the supply of power to said motor is cut off.

3,315,755
ACOUSTIC METHOD AND APPARATUS FOR DRILLING BOREHOLES
 Warren B. Brooks, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
 Filed June 7, 1965, Ser. No. 470,265
 14 Claims. (Cl. 175-56)



1. In apparatus for drilling a borehole in an earth formation, the combination which comprises
 - (a) conduit means adapted to be positioned in a borehole to provide a path for the circulation of drilling fluid from the surface to the bottom of said borehole;
 - (b) piston means supported at the lower end portion of said conduit means above and adjacent to the bottom of said borehole;
 - (c) a fluid passageway extending through said piston means and in fluid communication with said conduit means and said bottom of said borehole; and
 - (d) means for reciprocating said piston means at a frequency and magnitude such that when said piston is spaced from the bottom of said borehole acoustic pressure pulses are generated in the drilling fluid to effect drilling of the borehole, said means for reciprocating said piston means being supported by the lower end portion of said conduit means and in turn supporting thereon said piston means.

3,315,756
HYDRAULICALLY DRIVEN VEHICLE
 Anderson Billy Fly and William David McDearman, Amarillo, Tex., assignors to Hydro-Torq Pump Company, Inc., Amarillo, Tex., a corporation of Texas
 Filed Aug. 23, 1965, Ser. No. 481,879
 4 Claims. (Cl. 180-44)



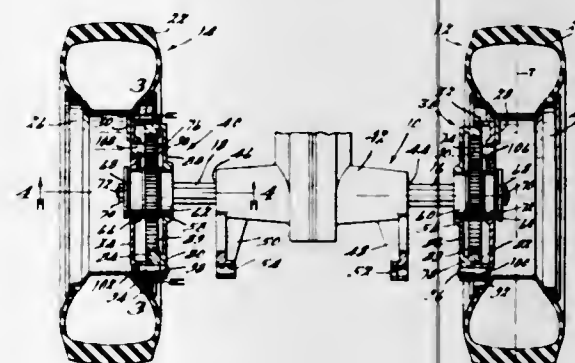
1. A hydraulically powered vehicle comprising a frame, a hydraulic engine thereon, said frame supported by a plurality of wheels each driven by a hydraulic motor, each said motor operatively connected to said engine, wherein said engine comprises a combustion chamber with an inlet for air and an inlet for fuel and a gas discharge outlet near the top thereof, valve means in each of said inlets and outlets for opening and closing each of said inlets and outlet, an air compressor and gas compressing means in said compressor and air compressor discharge means operatively connected to said compressor, said air compressor discharge means openings through an opening

and closing valve means to an air reservoir tank, said opening in said air reservoir tank being operatively connected, through an opening and closing valve means, to said inlet for air, and the gas discharge outlet of said combustion chamber being operatively connected, through an opening and closing valve means, to said gas compressing means within said gas compressor and actuating said compressor, and wherein the bottom of said combustion chamber contains a liquid and said combustion chamber is provided at its bottom with inlet and outlet valve openings, closed by one-way inlet and outlet valves, respectively, and one said outlet valve in said engine connects via liquid conduits to the inlet valve thereof through the motors driven by said liquid, and an adjustable valve controls the drive of said motors by said liquid.

3,315,757
VARIABLE SPEED DRIVE FOR ADJUSTABLE GAGE AXLES

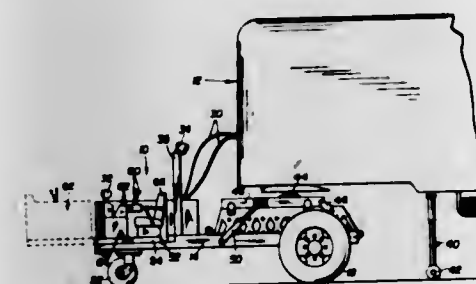
Günther Schlosser, Bublengen (Saar), Germany, assignor to Walter Gutbrod and Wolfgang Gutbrod, Bublengen (Saar), Germany

Filed July 9, 1964, Ser. No. 381,349
 Claims priority, application Germany, July 10, 1963, G 38,141
 4 Claims. (Cl. 180-75)



4. A drive unit for an agricultural implement comprising;
 - an axle,
 - driving means connected to said axle for providing motive power thereto including a housing having a horizontally extending aperture formed therein radially spaced from said axle,
 - a wheel assembly including a hub supported on said axle for rotative movement relative to said housing and adapted to be driven by said axle,
 - said hub having an aperture positioned therein radially outwardly spaced from said axle,
 - spaced reduction gear means interposed between said axle and said wheel assembly including means adapted to be non-rotatably fixed to either said hub or said housing for causing said hub to rotate at the speed of said axle or at a speed different from the speed of said axle,
 - said last named means having an aperture positioned therein radially outwardly spaced from said axle,
 - said aperture in said housing, said aperture in said hub, and said aperture in said last named means being equally outwardly spaced from said axle,
 - a first pin adapted to be inserted into both said aperture in said hub portion and said aperture in said last named means to thereby non-rotatably fix said hub to said last named means, and
 - a second pin adapted to be inserted into both the aperture in said housing and the aperture in said last named means to thereby non-rotatably fix the housing to said last named means.

3,315,758
TRACTOR WITH A SHIFTABLE OPERATOR'S STATION
 Max L. Allen, 8015 SE. Martins, Portland, Oreg. 97206
 Original application May 12, 1964, Ser. No. 369,345, now Patent No. 3,254,900, dated June 7, 1966. Divided and this application Dec. 8, 1965, Ser. No. 512,314
 7 Claims. (Cl. 180-77)



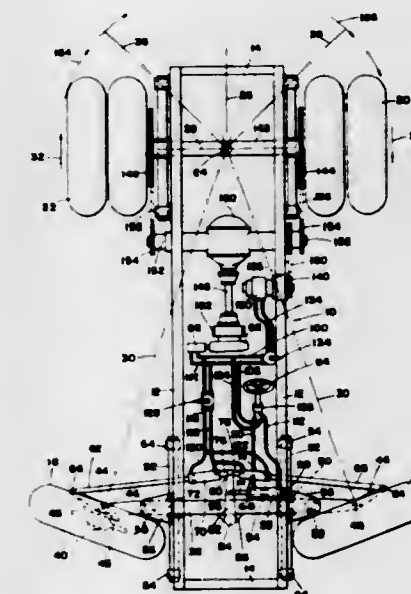
6. In a prime mover for a trailer,
 - a chassis,
 - steerable front wheel means supporting the front end of the chassis,
 - first power means for turning the front wheel means,
 - driving rear wheel means supporting the rear end of the chassis and positioned outwardly of the chassis,
 - operator supporting means,
 - means mounting the operator supporting means for movement relative to said front and rear wheel means between a first position in which the operator on the operator supporting means is positioned outwardly beyond one side of the rear wheel means and a second position in which the operator is positioned inwardly of the rear wheel means,
 - second power means for moving the operator supporting means between said positions,
 - first control means on and movable with the operator supporting means and operable by and convenient to the operator on the operator supporting means when the operator supporting means is in either of said positions for actuating the first power means, and
 - second control means operable by and convenient to the operator on the operator supporting means for controlling the second power means and unaffected by change of position of the operator supporting means relative to the chassis.

3,315,759
TRACTOR WITH MEANS TO EFFECT ZERO TURNING RADIUS
 Charles I. Bohlen, Doylestown, Pa., assignor to Strick Corporation, Fairless Hills, Pa., a corporation of Pennsylvania

Filed Dec. 16, 1964, Ser. No. 418,630
 9 Claims. (Cl. 180-79.2)

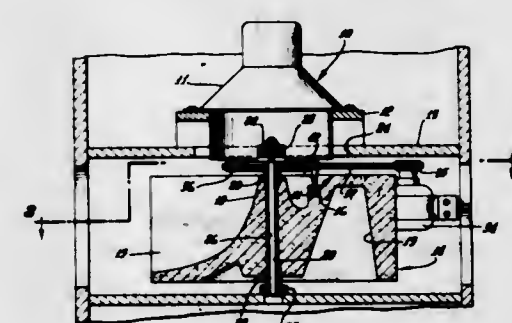
1. A vehicle having an elongated chassis, front and rear axles, wheels mounted on the rear axle for rotation about the axis thereof, wheels mounted on the front axle for rotation about the axis thereof and for movement about vertically extending axes, and means to move the front wheels about said vertically extending axes into positions diverging outwardly of the chassis whereby the vehicle may be turned about the intersection of the longitudinal axis of the chassis and that of the rear axle to provide a zero turning radius, said means including a hydraulic pump, a pair of cylinders operatively connected to each other and to said pump, piston rods slidable in said cylinders having inner ends disposed in said cylinders and outer ends pivotally attached to the front wheels, and a valve to admit fluid into said cylinders selectively to one side and the other of the inner ends of said piston rods to thereby selectively extend said piston rods and

cause the front wheels to move about said vertically extending axes to divergent positions and retract said piston rods and cause the front wheels to return to their original positions, means to move the front wheels about said vertically extending axes into positions of substantial parallelism, and means to steer the front wheels while in said positions of substantial parallelism including a power steering unit, a second hydraulic cylinder mounted on said chassis having a second piston rod slidable therein, and



means pivotally connecting said second piston rod to said first-named cylinders, said power steering unit being operatively connected to said pump and said second cylinder so that when said valve is turned to a position to cause retraction of said first-named piston rods, operation of said power steering unit will move said second piston rod and cause said first-named cylinders and said first-named piston rods to move laterally as a unit and thereby turn the front wheels in parallelism.

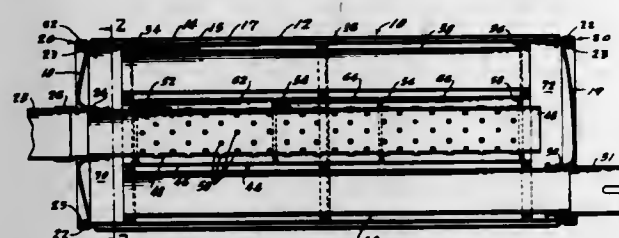
3,315,760
ACOUSTIC DAMPING DRIVE FOR PULSATO ROTOR
 Jacob M. Schwendener, Glendale, Calif., assignor to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York
 Filed Apr. 12, 1966, Ser. No. 542,113
 12 Claims. (Cl. 181-27)



1. In combination: a support; a pulsato drum; means supporting said drum for rotation about an axis; drive means for imparting rotating torque to said drum; a resilient flexible member anchored entirely on the drive means, said member having an intermediate part capable of flexing movement relative to the drive means; a substantially rigid and non-flexible element attached to the drum and engaging the said intermediate part of said member whereby noises and vibrations of the drive means are isolated from the drum.

3,315,761 MUFFLER WITH SPACED CONCENTRIC TUBULAR MEMBERS

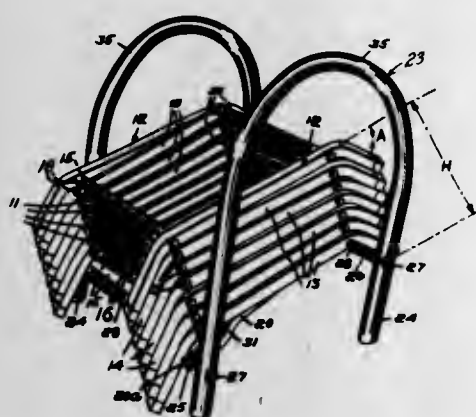
James H. Selig, Grand Haven, Mich., assignor to Oldberg Manufacturing Company, Grand Haven, Mich., a corporation of Michigan
Original application June 13, 1962, Ser. No. 202,143, now Patent No. 3,242,558, dated Mar. 29, 1966. Divided and this application Oct. 14, 1965, Ser. No. 495,825
3 Claims. (Cl. 181-48)



1. Apparatus for attenuating sound waves in a gas stream in combination:

- a pair of tubular members of different diameters arranged in telescoping relation,
- means on one of said tubular members and integral therewith spacing the inner tubular member from the outer tubular member,
- said means comprising a plurality of longitudinally spaced transverse partitions in sealing engagement with the other of said tubular members,
- said partitions each including an integral bight portion having sides in contiguous abutting relationship, and
- said bight portions of said partitions being successively smaller from one end of said apparatus to the other end.

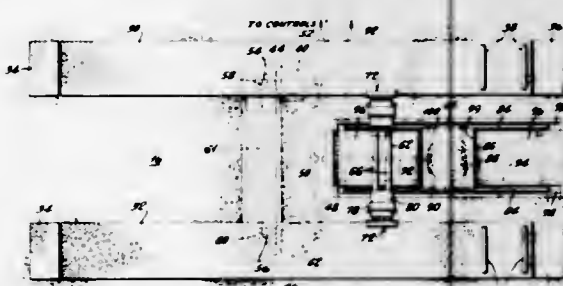
3,315,762
COLLAPSIBLE LADDER
Samuel S. Torrey, 252 Pond St., Ashland, Mass. 01721
Filed Mar. 25, 1965, Ser. No. 442,703
13 Claims. (Cl. 182-164)



1. A collapsible ladder comprising a plurality of uniformly shaped ladder sections, each of said ladder sections including a pair of vertical strut members connected and spaced by at least one transverse rung, said ladder sections being connected together by connecting links positioned between each set of adjacent ladder sections and pivotally connected thereto so as to permit substantial relative movement between said ladder sections allowing contraction thereof into a compact unit and extension into an elongated ladder assembly, the length of said connecting links and the spacing between the two pivotal connections of said connecting links on each strut member being substantially equal so as to allow said uniform ladder sections to nest in substantially parallel relationship when contracted into said compact unit, said vertical strut members having substantially straight mid-portions

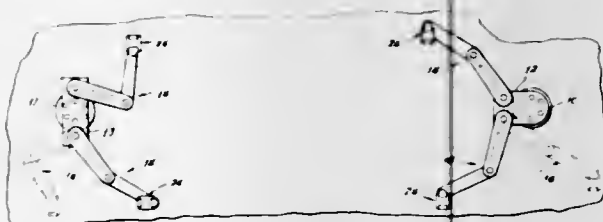
to which said transverse rungs are connected and end portions bent at an angle to said straight mid-portions so as to extend in divergent directions so as to permit nesting of said ladder sections in a compact side by side relationship, said strut member mid-portions and said transverse rungs, and attachment means connected to one of said ladder sections and adapted to permit suspension of said ladder from a supporting surface.

3,315,763
AUTOMOTIVE VEHICLE LIFT
Robert B. Harvey, Rosemont, Pa., and Charles H. Pancoast, Pitman, N.J., assignors to Mobil Oil Corporation, a corporation of New York
Filed May 18, 1964, Ser. No. 368,228
9 Claims. (Cl. 187-8.54)



1. A lift for an automotive vehicle having a body suspended on wheels, said lift comprising: a pair of spaced wheel supporting tracks; first elevating means for lifting said tracks vertically to an elevated position; and auxiliary lifting means engageable with the vehicle body, said auxiliary lifting means including a body engaging assembly resting on said tracks for vertical movement therewith and being movable horizontally relative to said tracks for horizontal registration with the body of the vehicle supported on said tracks, and second elevating means positioned between said tracks, said second elevating means including platform means vertically movable to a position above said tracks to lift said assembly upwardly off of said tracks into lifting engagement with the vehicle body, said first elevating means and said second elevating means being separate from and movable independently of each other.

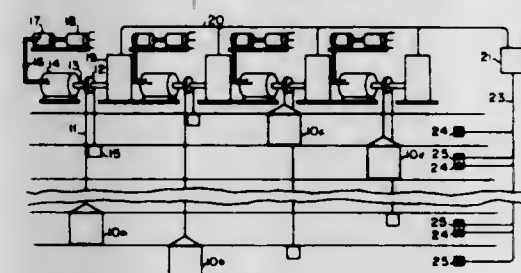
3,315,764
AUTOMOBILE LIFT
Jesse E. Clarke, Hinsdale, Ill., assignor to Autoquip Corporation, Chicago, Ill., a corporation of Illinois
Filed Nov. 10, 1965, Ser. No. 407,125
4 Claims. (Cl. 187-8.75)



1. In an automobile lift having bolster means movable vertically by hydraulic ram means and four car supports secured to said bolster means to engage parts of the auto to transmit the load of the auto to the bolster means, said lift being of the type wherein the bolster means in the lowered position is above the floor, the improvement in which each of said supports comprises: a first arm pivotally attached to the bolster means, a second arm pivotally attached to the distal end of the first arm, a car engaging member on the distal end of the second arm, each of said pivotal connections having a vertical axis,

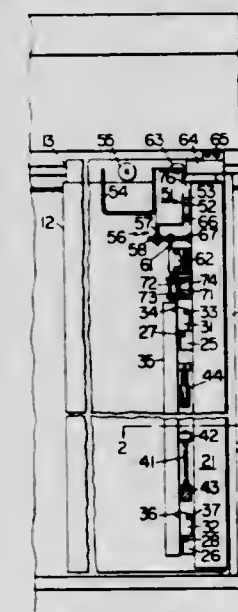
said first arm including an upper part and a lower part positioned below the upper part, said upper and lower parts being on the upper and lower sides respectively of the bolster means, and a spacer affixed to and extending between the parts intermediate the ends thereof, the proximal end of said second arm being received between the upper and lower parts.

3,315,765
PROGRAM COMPUTER FOR ELEVATOR SYSTEM
John R. Dinning, Los Angeles, Calif., assignor to Toledo Scale Corporation, Toledo, Ohio, a corporation of Ohio
Filed Jan. 20, 1959, Ser. No. 787,985
22 Claims. (Cl. 187-29)



1. In an elevator system, in combination, a plurality of elevator cars arranged to serve a plurality of floors, means for operating said cars in response to demands for service, means for measuring traffic demand by measuring the number of unanswered down hall calls, the loads in the cars during up trips, and the loads in the cars during down trips, and means for correlating such measurements to indicate heavy up traffic and heavy down traffic and means for instituting up peak and down peak programs of operation to serve the traffic pattern then indicated by such measurement correlation.

3,315,766
RETRACTABLE SAFETY EDGE FOR DOORS
Benjamin Whitehead Tucker, Jr., South Orange, N.J., assignor to Otis Elevator Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 12, 1965, Ser. No. 507,439
6 Claims. (Cl. 187-52)

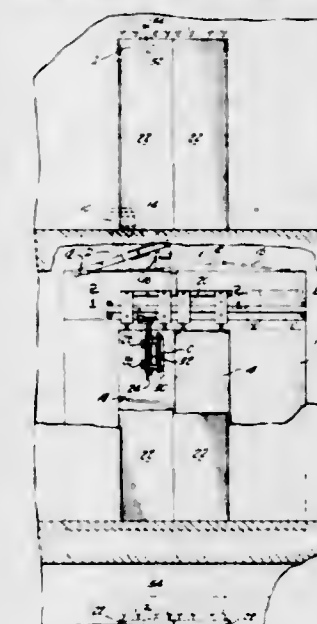


1. Protective apparatus, comprising:
a structure,
a door mounted on said structure for sideways movement relative thereto between an open and a closed position,
a bumper fastened to said door,

a safety edge mounted adjacent to the leading edge of said door and biased toward an extended position but movable sideways to a retracted position, a switch operable to first and second conditions rigidly fastened to said safety edge and including an actuator biased to urge said switch toward said first condition, a lever assembly pivotally mounted on said safety edge for rotation relative thereto in first and second directions, and spring means urging said lever assembly to rotate in said first direction, said lever assembly including a first arm engaging said actuator for operating said switch to said second condition when said assembly is rotated in said second direction, said lever assembly further including a second arm, positioned to engage said bumper as said safety edge moves from its retracted to its extended position, for rotating said assembly in said second direction.

3,315,767
SLIDING ELEVATOR AND HATCHWAY DOOR OPERATOR

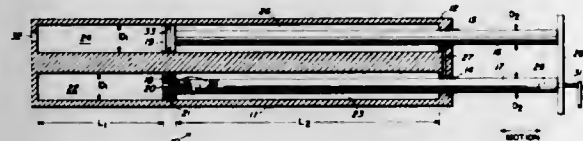
George Walter, Roslyn, N.Y., assignor to Armor Elevator Company, Inc., Woodside, N.Y., a corporation of New York
Filed Nov. 12, 1964, Ser. No. 410,580
10 Claims. (Cl. 187-57)



1. An elevator door operator for use in combination with an elevator door slidably mounted on an elevator car and a hoistway door slidably mounted on an elevator shaft, said elevator door operator comprising means mounted on said elevator car for applying an opening and closing force to said elevator doors, interlock switch means mounted on said hoistway door and said elevator shaft to mechanically lock said hoistway door in its closed position and to close an electrical switch when said hoistway door is locked in its closed position, said interlock switch means including a stationary electrical contact element and a stationary latch element mounted on said elevator shaft and a movable electrical contact element and latch element mounted on said hoistway door, lever means on said hoistway door for moving said electrical contact and latch element to engage and disengage said stationary latch element and to make and break contact between said contact elements, a stationary vane mounted on said elevator door to engage and move said lever means when an opening force is applied to said elevator door, abutment means mounted on said hoistway door to transmit opening and closing forces to said hoistway door, including means to adjust the displacement of said lever

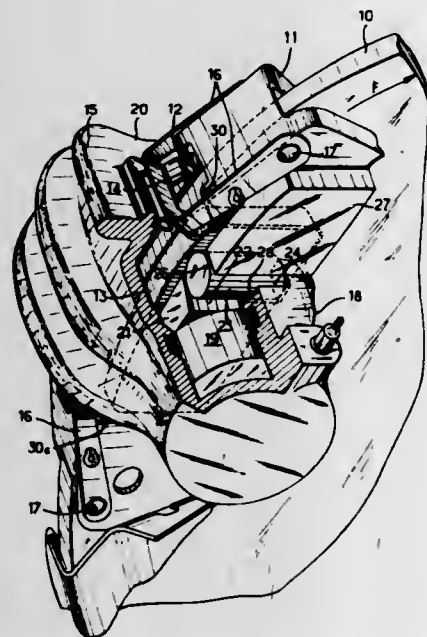
means in response to opening force applied to said abutment means by said stationary vane, movable vane means mounted on said elevator door to engage said abutment means in opposition to said stationary vane after said lever means has been fully displaced by said stationary vane, said movable vane means being operable to transmit a closing force from said elevator door to said abutment means, and means for disengaging said movable vane means from said abutment means when said elevator door approaches its closed position.

3,315,768
HYDRAULIC SHAFT POSITIONING MECHANISM
William B. Stuhler, Garland, and Raymond A. Zandonatti, Dallas, Tex., assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Nov. 22, 1965, Ser. No. 509,103
14 Claims. (Cl. 188-67)



1. A hydraulic device comprising: a casing and shaft means; said shaft means being positioned in said casing; means attached to said shaft means for separating said casing into a first, a second, and a third sealed, chambers, and a fourth chamber open to the atmosphere; first fluid communication means connecting said first and second chambers; and second fluid communication means connecting said second and third chambers; the cross-sectional area of said first chamber being related to the effective cross-sectional areas of said second and third chambers such that a change of volume of said first chamber equals the total change of volume of said second and third chambers.

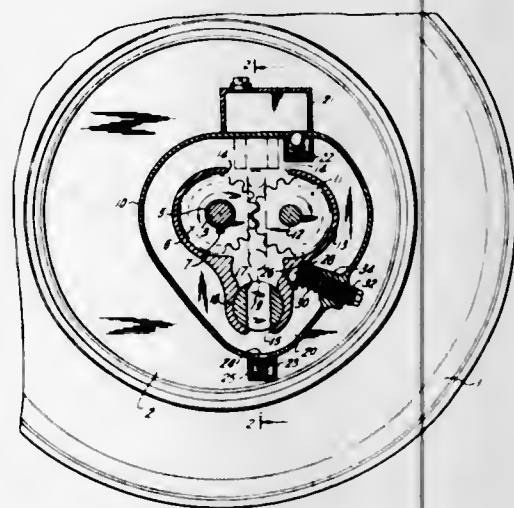
3,315,769
SELF-ENERGIZING CALIPER TYPE DISC BRAKE
Jean Georges Francois, Blanc-Mesnil, France, assignor to Societe Anonyme Francaise du Ferodo, a corporation of France
Filed June 3, 1965, Ser. No. 461,100
Claims priority, application France, June 15, 1964, 978,261
8 Claims. (Cl. 188-73)



1. A disc brake, especially for automotive vehicles, comprising a fixed support, a rotatable disc having two opposed frictional areas, first and second friction shoes

arranged on opposite sides of said disc, a transfer member mounted floatingly with respect to said fixed support and movable in a direction parallel to the disc axis and spanning the two shoes, said transfer member defining a hydraulic cylinder, piston means in said cylinder adapted to force the shoes against the two areas of the disc, an intermediate member between said piston means and the first shoe, connecting means for connecting said intermediate member with said first shoe, said fixed support having a first face rigid therewith and substantially perpendicular to said disc areas, said transfer member having a second face rigid therewith and substantially parallel to said disc areas, said intermediate member having a third face rigid therewith and extending obliquely with respect to said disc areas, and a balancing member freely disposed in contact with said three faces.

3,315,770
HYDRAULIC BRAKE
Byron T. Wall, 143-20 Franklin Ave., Flushing, N.Y. 11355
Filed Mar. 1, 1965, Ser. No. 435,795
15 Claims. (Cl. 188-90)

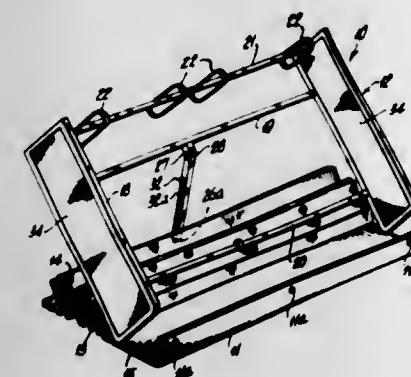


1. A brake for a movable part comprising a positive displacement pump adapted to be operatively connected to said movable part, said pump having an inlet, a pressure chamber and an outlet, a valve in said outlet movable from an open to a closed position, means for moving said valve, a passageway forming a closed path from said outlet to said inlet, a by-pass connecting said pressure chamber to said inlet, said pump, by-pass and passageway being adapted to be filled with liquid whereby said pump, when driven by said movable part, forces said liquid from said outlet into said passageway and back to said inlet when the valve is open but slows down and/or stops said part as the valve is moved from open to closed position and means independent of the pressure in the pressure chamber for pulsing the flow of liquid through said by-pass.

3,315,771
SAMPLE DISPLAY CASE
William Lansing Plumb, New York, N.Y., assignor to Concord Fabrics Inc., New York, N.Y., a corporation of New York
Filed Oct. 29, 1965, Ser. No. 505,667
8 Claims. (Cl. 190-16)

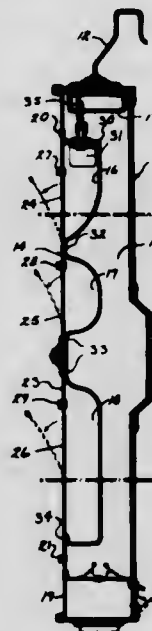
1. In a portable sample display case, the combination which comprises:
(a) a framework,
(b) said framework including a pair of spaced end panels,
(c) said panels having top and bottom edges and also rear and front edges,

(d) at least one cross-member attached to and extending between the end panels at the rear edges thereof with the panels extending forwardly therefrom and defining a storage space therebetween,
(e) an upper cross-member attached to and extending between the end panels at their upper edges,
(f) said upper cross-member being located intermediate the front and rear edges of the end panels with the front edges of the panels defining an unobstructed opening to the space between the panels;



(g) means carried by the upper cross-member for supporting samples in the space between the end panels;
(h) a removable cover of flexible material extending around the framework and between the end panels;
(i) said cover having ends which overlap in a closed position thereof; and
(j) means extending between the side panels for reinforcing said cover.

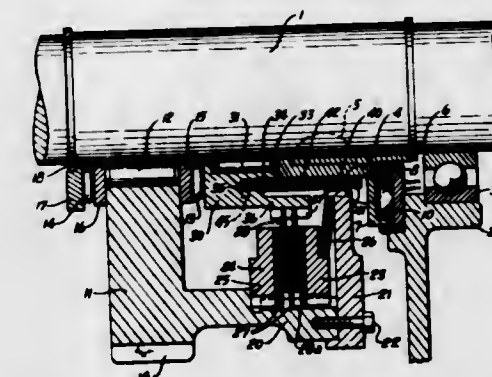
3,315,772
REMOVABLE POCKETED CURTAINS FOR GARMENT-CARRYING BAGS
Ira R. Katz, Nashville, Tenn., assignor to Hartmann Luggage Company, Lebanon, Tenn., a corporation of Delaware
Filed Oct. 12, 1965, Ser. No. 495,210
6 Claims. (Cl. 190-43)



1. A flexible garment-carrying bag for full length garments and of the type to be suspended in outstretched condition or folded medially upon itself for hand transportation, comprising generally rectangular secured-together face and end walls to form an envelope-like enclosure, an elongated opening being formed in one of the face walls of the bag to afford access to the interior thereof, a flexible curtain for normally closing said access opening and conforming generally to the size and contour of said opening, and hookless fastener means connecting the entire

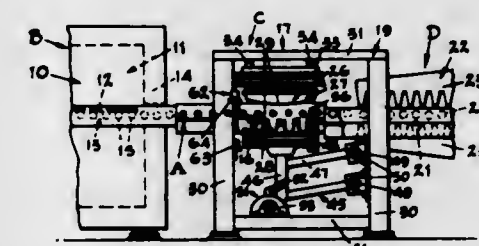
periphery of said curtain with the periphery of the said face wall surrounding the opening therein which when secured disposes the curtain substantially in the plane of said face wall of the bag and which when released permits the complete detachment of the curtain from said bag face wall for disposition remote therefrom, the curtain being formed with pockets wherein certain walls of the pockets are flush with and common to the face of the curtain.

3,315,773
ELECTRIC COIL CLUTCH IN SERIES WITH FRICTION COUPLING
George R. Aschamer, Racine, Wis., assignor to Twin Disc Clutch Company, Racine, Wis., a corporation of Wisconsin
Filed Mar. 2, 1965, Ser. No. 436,490
15 Claims. (Cl. 192-48)



1. A torque transmitting mechanism comprising, a rotatable drive member, a driven output member rotatably mounted around said drive member and coaxially arranged therewith, an intermediate clutch plate hub freely and rotatably supported on said drive member, a helical wrap spring having coils disposed around one of said members and said hub, said spring having one end which can torsionally deflect, stationary electro-magnetic coil means adjacent said one end of said spring for causing said one end of said spring to frictionally engage said one of said members and consequently deflect torsionally to establish a torque drive between said hub and said one member, friction plate-type clutch means between said hub and the other of said members, and means for constantly and resiliently biasing said clutch means into an engaged position.

3,315,774
SHEET SUPPORTING APPARATUS
Herbert A. Leflet, Jr., Toledo, Ohio, assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Sept. 16, 1965, Ser. No. 487,821
5 Claims. (Cl. 193-37)



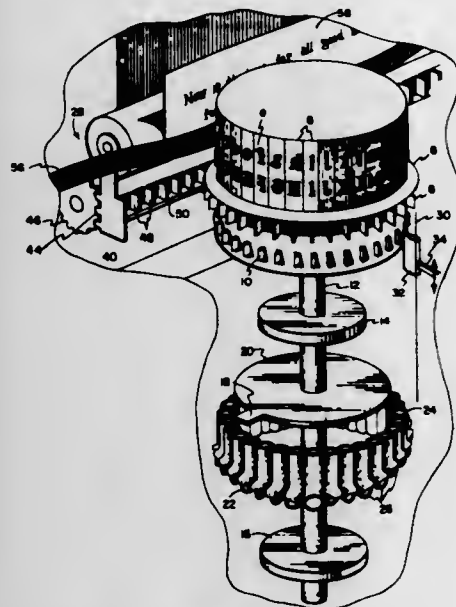
1. A conveyor roller for use in transporting heated glass sheets having, in combination, a mandrel, a plurality of strands of heat and wear resistant material braided about a common axis to form a radially expandable and contractible, soft, non-abrasive, resilient, tubular sleeve disposed on said mandrel, and means for securing said sleeve on said mandrel.

3,315,775

FLUID ACTUATED TYPEWRITER

Arnold Schonfeld, Levittown, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 27, 1965, Ser. No. 483,056
24 Claims. (Cl. 197-15)



1. In a typewriter of the type in which a plurality of print elements are located at fixed position about the perimeter of a rotatable type wheel and where said print elements are selectively brought into engagement with a printing medium at a printing station when the selected print element is rotated into a printing position, the combination comprising:

a fluid amplifier associated with each print element, each of said fluid amplifiers having an input channel, first and second output channels, and a control channel, and wherein said fluid normally flows from said input channel to said first output channel;

control means associated with each of said fluid amplifiers for selectively controlling pressure in the corresponding control channel so that fluid flow from said input channel is selectively directed into said second output channel;

print actuation means;

timing means for detecting the simultaneous occurrence of:

fluid flow in a selected second output channel, and the presence of the related print element in said printing position,

said timing means being operative to generate a signal indication of each said simultaneous occurrence;

and said print actuation means being operative in response to the signals generated by said timing means to move said rotatable type wheel to said print station whereby the print element associated with a selected control means is brought into engagement with said printing medium.

3,315,776

OFFICE MACHINE WITH ROTARY CARRIAGE CONTROL MEMBER

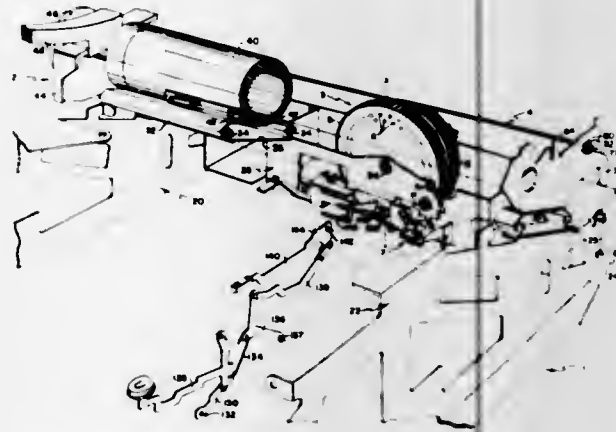
Joseph P. Barkdoll, Groton, Herrick R. Diamond, Homer, and Richard E. Shattuck and David H. Smith, Cortland, N.Y., assignors to SCM Corporation, a corporation of New York

Filed Apr. 29, 1965, Ser. No. 451,912
33 Claims. (Cl. 197-60)

1. In a typewriter, a work sheet support carriage, means mounting said carriage for rectilinear movement along a predetermined path in both the letter space and return directions, means urging said carriage in the letter space

direction, a rotary carriage control assembly, means drive connecting said assembly to said carriage for concomitant rotary and rectilinear motions respectively, and key actuated means for controlling the rotary motion of said assembly under the influence of said urging means, said last named means comprising:

- (a) a key controlled escapement mechanism connected to said rotary assembly and actuable to permit letter space movements of said carriage incident to key actuation;
- (b) a tabulation mechanism including at least one annular row of selectively settable tab stops on said



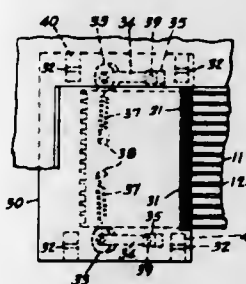
- assembly and concentric with the rotation axis thereof and a key actuated counter stop mounted for movement in response to key actuation into the path of movement of the set ones of said tab stops; and
- (c) a selectively settable margin stop on said assembly and an abutment disposed in the path of rotation thereof and engageable thereby for determining the limit of rotation of said assembly in the return direction of said carriage, said margin stop being structurally independent of and settable independently of said tab stops.

3,315,777

COMB PLATE FOR BELT TYPE MOVING SIDEWALK

Samuel Gustave Margles, Lake Mohegan, N.Y., assignor to Otis Elevator Company, New York, N.Y., a corporation of New Jersey

Original application Aug. 12, 1958, Ser. No. 754,679, now Patent No. 3,144,117, dated Aug. 11, 1964. Divided and this application June 15, 1959, Ser. No. 820,224
3 Claims. (Cl. 198-16)



1. A conveyor, comprising, a landing plate or platform having a comb plate with a plurality of comb teeth disposed thereon, an endless conveyor belt moving toward said comb plate and said conveyor belt having a plurality of substantially parallel longitudinal ribs disposed on the work surface thereof, said longitudinal ribs being intermeshed with said comb teeth, means including rollers for supporting said comb plate for lateral movement, and

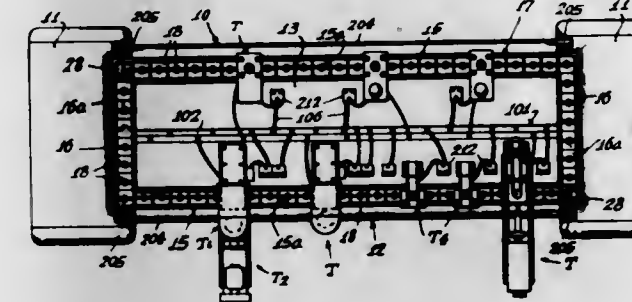
guiding means for laterally moving said comb plate on its supporting means responsive to the lateral movement of the conveyor belt in order to keep said comb teeth intermeshed with said longitudinal belt ribbing.

3,315,778

MACHINE TOOLS

George H. Kendall, Sr., Darien, Jerry A. Host, Fairfield, Robert E. Ward, Wilton, and George H. Kendall, Jr., Groton, Conn., assignors to Kenhos Development Pool, Darien, Conn., a co-partnership

Continuation of abandoned application Ser. No. 186,816, Mar. 30, 1962, which is a continuation of application Ser. No. 610,446, Sept. 18, 1956. This application Nov. 25, 1964, Ser. No. 418,944
2 Claims. (Cl. 198-19)



1. A machine for supporting and moving a plurality of workpieces past potential work stations on opposite sides of the machine for sequence operations thereon, comprising a frame, a worktable supported on said frame and having a horizontal rectangular tool-supporting surface which is substantially planar and continuous and provided with an endless marginal gap therein, said marginal gap being rectangular and having side portions and end portions adjacent to but spaced inwardly from and parallel with the sides and ends respectively of the worktable; a plurality of like rectangular work pallets arranged in said gap in side-by-side relation forming spaced straight side rows and end rows each row having a plurality of pallets, said pallets overlying said gap and substantially filling the same to complete said work surface except for voids at two diagonally opposite corners of the marginal gap, said pallets in opposite side rows being slightly spaced to enable individual registration thereof at said work stations, and said pallets in said end rows being in abutting relation; tracks in the side portions and end portions of the gap to slidably support said pallets with their work surfaces in substantially the horizontal plane of said worktable; means for advancing the pallets simultaneously in both said side portions of the gap and located below each side row of pallets and comprising reciprocating means for individually engaging each pallet in each of said side rows to advance each pallet in each side row simultaneously and intermittently a distance substantially equal to the width of each pallet to a potential work station on the worktable whereby each pallet in the side rows is selectively available for use to carry work and is positively advanced in sequence from one potential work station on the worktable to a succeeding contiguous potential work station at each operation of the advancing means, reciprocating means for advancing the pallets of each of said end rows comprising reciprocating means positioned to engage only the last pallet to enter the end row and by edge-to-edge engagement of the pallets to advance all of the pallets in each end row en masse to position the leading pallet in the end row in the void in the opposite side row and to present the opposite side of each pallet to the exterior of the table whereby opposite sides of workpieces supported on said pallet are made accessible from the opposite exterior side of the worktable; and means for alternately operating the means for advancing

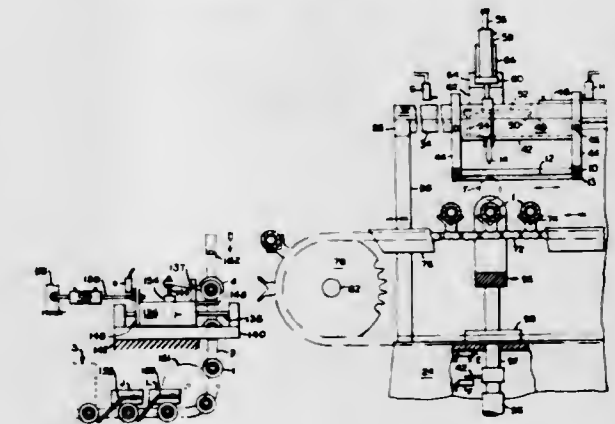
the pallets in the side rows and the means for advancing the pallets in the end rows, the portion of the worktable bounded by and adjacent each side portion of the endless marginal gap being sufficiently extensive to provide a substantial work surface whereby workpieces and tools may be supported thereby at said work stations.

3,315,779

SYNCHRONIZED AUTOMATIC DECORATING AND DRYING APPARATUS

William M. Karlyn, 18 Merritt St., Marblehead, Mass. 01945

Filed Aug. 12, 1965, Ser. No. 479,241
4 Claims. (Cl. 198-20)



1. Apparatus for automatically decorating and drying each of a series of articles, comprising, in combination: decorating means; a first conveyor for advancing successive articles to a decorating station, in which an article is positioned for decoration by said decorating means, and thence to a delivery station; said first conveyor including article carriers spaced apart uniformly, said delivery station being spaced from said decorating station a multiple of the spacing between adjacent carriers; an oven; a second conveyor extending adjacent to said delivery station for receiving articles from said first conveyor, and thence through said oven; said second conveyor including article carriers spaced apart uniformly thereon; means for transferring articles from an article carrier of said first conveyor at said delivery station to an article carrier of said second conveyor; drive means for continuously advancing said second conveyor; indexing means for intermittently advancing said first conveyor in discrete steps of a length equal to the spacing between adjacent carriers thereon, to position successive carriers at said delivery station; and sensing means positioned along the path of said second conveyor a distance from said transfer means which is a multiple of the spacing between carriers on said second conveyor, and being constructed and arranged to operate said indexing means and said transfer means to deliver an article from a carrier of said first conveyor to a carrier of said second conveyor upon passage of each successive article past said sensing means; whereby the rate of decoration and delivery of articles to said second conveyor is synchronized with the rate of arrival of carriers of said second conveyor in position to receive articles from said transfer means.

3,315,780

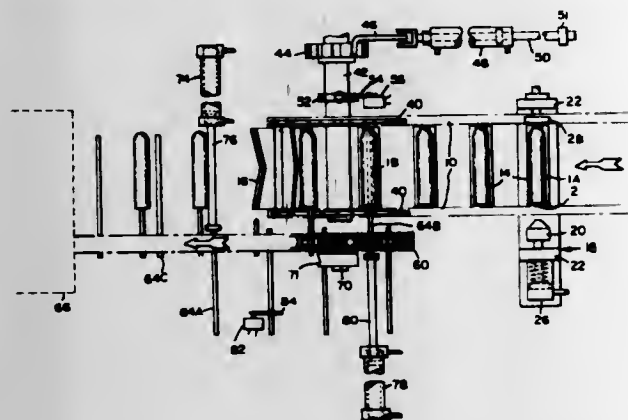
ARTICLE TRANSFER MECHANISM FOR DECORATING AND DRYING APPARATUS

William M. Karlyn, 18 Merritt St., Marblehead, Mass. 01945

Filed Sept. 21, 1965, Ser. No. 488,892
4 Claims. (Cl. 198-20)

1. Article transfer mechanism comprising, in combination: an endless delivering conveyor having indexing means advancing said delivering conveyor intermittently

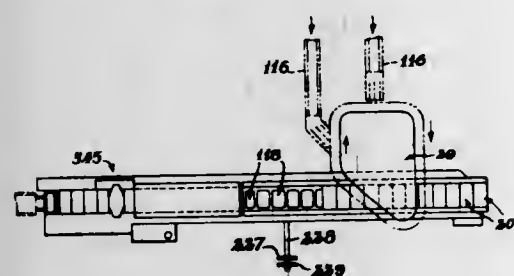
for positioning articles serially at a transfer station, an endless receiving conveyor having continuous drive means, said receiving conveyor extending in aligned article-transfer relation to said delivering conveyor at said transfer station, a series of pin means supported for axial sliding movement in said receiving conveyor for movement between extended and retracted positions, said pin means being spaced along said receiving conveyor, first positioning means constructed and arranged to move said pin means sequentially to the extended position upon



arrival thereof in aligned article-transfer relation with said delivering conveyor at said transfer station to transfer articles from said delivering conveyor into supported engagement with said pin means, control means including a switch responsive to the completion of indexing movement of said delivering conveyor for actuating said first positioning means coincident with the arrival of an article at said transfer station, and second positioning means constructed and arranged to return said pin means sequentially to the retracted position prior to a subsequent return of said pin means to the transfer station.

3,315,781
LOADING CONVEYOR
Augustus H. Eberman and Hans A. Jensen, both of Madison, Wis., assignors to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois
Original application July 31, 1963, Ser. No. 299,000.
Divided and this application Apr. 25, 1966, Ser. No. 560,390

6 Claims. (Cl. 198-28)



1. Means for successively depositing articles on a feed conveyor wherein the feed conveyor travels along a linear horizontal path during a portion of its travel, said means comprising, loading conveyor means for transporting said articles in spaced-apart relationship along a horizontal linear course above said path and obliquely thereto, which loading conveyor means moves along said course in a direction from one side of said feed conveyor to the other side thereof at a velocity having a vectorial component with a velocity equal to the velocity of said feed conveyor along said path, conveyor stripper means fixedly mounted in alignment with the course of said loading conveyor means and adjacent said other side of said feed conveyor, which conveyor stripper means is adapted to engage an article on the loading conveyor means for positioning

the article transversely of said feed conveyor, said loading conveyor means being provided with abutment means extending at a right angles to said path and adapted to engage a trailing edge portion of an article carried by the loading conveyor means for cooperating with said conveyor stripper means to cause the article to move relative to said loading conveyor means and at a velocity equal to the velocity of said feed conveyor for transfer of the article to the feed conveyor.

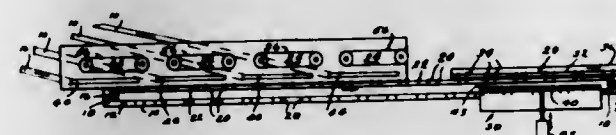
3,315,782
ARTICLE CONVEYING APPARATUS
John W. Eldred, Columbus, Ohio, assignor to The Eldred Company, Columbus, Ohio, a corporation of Ohio
Filed Oct. 1, 1965, Ser. No. 492,186
5 Claims. (Cl. 198-32)



1. A conveyor apparatus comprising a discharge conveyor including an endless conveyor belt and drive means connected therewith for revolving said conveyor belt in a given direction, said conveyor belt having an upper run forming an article supporting surface, a supply conveyor disposed at an angle to said discharge conveyor for displacing articles carried thereby in a direction transverse to the longitudinal axis of said discharge conveyor, said supply conveyor being formed by a multiplicity of spaced parallel, endless belts with each of said belts having an upper run disposed in a common plane forming an article supporting surface and a discharge end, and being supported by longitudinally spaced transverse drums including one disposed adjacent the discharge end, said endless belts having a width to spacing ratio such that the articles to be supported thereon will be in contacting engagement with at least two of said belts, said supply conveyor being supported with the discharge end thereof disposed in spaced relationship to an adjacent longitudinally extending edge of the upper run of said discharge conveyor, a transfer conveyor interposed between said supply conveyor and said discharge conveyor and bridging the space therebetween for transferring articles from said supply conveyor to said discharge conveyor, said transfer conveyor being formed by a multiplicity of spaced parallel, endless belts aligned with the longitudinal axis of said supply conveyor with each of said belts having an upper run disposed in a common plane forming an article supporting surface having respective receiving and discharge end portions, and being supported by longitudinally spaced transverse drums with the said drum at the discharge end of the supply conveyor being longitudinally intermediate the transfer conveyor drums, said transfer conveyor being supported with the receiving end portions of the belts interleaved with the belts of said supply conveyor at the discharge end thereof and with the surfaces formed by the upper runs of said supply and transfer conveyors forming a substantially continuous plane, and drive means mechanically coupled with said supply

and transfer conveyors for revolving said conveyors in the same direction with the transfer conveyor being revolved at a relatively faster rate than said supply conveyor, said drive means comprising a drive means coupled to at least one of said support drums of the supply conveyor and an independent drive means coupled to at least one of the support drums of the transfer conveyor.

3,315,783
ARTICLE CONVEYING APPARATUS
Russell J. Nadherny, Glenview, Ill., assignor to The Kroger Co., Cincinnati, Ohio, a corporation of Ohio
Filed Oct. 21, 1965, Ser. No. 499,488
7 Claims. (Cl. 198-32)

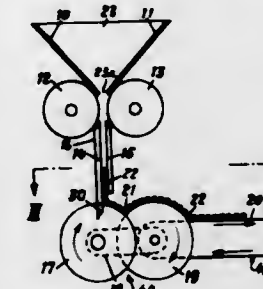


1. Apparatus for receiving a plurality of continuous columns of shingled panels, such as crackers, advancing at a relatively low speed, and for consolidating the panels into a single line consisting of longitudinally aligned equally spaced groups having a predetermined length traveling at a relatively high speed, the high speed being more than the multiple of the number of continuous columns times the speed of advance of each column, comprising:

- a variable speed conveyor means having equally spaced apart positions thereon for receiving groups of panels; means for sequentially advancing said variable speed conveyor means at a relatively low rate of speed hereinafter from an intermediate speed which is greater than the speed of advance of the continuous columns and then at the aforesaid relatively higher rate of speed, said means being so arranged that each sequence advances the conveyor a linear distance equal to the multiple of the number of continuous columns times the distance between centers of said spaced apart positions;
- accelerating conveyor means associated with each continuous column for segregating a group of predetermined length from the leading end of said column and accelerating the movement of said group to advance it to a transfer position wherein the group is juxtaposed to, and extends parallel to, the variable speed conveyor and is moving at the intermediate speed of the variable speed conveyor;
- a first transfer means associated with each accelerating conveyor to transfer the said group to one of the said positions on the said variable speed conveyor at a time when the variable speed conveyor is moving at the intermediate speed, said transfer means being so spaced from one another that each will serve groups to positions on the variable speed conveyor that are not already occupied by a group;
- a receiving conveyor advancing at the aforesaid high speed, said receiving conveyor having portions juxtaposed to, and extending parallel to, portions of the variable speed conveyor located in advance of the forwardmost first transfer means;
- a second transfer means associated with said variable speed conveyor and operable at a time when the variable speed conveyor is operating at the aforesaid high speed to simultaneously transfer a plurality of spaced groups to said receiving conveyor, the number of groups being transferred being equal to the number of columns.

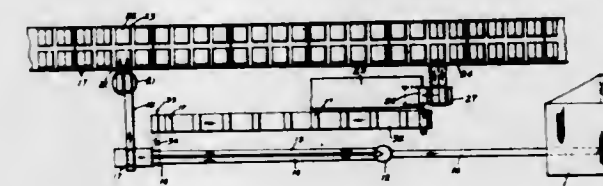
3,315,784
APPARATUS FOR LOADING TRANSPORT BANDS OR THE LIKE WITH ROD-LIKE ELEMENTS, PARTICULARLY WELDING ELECTRODES
Willy Pöll, Zurich, Switzerland, assignor to Holding Interco SA., Zurich, Switzerland, a corporation of Panama

Filed Jan. 5, 1966, Ser. No. 518,849
Claims priority, application Switzerland, Jan. 12, 1965, 377/65
4 Claims. (Cl. 198-62)



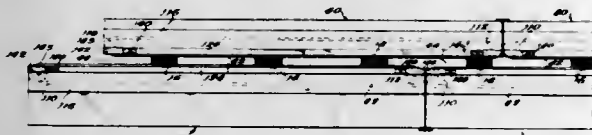
1. In combination with an at least approximately horizontally disposed conveyor means, an apparatus for charging said conveyor means with rod-like elements, particularly welding electrodes, which comprises a supply magazine for welding electrodes, substantially vertical guide channel means disposed beneath said supply magazine for receiving welding electrodes therefrom, said guide channel means including a lower discharge end for the departure of the welding electrodes, and transport mechanism located between said lower discharge end and said conveyor means capable of being continuously driven at a greater transport speed than that of said conveyor means, said transport mechanism comprising two pairs of wheel members located beneath said guide channel means, a respective shaft member upon which each pair of wheel members is fixedly mounted.

3,315,785
AUTOMATED TILE HANDLING SYSTEM
Stuart O. Shiffer, % Shiffer Industrial Equipment, Inc., 7559 Orlando Drive, Parma, Ohio 44129
Filed Oct. 14, 1964, Ser. No. 403,714
13 Claims. (Cl. 198-85)



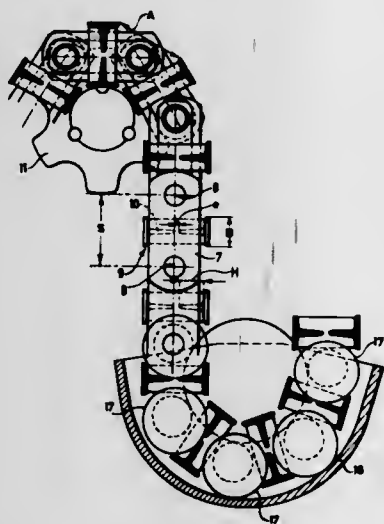
1. A system for handling similar articles comprising a conveyor operable to transport articles to a loading station, indexing means at said loading station operable to position saggars each adapted to receive a plurality of articles in alignment with said conveyor, said indexing means operating to progressively move said sagger to indexed positions in each of which said sagger is adapted to receive an article, said conveyor including intermittently operating feed means timed with the operation of said indexing means feeding articles into said sagger in each of said indexing positions, carrier means operable to place loaded saggars on a conveyance, said conveyance being adapted to carry said saggars through a firing oven and then deliver them to an unloading station, an unloader operable to remove saggars from said conveyance and move them to a dump station, dump means operable to empty said saggars, and a sagger transport means operable to transport empty saggars from said dump station to said indexing means.

3,315,786
CONVEYOR APPARATUS
 Harold James Hazelton, Batavia, Ill., assignor to Carlson Tool & Machine Company, a corporation of Illinois
 Filed Oct. 22, 1965, Ser. No. 500,741
 11 Claims. (Cl. 198—102)



1. A nestable apparatus for advancing articles in processional order which may be associated with other substantially identical apparatuses to perform an endless article advancing assembly, comprising: a frame; a driven shaft mounted on said frame; first and second belts on said frame, driven by said shaft and spaced from each other and defining an article advancing channel therebetween, said belts being mounted on the frame in a staggered relation to each other so that the lead portion of the first belt extends ahead of the lead portion of the second belt and the trailing portion of the second belt extends behind the trailing portion of the first belt, whereby a plurality of said apparatuses may be mated together with the lead portion of the first belt of one apparatus opposite the trailing portion of the second belt of the other apparatus, so that articles may be continuously advanced through the apparatuses by simultaneous engagement of said one apparatus first belt and said other apparatus second belt.

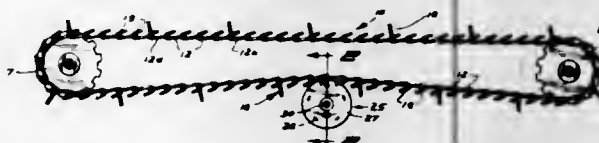
3,315,787
DEVICE FOR THERMAL TREATMENT OF COMMODITIES PACKED IN CONTAINERS
 Johannes B. van der Winden, Amstelveen, Netherlands, assignor to Gebroeders Stork & Co's Apparatenfabriek N.V., Amsterdam, Netherlands
 Filed Dec. 14, 1965, Ser. No. 513,864
 Claims priority, application Netherlands, Dec. 17, 1964, 6,414,701
 4 Claims. (Cl. 198—131)



1. In an apparatus for the treatment of goods in containers conveyed through a chamber, the combination of an endless conveyor arranged in a plurality of loops within a chamber, a plurality of wheels supporting said conveyor in loops, said conveyor comprising a plurality of links pivotally interconnected at the ends thereof, container carrying members extending from the central portions of said links, said carrying members each comprising a pair of laterally spaced parallel bars having similar cross sections but disposed in mirror image relationship to each other, each bar having a portion extending in the direction

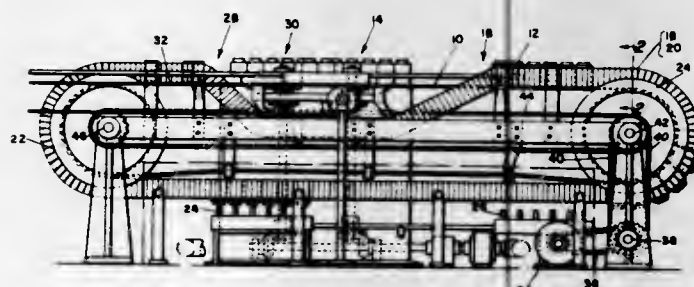
of movement of said conveyor, the widths of said bar portions as measured in said direction being such with respect to the distance between the centers of successive link pivot connections that in the extreme pivoted positions of two successive links the opening between the portions of their carrying members is at least 90% of said centers distance.

3,315,788
FLIGHT AND IDLER ROLLER CONSTRUCTION FOR ENDLESS BELT
 William S. Anderson, Braham, Minn., assignor to Braco, Inc., Braham, Minn., a corporation of Minnesota
 Filed Oct. 20, 1965, Ser. No. 498,768
 3 Claims. (Cl. 198—137)



1. An endless conveyor belt of the character indicated and lower run supporting structure for the same having in combination, interengaged transversely spaced links, a plurality of flights integral with and upstanding from certain of said links, each of said flights having an outer edge portion extending substantially the full width of said belt and having a remaining body portion of a reduced width being less than the width of said belt, a pair of rollers spaced apart somewhat more than the width of said belt to support the lower run of said belt, each of said rollers comprising a hub, a web integral with said hub, a plurality of pins in circular spaced relation integral with said web and at right angles thereto extending to one side thereof to underlie said belt, said pins being of a length to underlie and support the adjacent edge portions of said belt and to avoid engagement with said body portion of reduced width, and said pins on each of said webs being spaced apart sufficiently to allow the unobstructed passage therebetween of the extended portions of said flight providing said flight with a width the full width of said belt.

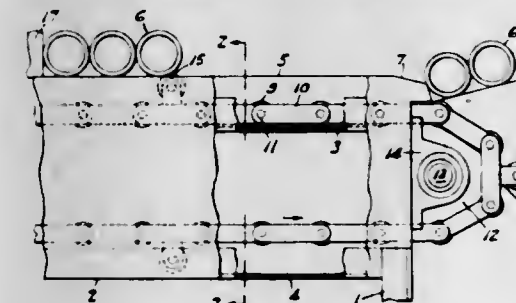
3,315,789
CONVEYER
 Douglas R. Egles, Holbrook, Mass., assignor to Pneumatic Scale Corporation, Limited, Quincy, Mass., a corporation of Massachusetts
 Filed May 26, 1965, Ser. No. 458,897
 9 Claims. (Cl. 198—165)



1. In a conveyor of the character described, in combination, a pair of end pulleys, a pair of endless resilient conveying elements arranged in spaced relation on said pulleys to grip and convey containers therebetween, said conveyor having an upper and a lower run, an intermediate container supporting belt, means including guide

rollers for diverting portions of the upper run outwardly and downwardly to provide clearance for receiving and discharging containers, each of said conveying elements comprising a central flexible core member, and a plurality of individual annular resilient sections mounted on said core member, said individual resilient sections being capable of absorbing any twisting strains during passage of the conveying elements over said diverting rollers without influencing the remainder of the conveying elements.

3,315,790
ACCUMULATING TRANSFER CONVEYOR FOR CYLINDRICAL OBJECTS
 Frank J. Hohl, Snyder, N.Y., assignor to Hohl Machine & Conveyor Co., Inc., Buffalo, N.Y.
 Filed Oct. 12, 1964, Ser. No. 403,205
 6 Claims. (Cl. 198—168)



1. A transfer and stacking conveyor for objects of generally cylindrical form comprising a framework providing supporting tracks on opposite sides thereof, a pair of movable roller conveyor chains supported by said supporting tracks, brackets carried by said chains at correspondingly spaced points therealong, transfer tracks along which cylindrical objects can be rolled, said transfer tracks being generally parallel to each other and to said supporting tracks, and transfer rollers mounted between corresponding pairs of said brackets for movement therewith, said transfer rollers extending at generally a right angle to said transfer tracks and projecting slightly thereabove to engage behind cylindrical objects and roll the same along said transfer tracks, the projection of said transfer rollers above said transfer tracks being sufficient to overcome the resistance to rolling of an object along said transfer tracks while enabling said transfer rollers to roll beneath cylindrical objects held against rolling movement along said transfer tracks.

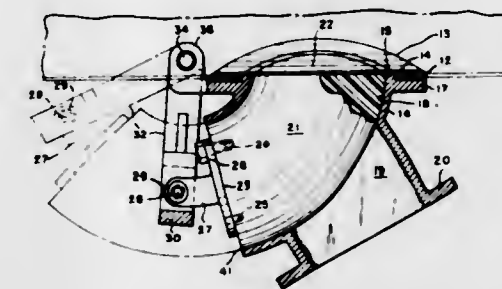
3,315,791
CONNECTING LINK STRUCTURE FOR CONVEYOR
 Vernon Flink, Cambridge, Minn., assignor to Braco, Inc., Braham, Minn., a corporation of Minnesota
 Filed Oct. 20, 1965, Ser. No. 498,769
 1 Claim. (Cl. 198—195)



An endless conveyor belt construction having in combination, a series of links, each of said links comprising a shank, a bifurcated extension of said shank forming spaced arms, said shank having a first transverse aperture adjacent the free end portion thereof, and a second transverse aperture adjacent said bifurcated portion, said first aperture being arranged and constructed to form a bearing,

said spaced arms having transverse spaced apertures, a pair of said links in spaced transverse alignment, a rod connecting said pair of links having its ends respectively rigidly secured in said second of said apertures, said pair of links and said rod therewith forming a link section, a second of said link sections, the shank portions of said links of said first link section being respectively disposed within the spaced arm portions of said second link section with said first apertures in said shanks being respectively in register with said spaced apertures in said arm portions, a pin respectively disposed through said apertures in each of said spaced arm portions and through said apertures forming bearings in said shank in register therewith, and said pins at their end portions being respectively rigidly secured within said apertures of said spaced arm portions and having central portions forming journals having free rotation within said bearings.

3,315,792
VALVE FOR CONVEYORS
 Richard T. Tyndall, Kailua, Hawaii, assignor to Castle & Cooke, Inc., Honolulu, Hawaii, a corporation of Hawaii
 Filed Dec. 28, 1965, Ser. No. 517,010
 5 Claims. (Cl. 198—213)

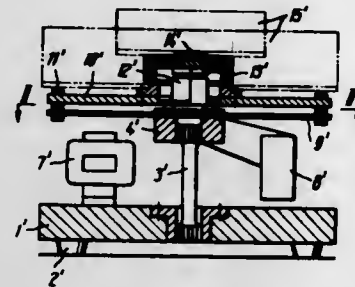


1. In combination with a conveyor, an opening in the bottom of the conveyor, a valve housing closing said opening, a valve chamber in said housing opening through said opening and opening through said housing, said chamber being circular in cross-section and having its long axis disposed on a curve of equal radii, a discharge orifice in said housing opening into said chamber, a valve plug slidably mounted in said valve chamber of sufficient length when in closed position to fill said chamber; to close said opening; and to close said discharge orifice, the end of said plug adjacent said opening conforming to the shape of the adjacent portion of the conveyor and means for sliding said plug in said chamber.

3,315,793
VIBRATORY ELECTROMAGNETIC DRIVE
 Vladimir Iosifovich Yakubovich, 2 Obyedvsky per. 13, kv. 2, Moscow, U.S.S.R.
 Filed Nov. 26, 1965, Ser. No. 509,895
 15 Claims. (Cl. 198—220)

1. A vibratory electromagnetic drive for imparting torsional and axial vibrations to a working member used to convey materials for vibration, said drive comprising: a base with shock-absorbers; a traverse; a common intermediate rigid member, resilient means connecting said rigid member to said base and to said traverse so as to form two resilient systems, one of which is supported by said base, and the other by said traverse, one of said systems including means enabling torsional vibrations and being stiff with respect to force applied along the longitudinal axis and yieldable to a torque acting on said axis, the other resilient system including means enabling axial

vibrations and being stiff with respect to the torque applied to said longitudinal axis and yieldable to force directed along said axis; and a pair of electromagnetic ex-

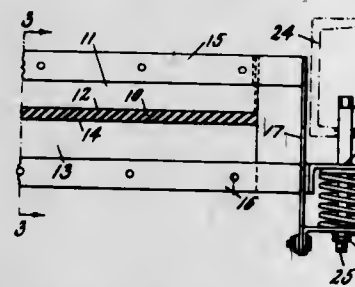


citer means, each being coupled to a respective resilient system to impart torsional and axial vibrations to a working member connected to said traverse.

3,315,794

CLEANING APPARATUS

Henry Ellington, Heathhall, Dumfries, Scotland, assignor to The North British Rubber Company Limited, Edinburgh, Scotland, a corporation of Scotland
Filed Apr. 27, 1965, Ser. No. 451,120
14 Claims. (Cl. 198-230)

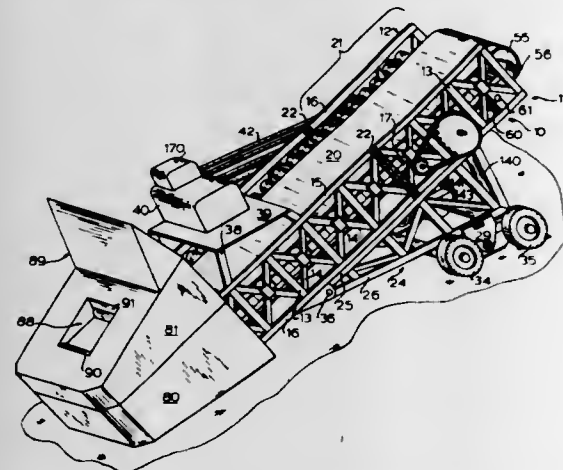


1. A conveyor belt cleaning apparatus comprising: upper and lower members positioned in superimposed relationship on opposite sides of the return run of said belt, at least one of said members being a belt cleaning member; resilient means interconnecting portions of said members for urging said members with an equal and opposite force into contact with said belt; and means for maintaining alignment between said belt cleaning apparatus and the conveyor support structure.

3,315,795

LOADER CONVEYOR SYSTEM

Walter E. Ross, Jr., Raleigh, and Shirley L. Kelly, Durham, N.C., assignors to Athey Products Corporation, Raleigh, N.C., a corporation of Illinois
Filed May 13, 1966, Ser. No. 550,006
11 Claims. (Cl. 198-233)



1. A loader-conveyor system for handling bulk material comprising an elongated conveyor means having a lower material receiving end and an upper material discharge

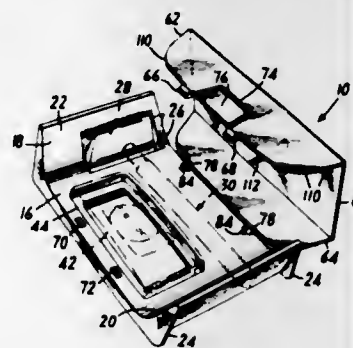
end and adapted to move said bulk material from said material receiving end to said material discharge end; an undercarriage structure supporting said conveyor means and adapted to transport said conveyor means across a surface; and a composite trap housing for receiving and dispersing said bulk material onto said conveyor means, said composite trap housing comprising a substantially enclosed gravity feed trap portion being integrally combined with said conveyor means and encompassing said lower end thereof, said gravity feed trap portion having an opening above said lower end of said conveyor means through which pass said bulk materials, a force feed trap portion adapted to be removably mounted on and supported by said gravity feed trap portion and having side and top walls, said top wall having an opening positioned in alignment with said opening in said gravity feed trap portion, said force feed trap portion housing and adjustably supporting a feeder box means beneath said opening therein, said feeder box means having a reciprocating bottom wall positioned in communication with said opening in said force feed trap portion, said opening in said gravity trap portion and said conveyor means, and linkage means detachably connecting said conveyor means with said reciprocating bottom wall for imparting a reciprocating motion to the same whereby said bulk material is dispersed onto said conveyor means.

3,315,796

PLASTIC BOX

Henry Dreyfuss, South Pasadena, Calif., assignor to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia

Filed June 21, 1965, Ser. No. 465,398
1 Claim. (Cl. 206-10)



A molded plastic box adapted to hold a safety razor-blade dispenser combination comprising a receptacle having an elongated floor with parallel front and rear margins, and a pair of opposed end walls extending upwardly and longitudinally outwardly of the ends of said floor, said floor and end walls having substantially smooth surfaces devoid of protuberant structure, each of said end walls having a slotted recess for receiving a corresponding end of the safety razor, said floor having an elongated stepped-down slotted opening extending longitudinally therein for receiving the blade dispenser, a cover having a top and vertically directed front and rear sides, the edges of said cover top and front and rear sides having a shape conforming to the shape of the receptacle floor and end walls and abutting thereagainst and inset from the receptacle marginal extremities adjacent thereto when the cover is closed; hinge means connecting said cover to said receptacle including lugs extending downwardly outwardly angularly from the rear side of said cover, pintles carried by the lugs and extending laterally thereof, the floor of said receptacle having pintle receiving recesses extending therethrough adjacent said rear margin, said pintle receiving recesses opening up from the underside of said floor and each communicating with an entry slot extending inwardly from the rear margin of the receptacle, said pintle receiving recesses having upper front

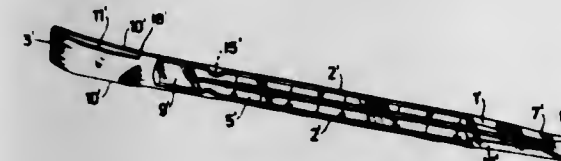
surfaces opposite said entry slots and extending frontally angularly of said rear margin to provide a surface upon which said lugs nest when the cover is closed, said lugs riding outwardly of the receptacle through said entry slots when the cover is swung to an open position, latching means carried by said cover and said receptacle for latching said cover in a closed position comprising a pair of spaced latch projections carried by said front side and each having a frontally directed horizontal shoulder thereon, the floor of said receptacle having vertical slots receiving said latch projections, said vertical slots having horizontal ledges therein extending inwardly of the front margin of said receptacle, said shoulders locating beneath said ledges for holding said cover closed, the front side of said cover intermediate said latch projections having a projecting boss surface defining a section against which finger pressure can be applied to deflect said front side inwardly for releasing said shoulders from beneath said ledges.

3,315,797

PROTECTIVE SHEATH FOR FEVER THERMOMETERS

Gustaf Emil Olsson, Varberg, Sweden, assignor to Axel Kistner Aktiebolaget, Stockholm, Sweden, a Swedish company

Filed Oct. 18, 1965, Ser. No. 497,226
Claims priority, application Sweden, Oct. 20, 1964, 12,610/64
14 Claims. (Cl. 206-16.5)



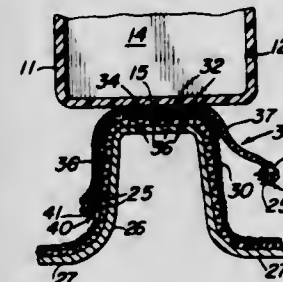
1. A disposable protective sheath for thermometers, adapted to be used while taking a patient's temperature, comprising a body forming a thermometer receiving cavity which is dimensioned to receive substantially the entire length of an inserted thermometer, said body having a closed forward end contiguous with the temperature sensitive end of said thermometer and having a closed rear end, said body being formed of a thin flexible material readily conformable to the contours of the thermometer surface and at least one closeable opening formed in said body adjacent said rear end susceptible of being sealed to prevent communication between said receiving cavity and the sheath surroundings and being of sufficient size to permit access to said cavity for insertion and removal of a thermometer.

3,315,798

LITTER RECEPTACLES FOR AUTOMOTIVE VEHICLES AND THE LIKE

Robert V. Mathison, 5 Woodcrest Road, Asheville, N.C. 28804

Filed Dec. 20, 1965, Ser. No. 514,814
4 Claims. (Cl. 206-19.5)



1. A receptacle for passenger compartments of automotive vehicles comprising, in combination, a container having walls defining the sides and bottom thereof, flexible, longitudinally stretchable, elastic strip means secured

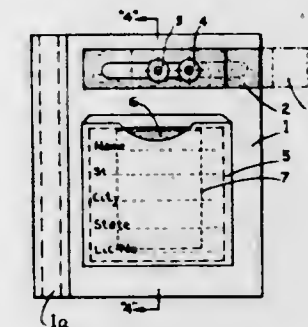
to said container and providing at least two longitudinally elastic, substantially oppositely disposed, strip members with free ends extending below the bottom of said container, and a plurality of small, tapered sloping projections on the inner faces of the respective free ends of said strip means, the axes of said projections sloping away from the respective inner faces and away from the respective free ends and toward said receptacle, whereby said projections are adapted to be seated and held in carpeting on the floor of said passenger compartment with said strip means under elastic stretch.

3,315,799

COMMUTER TICKET-BOOK HOLDER

Jasper A. Booker, 29 Woodbury Forest Drive, Hampton, Va. 23366

Filed Nov. 9, 1964, Ser. No. 409,721
5 Claims. (Cl. 206-40.5)



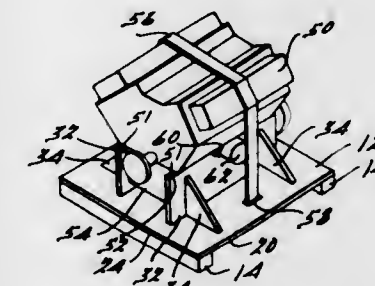
1. A ticket-book holder comprising a one-piece luminous base-piece and clip portion and having a slidably engaged clip attached thereto for holding tickets in the desired manner.

3,315,800

COLLAPSIBLE PLYWOOD SHIPPING DEVICE

Hampton R. Wagner, 2220 Elmhorst, Royal Oak, Mich. 48073

Filed Dec. 14, 1964, Ser. No. 417,920
9 Claims. (Cl. 206-46)



3. A shipping pallet including a deck having first and second sets of spaced openings therein; a pair of upright walls supported on said deck in spaced relation, an article to be shipped supported on the upper ends of said upright walls, each of said upright walls having a pair of longitudinally spaced depending projections closely fitted in a pair of said first set of deck openings and at least one opening formed therein; a pair of braces, each brace engaging the outer surface of one of said walls and each of said braces having a first projection closely fitted in one of said second set of deck openings and a second projection closely fitted in the opening of its adjacent upright wall, said article resting on said upright walls being operable to hold said wall projections in said first set of deck openings whereby said braces are held in assembly with said deck and walls.

3,315,801 DISPENSER PACKAGE

Robert D. Lowry, Winchester, Mass., assignor to Lowry Development Corporation, Winchester, Mass., a corporation of Massachusetts

Filed May 18, 1964, Ser. No. 367,969
7 Claims. (Cl. 206—56)



1. A collapsible dispenser package containing a flowable commodity comprising two opposed sheets of material, one of said sheets being relatively stiff and the other of said sheets being limper, said sheets being hermetically sealed together around the marginal edge portions of the limper sheet with a fullness in said limper sheet to form a hollow enclosure between said sheets said stiffer sheet being folded medially along a single fold line to sandwich said limper sheet between angularly inclined panels of said folded stiffer sheet diverging away from said fold and terminating in spaced-apart edges forming feet for supporting said package in inverted V-shaped configuration with said single fold at the top of said package, and a flowable commodity contained within said hollow enclosure, said panels being movable together about the fold line as a hinge to collapse said package and extrude said commodity through an opening made near said fold line.

3,315,802 PACKAGE FOR STERILE STORAGE OF SURGICAL DEVICES AND ACCESSORIES

Hans Christian Rønnow Lønholdt, Esbjerg, and Knud Maro Henrik Bjørn, Stenløse, Denmark, assignors to Novo Terapeutisk Laboratorium A/S, Copenhagen, Denmark, a Danish joint-stock company

Filed Oct. 22, 1965, Ser. No. 501,752
Claims priority, application Denmark, June 21, 1963, 2,966/63
15 Claims. (Cl. 206—56)



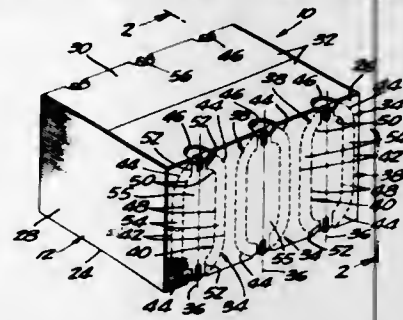
1. A package for sterile storage of suture and ligature material, haemostatic forceps, wound retractors, knives, catheters, and other surgical devices which comprises an envelope for holding at least one of said devices, said envelope having a closed bottom and sidewalls joined with one another a selected distance from the bottom of the envelope, said side walls being flexible and extending beyond the joined portion to form flaps, said flaps being loaded with such weight that when the envelope is placed bottom down, said flaps fall out to the sides and thereby provide free and easy admission to the interior of the envelope.

3,315,803 BEVERAGE CONTAINER CARTON WITH PUNCH-OUT CONTAINER HANDLES

Edward A. Kalajian, 9016 W. Pico, Los Angeles, Calif. 90035
Filed Mar. 8, 1965, Ser. No. 437,725
10 Claims. (Cl. 206—65)

1. In combination: a beverage carton including two generally parallel side walls, a number of beverage containers within said carton arranged in two rows extend-

ing parallel to and disposed adjacent said side walls, respectively, said side walls including means defining punch-out handles equal in number to said containers, and each

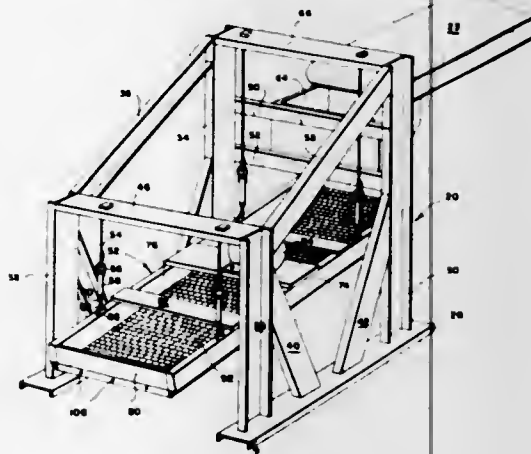


handle of each side wall being located opposite a container in the adjacent container row and being adapted for connection to its respective adjacent container.

3,315,804 APPARATUS FOR RIFLE SCREEN SIZING

Herbert C. Brauchla, P.O. Box 349, Oak Harbor Road, Fremont, Ohio 43420

Filed Oct. 7, 1965, Ser. No. 493,643
3 Claims. (Cl. 209—44)



1. A rifle screen for sizing comprising:
 - (A) a frame, resiliently attached to supporting structure;
 - (B) transversely extending, abutting rifle screen elements mounted in said frame, so as to form a sizing bed, each of said rifle screen elements being bent so as to have an arcuate top and vertically aligned opposed sides and an open bottom, seal means between abutting sides of adjacent rifle screen elements and at least one longitudinal supporting rod extending beneath said sides;
 - (C) vibration means connected to said frame;
 - (D) a transverse vibrating rod loosely supported on said longitudinal supporting rod within each of said rifle elements so as to beat the screen from below; and
 - (E) means rigidly securing said rifle screen elements and said seal means one to another in side by side relationship.

3,315,805 MAGNETIC SORTING MEANS

William Brenner, 105 Neil Court, Levittown, N.Y. 11756, and Sidney Koslow, 5 Timothy Court, Commack, N.Y. 11725

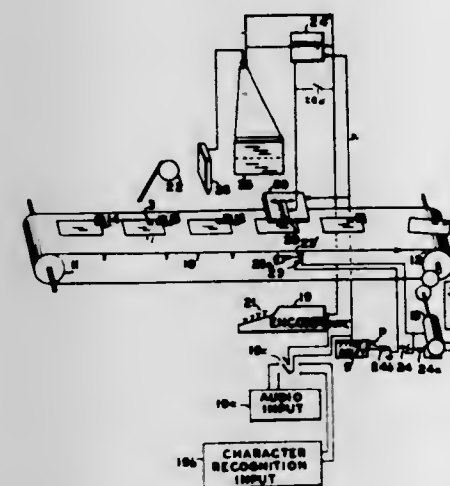
Original application June 19, 1962, Ser. No. 202,291. Divided and this application Oct. 13, 1965, Ser. No. 495,615

1 Claim. (Cl. 209—111.8)

Means for automatically sorting mail pieces of varying size having a written address area and having magnetic address information thereon on an area spaced a pre-

determined distance from one edge of said mail pieces, comprising:

- a conveyor,
- a magnetic reading head mounted in predetermined space relation to said conveyor,

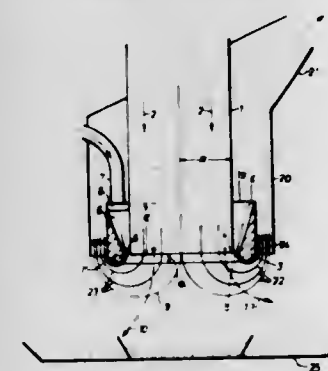


registration means on said conveyor adapted to register said magnetic address area with said reading head, said registration means being adapted to receive said pieces of varying size, a decoder connected to said head, a plurality of sorting gates mounted in operative relation to said conveyor and connected to said decoder.

3,315,806 METHOD AND APPARATUS OF SEPARATING ENTRAINED PARTICLES FROM GASES

Karl Sigwart and Heinz Gröne, Leverkusen, and Edgar Muschelknautz, Leverkusen, Bayerwerk, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

Filed Jan. 8, 1965, Ser. No. 424,432
Claims priority, application Germany, Oct. 11, 1963, F 40,965; Oct. 18, 1963, F 41,026
17 Claims. (Cl. 209—143)



7. A separator comprising a tubular gas flow conduit having an outlet exit, an annular rounded air foil surrounding said outlet exit defining an annular slot between it and the edge of said outlet exit, means for passing a stream of gas containing entrained particles to be separated through said gas flow conduit, and means for passing a rotating gas stream through said annular slot, said annular rounded air foil being dimensioned and positioned to cause said rotating gas stream to flow therearound.

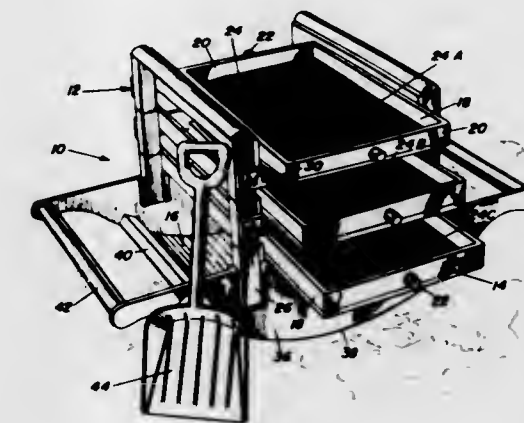
3,315,807 SIFTER TOYS

Leonard B. Rosen, R.D. 2, Jamestown, Pa. 16134

Filed Sept. 21, 1964, Ser. No. 397,999
2 Claims. (Cl. 209—315)

1. A sifter toy adapted for use in sand and other particulate material, said sifter toy comprising:

a frame formed of a plurality of interfitting sections assembled in stacked relation with one another; each of said frame sections containing a pair of spaced tracks; a plurality of sieve members, each formed by an open mesh screen mounted within a peripheral border; one of said sieve members being disposed within each of said frame sections with said peripheral border riding upon said tracks; a pair of spaced, generally parallel side members having substantially linear upper edges and arcuate lower edges; said frame being mounted upon said side members with the lowermost of said frame sections being connected to said side members but all of said sieve members being disposed above said upper edges; a curvilinear base section extending between the central portion of said side member lower edges and having and arcuate configuration corresponding to that of



said side member lower edges and thereby forming an arcuate bottom upon which said toy may be rocked; and handle means extending between said side members at opposite ends thereof to enable said toy to be rocked upon said arcuate bottom; said sieve members being reciprocally slidably upon said tracks in a direction perpendicular to said linear upper edges whereby, when sand is poured onto the uppermost of said sieve members, said sieve members may be reciprocated to cause such sand to pass through said open mesh screens and fall into said curvilinear base section; said mesh size of said screens being smaller in the sieve member closest to said base section and progressively increasing in said sieve members further away from said base section.

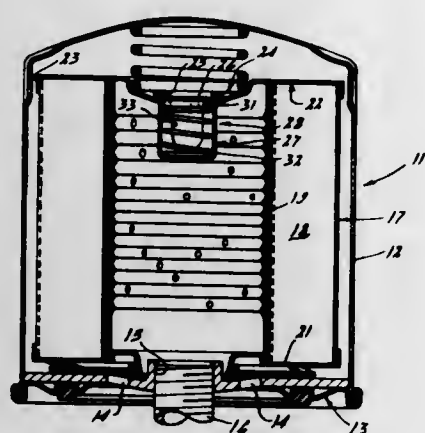
3,315,808 FILTER PRESSURE RELIEF VALVE

John D. Hopkins, Franksville, Wis., assignor to Walker Manufacturing Company, a corporation of Delaware

Filed Mar. 24, 1965, Ser. No. 442,396
2 Claims. (Cl. 210—130)

2. A filter cartridge comprising an annular filter media having a center tube, an end cap for said filter cartridge, said end cap having a first portion engaging one end surface of said filter media and a central aperture formed by a depending flange in alignment with said center tube, said depending flange providing a valve seat, a valve disc adapted to abuttingly engage said valve seat, a valve cage for constraining said valve disc, said valve cage comprising a cylindrical portion depending into said inner tube for guiding said valve disc, spring means interposed in said valve cage for urging said valve disc into engagement

with said valve seat, said cylindrical portion terminating at one end thereof in an outwardly extending flange engaging said end cap, a second depending flange formed in



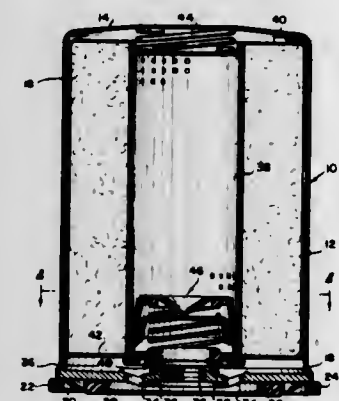
said end cap around said central aperture and folded over and engaging said valve cage flange for fixing said valve cage relative to said end cap.

3,315,809

FILTER UNIT WITH BY-PASS AND ANTI-DRAIN BACK VALVE

William H. Hultgren, Mount Carmel, Ill., assignor to Champion Laboratories, Inc., West Salem, Ill., a corporation of Connecticut

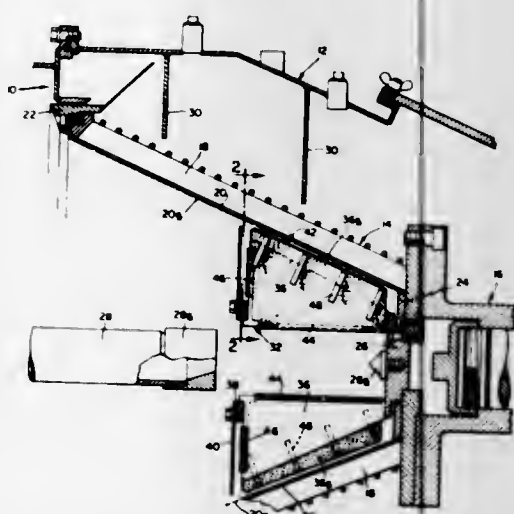
Filed Sept. 24, 1965, Ser. No. 490,137
13 Claims. (Cl. 210-130)



1. A spin-on type oil filter unit comprising a housing with a closure member having an oil inlet and oil outlet therein, an annular filter element in said housing, and a by-pass and anti-drain back valve assembly disposed in said housing including sleeve means with a filter element support member, outer casing means disposed on said support member forming an anti-drain back chamber, said filter element seated on said support member around said outer casing means, oil inlet port means in said outer casing means, an anti-drain back valve positioned to cover said oil inlet port means, biasing means in said chamber urging said valve to a seated position, an inner casing means on said support member communicating at the top thereof with said outer casing means and disposed within said outer casing means and forming a by-pass chamber inwardly of said anti-drain back chamber, by-pass oil port means in said support member, a by-pass valve covering said by-pass port means, separate by-pass biasing means urging said by-pass valve to a seated position, said by-pass valve being disposed within said inner casing means and in said by-pass chamber.

3,315,810 CENTRIFUGE HAVING FRUSTO-CONICAL SCREEN WITH MEANS TO IMPROVE SCREEN LIFE

Dean E. Humphrey, Lansdale, Leonard Shapiro, Upper Darby, and Perry W. Wilder, Jr., Philadelphia, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Nov. 13, 1964, Ser. No. 411,039
3 Claims. (Cl. 210-367)



1. A screen centrifuge comprising a frusto-conical screen having an axis, means mounting the screen for rotation about the axis, feed means disposed within the screen and adapted to deliver feed to the smaller end of the screen, a plurality of substantially radially disposed feed-dispersing baffles mounted within the screen for rotation therewith, the baffles being perforate and formed with flow-diverting ribs adapted to deflect the feed in a direction toward the smaller end of the frusto-conical screen and with outer edges curved toward a direction parallel with the adjacent portion of the screen when viewed in a plane perpendicular to the axis to enhance the dispersement of the feed, whereby the feed impinges the screen in wide areas rather than in localized areas.

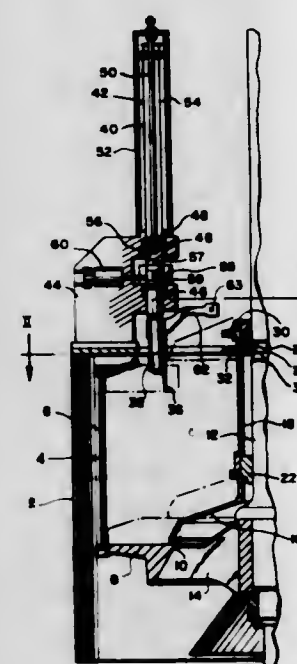
3,315,811

CENTRIFUGAL MACHINE WITH BUILT-IN PLOW

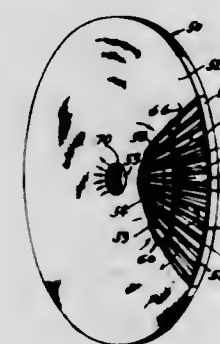
Andre Mercier, La Madeleine, and Roger Josien, Annappes, France, assignors to Flves Lille-Cail, Paris, France
Filed Feb. 18, 1965, Ser. No. 413,661
Claims priority, application France, Feb. 27, 1964, 965,304, Patent 1,394,980
10 Claims. (Cl. 210-375)

1. In a centrifugal machine, in combination:
(a) a basket having
(1) an axis,
(2) an axially and circumferentially extending inner wall, and
(3) a bottom wall transverse of said axis and formed with a central aperture;
(b) drive means for rotating said basket, said drive means including a spindle member fixedly fastened to said bottom wall and having a portion axially co-extensive with said inner wall;
(c) a valve member adapted to close said aperture, said valve member having a radially outermost portion;
(d) lifting means for moving said valve member in an axial path toward and away from a position of engagement with said bottom wall in which said outermost portion is at a predetermined distance from said axis and spaced radially outward from said aperture, said lifting means including a tubular member slidably enveloping said portion of said spindle member and having a terminal portion fixedly attached to said valve member;

(e) plow means in said basket for scraping said walls and including a blade member;
(f) first plow actuating means for radially moving said plow means between an inoperative position in which said blade member clears said path, and an operative position in which a portion of said blade member extends into said path, and the spacing of said por-

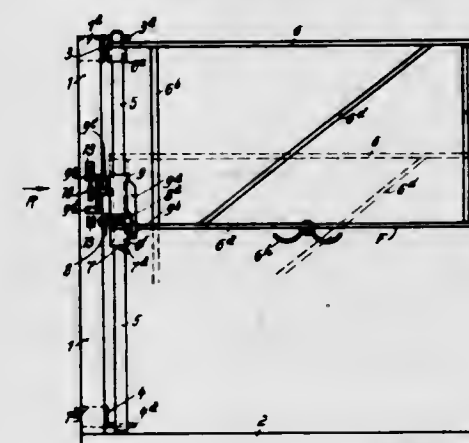


3,315,812
FILTER DISK STRUCTURE
Kenneth Lewis, 8291 Lambert Drive, Huntington Beach, Calif. 92647, and Wilmet M. Yeths, 10407 Dorothy St., South Gate, Calif. 90280
Filed Dec. 28, 1964, Ser. No. 421,265
3 Claims. (Cl. 210-487)



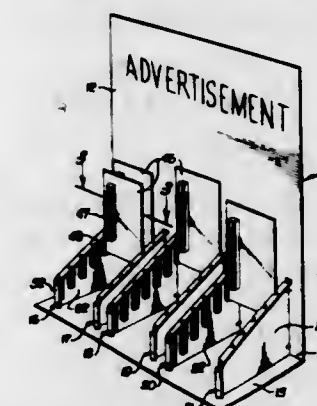
1. In filter apparatus: a filter disk comprising a septum and a fabric envelope enclosing the septum, said septum formed with an axial opening for mounting the septum on a tubular shaft, said septum having a pair of imperforate spaced apart annular disks extending from the axial opening in the septum outwardly therefrom, rib members formed on the exterior surface of each imperforate disk, and extending beyond the rim portions of said imperforate disks, an encircling band joining the outer rib ends to provide an annular open area between the encircling band and the rim portions of the imperforate disks, the side areas of said imperforate disks and of said annular open area being substantially equal.

3,315,813
POWER DRIVEN RUG DISPLAYING DEVICE
Willy Schneider, Vorst, Post Schwenke, Westphalia, Germany; Ingeborg Schneider, heir of said Willy Schneider, deceased
Filed July 29, 1965, Ser. No. 475,666
Claims priority, application Germany, Aug. 8, 1964, Sch 35,599
9 Claims. (Cl. 211-1.5)



1. A display device for rugs comprising in combination:
(a) a vertical supporting structure;
(b) a plurality of relatively flat rug-supporting frames arranged in vertical planes and supported by said supporting structure, each of said plurality of frames being pivotable about a vertical axis relative to said supporting structure and projecting in cantilever fashion away from said supporting structure; and
(c) automatic means for sequentially pivoting said plurality of frames, said pivoting means including a plurality of pairs of angularly and vertically displaced abutments, each pair of said plurality of pairs of abutments being arranged on the side of one of said plurality of frames adjacent said supporting structure and operatively related to one of said plurality of frames for actuation thereof, and said pivoting means further including power driven horizontally travelling abutment means operated to move alternately forward and backward and arranged to engage during the forward movement thereof one abutment of said plurality of pairs of abutments and to sequentially engage during the backward movement thereof the other abutment of each of said plurality of pairs of abutments.

3,315,814
COUNTER DISPLAY
Irl J. Kosen, Beverly Hills, Calif. (% Ray Burns, Inc., 19900 S. Normandie Ave., Torrance, Calif. 90502)
Filed Nov. 29, 1965, Ser. No. 528,665
6 Claims. (Cl. 211-45)



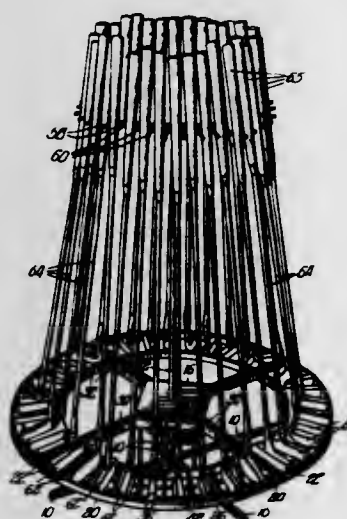
1. In a counter display device: a board having two hinged parts extending from a common fold line, said parts being movable angularly to a right angle

relationship in which one part extends substantially horizontally to form a base for the display device and the other part extends substantially vertically; and a plurality of separate corner brackets; each corner bracket having parts extending respectively along the said board parts in right angle relationship to said solid line; said corner bracket parts of each bracket and said board parts having a companion detachable connector means securing said board parts to said bracket to rigidly hold said board parts in right-angle relationship; said brackets, except for said connector means, lying entirely in the right-angle space bounded by said board parts; said corner brackets having provisions for supporting between them, packaged merchandise.

3,315,815

GOLF CLUB DISPLAY FIXTURES

Klem R. Wittek, % Wittek Golf Range Supply Co., Inc.,
5122-28 W. North Ave., Chicago, Ill. 60639
Filed May 19, 1965, Ser. No. 456,940
11 Claims. (Cl. 211-60)



3. A display fixture for golf clubs comprising a base having radiating arms joined at their inner ends and carrying an upright short post, an upright post having a tubular lower end mounted to turn on said short post, lower and upper square members fixed to turn with said upright post, fixtures of quadrantal form secured to the sides of the lower member and having rounded outer portions, rounded portions inwardly of said rounded outer portions, golf club head partitions extending between and secured to said rounded outer and inner portions for positioning heads of golf clubs therebetween, four upper positioning devices secured to the sides of the upper member, and a plurality of radially extending rods carried by said upper devices and extending between handles of clubs.

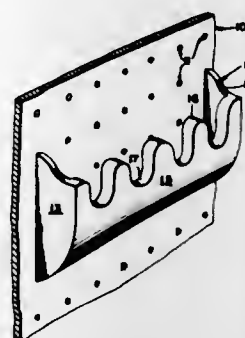
3,315,816

TOOL HOLDER

Russell E. Mallory, 1667 Linden Ave.,
North Tonawanda, N.Y. 14120
Filed Nov. 21, 1966, Ser. No. 595,685
2 Claims. (Cl. 211-60)

1. A tool support for hand tools, adapted to be mounted on a perforated board, comprising a one piece unitarily molded bracket with vertical end flanges, a front panel, an upper horizontal flange above said front panel projecting rearwardly and having recesses formed therein to receive and hold hand tools, each of said end panels being provided at its upper extremity with a lug adapted to project through an opening in a perforated board, said lug having the extremity thereof projecting upwardly so as to be

brought into contact with the rear surface of said perforated board when said bracket is in contact with the outer surface of said perforated board, said end panel being provided at an appropriate distance below said up-

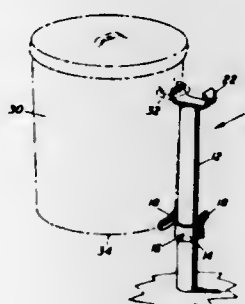


per lug with a lower lug, said lower lug projecting downwardly from the marginal surface of the said end panel and adapted to be received in and held by a second opening in said perforated board.

3,315,817

SUPPORT STAND

Norris K. Hook, 1404 Saluda River Drive,
West Columbia, S.C. 29169
Filed July 6, 1966, Ser. No. 543,159
4 Claims. (Cl. 211-71)



1. A stand for removably supporting a cylindrical receptacle having a handle loop on its outer surface and terminated at its lower end by an annular rim comprising

- a post,
- a sleeve received about said post at a selected point,
- an arcuate flange,
- a base portion of said flange affixed to said sleeve,
- an upper portion of said flange extending above said sleeve to thereby define a recess with said post to receive a rim,
- and means spaced above said flange for retentively mounting a receptacle in close proximity to said post.

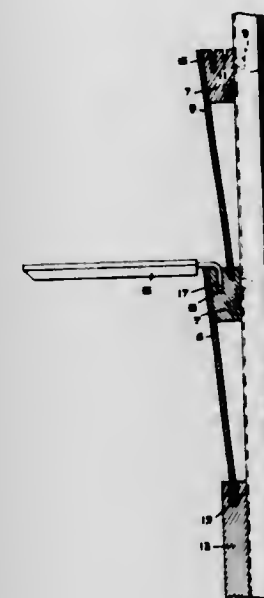
3,315,818

PANEL STRUCTURES FOR SUSPENDING DISPLAY STANDS

Erik Bondesson, Muraregatan 3D, and Erik Tehler,
Jarnvagsgatan 9, both of Halmstad, Sweden
Filed Mar. 19, 1965, Ser. No. 441,257
12 Claims. (Cl. 211-148)

1. A panel structure for supporting display devices, comprising stationary vertical rail means disposed adjacent each other with a predetermined spacing, panel board members extending in a horizontal direction, a batten member fastened to the back of each of said panel board members at the upper longitudinal edge thereof, hook means on the back of said batten members mount-

ing said panel board members on said rail means above each other, and means in said batten members for re-

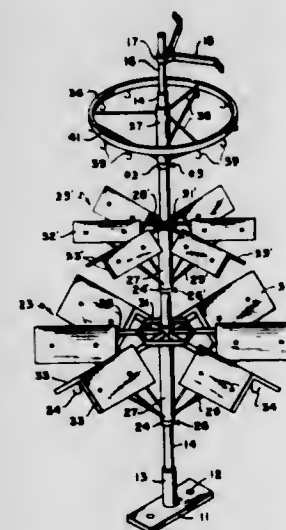


ceiving said display devices at optional places along the boundary between any two of said panel board members.

3,315,819

SADDLE SUPPORT STAND

Jack Kingsbery, 1224 E. Maverick,
Crystal City, Tex. 78839
Filed Mar. 10, 1965, Ser. No. 438,555
4 Claims. (Cl. 211-163)

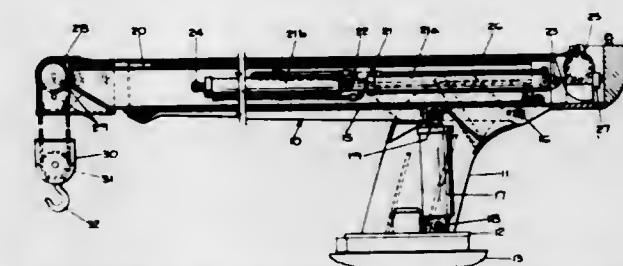


1. A combination saddle and blanket stand comprising: a base; a vertically adjustable shaft rotatably supported on said base; a first rack fixedly secured to said shaft, said first rack including a plurality of spaced seats for receiving saddles extending radially from said shaft, the cross-sectional configuration of said seats being angular and substantially conforming in configuration to that of a saddle; a second rack vertically spaced above said first rack and fixedly secured to said rotatable shaft similar to the first rack and including a plurality of radially extending seats smaller in length and angular cross-sectional configuration for receiving blankets for the respective saddles, said seats on said second rack positioned directly above the seats on said first rack, thereby maintaining selected sets of saddles and blankets in determined order, one above the other, for ease in storage and selection.

3,315,820

CRANE WITH WINCH RELEASING MEANS

Robert E. Stauffer, Gallon, Ohio, assignor to Jeffrey Gallon
Manufacturing Company, a corporation of Ohio
Filed Sept. 15, 1965, Ser. No. 487,552
10 Claims. (Cl. 212-35)

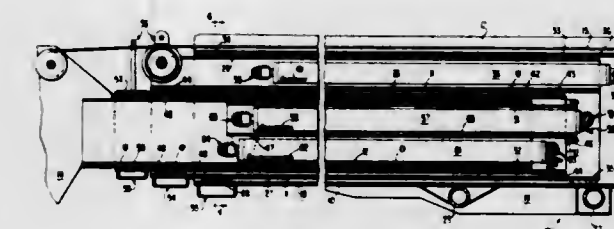


4. In a crane, an extensible boom, a winch, a line reeled on the winch, said line extending from said winch over said boom to depend from the boom, a line block on said line and depending from the boom, a reversible hydraulic motor to operate said winch in one direction to pay out said line and to lower said line block relatively to said boom or to operate said winch in the opposite direction to reel in said line and to raise said line block relatively to said boom, means to hold said winch hydraulic motor and said winch in fixed position to fix the length of line extending over said boom, two direction hydraulic power means to extend and to retract said extensible boom, reversible means to supply hydraulic fluid in one direction to operate said boom hydraulic power means to extend said boom or to supply hydraulic fluid in the opposite direction to operate said boom hydraulic power means to retract said boom, and means to release said holding means by said hydraulic fluid in said one direction as the boom is extended by operation of said boom hydraulic power means, said line being paid out from the winch by a pulling force on the line as the boom is extended, said line pulling force acting on said winch hydraulic motor to drive the motor as a hydraulic pump, a valve connected across said winch hydraulic motor and being opened in response to the pressure of the hydraulic fluid when the winch hydraulic motor is driven as a pump for flow of hydraulic fluid through the motor and the valve.

3,315,821

FOUR-SECTION FULLY HYDRAULICALLY OPERATED BOOM

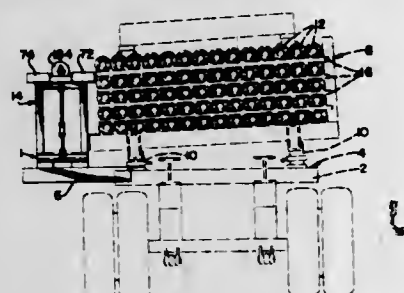
John L. Grove, Greencastle, Pa., assignor to Grove Manufacturing Co., Shady Grove, Pa., a corporation of Pennsylvania
Filed Mar. 15, 1966, Ser. No. 534,538
9 Claims. (Cl. 212-35)



1. A boom having at least four telescopic extensible sections, comprising, a first section, a second section telescopically disposed in said first section, a third section telescopically disposed in said second section, means extending longitudinally of the interior of said third section and connected at the inner end to the inner end of said third section, a fourth section telescopically disposed substantially throughout its length in said third section, first fluid motor means pivotally connected at opposite ends to said first and second sections for moving said second section lineally relative to said first section, second fluid motor means connected at one end to said second section

and at the other end to said means, for moving said third section and said means lineally relative to said second section, third fluid motor means connected at opposite ends to said third and fourth sections for moving said fourth section lineally relative to said third section, and said fourth section disposed in surrounding relation to said means and said third fluid motor means.

3,315,822
DRILL STEM AND PIPE POSITIONER DEVICE
 John Hart Wilson, % Wilson Manufacturing Co.,
 P.O. Box 1031, Wichita Falls, Tex. 76307
 Filed Oct. 4, 1965, Ser. No. 492,581
 10 Claims. (Cl. 214-2.5)



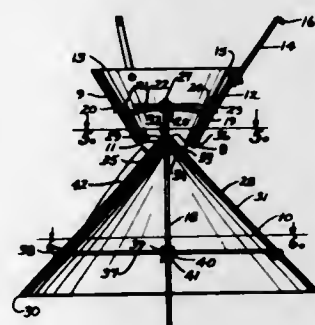
1. In combination, a portable pipe hauling and dispensing device comprising:

- (a) a wheeled frame,
- (b) a pipe rack mounted on said wheeled frame and being movable both vertically and angularly with respect thereto,
- (c) jack means mounted on said wheeled frame for elevating said pipe rack to different vertical levels,
 - (1) said jack means being adapted to selectively elevate a corner of said pipe rack,
- (d) a pipe positioning device mounted on said wheeled frame of the portable pipe hauling and dispensing device, and including an elongated frame,
 - (1) a trackway mounted on said pipe positioning device, longitudinally thereof,
 - (2) a wheeled carrier moveably mounted on said trackway,
- (e) support bars mounted on said pipe positioning device which extend into close proximity to layers of pipe on said pipe rack of the pipe hauling and dispensing device,
- (f) kicker bars mounted on said elongated frame intermediate the length of said support bars and associated therewith to move the pipe transversely of said elongated frame,
- (g) actuator means to selectively actuate certain kicker bars to direct pipe transversely from said elongated frame onto said wheeled carrier on said trackway,
- (h) a fluid actuated cylinder associated with said wheeled carrier to move said wheeled carrier and the pipe thereon longitudinally on said trackway, and
- (i) elevating means associated with said elongated frame of said pipe positioning device to elevate an end of said pipe relative to said elongated frame.

3,315,823
ROTARY GRAIN DISTRIBUTOR
 Fred B. Rikoff, R.R. 1, Colby, Kans. 67701
 Filed Feb. 3, 1965, Ser. No. 430,102
 2 Claims. (Cl. 214-17)

- 1. A rotary material distributor comprising,
 - (a) a funnel-shaped body having an upper open inlet end and an open lower discharge end,
 - (b) means mounting said body in the filling opening of a storage space in substantially concentric relation thereto and with the lower end extending into said space,

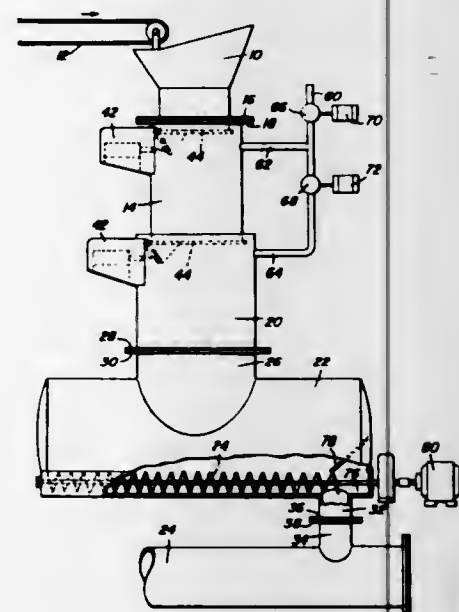
- (c) a vertically disposed shaft,
- (d) means in said body supporting said shaft axially of said body lower end and extending downwardly therefrom,
- (e) a hollow open bottom cone-shaped rotor rotatably mounted on said shaft with the apex thereof adjacent the body lower discharge end of the funnel shaped body, a ball shaped collar within said rotor and rotatably mounted on said shaft, said collar supportedly engaging the apex of said rotor, a lower rotor support rotatably mounted on the shaft and



spaced downwardly from the collar, transverse braces in the lower portion of the rotor and fixed to said lower support and the rotor, means on the shaft for each of the collar and lower rotor support to retain same against downward movement,

(f) and a plurality of circumferentially spaced fins on said rotor and inclined downwardly thereon whereby material gravitating from the funnel-shaped body will strike said fins and effect rotation of the rotor and said material will be directed outwardly and downwardly from said rotor.

3,315,824
METHOD AND APPARATUS FOR CONTINUOUS GRAVITY FEED OF FLUENT MATERIALS
 Martin J. Kirchhoefer, Wisconsin Rapids, Wis., assignor to Pulpamac, Inc., a corporation of Wisconsin
 Filed May 25, 1965, Ser. No. 458,556
 7 Claims. (Cl. 214-17)

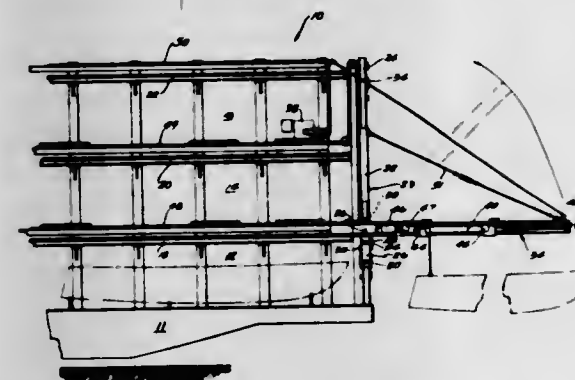


- 1. A method for supplying fluent material received from a relatively low pressure source in a continuous stream at a controlled rate and while maintained under a relatively high pressure which comprises the steps of
 - (a) withdrawing in intermittent batches from a low pressure region fluent material which is under a relatively low pressure,

- (b) transferring the withdrawn batches while under said relatively lower pressure intermittently into a confined region of variable pressure when the latter is at said relatively low pressure,
- (c) while said batches of material are confined therein, raising the pressure of said variable pressure region to said relatively high pressure,
- (d) transferring batches of material successively from said variable pressure region while the latter is under said relatively high pressure to a high pressure region which is maintained continuously under said relatively high pressure,
- (e) withdrawing fluent material in a continuous stream from said high pressure region while maintaining said relatively high pressure upon said stream of material and in said high pressure region.

5. An apparatus for supplying a continuous stream of fluent material under a relatively high pressure from fluent material obtained in successive batches from a source of material under a relatively low pressure which comprises a low pressure chamber and a high pressure chamber with a variable pressure chamber interposed therebetween and disposed for successive movement of fluent material therethrough, a first and second valve means disposed respectively in said variable pressure chamber and in said high pressure chamber and controlling flow into and out of said variable pressure chamber, first and second operating means each connected respectively to and operating one of said first and second valve means, control means connected to said operating means and cyclically controlling their actuation of said first and second valve means, and control means in said high pressure chamber for effecting a continuous, uninterrupted and variable rate of flow of fluent material from said high pressure chamber.

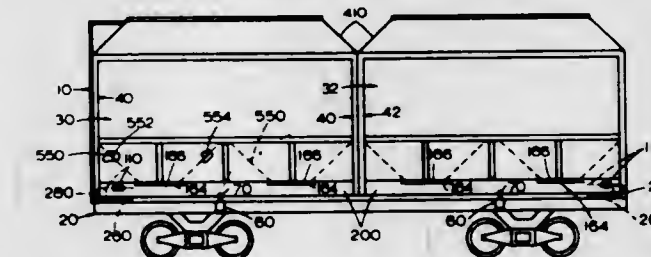
3,315,825
SELF-LOADING RAILROAD CAR
 Richard R. Schelnert, Waukegan, Ill., assignor to On-board Marine Corporation, Waukegan, Ill., a corporation of Delaware
 Filed May 19, 1965, Ser. No. 456,911
 9 Claims. (Cl. 214-75)



- 1. A multi-level railroad car including horizontal track means for each level, vertical track means at one end of said railroad car, a boom support having means engaged with said vertical track means for affording movement of said boom support along said vertical track means, a boom including track means, said boom being pivotally connected with said boom support for swinging movement between a horizontal position and a vertical position, a first hoist means for lifting and lowering said boom support along said vertical track means to afford selective alignment of said boom track means with any of said horizontal track means, second hoist means for affording pivotal movement of said boom relative to said boom support between said horizontal and vertical positions, a carriage including article hoist means, means on said carriage

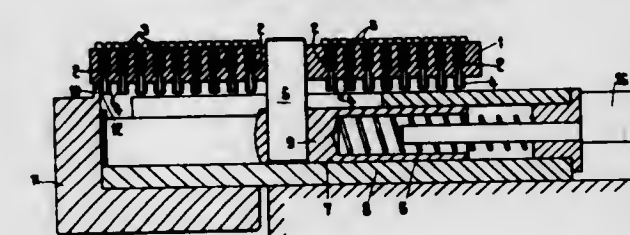
engageable with said boom track means and with said horizontal track means for affording movement of said carriage along said boom track means and said horizontal track means and to and from said boom when said boom track means are horizontally aligned with any of said horizontal track means, and means for moving said carriage on said boom track means and said horizontal track means.

3,315,826
BULK CARRIER AND CONVEYOR ASSEMBLY
 Jimmie S. Gardner, Box 341, Washington, N.C. 27889
 Filed Mar. 1, 1965, Ser. No. 437,005
 2 Claims. (Cl. 214-83.2)



- 1. A flat bed conveyance having a flat upper bed, bin means disposed above said bed, bin frames supporting said bin means and having lower frame members engaging said bed, means for removably attaching said frame means to said conveyance, a conveyor extending longitudinally of said conveyance and extending beneath said bin means, gate valve means disposed between said bin means and said conveyor, said bin means having openings disposed above said conveyor for the discharge of material, said discharge openings being far lesser in total combined area as seen in top plan view than the area of the horizontal cross section of said bin means at a point on said bin means of maximum horizontal cross section, whereby the majority of the weight of cargo in said bins is supported by lower portions of said bins means rather than by said gate valves, each gate valve having a sliding gate which extends horizontally and which is horizontally slidable to and from positions extending across the underside of said respective discharge opening, and in which said frame means is supported on means at the edges of said flat bed of said conveyance and in which an area beneath a lower portion of said horizontally extending conveyor is substantially free of portions of said frame, the lower section of said conveyor being disposed closely below said frame means adjacent said flat bed for the reduction of height and the maintenance of a low center of gravity for stability.

3,315,827
FEEDING DEVICE
 Theo Monnin, Neuchatel, Switzerland, assignor to Ebauches S.A., Neuchatel, Switzerland
 Filed Sept. 14, 1965, Ser. No. 487,200
 Claims priority, application Switzerland, Sept. 18, 1964, 12,190/64
 5 Claims. (Cl. 214-300)



- 1. A feeding device for presenting oriented pieces to a mechanism comprising a rotary feeding disc, means tending to move the feeding disc laterally, means on said disc defining recesses arranged in a spiral for receiving said oriented pieces, stop means opposing the action of

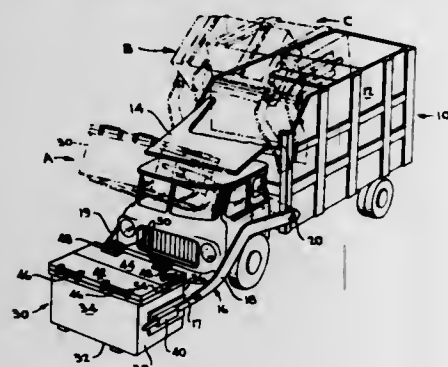
said lateral moving means, said stop means progressively bearing against at least one of said recess defining means as the disc is rotated, and means for rotation of said disc.

3,315,828

RESILIENT CLOSURE LATCH FOR CONTAINERS

Harry H. Dubo, 36 Yates Drive, Hamilton, Ontario, Canada

Filed Dec. 31, 1964, Ser. No. 422,650
6 Claims. (Cl. 214-302)



1. In a container including a body portion opening upwardly and having means for engagement with lift means whereby said container is normally supported in an upwardly-opening position when being loaded and is inverted to a downwardly opening position when raised and unloaded, said body portion including opposite side walls, at least one top closure panel pivotally secured to said container and overlying the upwardly opening container, top closure latch means on said container, said top closure latch means including releasable means securing said closure in sealing relation to said container when said container is in an upright position, said latch means including means for retaining said container closure in substantially sealing relationship to said container while said container is being inverted, said releasable means including means for releasing said container closure to permit said closure to fully open under the influence of gravity when said container reaches the substantially inverted dumping position, said releasable means including a spring, said spring having a first end and a second end, said first end having means securing said spring to a portion of said container, each second end of said spring terminating in a free end, means secured to another portion of said container releasably engaging said free end of said spring and permitting relative movement and separation therebetween.

3,315,829

SELF-LOADING STRADDLE TRUCK

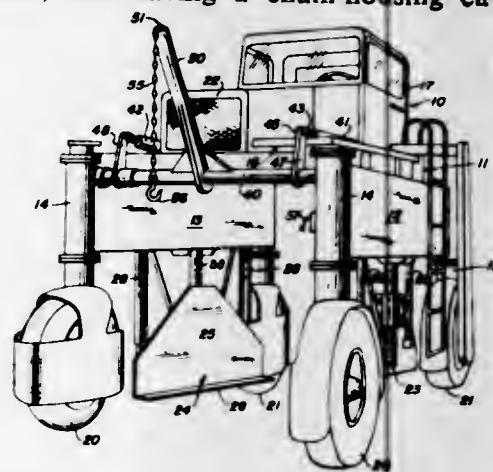
Plinio L. Cellini, Concord, Calif., assignor to Tidewater Oil Company, Los Angeles, Calif., a corporation of Delaware

Filed Sept. 1, 1965, Ser. No. 484,275
6 Claims. (Cl. 214-392)

1. In a straddle truck having a main frame comprising two vertical side members, each having a forward end and a rear end, and cross means at the top joining said side members and including a high control cab, said side members each extending forward of said cross means and cab, wheels supporting said frame and including forward wheels at and beneath the forward end of each said side member and rear wheels at and beneath the rear end of each said side member, motive means for driving said wheels, pallet-engaging means suspended from each said side member in between its forward and rear wheels, for grasping and lifting and supporting the side edges of a pallet for carrying a load thereon, and first hydraulic means for positioning said pallet-engaging means,

the combination therewith of pallet-loading means, comprising:

- a laterally extending shaft rotatably mounted forward of said cab and cross means and bridging the top of said side members at a level at least as high as the bottom of said cross means,
- second hydraulic means for rotating said shaft approximately 90°,
- a forwardly generally axially extending tubular post extending out from the center of said shaft for motion between an upper position and a lower position as a result of rotation of said shaft, and having a chain-housing cavity and



having an outboard end with chain-locking means,

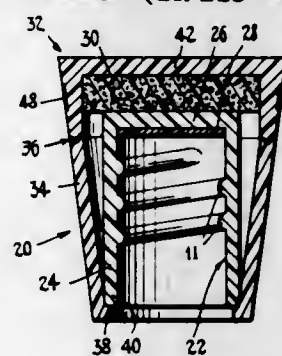
- a chain partly in said cavity and locked to said chain-locking means and extending out from said post, and
- a load-engaging hook on the distal end of said chain, so that said hook can be connected to a heavy load with said post in a lower position and the chain nearly taut and then said post raised to an upper position to lift said load and said truck may then be moved to carry said load over a pallet when said load can be lowered on to said pallet and said chain unhooked therefrom, said pallet subsequently being lifted and carried by said pallet-engaging means.

3,315,830

CAP AND CLOSURE FOR CONTAINERS

Charles V. Flynn, Scarsdale, N.Y. (% Flyndustries Inc., 211 E. 43rd St., New York, N.Y. 10017)

Filed Oct. 18, 1965, Ser. No. 497,137
11 Claims. (Cl. 215-40)



1. A three-piece molded plastic cap structure for a container comprising, in combination:

- (a) an inverted molded plastic cup constituted of a chemically inactive substance adapted to have a minimum reaction with liquid contents of a container on which the cap is used, said cup having a transverse top wall and having means cooperable with detent means of a container opening, for detachably attaching the cup when in said inverted position to the container to close the opening thereof,

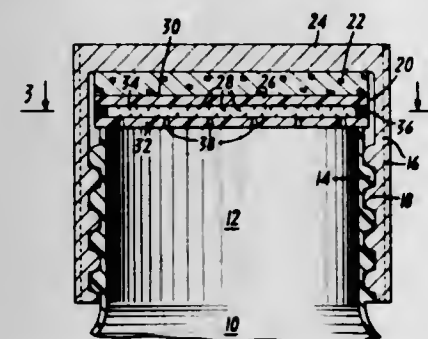
- (b) sealing means disposed at the inside of said transverse wall of the cup and engageable with the lip of the container at the opening thereof, for sealing against said lip and conforming to slight irregularities thereof,
- (c) an annular upright molded plastic cover piece having top and bottom ends, extending around said cup with its bottom end engaged with the rim portion of the cup, said top end of the cover piece extending around a portion of the cup,
- (d) a second molded plastic cover piece separate from the first and covering over the closed portion of said cup,
- (e) said upper end of the first-mentioned cover piece and a portion of said second cover piece being abutted and attached one to the other whereby the two said cover pieces fully enclose said cup except for the cup opening,
- (f) said cover pieces being constituted of a thermoplastic substance adapted to be readily decorated as by heat stamping.

3,315,831

LINER FOR BOTTLE CAPS

Douglas C. Scott, West Hartford, Conn., assignor to Scott Plastics Corporation, Hartford, Conn., a corporation of Connecticut

Filed Feb. 25, 1966, Ser. No. 529,980
7 Claims. (Cl. 215-56)



1. A breathable closure for containers having a pouring opening defined by a circumferential rim, comprising a cap member having a top wall and a side skirt for removable mounting on a container, a first layer of material adhered to the inside of said top wall and substantially coextensive therewith, a second layer of liquid-impervious material adhered to said first layer and substantially coextensive therewith, a third layer of liquid-impervious material for engaging the rim of the container adhered to said second layer, a layer of fibers between said second and third layers and a plurality of punctures which communicate with the inside of said container and the layer of fibers between said second and third layers of material.

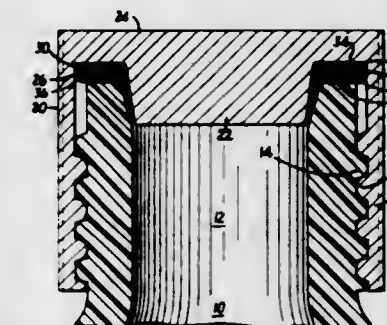
3,315,832

LINER FOR BOTTLE CAPS

Douglas C. Scott, West Hartford, Conn., assignor to Scott Plastics Corporation, Hartford, Conn., a corporation of Connecticut

Filed Feb. 25, 1966, Ser. No. 530,026
5 Claims. (Cl. 215-56)

1. A breathable closure for a container having a pouring opening defined by a circumferential rim, comprising a cap member having a top wall and a side skirt for removable mounting on said container, a protrusion tapering downwardly from said top wall for engagement in the neck of said container, and a liner adhered to the inside of said cap for engaging the neck of said container in liquid-tight relation, said liner comprising a first annular layer of liquid-impervious material adhered to the inside of said top wall, a second annular layer of porous



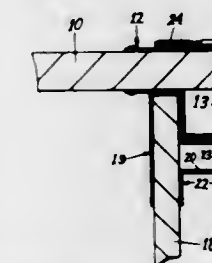
material having an upper surface adhered to said first layer of material and a lower surface adhered to an annular facing liner formed of liquid-impervious material and engaging the rim of said container, said first layer of material and said facing liner comprising openings smaller in diameter than the opening in said second layer of material and the radial clearance between said protrusion and said second layer of material being slightly greater than the combined thickness of said first layer of material and said facing liner such that the inner edges of said first layer and said facing liner extend vertically into the neck of said container to form a liquid-tight air-porous wedge between said protrusion, said rim of said container and the inner surface of said cap member.

3,315,833

BOX CONSTRUCTION

Harry Guthrie Bell, Paris, Ky., assignor to Gay-Bell Corporation, Paris, Ky., a corporation of Kentucky

Filed Jan. 25, 1965, Ser. No. 427,582
1 Claim. (Cl. 217-69)



A box having enclosing side walls; and a pair of end walls; a channel-like member secured to each end edge of said enclosing side walls, said channel-like member having an inwardly extending flange; a second channel-like member secured to each edge of at least one of said end walls, said last mentioned channel-like member having an outwardly extending abutment whose width is substantially equal to the thickness of said flange, said abutment being parallel to and spaced from the edges of said end wall by a distance substantially equal to the width of said flange, whereby said abutment and said flange are in substantial contact, and means engaging the said abutment to secure said end wall to said enclosing side walls, said last named means comprising fastening means on the outer end of said abutment, fastening means on the opposite side of said channel-like member from said flange, and flexible securing means extending therebetween.

3,315,834

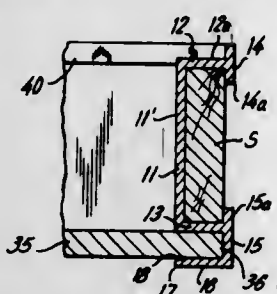
ENCLOSURE STRUCTURE

Lee S. Nemlich, 50 Sunset Drive, Croton-on-Hudson, N.Y. 10520

Filed Nov. 10, 1964, Ser. No. 410,150
2 Claims. (Cl. 220-4)

1. A decorative enclosure structure comprising an integral metallic perimeter member including a planar inner vertical web portion, upper and lower leg portions extending outwardly from and aligned normal to said web portion, a downwardly directed upper flange member depend-

ing from the outer extremity of said upper leg portion, an upwardly directed flange member at the outer extremity of said lower leg portion, said upper and lower members having their outer surfaces in coplanar alignment, the inner surfaces of said flange members and leg portions and the outer surface of said web defining an outwardly facing channel, a lock ledge extending inwardly from the inner surface of said lower flange member in proximate spaced relation to and in parallelism with said lower leg, the inner end of said lock ledge not extending beyond a plane forming a downward continuation of the inner surface of said web portion, the upper and lower surfaces of said ledge and lower leg portion, respectively,



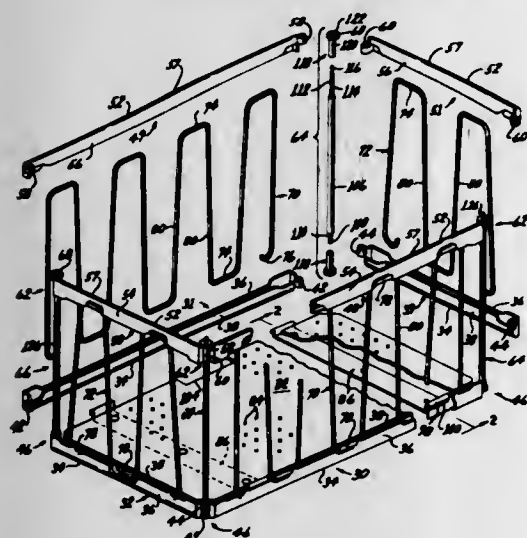
and the inner surface of said lower flange defining an inwardly directed lock channel, said perimeter member and strip having a plurality of spaced, transverse cut away portions defining slots having isosceles triangular cross sections, the apices of said slots being substantially coincident with the inner extremity of said flanges, and the bases of said triangular slots being parallel with said flanges, said flange members being bent along bending lines defined by said apices to bring the side walls defining said slots into abutting relation, and a planar rigid base member tightly, frictionally gripped within said lock channel, said base member having sides corresponding in length to the spacing of said apices.

3,315,835

COLLAPSIBLE STACKING CRATE

Frederick Katzman, Henrico County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Feb. 25, 1963, Ser. No. 260,619
7 Claims. (Cl. 220-6)



1. A crate construction comprising: four continuous, straight rectangularly arranged homogeneous sheet metal bottom rails each having a main upwardly directed channel shaped body with two continuous sides and an upwardly directed bottom, and homogeneous sheet metal curled end hinge forming members with pairs of said hinge forming members aligned to form composite corner tubular hinge rod receiving members; four continuous straight rectangularly arranged homogeneous sheet metal top rails each having a main downwardly directed chan-

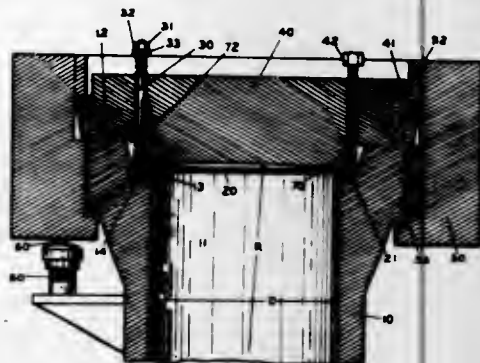
nel shaped body with two continuous sides and an inverted downwardly directed bottom and homogeneous sheet metal curled end hinge forming members with pairs of said hinge forming members aligned to form composite corner tubular hinge rod receiving members; hinge rod constructions extending through said hinge rod receiving members and having flat end pieces; zigzag rod constructions extending between the respective ones of said bottom and top rails with return bends pinched between the sides of said channel shaped bodies; a flat rectangular bottom members having its edges adjacent to and inside the inner sides of said bottom rails and having two supporting straps under said bottom member respectively parallel to two of said bottom rails with their ends extending upwardly from one side of said bottom member and hingedly curled and hooked into slits on the inner side of an adjacent bottom rail to form bottom member hinges, the other ends of said straps extending upwardly from the opposite side of said bottom member and hooked on and over the inner side of the adjacent bottom rail, said crate being foldable by swinging said bottom member upwardly about said bottom member hinges and then folding said top and bottom rails about said hinge rods until said rails are substantially parallel.

3,315,836

PRESSURE VESSEL CLOSURE

George B. Boon, Webster Groves, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Jan. 4, 1965, Ser. No. 423,049
3 Claims. (Cl. 220-46)



1. A pressure vessel comprising a pressure chamber having a rounded opening, a radially enlarged shoulder at the said opening, a planar seating surface on the said shoulder, a normally planar inner seating disc, an outer restraining head having the inner face thereof concave relative to the interior of the said pressure vessel, fastening means on the said outer restraining head, a bearing ring located between the said outer restraining head and the said planar disc, the said bearing ring having an inner circumferential chamfer on the face thereof which contacts the said disc whereby the imposition of an inner pressure within the said pressure vessel causes a bowing outward of the said planar disc against the concavity of the said outer restraining head and against the chamfer of the bearing ring.

3,315,837

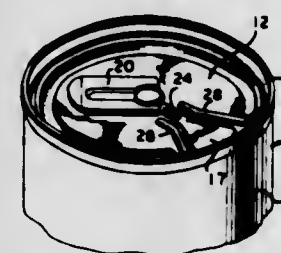
EASY OPENING END

Arnold R. Bolk, Chicago, and Frederick J. Stec, Oak Lawn, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Nov. 25, 1964, Ser. No. 413,938
12 Claims. (Cl. 220-54)

1. A can end particularly adapted for use with products packaged under gaseous pressure, said can end comprising an end panel having score lines defining a removable tear strip, said tear strip having a starting end portion to which pull means are attached, and said end panel

having the appearance of having been reshaped adjacent said pull means with portions of said score lines having the appearance of having been re-formed to provide for a greater resistance to tearing of said tear strip from said

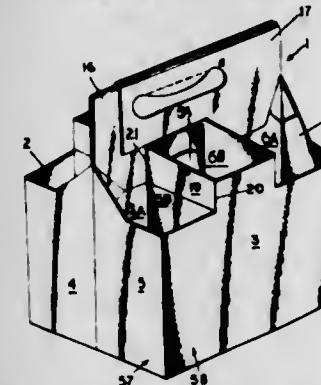


end panel adjacent said starting end portion whereby uncontrolled tearing and blow-out of said tear strip from said end panel after the initial rupture of said end panel due to gaseous pressure on said tear strip is prevented.

3,315,838

LAMINATED ARTICLE CARRIER

Homer W. Forrer, Jonesboro, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed Apr. 2, 1965, Ser. No. 445,096
9 Claims. (Cl. 220-113)



1. An article carrier of partially laminated construction comprising a handle including a handle panel, a laminated two-ply riser panel foldably joined to said handle panel along an end edge thereof, an end panel of single-ply construction foldably joined to an edge of one ply of said riser panel which is generally in alignment with the fold line between said handle panel and said riser panel, a side wall foldably joined to said end panel along a fold line remote from the fold line between said riser panel and said end panel, a single-ply medial partition panel foldably joined to the other ply of said riser panel and disposed underneath and generally in alignment with said handle panel, a transverse partition panel foldably joined to said medial partition panel along an edge thereof remote from the fold line between said medial partition panel and said riser panel, and a central inner side wall panel laminated to the central portion of said side wall and foldably joined to said transverse partition panel along an edge thereof remote from the fold line between said transverse partition and said medial partition panel.

3,315,839

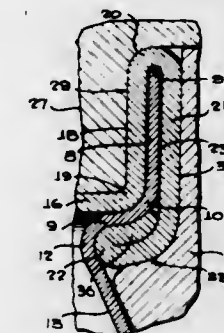
CAN CLOSURE AND METHOD OF FORMING SAME

Philip F. Catalano and Anthony Grabowski, Chicago, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed June 6, 1962, Ser. No. 200,534
16 Claims. (Cl. 220-67)

1. In a metal container, a generally cylindrical body having a generally cylindrical end portion terminating endwise in a raw metal edge, said generally cylindrical portion merging into an inwardly turned bead presenting a horizontal shoulder in turn merging inwardly and in a direction generally axially away from said raw metal

edge and into an outwardly and longitudinally flared and curving wall portion finally merging into the main generally cylindrical body, a closure having a central closure portion and a surrounding upstanding downwardly opening channel defined by an inner chuck wall connected with the central closure portion through a chuck radius and an outer seaming wall which is axially longer than the chuck wall and the generally cylindrical end portion and which is connected with the chuck wall through a channel radius, said central closure portion firmly rest-



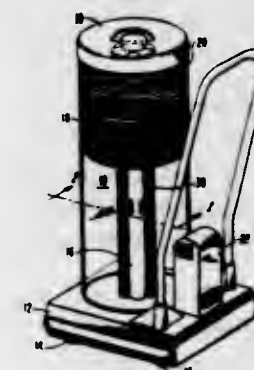
ing on said shoulder about an annulus joining with the chuck wall through said chuck radius, with the seaming wall portion remote from the channel radius turned snugly under and locked against the body shoulder in a manner holding said seaming wall in tension and the closure firmly against said raw metal edge and on said shoulder with the generally cylindrical body end portions tightly embraced between the chuck wall and seaming wall and conforming in shape thereto and with the channel radius firmly engaged over the raw metal edge.

3,315,840

AUTOMATIC DISK STACKING DEVICE

Arthur W. Tollkuhn, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 23, 1963, Ser. No. 332,608
3 Claims. (Cl. 221-75)



1. An automatic magnetic disk stacking device for random access memory disks which have a central aperture defining a substantial inner diameter and which are generally circular in outline, said device comprising, in combination, a wheeled base member, a reversible drive motor mounted on the base member, a plurality of vertically extending spaced lead screws mounted in and projecting upwardly from the base member, the screws being symmetrically disposed at like radii about a common axis so that all the lead screws are capable of simultaneously engaging the inner diameter of a magnetic disk in a sliding low friction fit, the lead distance between adjacent turns of the threads of the lead screws corresponding to a desired increment of spacing between disks and being greater than the thickness of the disks and the lead screw threads being thin in width relative to the width of the grooves intermediate adjacent turns of each thread, hub means rotatably coupled to the upper ends of said lead screws

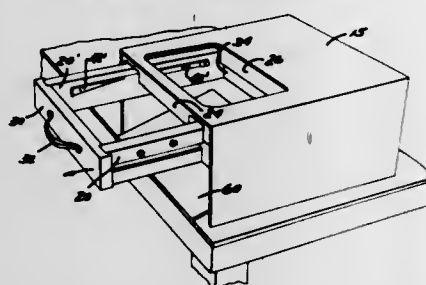
and smaller in cross-sectional area than the inner diameter of said disks, and means mounted in the base member and interconnecting each of the lead screws to the drive motor for driving the lead screws in synchronism.

3,315,841

DESTACKER HAVING RECIPROCATING TRAY DISCHARGE MEANS

Russel H. Kirkhof, Marne, Mich., assignor to Kirkhof Manufacturing Corporation, Grand Rapids, Mich., a corporation of Michigan

Filed Oct. 21, 1965, Ser. No. 499,231
3 Claims. (Cl. 221-223)



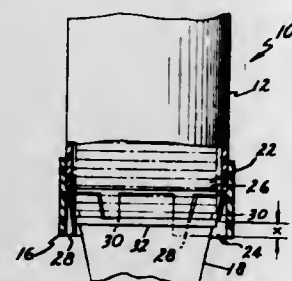
1. A double acting destacker for tray type articles having opposite edge flanges comprising: slide means movable reciprocally back and forth in one generally horizontal dimension; said slide means having two pairs of adjacent stack supporting and tray separating elements, each pair being spaced from each other on opposite sides of a tray deposit opening, and each element of each pair being generally aligned with a corresponding element of the second pair, in said dimension; stack restraining means extending above said opening and elements, and positioned to restrain stack movement in said dimension; said slide means being shiftable back and forth beneath said restraining means to shift said pairs alternatively beneath said restraining means; said elements each being tapered to form article intersecting ends and to comprise article separating means near the adjacent corresponding element, and each having upper stack support surface means; and means to controllably cause slight vertical shifting of the tapered ends of each pair of elements slightly above those of the second pair prior to movement of said one pair beneath said restraining means.

3,315,842

CUP DISPENSER

James P. McGurk, Pittsfield, Mass., assignor to Greylock Plastics, Inc., Pittsfield, Mass., a corporation of Massachusetts

Filed Mar. 14, 1966, Ser. No. 534,129
8 Claims. (Cl. 221-310)



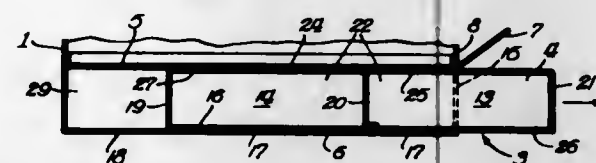
1. In a cup dispenser, a dispenser head comprising a plurality of inwardly and downwardly extending cup retaining fingers, the inner surface of said fingers defining in part a conical surface when said fingers are in an unflexed condition, at least one of said fingers being substantially shorter than the other of said fingers, the conical surface defined by the lower portions of said fingers having a diameter less than the maximum diameter of the cups to be dispensed therefrom whereby all of

said fingers simultaneously engage the lowermost cup to be dispensed, and said fingers being sufficiently resilient to be flexed outwardly by the passage of a cup thereby.

3,315,843

DISPENSING AND METERING APPARATUS HAVING A RECIPROCATING TRAP CHAMBER

John E. Tumbleson, Kewanee, Ill.
(2401 17th St., Rock Island, Ill. 61201)
Filed May 20, 1965, Ser. No. 457,404
3 Claims. (Cl. 222-50)



1. In a material dispensing and metering means for a flowable material container comprising, in combination, a walled container having a false wall spaced from the container bottom to provide an open compartment across the container at its bottom, a wall enclosed hollow drawer slidable in said compartment between a fully confined retracted position therein to a partially extended projecting position to expose one end of the drawer outwardly of said container, said enclosed hollow drawer including a division wall intermediate its length to provide a dispensing chamber at the dispensing end of the drawer and a dead chamber end adjacent thereto, valve means to permit access of container material to the dispensing chamber of the drawer comprising an opening in said false wall and a material inlet opening in a wall at the dispensing chamber end of the drawer, said openings being normally aligned with the drawer located in retracted position wholly inside said container compartment and said openings being automatically closed when moved out of alignment by the false wall and the adjacent drawer wall respectively, and said dispensing chamber having a material discharge opening in another spaced wall portion of the drawer located in offset relation along the length of the drawer with respect to the material inlet opening in said drawer to permit material discharge from the exposed drawer end when the drawer is moved outwardly of the container compartment into a projected position, said material discharge opening of said drawer being normally closed by another wall portion of the container when the drawer is retracted, said drawer including a finger receiving means to bodily move the wall enclosed drawer between retracted and extended positions comprising an elongated opening in the container bottom to expose the dead chamber portion of said drawer, and a finger fitting hole in the dead chamber portion of the drawer wall located adjacent said elongated opening to receive an operator's finger from the exterior of said container whereby to actuate the drawer back and forth as limited by the terminal ends of the elongated opening in the container bottom.

3,315,844

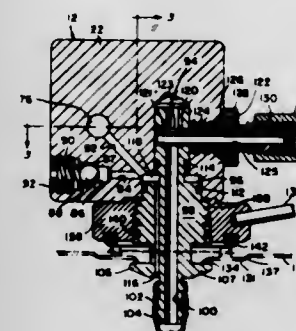
DISPENSING APPARATUS

George A. Klasson, South Whitehall Township, Lehigh County, and Justin W. Mills, Macungie, Pa., assignors to Air Products and Chemicals, Inc., a corporation of Delaware

Filed Jan. 13, 1965, Ser. No. 425,204
8 Claims. (Cl. 222-52)

2. In a dispensing system including a disposable container having a wall with a neckless aperture therethrough, the invention comprising: a reusable fluid pressurizing unit, first and second clamping means positively secured to said unit, said first clamping means being nonrotationally secured to said unit and including clamping projections of a size and shape so as to be insertable through said aperture from the external side thereof and engage

the interior surface of said wall adjacent said aperture, pressurizing passage means extending through said first clamping means, means mounting said second clamping means for releasable engagement with the exterior surface of said wall whereby said wall is releasably clamped between said first and second clamping means, a fluid storage chamber in said unit for containing a pressurizing

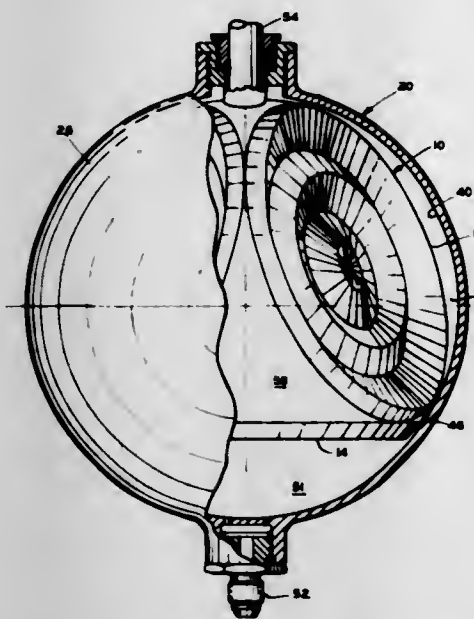


fluid under high pressure, a fluid pressure regulator in said unit having an inlet and an outlet, first passage means maintaining said storage chamber in communication with said regulator inlet, and second passage means connected to said regulator outlet for conducting said pressurizing fluid through said pressurizing passage means into said container when said unit is releasably attached thereto by said first and second clamping means.

3,315,845

CONVOLUTED SPHERICAL BARRIER FOR LIQUID STORAGE TANK

John C. Valden, Wayne, N.J., assignor to The Bendix Corporation, a corporation of Delaware
Filed Sept. 27, 1965, Ser. No. 490,372
4 Claims. (Cl. 222-95)



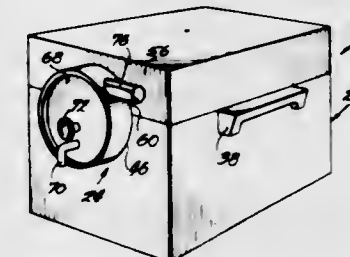
2. In a storage tank, the combination comprising a plurality of adjacent circular and convoluted integral diaphragms, each of said diaphragms being interconnected with each of the other of said plurality of diaphragms about the periphery thereof at tangential points common to the periphery of the other of said diaphragms to form a truncated pyramidal bladder structure, a housing having inlet and outlet ports, said bladder being insertable through one of said ports and having a neck portion supported in said one port, said bladder forming an inner chamber connected through said neck portion exteriorly of said tank, and said tank having an inner surface forming with the diaphragms of said bladder a plurality of outer chambers connected to the other of said ports.

3,315,846

LIQUID COOLING AND DISPENSING DEVICE

H. Richard Landis, 5200 Stony Creek Drive, Oak Lawn, Ill. 60453, and Thomas E. Wright, 6862 Lode Drive, Worth, Ill. 60482

Filed June 24, 1965, Ser. No. 466,712
1 Claim. (Cl. 222-130)



A portable insulated unit for holding cylindrical-shaped liquid-filled containers including an upper dispensing container supported in a lying position and a lower storage container supported in a lying position, comprising in combination:

- (a) a lower housing including
 - (1) a bottom wall having a slightly concave inner surface forming a support for said lower storage container,
 - (2) a pair of spaced apart side walls, extending upwardly from opposite sides of said bottom wall and attached thereto, each wall having an integral cradle support means formed on the inner surface,
 - (3) a pair of spaced apart end walls extending upwardly from said bottom wall between the edges of said side walls, and attached thereto, one of said end walls being a front wall and having a semi-circular cut-out formed in its upper edge,
- (b) an upper housing including
 - (1) a top wall,
 - (2) a pair of spaced apart side walls depending downwardly from opposite sides of said top wall and attached thereto,
 - (3) a pair of spaced apart end walls depending downwardly from said top wall between the edges of said side walls and attached thereto, one of said end walls being a front wall and having a semi-circular cut-out in its lower edge matching the cut-out in said lower housing so that a circular hole is formed in the front wall of said unit when said upper and lower housings are engaged,
 - (4) the lower edges of said upper housing side walls and rear wall having inset edges for engaging the lower housing walls upper edges,
- (c) a cradle for supporting said upper dispensing cylindrical-shaped container lying on its side at a height above said bottom wall so that the flat end portion of said upper dispensing container is in registry with said circular cut-out in said front wall, said cradle supported by said lower housing side wall cradle support means, and
- (d) all of the walls of said unit being formed of a material having a low heat transfer coefficient.

3,315,847

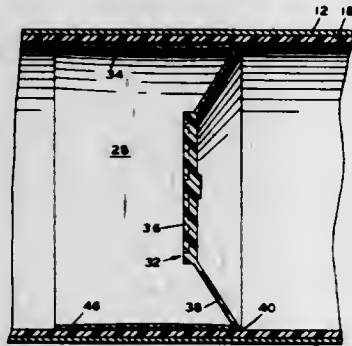
PLUNGER

Donald E. Trumbull, Birmingham, Mich., assignor to Pyles Industries, Inc., Southfield, Mich., a corporation of Michigan

Filed May 13, 1965, Ser. No. 455,419
1 Claim. (Cl. 222-327)

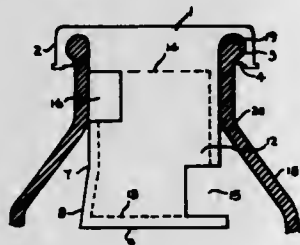
A material dispensing plunger for use in a cylindrical cartridge having an open rear end and a nozzle opening at

the forward end thereof comprising a generally cup-shaped plunger member slidably receivable within said cartridge having a forward wall and a cylindrical skirt extending rearwardly from said forward wall terminating in a free trailing edge having a diameter slightly oversize the cartridge inner diameter for intimate contact with the cartridge wall, said forward wall comprising a relatively rigid non-deformable central portion having an aperture of truncated conical shape opening therethrough and a relatively flexible peripheral portion integrally connecting the central portion to the leading edge of said plunger skirt with said central portion spaced rearwardly of the skirt leading edge and said peripheral portion being planar



and extending radially and forwardly from said central portion to and intersecting said skirt leading edge at an acute angle to provide a relatively sharp circumferential edge in sliding engagement with the inner cartridge wall, and a solid resilient plug for engagement within said central portion aperture, said plug having a tapering nose portion, a truncated conical intermediate portion corresponding in shape to the plunger aperture and a rear end portion, and a pair of radially projecting shoulders on said plug at opposite ends of the intermediate portion adapted to sealingly overlie the opposite marginal edges of said aperture upon engagement of the plug within the plunger.

3,315,848
SAFETY DISPENSING CAP
Harold C. Anfossi, 11 Argyle St., Bowmanville,
Ontario, Canada
Filed Aug. 9, 1965, Ser. No. 478,147
3 Claims. (Cl. 222-361)



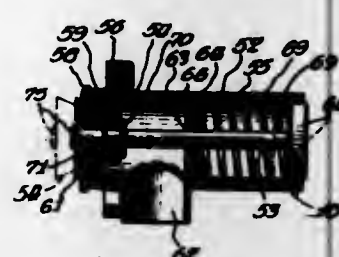
1. A safety dispensing cap for a narrow neck bottle-type container comprising an upper closed circular end part, a downwardly extending flange integrally formed on the outer edge of the upper closed circular end part, said flange formed with inner and outer sides, the inner side formed with an inwardly extending annular part, said narrow neck bottle-type container having an annular rim on the upper end of said narrow neck over which the said flange and the said inwardly extending annular part of said flange are adapted to extend, a narrower downwardly extending part integrally connected to the said upper closed circular end part, a wider conical part extending downwards from the said narrower downwardly extending part, the said wider conical part and the narrower downwardly extending part being formed with an interior dispensing chamber, an inlet opening in the lower part of the said chamber, and an outlet opening in the upper part of said chamber.

3,315,849
CLOSURE FOR COLLAPSIBLE TUBE
Albert M. Herzig, 700 N. Rexford Drive,
Beverly Hills, Calif. 90210
Filed Sept. 15, 1965, Ser. No. 487,503
4 Claims. (Cl. 222-491)



1. A container defining a flattened neck opening part formed of flexible material, the neck part when flat having front and back portions in contiguous relationship, the said portions having side edges, the material of the neck portion being sufficiently flexible that material in the container might be squeezed out between the contiguous portions, and improved resilient means providing an automatic positive closure for the container, said resilient means having a set providing a transverse bend in the neck portion for normally holding the front and back portions of the flattened neck together at the bend sufficiently tightly to prevent discharge of material from within the container, said resilient means being adapted to unbend said transverse bend and permit discharge of material through said opening as a result of pressure resulting from squeezing of the container whereby to allow discharge through the neck part.

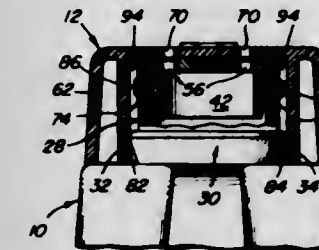
3,315,850
DISPOSABLE VALVED SPOUT
Carl A. Gran, Arlington Heights, Ill., assignor to Magi-Pak Corporation, a corporation of Delaware
Filed Apr. 29, 1965, Ser. No. 451,751
7 Claims. (Cl. 222-501)



1. A disposable valved spout for a liquid dispenser consisting of four elements: a tubular housing; a valve stem; a valve; and a spring; said housing being open at each end and having a side opening in a wall of said housing intermediate the ends thereof, said housing having a transverse wall between one end of said housing and said side opening, there being defined within said housing two spaced open ended chambers, one chamber being generally circular in cross section, said transverse wall having a circular bore therethrough, said valve stem being cylindrical and having a peripheral configuration complementary to said circular bore and extending through and being slidingly engaged in said bore so as to inhibit leakage between the two chambers around the stem and through the bore, said valve stem having a transverse member on one end thereof, said transverse member having a peripheral configuration substantially complementary to the circular interior of said one chamber in said tubular housing, but being slightly out of round, whereby said transverse member is slidable in said one chamber in the housing and the trapping of air between said transverse member and said transverse wall is prevented, said valve being affixed on the other end of said valve stem and being adapted to engage a valve seat defined adjacent the other

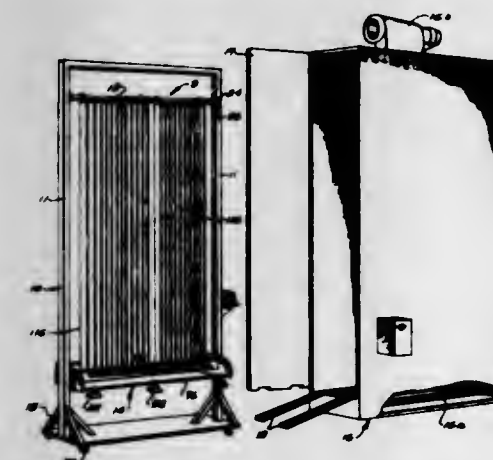
end of said housing, said spring being a coil spring constructed and arranged to bias said valve to the closed position against said valve seat.

3,315,851
DISPENSING CONTAINER AND CLOSURE THEREFOR
Robert A. Ayotte, Mays Landing, N.J., assignor to Wheaton Plastics Company, Mays Landing, N.J., a corporation of New Jersey
Filed Jan. 12, 1965, Ser. No. 424,910
14 Claims. (Cl. 222-559)



1. A dispensing container assembly comprising a container, said container including a top wall, a shoulder extending upwardly from said top wall, a neck extending upwardly from said shoulder, said neck having dispensing outlet means therein, a slidable closure for said outlet means, said closure having dispensing outlet means movable into or out of registry with said dispensing outlet means of said neck in accordance with sliding movement imparted to said closure, said shoulder including a first pair of spaced edges extending in the direction of travel of said slidable closure and a second pair of spaced edges extending substantially transversely of the direction of travel of said slidable closure, said spaced edges of said first pair each respectively having an undercut region extending lengthwise of the direction of travel of said sliding closure, means on said slidable closure engaged with said undercut region of the respective edges of said first pair whereby to hold said closure firmly engaged with said dispensing outlet means of said neck, and means including the respective edges of said second pair for limiting the sliding movement of said closure in either an opening or a closing direction.

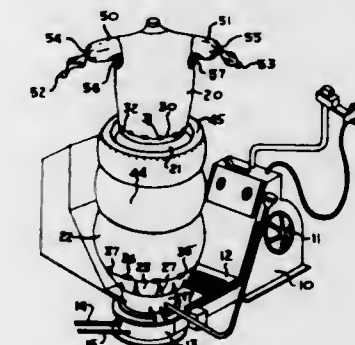
3,315,852
DRAPERY PLEATING, FINISHING AND SIZE CONTROL MACHINE
Frederick G. Getchell, James W. Getchell, and Harold K. Trunnell, Eugene, Oreg., assignors, by mesne assignments, of one-half to Northwest Science Investment Corporation and one-half to Preferred Growth Capital, Inc.
Filed Oct. 8, 1962, Ser. No. 229,007
5 Claims. (Cl. 223-32)



1. A pleating machine comprising an upright frame including a spaced parallel pair of vertical guide means,

a bar extending horizontally between the upper portions of said guide means, means removably mountable on said bar for detachably supporting the upper edge of a pleated drapery at a plurality of spaced points which are normally the points at which drapery hooks are engaged with the drapery, a pleating frame extending horizontally between said guide means beneath said bar, said pleating frame comprising guided means at each end respectively engaging said guide means whereby said pleating frame may be moved vertically with respect to said bar, said pleating frame comprising a plurality of pleating paddles adapted to be inserted respectively into the pleats of the drapery from one side thereof and a plurality of pleating fingers adapted to be inserted respectively into the pleats of the drapery from the other side thereof, means on said pleating frame mounting all of said pleating paddles for simultaneous movement from inactive positions at one side of the drapery to active positions within the pleats of the drapery, means on said pleating frame mounting all of said pleating fingers for simultaneous movement from inactive positions at the other side of the drapery to active positions within the pleats of the drapery, said pleating paddles and said pleating fingers interdigitating when in active positions, and interconnecting means between said paddle mounting means and said finger mounting means for causing simultaneous movements thereof from their inactive positions to their active positions and return.

3,315,853
FORM FINISHER BAG
Bertram G. Blevens and Frank H. Richterkessing, Louisville, Ky., assignors to W. M. Cissell Manufacturing Company, Louisville, Ky., a corporation of Kentucky
Filed Jan. 4, 1966, Ser. No. 518,623
8 Claims. (Cl. 223-70)

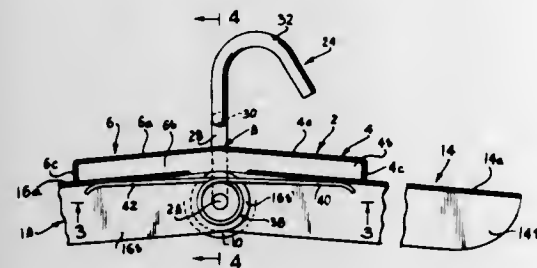


1. A form finisher bag comprising, a bodice portion, a skirt portion, a bridging portion connecting said bodice and skirt portions and serving to space the same from each other, a bottom portion connected to the lower edge of said skirt portion and serving to enclose the lower end of said bag, a first drawstring means for adjusting the waist line of said bag peripherally of said bodice portion and above said bridging portion, a second drawstring means for adjusting the hem line of said bag peripherally of said skirt portion and adjacent the junction of said skirt and bottom portions, and an inner bag portion extending peripherally of said bag and connected along a first peripheral line at its upper edge to said bridging portion and along a second peripheral line at its lower edge to said skirt portion and above the hemline of said bag, the area of skirt and bridging portions disposed between said first and second connecting lines being greater than the area of said inner portion disposed between said first and second connecting lines.

3,315,854

GARMENT HANGER

Clyde E. Glisson, Starkville, and Hugh King, Corinth, Miss., assignors to Garan Incorporated, New York, N.Y., a corporation of Virginia
Filed Oct. 14, 1965, Ser. No. 495,829
6 Claims. (Cl. 223-94)

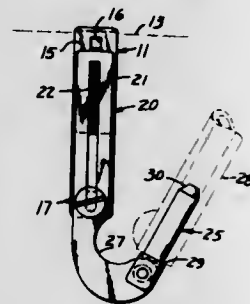


1. A clothes hanger comprising a support having a pair of fixed members extending in opposite directions, a pair of arms pivotally mounted on said support beneath and movable upwardly into engagement with said fixed members respectively, resilient means on said support and active on said arms to urge them into engagement with said fixed members respectively, said fixed members thereby defining stops limiting the movement of said arms in upward directions, said arms being movable away from said fixed members in opposition to the force exerted on said arms by said resilient means, and a suspending hook operatively connected to and extending from said support.

3,315,855

WAISTBAND HOLSTER

Walter D. Boone, 1327 Oakwood Drive, Arcadia, Calif. 91006
Filed Apr. 1, 1966, Ser. No. 539,559
5 Claims. (Cl. 224-1)



1. A waistband holster comprising: a hook including a bend, said hook being adapted to be placed over a waistband to be supported therefrom; a stud pivotally connected to and projecting from the hook remote from the bend to receive the discharge end of the hand-gun barrel, thereby to support the barrel of the hand-gun inside the trousers with the grip outside the waistband, the angle of the stud relative to the hook being adjustably variable.

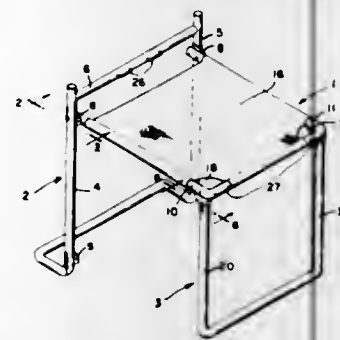
3,315,856

PACKBOARD WITH A FOLDING STOOL

Garnett V. Black, 723 3rd St., Hoquiam, Wash. 98550
Filed May 17, 1965, Ser. No. 456,324
4 Claims. (Cl. 224-9)

1. A packframe convertible to a stool comprising a substantially rectangular main frame having a lower horizontal extension for supporting a pack, an open seat frame pivoted at one end to the upper portion of the main frame, a leg frame pivoted at one end to the other end portion of the seat frame, a canvas seat mounted across said seat frame, shoulder straps attached to the said upper portion of the main frame and extending over the seat frame and connected to the said other end portion of the seat frame, whereby when the three frames are in an unfolded

position an inverted U-shaped stool is provided and when the three frames are folded to be parallel to each other

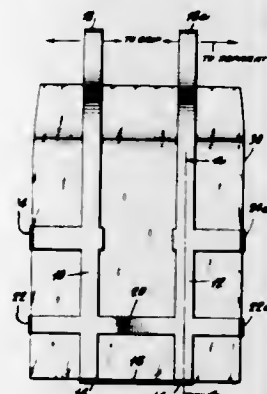


with the leg frame between the seat and main frames, a packframe is provided.

3,315,857

BAG CARRIER

Hjalmar P. Eclow, 519 S. Veltch St., Arlington, Va. 22204
Filed Apr. 6, 1965, Ser. No. 445,875
5 Claims. (Cl. 224-45)

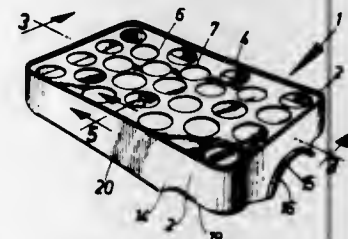


1. A flexible bag carrier in the form of a skeleton frame of flexible material capable of being folded to collapsed storage position, and comprising a plurality of laterally spaced vertical strips providing handle means at the upper ends thereof and having transversely extending lower ends for bag support, and a plurality of generally horizontal disposed strips vertically spaced apart and connecting said vertical strips below the handle means, an uppermost horizontal strip being disconnected between said vertical strips to permit lateral separation of the vertical strips and the uppermost horizontal strip for insertion and removal of a bag but with the uppermost horizontal strip maintained in bag-confining position by the vertical strips when grasping together the handle means for carrying purposes.

3,315,858

SERVICE TRAY

Joel P. Horner, 2256 Dougall Ave., Windsor, Ontario, Canada
Filed Mar. 16, 1965, Ser. No. 440,164
2 Claims. (Cl. 224-48)



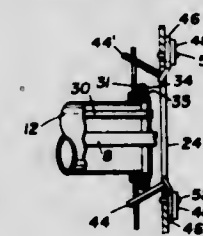
1. A serving tray comprising a tray base, said tray base having a forward end and a rearward end, said tray base being supplied with a surrounding downwardly depending ledge, said tray having an upper surface and under surface, said under surface being supplied with a down-

wardly depending post substantially forward of said under surface center, said post ending in a substantially circular plate located in a plane perpendicular to said post, said post and said plate comprising a downwardly depending handle means, said ledge located at said rearward end of said tray being supplied with a concave cutout, said cutout being supplied with a load distribution lip, said cutout and lip suitable to permit a user of said tray to nest his arm therein, substantially at his elbow, upon holding said handle and carrying said tray, said surrounding ledge being supplied with a shallow cutout on each side of said concave cutout, said shallow cutout being sufficiently deep to permit insertion of fingers of a user of said tray upon said tray being located on a flat surface and said user desiring to lift up said rearward end of said tray for insertion of his fingers of one hand thereunder and lifting the tray up sufficiently to enable the other arm to reach in under the tray and grip said handle, said downwardly depending ledge having a lower edge, portions of said lower edge being supplied with downwardly facing glider means of nonmarring and nonelastic material to permit said tray to slide smoothly over a surface without marring said surface.

3,315,859

WEB TRACKING MECHANISM

William S. Owen, Jr., and Robert F. Smith, Jr., Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Mar. 31, 1965, Ser. No. 444,252
14 Claims. (Cl. 226-21)



6. In a web tracking mechanism, the combination comprising:
a support;
a roller pivotally mounted on said support for supporting a web trained thereover for travel along a predetermined path;
web sensing means mounted at one end of said roller for rotation therewith, and for axial movement relative to said roller in response to lateral drift of said web from said predetermined path;
cam means rotatably mounted on said web sensing means;
a member inclined at an angle with respect to the axis of said roller; and
clutch means interposed between said cam means and said web sensing means whereby said cam means is moved into engagement with said member in response to travel of said web, said member and said cam means slidably cooperating to pivotally move said roller in a direction for returning said web to its predetermined path in response to movement of said web sensing means.

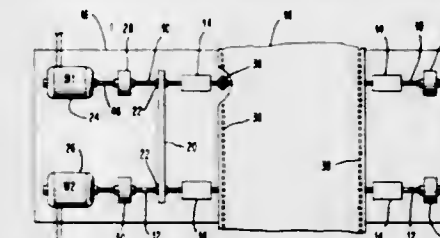
3,315,860

HIGH SPEED WEB OR PAPER FEEDER

George R. Adams, Doylestown, and Robert M. Mihalek, Ambler, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed June 28, 1965, Ser. No. 467,396
10 Claims. (Cl. 226-47)

1. Web advance apparatus comprising:
(A) a pair of spaced rotatable driving elements for engaging and driving the web;

(B) means interconnecting said elements for simultaneous rotation at the same speed;
(C) means for rotating one of said drive elements at one speed whereby the other element is driven at said one speed through said interconnecting means;
(D) means for rotating the other of said drive elements at another and higher speed whereby the said

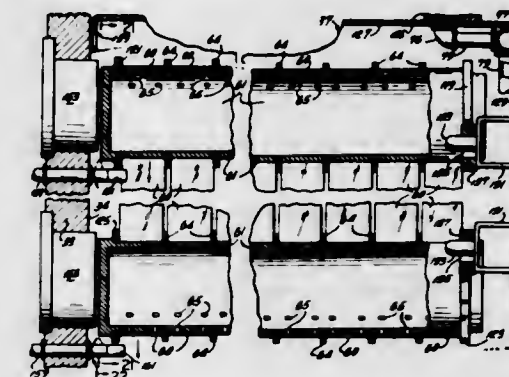


one element is also driven at said higher speed through said interconnecting means;
(E) normally inoperative clutch means for each of said drive elements whereby each may selectively be drivingly engaged with its rotating means; and
(F) means for selectively activating each of said clutch means thus selectively to advance said web at one or the other of said speeds by its drive element through said interconnecting means.

3,315,861

MAGNETIC TAPE SUPPORT

Louis G. Metzger, 549 Riverside Drive, New York, N.Y. 10027
Continuation of application Ser. No. 407,814, Oct. 30, 1964. This application May 6, 1966, Ser. No. 548,336
8 Claims. (Cl. 226-90)



1. A random access information storage memory device comprising:
supporting means,
magnetic means mounted on said supporting means defining a first magnetic pole and a second magnetic pole,
a first turn-around having a face defined by material attracted by said first magnetic pole,
said face of said first turn-around having a shape adapted to engage the face of said first magnetic pole so that said first magnetic pole will hold said first turn-around precisely in a first predetermined position,
a second turn-around having a face defined by a material adapted to be attracted by said second magnetic pole,
said face of said second turn-around having a shape adapted to engage said second magnetic pole so that said second magnetic pole will hold said second turn-around precisely in a second predetermined position,
a plurality of storage tape loops supported by said first and second turn-arounds and suspended between said first and second turn-arounds, and
transducing means mounted on said supporting means positioned to perform transducing operations on said

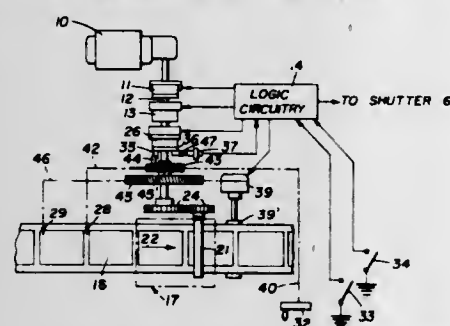
tape loops when said turn-arounds supporting said tape loops are held by said magnetic poles in said first and second predetermined positions.

3,315,862

WEB DRIVE MECHANISM

David N. Schwardt, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Apr. 12, 1965, Ser. No. 447,387
6 Claims. (Cl. 226-136)



1. A film metering device for selectively driving a film strip along a preselected path past a printing aperture comprising:

- a film drive means;
- a first pointer;
- a second pointer;

linkage means for adjusting the location of said first and second pointers along the path of the film strip being presented to the printing aperture so that said second pointer is always twice the distance of said first pointer from the printing aperture;

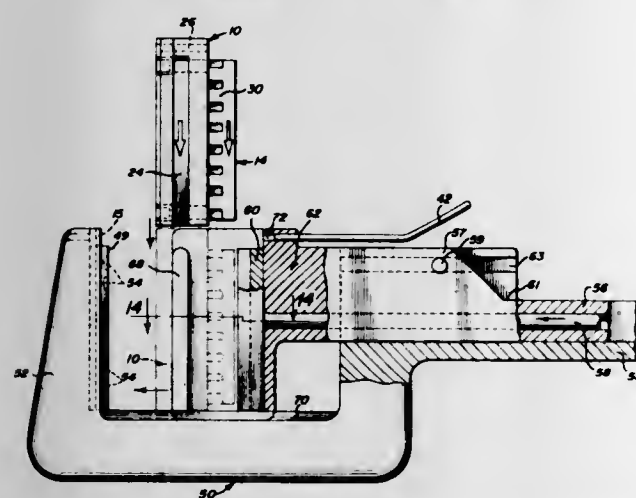
first circuit means for controlling said drive means to advance the film the distance corresponding to the spacing of said first pointer from the aperture; and other circuit means operable for controlling said first circuit means to advance the film strip twice the distance of said first pointer when an unprintable negative is detected adjacent to the printing aperture.

3,315,863

MEDICAL INSTRUMENT

Thomas M. O'Dea, Cheshire, Conn., assignor to United States Surgical Corporation, Baltimore, Md., a corporation of Maryland

Filed July 6, 1965, Ser. No. 469,650
16 Claims. (Cl. 227-19)



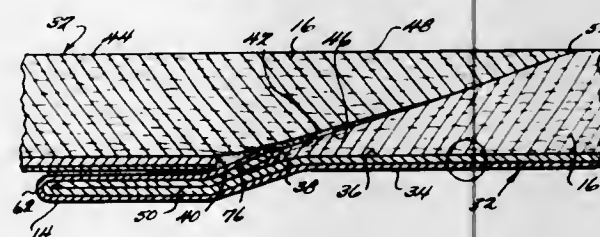
8. A medical instrument for stapling organs and the like comprising a C-shaped jaw having an upstanding forward leg, an elongated instrument body connected to the rear of said jaw, a movable carrier member positioned within the mouth of said jaw and movable toward and away from said forward leg, an upstanding pusher head positioned within said carrier member and relatively movable thereto in a forward and rearward direction, an

elongated operating rod connected to said pusher head and extending rearward through said elongated instrument body, a removable disposable staple carrying and ejection unitary assembly comprising a staple-holding cartridge provided with a plurality of slots extending through said cartridge, each slot being adapted to hold a surgical staple therein, said assembly further comprising a drive member having an elongated rear body positioned behind and spaced from the rear wall of said cartridge and having a plurality of drive blades extending from said rear body and each penetrating a respective one of said slots, said assembly being removably mounted on the forward end of said carrier member, an anvil provided with a plurality of depressions correspondingly arranged in association with the slot arrangement of said cartridge, means for mounting said anvil on the rear face of said forward leg such that said depressions face said carrier member, whereby the organ to be stitched may be clamped between the forward face of said cartridge and said anvil when said carrier member is moved forward, after which said operating rod is forced forward and said pusher head engages said rear body of said drive member, forcing the same forward to effect the ejection of each said staple in said cartridge.

3,315,864

TUBULAR MEMBER AND CONTAINER MADE THEREFROM

Roy M. Martin, Henrico County, and Calvin L. Wilson, Chesterfield County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed June 9, 1965, Ser. No. 462,666
7 Claims. (Cl. 229-4.5)



1. A tubular member comprising a helically wound web of material including a first strip of material having opposed sides and opposed skived marginal end portions terminating in opposed end edges, and a second strip of material disposed against the inner side of said first strip and having opposed end edges, one of said end edges of said second strip being disposed against the outer side of of the adjacent marginal end portion of said first strip in such a manner that said second strip forms a folded loop the fold of which is spaced from the adjacent end edge of said first strip, the opposite end edge of said second strip being disposed against the inner side of said first strip in inwardly spaced relation to the adjacent end edge thereof, said strips being secured in helically wound relation with the portion of said second strip between said fold and the adjacent end edge thereof and the adjacent skived marginal end portion of said first strip lapping a portion adjacent the opposite end edge of said second strip and the adjacent marginal end portion of said first strip.

3,315,865

STACKABLE FIBER DRUM

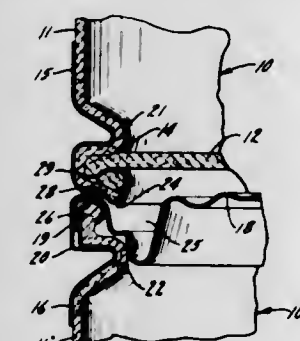
Paul Bracht, deceased, late of Porz-Westhoven, near Cologne, Germany, by Maria Herres Bracht, sole heir, Porz-Westhoven, near Cologne, Germany, assignor to Inland Steel Company, Chicago, Ill., a corporation of Delaware

Filed Jan. 4, 1965, Ser. No. 423,399

2 Claims. (Cl. 229-5.6)

1. A shipping container comprising, in combination, a peripherally continuous sidewall formed of fibrous mate-

rial, means defining a peripherally continuous inwardly extending rib formed on said sidewall at a point spaced axially inward of the lower end thereof, a bottom closure positioned within the lower end of said sidewall and seated against said rib, a metallic reinforcing band surrounding the lower end of said sidewall, the lower ends of said band and said sidewall being curled together to form a seamed connection therebetween within said seamed connection engaging a portion of said bottom closure for clamping the latter between said seamed connection and



said rib, said bottom closure being formed of fibrous material and having its opposite faces engaged by respective ones of said rib and said seamed connection whereby said bottom closure is rigidly secured in place relative to said sidewall, said band having a peripherally continuous depending ridge dimensioned for complementary telescopic engagement with the top contour of a similar shipping container when two of said containers are stacked one upon another so as to preclude accidental dislodgment of stack containers.

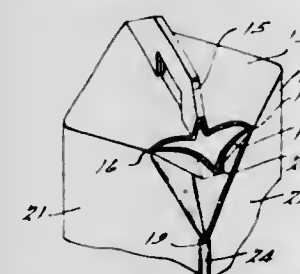
3,315,866

POURING SPOUT

David A. Kersh, 127 Wadsworth, Santa Monica, Calif. 90405, and Irving Kersh, 18411 Greenlawn, Detroit, Mich. 48221

Application Aug. 12, 1964, Ser. No. 390,263, now Patent No. 3,262,627, dated July 26, 1966, which is a continuation of application Ser. No. 169,373, Jan. 29, 1962. Divided and this application Sept. 9, 1965, Ser. No. 486,101

9 Claims. (Cl. 229-7)



1. In a container, a spout portion having a pair of spaced points which form a pivotal axis across the interior of the container, the portion of the spout on one side of the axis being severed from the container, the portion of the spout on the other side of the axis being in hinged relation with the container portion therebelow, said severed portion of the spout being cut from the top of the container to hinge upwardly therefrom, said severed spout portion having a central reversely bent section therein forming a pouring trough portion.

3,315,867

CORNER POST

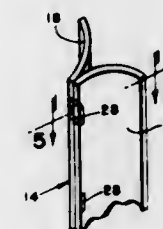
Paul R. Seltman, Florence, Ky., assignor to Crescent Paper Tube Company, Inc., Florence, Ky., a corporation of Kentucky

Filed Aug. 31, 1964, Ser. No. 393,043

6 Claims. (Cl. 229-14)

1. A container having substantially vertical walls and being polygonal in cross section, said container having a

plurality of corners, a bottom closing the lower end of said container, a corner post disposed within said container in each of said corners, each of said corner posts comprising a first curved portion and a second curved portion connected together along a common edge on their convex sides, the concave side of said first curved portion facing one of said vertical walls forming a corner of said

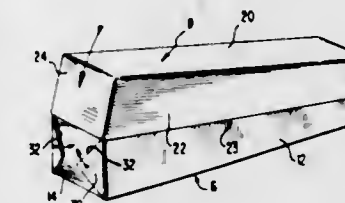


container, the concave side of said second curved portion facing the other of said vertical walls forming said corner of said container, said first curved portion and said second curved portion having their ends at said common edge disposed at the junction of said walls, and means securing said first curved portion and said second curved portion together adjacent said common edge.

3,315,868

PACKAGE

Gerald L. Hempfling, Clarksville, Md., assignor of one-half to James E. Van Noy, Clarksville, Md.
Filed July 22, 1965, Ser. No. 473,964
10 Claims. (Cl. 229-31)



1. A package comprising a bottom wall of sheet material and opposite side and end walls of sheet material foldable relative to said bottom wall to form an enclosure for receiving an article, and gusset means connecting adjacent side and end walls and being freely foldable into positions against the external sides of said end walls when said side and end walls are folded relative to said bottom wall to receive an article, said gusset means being freely foldable into outwardly extending positions generally coplanar with said side and end walls, said gusset means having an exposed and unobstructed marginal edge portion projecting beyond said end walls and downwardly towards the plane of said bottom wall when said side and end walls are folded to receive an article, said marginal edge portion forming an exposed and unobstructed cam edge dimensioned to be engaged and cammed to fold said gusset means inwardly against the adjacent end wall by a lid placed over portions of said side and end walls.

3,315,869

BOOK CARTON

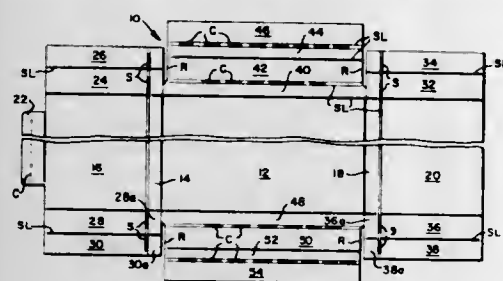
David H. Rous, New York, N.Y., assignor to Federal Carton Corporation, North Bergen, N.J., a corporation of New York

Filed May 19, 1965, Ser. No. 457,124

10 Claims. (Cl. 229-34)

1. A container formed of a single piece of fibrous material comprising a bottom wall having a pair of tubular side walls and end walls extending at right angles to said side walls, cover flaps extending longitudinally from said end walls, overlying said tubular side walls and

folded extensions at the sides of said end walls reinforcing the container at its corners and additional folded

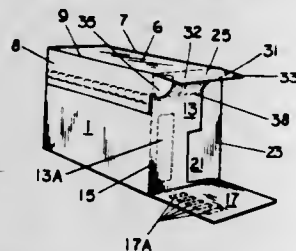


extensions at the sides of said cover flaps providing multiples overlying the ends of said tubular side walls.

3,315,870

TOP OPENING CARTON

Bayard I. Barnes, Oakland, Calif., assignor to The Mead Corporation, a corporation of Ohio
Filed Apr. 22, 1965, Ser. No. 449,982
1 Claim. (Cl. 229—37)



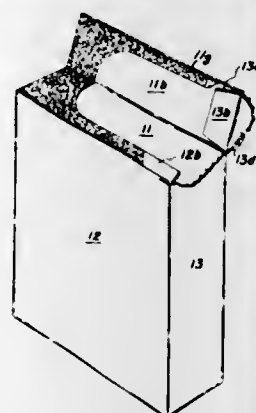
A carton comprising a bottom panel, front and rear panels foldably joined to the front and rear edges respectively of said bottom panel, a lid panel foldably joined to the edge of said rear panel remote from said bottom panel, a thermoplastic heat sealable liquid tight coating completely covering the inside and outside surfaces of said bottom, front, rear and lid panels, rear end panels foldably joined to opposite end edges of said rear panel respectively, front end panels foldably joined to the end edges of said front panel respectively, bottom end panels foldably joined to opposite end edges of said bottom panel respectively, and a thermoplastic heat sealable liquid tight coating completely covering the inside surface of said bottom end panels and completely covering the inside surfaces and partially covering the outside surfaces of said rear end panels and of said front end panels, said front and rear end panels being secured together in overlapping relationship with portions of the outer surfaces of said front end panels being disposed in face contacting relation with the entire inner surfaces of said rear end panels and being secured thereto by said heat sealable coatings and the inner surfaces of said bottom end panels being secured in face contacting relation to portions of the outer surfaces of said rear end panels and of said front end panels, said rear end panels being narrower than said front end panels and being secured to the outer surfaces of said front end panels respectively so as to expose an outer area of said front end panels and the exposed areas of said front end panels and of the contacting areas of said bottom end panels being embossed.

3,315,871
CARTON

Norman H. Moore and Thomas W. Foster, Palo Alto, Calif., assignors to Fibreboard Paper Products Corporation, San Francisco, Calif., a corporation of Delaware
Filed June 9, 1965, Ser. No. 462,589
9 Claims. (Cl. 229—37)

1. A carton comprising opposed side and end panels and top and bottom closures, said top closure comprising a first flap hingedly connected to a first one of said side panels a second flap of less width than said first flap

hingedly connected to the second one of said side panels and third and fourth flaps hingedly connected to said opposed end panels, first cut means formed on said second side panel at each corner of said top closure said first cut means being in parallel and in slightly offset relationship to a score line hingedly connecting said second flap to said second side panel, second cut means formed on an underside of said first flap, each of said first and second cut means arranged to extend into their respective panel or flap to a limited depth, means adhesively secur-

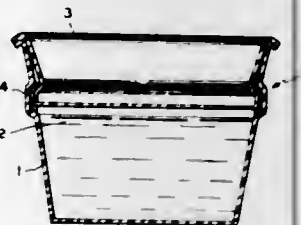


ing inner surface portions of said first flap in overlying relationship with respect to said second flap adjacent said second cut means for permitting part of said inner surface of said first flap portion to remain secured to said second flap when said first flap is detached from said second flap, said first cut means constructed and arranged on the carton side walls to permit a slight crushing of the corner portions of said first and second flaps and said second side panel and cooperate with said third and fourth flaps to effect efficient sealing thereat.

3,315,872

HERMETICALLY SEALED PLASTIC CONTAINERS

Anthony J. Carbone, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Nov. 2, 1964, Ser. No. 448,019
3 Claims. (Cl. 229—43)



1. A hermetically sealed container comprising (1) a polystyrene, unitary container body having an opening, (2) a polystyrene unitary closure adapted to close said opening by a snap-fit means comprising mating convex portions and concave portions on said container body and on said closure whereby said container body or said closure is subjected to a springing action when said closure is applied to, and removed from said container body, and (3) a hermetic seal consisting essentially of an ethylene/vinyl acetate copolymer composition between said container body and said closure in the zone of said snap-fit means.

3,315,873

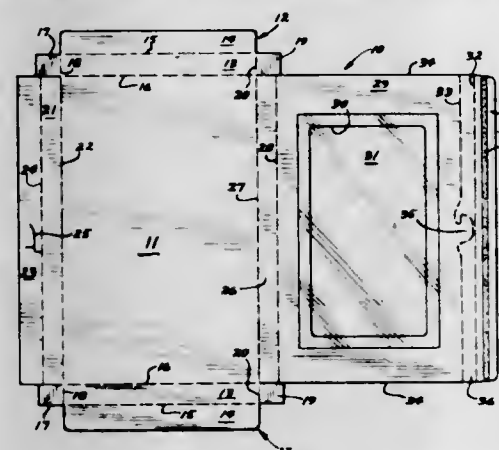
RECLOSABLE PACKAGE

William M. Strange, Neenah, Wis., assignor to John Strange Carton Company, Menasha, Wis., a corporation of Wisconsin

Filed Jan. 9, 1961, Ser. No. 81,450
7 Claims. (Cl. 229—51)

1. A recloseable package which comprises, a bottom panel of generally rectangular shape, an upstanding end

wall at each end of said bottom panel, an upstanding front wall at the forward edge of said bottom panel, an upstanding rear wall at the rearward edge of said bottom panel, a flat cover panel overlying said bottom panel and joined at its rear edge to the upper edge of said upstanding rear wall, a flat seal strip joined in angulated depending relation to the front edge of said cover and sealed to the surface of the front wall, the line of juncture be-



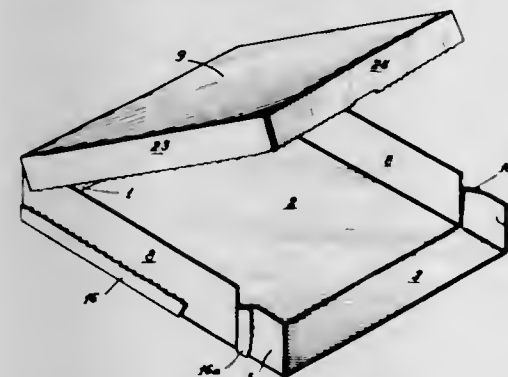
tween said seal strip and said cover being perforated along a fold line, and a second perforated tear line in said flat cover panel lying in spaced relation inwardly of said perforated fold line and forming a tear strip therewith in the plane of said cover panel whereby, upon tearing said strip along the perforated lines, the cover will become free to open, but said seal strip will remain secured to the front wall as additional support therefor and extending fully to the top edge of said front wall.

3,315,874

DROP-FRONT CARTON HAVING TEAR STRIP IN COVER FLAPS

Kenneth T. Buttery, Kalamazoo, Mich., assignor, by mesne assignments, to Brown Company, a corporation of Delaware

Filed Nov. 18, 1964, Ser. No. 412,106
16 Claims. (Cl. 229—51)



1. A carton formed of an integral blank cut and scored to provide a bottom member having inner end wall members attached thereto, a rear wall member, an inner front wall member, and end flaps attached to said rear and inner front wall members, a cover hingedly connected to the upper edge of said rear wall member and provided with cover flaps comprising outer end wall members and an outer front wall member, said cover flaps having terminal extensions affixed to an adjacent cover flap, said cover flaps and said terminal extensions each being provided with a pair of spaced-apart substantially parallel fracture scores defining a tear strip, said cover flaps being secured to said inner end wall members and to said inner front wall member below the lower of said fracture scores, the tear strips of said cover flaps being secured together in alignment by the tear strips of said terminal extensions, the margins of said outer end wall members below the lower of said fracture scores being divided

transversely into two segments, the segment at the forward portion being of substantially the same length as the end flaps of said inner front wall member, whereby when said tear strip is removed, said inner front wall member and its end flaps may be unfolded to permit the contents of the carton to be removed through the resulting open front thereof.

3,315,875

DISPENSING CONTAINER

Karl Rudolf Praetorius, Nurnberg, Germany, assignor to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed Feb. 8, 1965, Ser. No. 431,096
Claims priority, application Germany, Feb. 14, 1964, D 43,627

6 Claims. (Cl. 229—51)

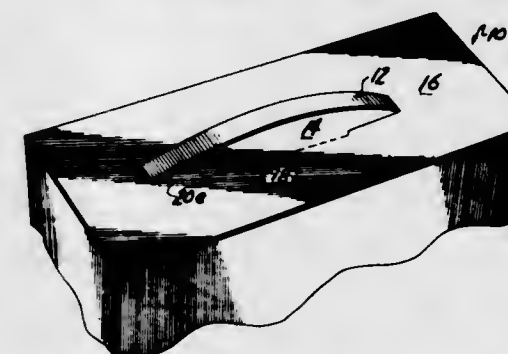


1. A package of parallelepipedic shape for stacked containers, boxes, and similar articles adapted to be stacked, comprising: a rectangular body having two opposed side walls, a front wall, a back wall, a bottom wall, and a top wall; said top wall including a front flap integrally hinged along a fold line void of perforations and continuously integral along its entire length to the top edge of said front wall; said front wall having a line of perforation defining the three sides of a tear-out front window and terminating at each end adjacent to each end of said front flap fold line, respectively; and said front flap being separate from said back and side walls forming pull tab means readily separable without rupture of side walls for tearing out said tear-out front window along said line of perforation.

3,315,876

HANDLE CONSTRUCTION

Robert H. Vander Jagt, Grandville, Mich., assignor to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware
Filed Oct. 21, 1965, Ser. No. 499,499
10 Claims. (Cl. 229—52)

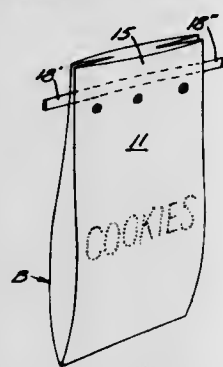


7. In a carton blank, a handle construction comprising a handle-supporting panel, an opening having a narrow portion formed in said panel, strap means traversing said opening secured at opposed end portions of said opening, said strap means having a transversely flexible portion disposed beneath said opening narrow portion which is of a greater width than said opening narrow portion, and means integrally formed with said panel urging the strap

means portion beneath said opening narrow portion into engagement with panel portions defining said narrow portion.

3,315,877
BAG

John Joseph Grevich, Star Prairie, Wis., assignor to Doughboy Industries, Inc., New Richmond, Wis., a corporation of Wisconsin
Filed Sept. 14, 1965, Ser. No. 487,208
1 Claim. (Cl. 229—65)



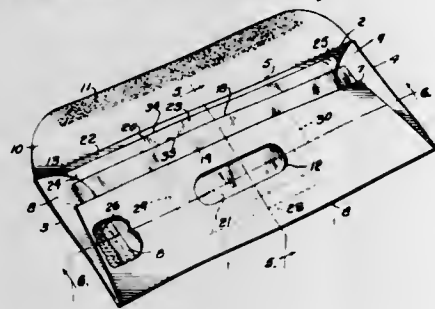
A reclosable bag for maintaining product freshness, comprising a bag type receptacle constructed of sheet material and having front and rear walls with upper portions lying substantially against each other, said upper portions being twice successively folded back upon themselves and downwardly to define a multiple thickness closure portion having an inner fold area confronting the outer side of one of said walls and also having an outer fold area facing outwardly, the bag thereby being closed to maintain freshness of product,

a quantity of adhesive between and joining said inner fold area and the outer side of said one wall, and a deformable strip capable of retaining a predetermined shape and applied to said outer fold area of the bag, the ends of said strip being bent back upon themselves and around said folded upper portions and said bag walls to cooperate with said adhesive in retaining said upper portion in folded condition and against the outer side of said one wall, said strip also functioning to hold the upper portion of the bag closed and downwardly folded after the bag is initially opened to thereby maintain freshness of product.

3,315,878

ENVELOPE HAVING AN AUXILIARY POCKET
Walter L. Hiersteiner, Mission, Kans., assignor to Tension Envelope Corporation, Kansas City, Mo., a corporation of Delaware

Filed Oct. 14, 1965, Ser. No. 495,945
9 Claims. (Cl. 229—72)



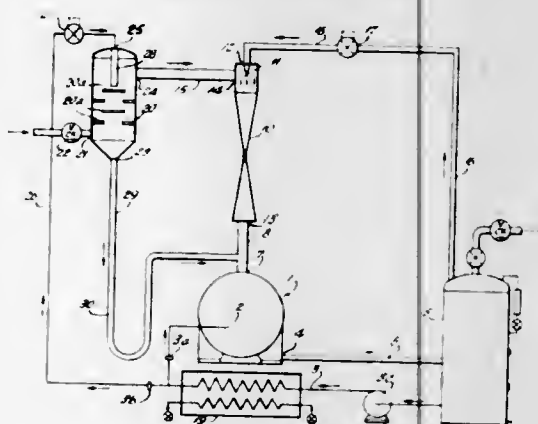
1. An envelope including generally rectangular front and rear panels interconnected along three of their corresponding edges, with the other edges unconnected to provide an insert opening, a single patch of material between said panels and having a fold providing folded-over panel portions,

adhesive sealing one of said panel portions to one panel of the envelope and leaving the other panel portion loose from the other panel of the envelope to provide one pocket having substantially the size of the envelope and another pocket between said folded-over panel portions, each of which is accessible through the insert opening, and

a closure flap on one of the panels of the envelope extending along the insert opening for folding over the other panel for closing the insert opening and retaining the enclosures in the respective pockets, said one panel being of less depth than the other panel of the envelope and the panel portion of said patch that is secured to said one panel being of greater depth than said one panel and shorter in depth than the other panel portion of said patch to facilitate insertion of enclosures in said pockets.

3,315,879

EVACUATION SYSTEM
Irving C. Jennings, South Norwalk, Conn.
Filed Apr. 22, 1966, Ser. No. 549,761
12 Claims. (Cl. 230—45)



1. A system for evacuating fluid having liquid and gaseous phases, comprising liquid ring pump means having suction and discharge portions and forming a second stage of the system, jet diffuser means having inlet and outlet portions and forming a first stage of the system, said jet diffuser means having its outlet portion communicating with said suction portion of said pump means, supply conduit means communicating with and feeding the fluid to said inlet portion of said jet diffuser means, and separating means communicating with said conduit means upstream of said inlet portion of said jet diffuser means for separating the liquid phase from the fluid before it reaches said jet diffuser means, said separating means having means communicating with said suction portion of said pump means, so that the separated liquid bypasses said jet diffuser means.

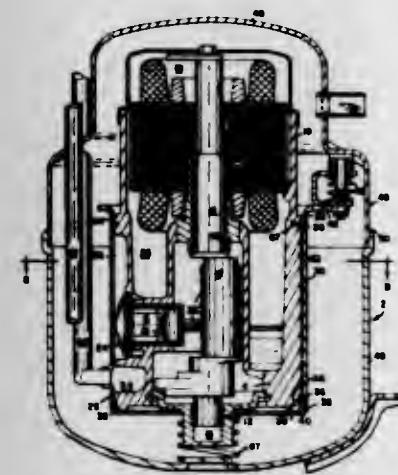
3,315,880

COMPRESSOR MANIFOLD SEAL
Tadek M. Kropiwnicki, Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed Oct. 24, 1965, Ser. No. 504,557
4 Claims. (Cl. 230—58)

1. In a hermetic motor compressor apparatus, the combination of a housing defining a generally cylindrical chamber; a compressor block telescopically received in said chamber, said block having first and second annular sides projecting therefrom engageable with the inner wall of said housing to define in cooperation therewith a substantially annular discharge manifold; the part of said block between said first and second projecting sides defining a plurality of radially oriented cylinders opening into said discharge manifold; a crankshaft rotatably jour-

nalled in said block; a piston slidably received in each cylinder operatively secured to said crankshaft; a suction manifold; valve means regulating communication of each cylinder with said suction manifold and said discharge manifold; and means for sub-dividing said discharge manifold into a first manifold section communicating with at least one of said cylinders and a second manifold section to permit said first manifold section to be connected with said suction manifold to thereby render said one cylinder



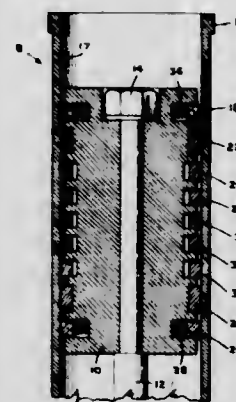
ineffective including, an outwardly projecting flange on said block on each side of said one cylinder engageable with the inner wall of said housing, said flanges extending between said first and second projecting sides, the outer surface of each flange having a shallow groove therewithin continuing from said first projecting side to said second projecting side, and a length of resilient seal in each flange groove, the dimension of said seals being greater than the depth of said flange grooves so that said seals project into sealing engagement with the inner wall of said housing.

3,315,881

SELF-LUBRICATING SYSTEM PARTICULARLY ADAPTABLE FOR USE IN HIGH PRESSURE COMPRESSORS

Martin J. Halpin, West Seneca, N.Y., and Derek Woollett, West Didsburg, England, assignors to Worthington Corporation, Harrison, N.J., a corporation of Delaware

Filed July 23, 1965, Ser. No. 474,310
8 Claims. (Cl. 230—206)



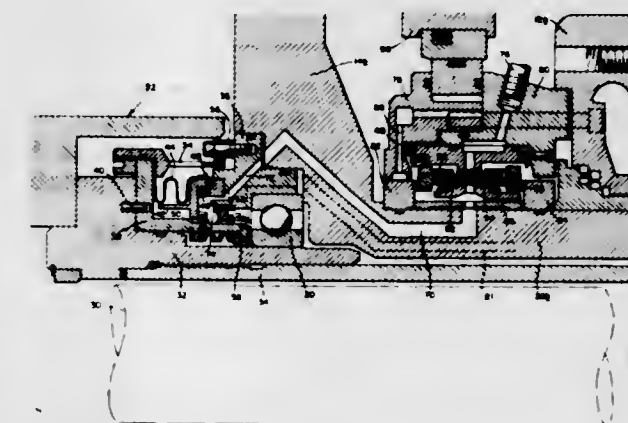
1. In a self-lubricating system for a reciprocating compressor comprising:
(a) a cylinder liner;
(b) said liner having a non-clogging porous coating on the inner wall thereof;
(c) a piston reciprocal within said liner;
(d) piston ring means on said piston extending therefrom into contact with said inner wall of the cylinder liner;

(e) said piston ring means comprising a consumable self-lubricating material applied to said coated liner upon reciprocation of said piston;
(f) and the non-clogging porous coating on the inner wall of the cylinder liner comprising a material which cooperates with the piston ring means to maintain relative lubricity between the piston ring means and said inner wall of the cylinder liner, whereby sufficient liner porosity is maintained by the properties of the material forming the coating on the inner wall of the cylinder liner.

3,315,882

CENTRIFUGE HAVING ROTARY SOLIDS DISCHARGE CONVEYOR WITH BEARING SEAL
Karl G. Reed, Wayne, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

Filed Oct. 5, 1964, Ser. No. 401,383
4 Claims. (Cl. 233—7)



1. A centrifuge comprising
(a) a bowl assembly mounted to rotate about an axis,
(b) a conveyor assembly comprising a helical conveyor element and disposed within the bowl assembly,
(c) lubrication-requiring bearing means mounting the conveyor assembly within the bowl assembly for rotation relative thereto, process vapors in the bowl tending to follow a path to reach the bearing means,
(d) rigid-faced sealing means sealingly held on one of said assemblies and resiliently biased into sealing engagement with the other assembly, said rigid-faced sealing means being disposed on the path intermediate said helical conveyor element and said bearing means,
(e) elastomeric sealing means sealingly held on one of said assemblies and having its distal periphery sealingly engaging the other assembly, the elastomeric sealing means being disposed on the path intermediate the rigid-faced sealing means and the bearing means, the rigid-faced sealing means and the elastomeric sealing means together with the conveyor assembly and the bowl assembly defining a chamber, and
(f) means for supplying a gas under pressure to said chamber.

3,315,883

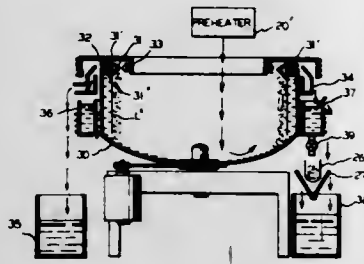
METHOD OF AND APPARATUS FOR COLLECTING HONEY

Walter R. Meier, 143 S. Rose Lane, Columbus, Nebr. 68601

Filed Oct. 4, 1966, Ser. No. 584,270
9 Claims. (Cl. 233—11)

1. The method of recovering honey from a mixture of honey, beeswax and slumgum which consists in:
(a) producing a floating layer of the mixture on a layer of honey;

- (b) forming a barrier to movement of the floating layer;
 (c) urging said floating layer toward said barrier;
 (d) heating the layer, only in the region of said barrier and only to a temperature sufficient to melt said wax,



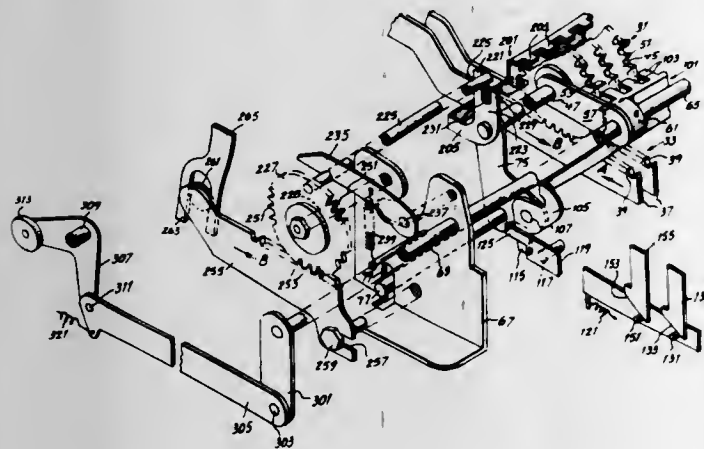
- whereby the honey in said mixture is released and separates from said floating layer;
 (e) removing molten wax and entrained slumgum; and
 (f) removing honey from the layer of honey.

3,315,884

MECHANICAL MEMORY UNIT

Ralph V. Bennett, Norwalk, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Mar. 1, 1965, Ser. No. 435,928
 4 Claims. (Cl. 235-60)

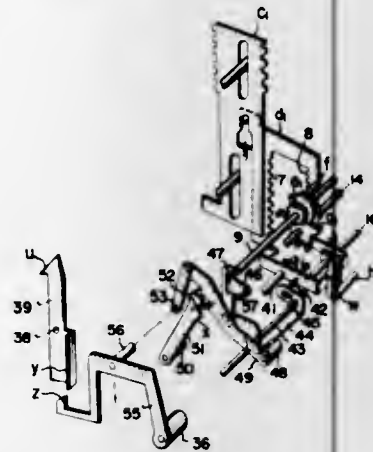


1. In a cyclicly operable business machine, a value storage and recall mechanism comprising:
 (a) a differentially settable memory unit;
 (b) a differential transfer mechanism;
 (c) means for moving said transfer mechanism to a set position corresponding to a value during the first half of a cycle of operation of said machine;
 (d) erasing means for actuating said memory unit to its zero condition during the first half of said cycle of operation;
 (e) means for shifting said memory unit into engagement with said transfer mechanism at the end of said first half cycle whereby said value is transferred to said memory unit during the second half of said cycle; and
 (f) means for temporarily disabling said erasing means thus to retain the value set in said memory unit for use during subsequent cycle of machine operation; and
 (g) control means selectively operable to latch said memory unit and transfer mechanism releasably in engagement with each other while said erasing means is disabled thus to retain the value last entered into said memory unit for recall when desired.

3,315,885
 APPARATUS FOR CALCULATING COMPLEMENTS IN CALCULATING MACHINES

Tetsuo Sato and Harutaro Oba, Ohito-machi, Takata-gun, Japan, assignors to Tokyo Denki Kabushiki Kaisha, Tokyo-to, Japan

Filed Dec. 27, 1965, Ser. No. 516,227
 Claims priority, application Japan, Dec. 30, 1964, 39/102,780
 2 Claims. (Cl. 235-60)



1. In a mechanical calculating machine having an apparatus for calculating complements, said machine having a plurality of frame members corresponding to the successive denominational orders, each of said frame members having an addition rack and a subtraction rack thereon and being displaceable longitudinally of said racks, pin carriage means, frame member moving means coupled to said frame members for moving them longitudinally under control of said pin carriage means, a plurality of recording pinions, one for each frame member and movable transversely of said racks for selective meshing with said addition racks or said subtraction racks, a plurality of rocking levers, one associated with each pinion for engaging the adjacent frame members for raising the adjacent frame members to increase or decrease the number indicated thereby by one unit, an indicating wheel having a plurality of indicating type faces thereon and positioned adjacent the frame member for the lowest denominational order, an indicating frame member engaged with said indicating wheel for rotating said indicating wheel for positioning different type faces on said indicating wheel to print, and means for moving said indicating frame member, that improvement comprising a first lever coupled to the rocking lever for the highest denominational order recording pinion, a second lever, said first lever being movable toward and away from said second lever to engage and disengage therefrom, said second lever engaging the frame member for the lowest denominational order for moving said last mentioned frame member to lower it when said first lever is disengaged from said second lever, and coupling means coupled between said second lever and the indicating frame member moving means for moving said indicating frame member in the direction to rotate said indicating wheel to move the appropriate type face into printing position upon movement of said first and second levers in response to the rocking motion of said highest denominational order recording pinion.

3,315,886

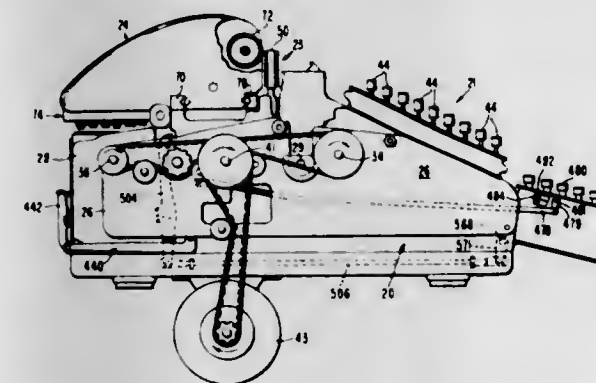
ACCOUNTING MACHINE ERROR CORRECTION MECHANISM

Nicholas Kondur, Jr., Northville, and Ronald H. Mack, Plymouth, Mich., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Oct. 8, 1965, Ser. No. 494,174
 4 Claims. (Cl. 235-60.47)

1. In a cyclicly operable accounting machine, supporting means, a carriage mounted on said supporting

means, power means operable to move said carriage in tabulation and return directions, a retractable stop member normally holding said carriage against movement in a columnar position, cyclically operable means operatively connected to said retractable stop member and operable to retract the latter to effect movement of the carriage in a return direction toward an adjacent columnar position, means actuated by movement of the carriage toward said columnar position to release said stop member to stop said carriage at said adjacent columnar position, said carriage in said adjacent columnar position representative of an arithmetical function, means defining a carriage position sensing station, an arithmetical function selector responsive to positions of said carriage



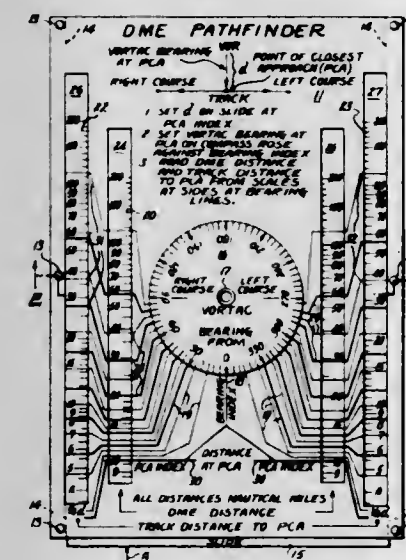
and operatively connected to and actuated by said cyclically operable means, an element carried by said carriage and positioned, when said carriage is in said adjacent columnar position, a predetermined distance from said station in a carriage tabulation direction less than the distance between columnar positions of said carriage, said element representative of an arithmetical function opposite of said first-mentioned arithmetical function, a second stop member retracting means operable to retract said stop member to effect an additional return movement of said carriage, and means actuated by the additional return movement of said carriage to release said stop member to stop said carriage with said element at said sensing station.

3,315,887

NAVIGATION AID

Hunt V. Martin, Jr., Springfield, Va., assignor to Marko, a partnership consisting of Hunt V. Martin, Jr., and Arnold G. Gulko

Filed Aug. 27, 1965, Ser. No. 483,093
 11 Claims. (Cl. 235-61)



1. A navigation aid for use with OMNI apparatus giving bearings with respect to an OMNI station and

DME apparatus giving distances with respect to the same station, comprising three separate information-containing surfaces as follows:

- (1) a first surface provided by a compass rose rotatable about its axis with respect to the other two surfaces;
- (2) a second surface fixed with respect to the axis of said compass rose and having a bearing index marked thereon; and
- (3) a third surface slidably longitudinally with respect to said second surface and having at least one pair of logarithmic distance scales thereon, said scales being disposed on opposite sides of said compass rose;

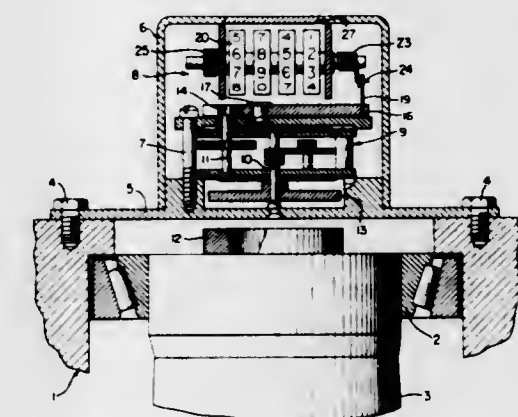
said second surface being lined to provide a pair of logarithmic secant scales connected to the bearings on said compass rose, one of said secant scales being positioned on each side of said bearing index, said logarithmic secant scales being positioned alongside said logarithmic distance scales on said third surface so that when the bearing from the point of closest approach to said station is aligned with said bearing index and the distance from the point of closest approach to said station is aligned with the unit index of said secant scale, the bearings on said compass rose on each side of said bearing index will become correlated with particular distances on each of said distance scales indicative of the DME distance which correspond with the selected course.

3,315,888

WHEEL REVOLUTION COUNTER

Stanford C. Lockhart, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Nov. 26, 1965, Ser. No. 509,765
 2 Claims. (Cl. 235-95)



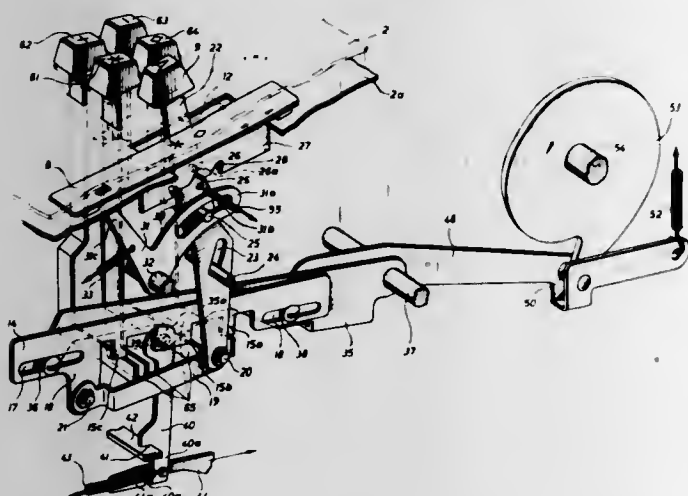
1. A wheel revolution counter assembly operatively carried by the hub of a wheel and including
 a counter mechanism,
 a drive shaft for said counter mechanism,
 a gear reducer having an input-shaft adapted to be driven correspondingly relative to a revolution of the wheel and an output shaft rotating about its axis at a proportionally smaller rate than the input shaft,
 a helically coiled spring having two ends slidably positioned on the drive shaft of the counter with one end thereof in close spaced adjacent relation to the shaft, and the other end thereof bent away in spaced parallel relation to the axis of the shaft,
 elongated flat walking beam means having a U-shaped opening in one end thereof pivotally mounted at about the center thereof to said counter mechanism, the longitudinal axis of said bar means being spaced

from and substantially parallel to the drive shaft of said counter mechanism,
 a cam eccentrically mounted to the end of the output shaft of the gear reducer and fitting into the U-shaped opening of the walking beam means to effect reciprocation thereof upon rotation of the output shaft,
 a pair of spaced parallel pins mounted substantially perpendicular to said bar means on the end thereof opposite the U-shaped opening which pins receive the other end of said spring extending therebetween whereby reciprocation of said walking beam means effects a rotative drive of said spring which rotation in one direction wraps onto the drive shaft of the counter to effect rotation thereof and rotation in the other direction unwraps from the drive shaft of said counter so no rotation thereof occurs.

3,315,889

CONTROL KEY ARRANGEMENT FOR A CALCULATOR

Paul Thevis, Oberndorf (Neckar), Germany, assignor to Olympia Werke AG., Wilhelmshaven, Germany
 Filed Apr. 26, 1965, Ser. No. 451,077
 Claims priority, application Germany, Sept. 21, 1964, O 10,391
 19 Claims. (Cl. 235-145)

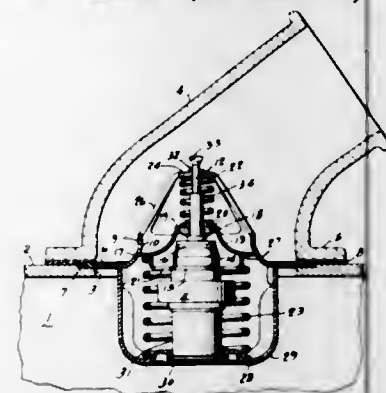


11. In a calculator, in combination, four actuating keys for starting four different operations of the calculator, and including a total key and a subtotal key for taking result values from a result register, and two keys for entering positive and negative values into a storage register; drive means; coupling means movable between four coupling positions for respectively connecting said actuating members with said drive means so that different operations are initiated in said coupling positions; a control key; and means mounting said control key for translatable movement between two first positions, and for turning movement between two second positions, said control key being operatively connected to said coupling means for placing the same in a different coupling position in each of said positions of said control key so that by selective actuation of said control key said drive means are connected to selected actuating members for initiating different operations of the calculator, one of said first positions being a normal position of said control key and effecting the automatic taking of a subtotal, the other first position being a depressed position of said control key and effecting the automatic taking of a total, one of said second positions being a depressed and rearwardly turned position of said control key and effecting the automatic positive storage of a total, and the other of said second positions being a depressed and forwardly turned position of said control key and effecting the automatic negative storage of a total.

3,315,890 REVERSE ACTING DOUBLE PORT THERMOSTAT WITH BUTTERFLY CHARACTERISTIC

Harold B. Drapeau, Oak Park, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois

Filed July 2, 1965, Ser. No. 469,285
 5 Claims. (Cl. 236-34)



1. A double port thermostat for controlling the flow of fluid through a conduit comprising:
 a temperature responsive power unit having first and second relatively extensible power members,
 a supporting bracket for positioning said thermally responsive power unit within said conduit,
 a first valve means disposed for increasing the flow of fluid through said conduit in response to a downstream motion of said first power member,
 a second valve means disposed for increasing the flow of fluid through said conduit in response to an upstream motion of said second power member,
 means rigidly holding said second power member stationary during a downstream motion of said first power member,
 means rigidly holding said first power member stationary during an upstream motion of said second power member, and
 means generating a downstream motion of said first power member prior to an upstream motion of said second power member in response to increasing fluid temperature.

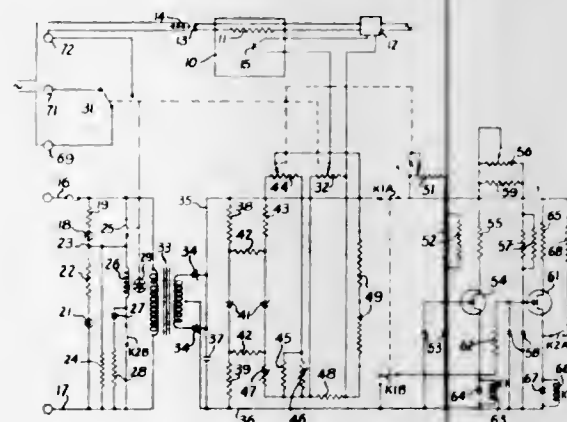
3,315,891

PROCESS PROGRAM CONTROLLER

Oliver K. Allen, La Habra, Calif., assignor to Basic Products Corporation, a corporation of Wisconsin

Filed Aug. 30, 1965, Ser. No. 483,640

12 Claims. (Cl. 236-46)

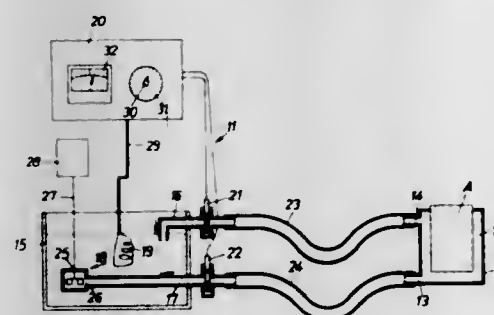


1. A process program controller comprising a motor, control means driven by the motor, a pair of timing devices one of which functions on a shorter time cycle than the other, means operated by said one of the timing devices at the end of its time cycle to make the motor ineffective to drive the control means, and means operated by the other of the timing devices at the end of its time cycle to reset said one of the timing devices and to make the motor effective to drive the control means.

3,315,892 METHOD OF MEASURING THE TEMPERATURE PREVAILING IN A BATH AND A SYSTEM FOR MAINTAINING A PREDETERMINED TEMPERATURE WITHIN AN ARTICLE

Peter Haake, 6 Stettiner Strasse, Karlsruhe, Germany
 Filed Feb. 2, 1965, Ser. No. 429,781
 Claims priority, application Germany, Feb. 7, 1964, H 51,622

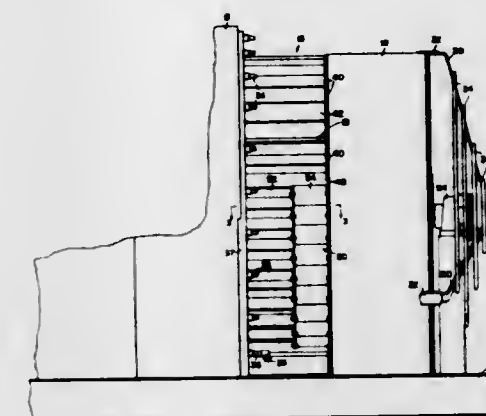
3 Claims. (Cl. 237-8)



1. In a system of the character described, the combination comprising a container, a pair of pipes extending through the walls thereof and being adapted to be connected to inlet and outlet ports, respectively, of a bath, a heating element in said container, a pump disposed within said container and provided with a suction port and a pressure port, said pressure port communicating with one of said pipes, whereas said suction port and the other one of said pipes freely communicate with the interior of said container, temperature-responsive elements mounted within said pipes adjacent to the wall of said container, an adjustable device adapted to be adjusted in accordance with the desired temperature of said bath, control means connected with said adjustable device, with said temperature-responsive elements and with said heating element, said control means being responsive to the average of the responses of said temperature-responsive elements and being operative to so control said heating element as to change the temperature of a fluid in said container in a manner rendering the difference of said average from said desired temperature to a minimum.

3,315,894 SPRAYER HAVING ADJUSTABLE LONG AND SHORT VANES IN LONGITUDINAL ALIGNMENT

Welker W. Funk, Moline, Ill., assignor to Deere & Company, Moline, Ill., a corporation of Delaware
 Filed Feb. 9, 1965, Ser. No. 431,297
 3 Claims. (Cl. 239-78)



1. A mobile sprayer adapted for movement past plants to be treated comprising means for creating and discharging an air blast in a plane extending transversely of the direction of travel of the sprayer, said means including a longitudinally extending cylindrical housing having a transverse opening therein, means associated with said air blast creating and discharging means for introducing agricultural chemicals into the air blast, a plurality of longitudinally extending vane means adjustably secured at least at one end to said housing and extending across said opening for controlling said air blast, each of said vane means including aligned short and long vanes, one of said long and short vanes being adjustably secured at one end to said housing and the other of said long and short vanes being independently adjustable with respect to said one vane.

3,315,895

DIFFUSER TUBE

Raymond J. Klingbell and Albert E. Lang, Columbus, Ohio, assignors to FMC Corporation, a corporation of Delaware

Filed Feb. 5, 1965, Ser. No. 430,634

4 Claims. (Cl. 239-145)



1. A diffuser tube comprising a rigid inner skeletal frame member having an opening therein, a rigid adapter fitting secured to one end of said frame member, a flexi-

3,315,893 ELECTRICALLY INSULATING SUPPORTING MEANS FOR A RAILWAY RAIL

Göte Christer Ingemar Thornander, Farsta, Sweden, assignor to Elektriska Svetsningsaktiebolaget, Göteborg, Sweden, a corporation of Sweden

Filed Sept. 25, 1964, Ser. No. 399,406

Claims priority, application Sweden, Sept. 25, 1963, 10,486/63

2 Claims. (Cl. 238-283)



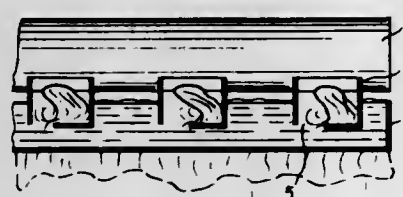
1. A rail supporting unit comprising a rail supporting plate, means for attaching the rail to said plate, a base plate attached to a track substructure, and a resilient and electrically insulating block interposed between said supporting plate and said base plate, said block comprising at least three superimposed members including two sheets of insulating material, at least one of which is natural or artificial rubber, and an electrically conducting intermediate member separating said sheets, the edge of said intermediate member being exposed throughout its perimeter, said plates and said at least three interposed members being bonded to each other to form a coherent unit.

ble, collapsible, porous outer sleeve enclosing said skeletal frame member, said sleeve having one permanently closed end, means providing a substantially airtight connection between the other end of said sleeve and said adapter fitting, and an inlet for an aeriform body extending axially through said adapter fitting, the porosity of said sleeve causing air flowing through said inlet into said sleeve under pressure to flow into liquid in which said diffuser tube is immersed, said sleeve having sufficient slack transversely of said skeletal frame member to cause substantially all of the portion of said sleeve overlying the opening in said skeletal frame member on one side of said frame member to slap against the corresponding portion of said sleeve on the opposite side of said skeletal frame member when said sleeve is deflated rapidly, to thereby dislodge solid matter accumulated on the outer surface of said sleeve.

3,315,896

LIQUID-COOLING APPARATUS

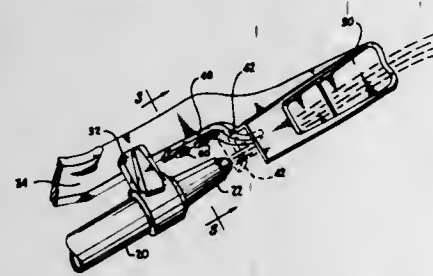
Joseph André Jacir, 13 Rue Jean Bachelet, Neuilly-Plaisance, France
Filed Mar. 10, 1965, Ser. No. 438,487
Claims priority, application France, Mar. 11, 1964, 967,024, Patent 1,396,478
3 Claims. (Cl. 239-193)



1. In a water-cooling apparatus having apertured pipes through which water is conveyed, and troughs located adjacent the pipes for receiving water from the pipes through said apertures for distribution by an overflow process, the improvement comprising diverter boxes disposed beneath the pipes surrounding the holes, said boxes having walls extending into said troughs below the overflow level and having openings to enable the water to flow into the troughs.

3,315,897

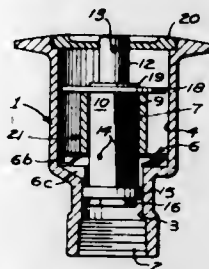
INSECT GUARD FOR IRRIGATION NOZZLES
William H. Stout, 223 N. Jessup, Portland, Oreg. 97217
Filed Aug. 17, 1965, Ser. No. 480,263
4 Claims. (Cl. 239-230)



1. The combination, comprising:
rotatably mounted nozzle having an orifice;
an oscillatory arm pivotally associated with said nozzle and including actuation means to swing into and out of the axis of said nozzle orifice;
an orifice closure carried by said arm at a location disposed in close proximity to said nozzle orifice in its axis, said closure being adapted to be displaced from its orifice closing position by the force of a stream of water discharging from said nozzle only during such time as said arm swings into and out of said stream.

3,315,898
WATER MOTOR FOR SPRINKLERS
Robert B. Costa, Covina, Calif., assignor to Lyntone Engineering, Inc., Glendora, Calif., a corporation of California

Filed Apr. 5, 1965, Ser. No. 445,543
5 Claims. (Cl. 239-241)

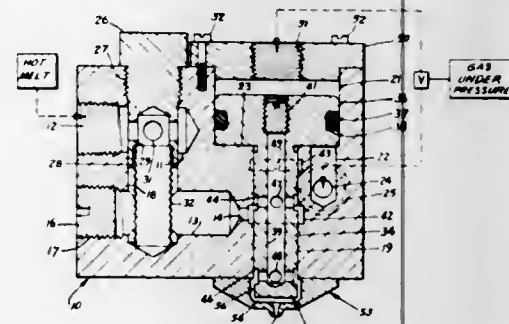


1. A water motor for sprinklers, comprising:
(a) a drive ring having a polygonal opening there-through forming a plurality of striker regions;
(b) a driven shaft extending through said drive ring and including an impact receiving portion having at least one less impact receiving region than the striker regions of the polygonal opening through said drive ring;
(c) and means for rotating said drive ring about said shaft to cause said striker regions to strike said impact receiving regions and effect incremental advance of said shaft about its axis.

3,315,899

HOT MELT NOZZLE WITH RECIPROCATING PISTON DRIP-PREVENTION MEANS

Vernon K. Quarve, Brooklyn Center, Minn., assignor, by mesne assignments, to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 8, 1965, Ser. No. 424,271
10 Claims. (Cl. 239-586)



1. A nozzle for depositing hot melt comprising: a body including an inlet therein for receiving hot melt under pressure and a bore in communication with said inlet; a means for removing impurities from said hot melt interposed between said inlet and said bore; a piston having an exterior surface adapted to slide within said bore, a longitudinal passage closed at both ends thereof, and two transverse passages, an upper and a lower each communicating said longitudinal passage with the exterior surface of said piston; a dispensing member secured to said body below said bore and including a chamber of a greater diameter than said bore; driving means secured to said piston for selectively reciprocating said piston so that said piston in its bottommost position is disposed with said upper transverse piston passage of said piston in communication with said hot melt inlet and said lower transverse piston passage in communication with said chamber of said dispensing members and said transverse piston passages being out of communication with said inlet and chamber when said piston is at its uppermost position.

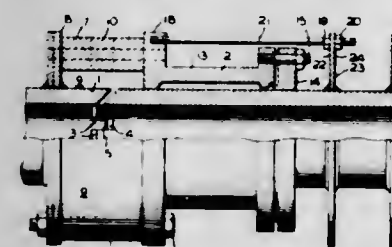
4. A nozzle for depositing hot melt comprising: a body including an inlet for receiving a viscous liquid under

pressure, said body having a bore in communication with said inlet, piston means having an exterior surface adapted to slide within said bore, said piston including a longitudinal passage closed at both ends thereof, and a first transverse passage means and a second transverse passage means each communicating said longitudinal passage with the exterior surface of the piston means, a dispensing member secured to said body in alignment with one end of said bore; said dispensing member having a chamber of a greater diameter than said bore, driving means secured to said piston for selectively reciprocating said piston in said bore to a first position and a second position, said piston being in the first position when said first transverse passage is in communication with said inlet and said second transverse passage is in communication with said chamber whereby the viscous liquid under pressure flows through said piston and dispensing member to a discharge location, and said piston being in the second position when the first and second passage means are out of communication with said inlet and said chamber respectively.

3,315,900

APPARATUS FOR PULVERIZING

Walter Twist, Billingham, and Harold Edward Haigh, Norton, England, assignors to British Titan Products Company Limited, Durham, England, a corporation of the United Kingdom
Filed May 13, 1964, Ser. No. 367,118
14 Claims. (Cl. 241-39)



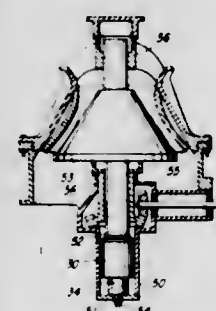
1. Apparatus for the fluid energy pulverization of particulate solids comprising two conduits aligned in end to end relationship wherein the adjacent ends of the conduits form a number of interlocking teeth and means to direct inwardly between the teeth a fluid under pressure.

3,315,901

GAS HYDRAULIC SPRING FOR CRUSHING APPARATUS

Harold C. Pollitz, Cedar Rapids, Iowa, assignor to Iowa Manufacturing Company of Cedar Rapids, Iowa, Cedar Rapids, Iowa, a corporation of Iowa
Original application Aug. 31, 1962, Ser. No. 220,697. Divided and this application Mar. 18, 1965, Ser. No. 440,908

11 Claims. (Cl. 241-211)



5. In a crusher of the gyratory type having a frame, a crushing bowl mounted rigidly to said frame having a downwardly opening inner crushing surface, and a crushing mantle therebelow having a generally vertical main-shaft journaled in said frame above and below said mantle and an upwardly facing outer crushing surface operatively spaced from said bowl surface and adapted to

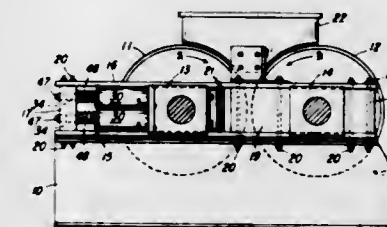
crush material thereagainst by gyratory movement of the lower journal of said shaft, the spacing between said surfaces being adjustable by vertical movement of said mantle and shaft relative to said bowl and frame, the combination therewith of self-contained gas hydraulic means both to adjust the spacing between surfaces and to maintain a predetermined spacing therebetween up to a predetermined load therebetween and to accommodate an overload by resiliently increasing said spacing, said means including at least one piston housing having closed opposite ends, a main piston in said housing slidable between said ends, and a gaseous fluid under pressure between said piston and one of said closed ends of said housing, said means being operatively associated with said frame and shaft so that thrust between said crushing surfaces is communicated to said housing and piston against the pressure of said fluid, said pressure being such that the total force exerted thereby is sufficient to maintain said predetermined spacing between said bowl and mantle as long as the crushing load therebetween does not exceed said predetermined load, said means being removable from said crusher without need first to discharge any of said fluid therefrom, and means for adjusting the spacing between said bowl and mantle, said adjusting means being effective independently of said fluid in said housing.

3,315,902

GAS HYDRAULIC SPRING FOR CRUSHING APPARATUS

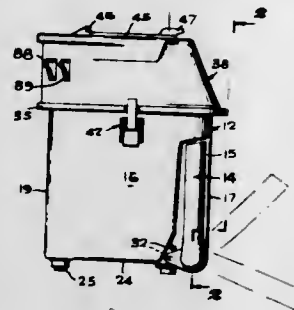
Harold C. Pollitz, Cedar Rapids, Iowa, assignor to Iowa Manufacturing Company of Cedar Rapids, Iowa, Cedar Rapids, Iowa, a corporation of Iowa
Original application Aug. 31, 1962, Ser. No. 220,697. Divided and this application Mar. 22, 1965, Ser. No. 444,919

10 Claims. (Cl. 241-231)



2. In a crushing device of the roll type having a frame and a pair of spaced crushing elements journaled at each of their axial ends for rotation on said frame adapted to crush material therebetween by rotation of said elements with respect to each other, at least one of said elements being movable with respect to the other in order to adjust the spacing therebetween, the combination therewith of gas hydraulic means for maintaining a predetermined spacing between said elements during their crushing operation up to a predetermined load and thereafter to accommodate an overload by resiliently increasing said spacing, said means comprising at least one cylinder closed at at least one of its two ends, a piston slidably mounted in said cylinder between said ends, and a compressible fluid under pressure between said piston and said closed end, one of said means being operatively associated with each journal of said movable element so that thrust between said elements is communicated to said cylinder and piston against the pressure of said fluid, the pressure in each of said cylinders being such that the total force exerted by all of said means is sufficient to maintain said predetermined spacing between said elements up to said predetermined load only, there being no expulsion of said fluid from said cylinder when said predetermined load is exceeded, and means for adjusting the spacing between said elements, said adjusting means being effective independently of said fluid in said cylinder.

3,315,903

PORTABLE WASTE FOOD GRINDERRichard L. Vernon, 1916 W. Mountain St.,
Glendale, Calif. 91201Filed Sept. 14, 1964, Ser. No. 396,167
8 Claims. (Cl. 241-285)

1. A portable, self-contained waste food shredding and grinding device, comprising a housing means, a motor supported in the housing means, a shredding and grinding means operated by the motor and located in the upper end portion of the housing means, said housing means and said motor defining an annular space around the motor, said shredding and grinding means having an annular opening in open communication with the upper end of said space for discharge of liquid and comminuted particles into said space, a pump operated by the motor, and fluid delivery means associated with the pump and extending around the motor and the shredding and grinding means for delivering fluid from the bottom of the housing means to the upper end portion thereof above the shredding and grinding means, said motor having a hollow drive shaft extending from the region of the upper end of the housing to the lower end portion thereof for the circulation of excess fluid downwardly there-through.

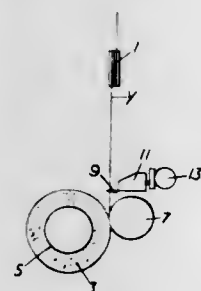
3,315,904

WINDING YARNGlyndwr Hardee, Glascoed, England, assignor to British
Nylon Spinners Limited, Pontypool, England

Filed Oct. 19, 1964, Ser. No. 404,761

Claims priority, application Great Britain, Oct. 22, 1963,
41,579/63

7 Claims. (Cl. 242-18)



1. A method of winding yarn into a cylindrical-bodied, straight-ended yarn package wound on a bobbin comprising, winding yarn in layers of helical coils on a bobbin which is rotated at a gradually decreasing rotational speed throughout the period of winding traversing the yarn to and fro axially of the bobbin at a rate that is not constant throughout said period of winding by increasing the rate of traversing from its initial rate so that it attains the maximum rate at a time after about 15% and before about 75% by weight of the yarn in the final package has been wound.

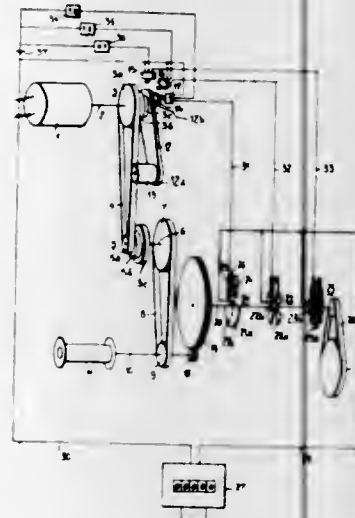
3,315,905

DRIVE MECHANISM FOR A WINDING MACHINE
Walter Angst, Kloten, Switzerland, assignor to Meteor
AG, Glattbrugg, Switzerland, a corporation of Switzerland

Filed Aug. 27, 1965, Ser. No. 483,049

Claims priority, application Switzerland, Apr. 22, 1965,
5,639/65

10 Claims. (Cl. 242-25)



1. Drive system for a winding machine, comprising a winding spindle, drive means for selectively driving said winding spindle at different rotational speeds, a respective impulse transmitter for each possible rotational speed of said winding spindle operated by said winding spindle, each impulse transmitter for each rotational speed of the winding spindle generating signals having a given pulse recurrence frequency with regard to each rotation of the winding spindle, with the pulse recurrence frequency of the generated signals of each impulse transmitter differing from one another, a counter mechanism operably connected with said impulse transmitters for enabling determination of the number of revolutions performed by said winding spindle at any given time during its rotation, and selector means for operably coupling a given impulse transmitter with said counter mechanism as a function of the selected rotational speed imparted to said winding spindle by said drive means, so that with the greatest rotational speed of said winding spindle the impulse transmitter with the smallest pulse recurrence frequency is operable upon said counter mechanism and with the smallest rotational speed of said winding spindle the impulse transmitter with the largest pulse recurrence frequency is operable upon said counter mechanism.

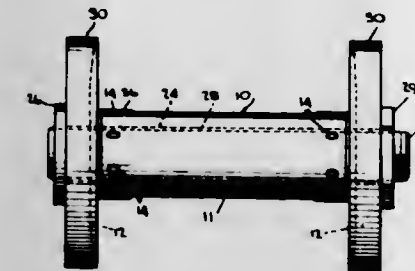
3,315,906

WARP BEAM WINDING ARBORAlvin B. Storey, Charlotte, N.C., assignor to Celanese
Corporation, a corporation of DelawareContinuation of application Ser. No. 399,124, Aug. 28,
1964, which is a division of application Ser. No.
855,868, Nov. 27, 1959, now Patent No. 3,173,624,
dated May 16, 1965. This application Nov. 26, 1965,
Ser. No. 517,205

9 Claims. (Cl. 242-46.21)

1. Winding arbor for use with a warp beam having a pair of yarn-engaging flanges comprising:
(a) an elongated body externally threaded at one end;
(b) an abutment plate affixed to said body substantially at the other end of the latter, said body being provided on its exterior with at least one guide arrangement extending from said abutment plate substantially up to the threads at said one end of said body;
(c) a pair of face plates having complementary means cooperating with said guide arrangement removably

mounted on said body at spaced locations and adapted to engage the outer faces of said yarn-engaging flanges of said warp beam when the latter is located on said body intermediate said face plates, with complementary means on said flanges cooperating with said guide arrangement; and



(d) nut means screwed onto the threaded end of said arbor body for engagement with the associated face plate, whereby said beam when mounted on said arbor is clamped in a position with said face plates strengthening and preventing yarn-induced distortion of said beam flanges, the face plates and beam flanges rotating together and cooperating as a unit during beaming.

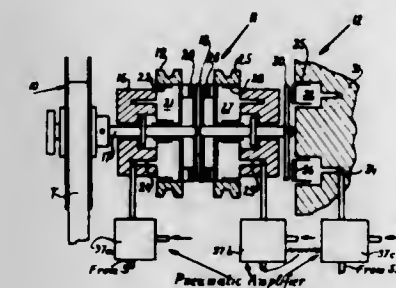
3,315,907

TAPE WINDING CONTROL MECHANISMStanislav Jura, Prague, Czechoslovakia, assignor to
Výzkumný ústav matematických strojů, Prague,
Czechoslovakia

Filed May 12, 1965, Ser. No. 455,117

Claims priority, application Czechoslovakia,
May 16, 1964, 2,833/64

5 Claims. (Cl. 242-55.12)



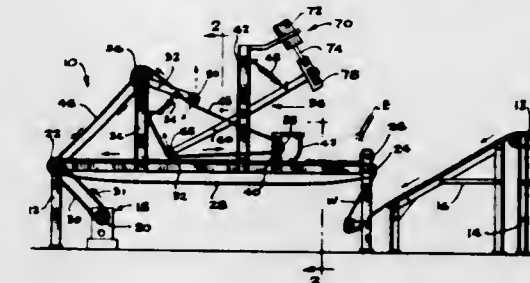
1. In winding apparatus of the class described, the combination of a shaft mounted for rotation, a reel for tape on said shaft and rotatable therewith, a clutch friction disc and a brake friction disc on said shaft and rotatable therewith, rotatable drive means having a pneumatic pressure operated member for frictionally engaging one side of said clutch disc to effect rotation of said shaft, brake means including a pneumatic pressure operated member for frictionally engaging said brake disc to retard rotation of said shaft, a reservoir for storing tape including means constructed and arranged to sense and respond to the amount of tape stored in said reservoir, and pneumatic regulating means including first and second nozzles, each having a discharge outlet, an air inlet and a bypass outlet between said discharge outlet and said air inlet and connected for each respectively controlling one of said pressure operated members and including a control member operatively connected to said storage response means and facing said nozzle discharge outlets, said control member being constructed and arranged for closing one of said discharge outlets and opening the other of said discharge outlets and vice versa.

3,315,908

WINDING APPARATUSJustin J. Wetzler, Evanston, Ill., assignor to F. W. Means
& Co., Chicago, Ill., a corporation of Illinois

Filed May 3, 1965, Ser. No. 452,499

5 Claims. (Cl. 242-67.1)



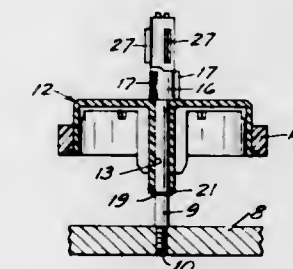
1. A winding apparatus for winding lengths of webbing into rolls comprising:
a support bed; said bed having an entry section, a winding section and a discharge section;
a first belt movable in a first direction and supported on rollers mounted on said support bed;
deflectable web winding starter means mounted above said first belt and positioned along the entry section thereof and adjacent the winding section, said deflectable means having a portion thereof extending deflectably onto said first belt;
a second belt movable in a second direction opposed to the direction of movement of said first belt and supported on a pair of fixed rollers mounted on said bed, said fixed rollers defining in part, the path of movement for said second belt, deflectable roller means, biasing means to urge said deflector roller means against said second belt to provide tensioning means against a growing roll of webbing to adjustably vary the pressure engagement of said second belt with said web during the winding operation, whereby a web of material may automatically be wound in said apparatus without operator attention during the winding operation.

3,315,909

REEL LOCKSten R. Gerfast, St. Paul, Minn., assignor to Minnesota
Mining and Manufacturing Company, St. Paul, Minn.,
a corporation of Delaware

Filed June 25, 1965, Ser. No. 467,066

3 Claims. (Cl. 242-68.3)



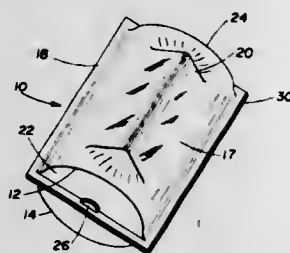
1. An automatic reel locking device for use with a transporting apparatus adapted to receive a reel which is formed with a hub having a central bore adapted to fit on a spindle and provided with at least one axially extending groove formed in the wall of said bore, said device comprising in combination a shaft, said shaft having one end adapted to be fixedly mounted to a support plate, reel supporting means including a spindle rotatably mounted on said shaft, means to limit axial movement of said supporting means toward the said one end of said shaft, said spindle extending along said shaft in a direction away from said one end of said shaft and terminating with an outer end portion, said spindle having at least one radial projection on its outer surface adapted to fit in a said

groove of a said reel for driving engagement therewith, a sleeve journaled on said shaft adjacent said outer end portion of said spindle and being urged toward said spindle, said sleeve having at least one projection on the outer surface of said sleeve, the outer end portion of said spindle and the opposed end of said sleeve being formed with cooperating camming means for positioning said projections on said sleeve and on said spindle in circumferential spaced relation when said camming means are in full contact, and brake means for said sleeve affording relative rotation between said sleeve and said spindle when said camming means are out of full contact such that upon rotation of said spindle relative to said sleeve, said sleeve will move axially toward said spindle placing said camming means in full contact to so position the projection on said sleeve in said spaced relation to the projection on said spindle to lock a reel on said spindle.

3,315,910

CARTRIDGE DISPENSER

Hollis T. Galley and Arthur C. Rissberger, Jr., Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Oct. 4, 1965, Ser. No. 492,680
8 Claims. (Cl. 242-71.1)

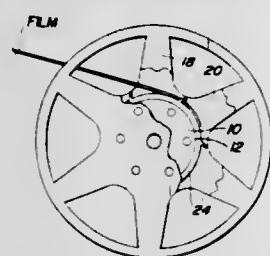


2. A web dispensing cartridge comprising two portions, each of said portions having a foot member and a flange member, said portions connected along said flange members and an opening in said cartridge for dispensing a web product therefrom.

3,315,911

TAKE-UP REEL FOR MOTION PICTURE PROJECTOR

John J. Bundschuh, Penfield, and Kenneth W. Thomson, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 13, 1966, Ser. No. 520,457
5 Claims. (Cl. 242-74)

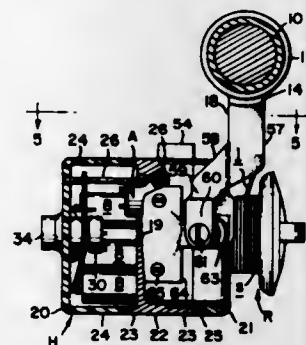


1. A take-up reel for a perforated film, comprising: a hub member having an axis and a pair of flanges secured to each end of the member spaced a distance slightly greater than the width of a film; said hub member further having a film-receiving portion interposed between said flanges onto which said film is wound; and clutch means rotatably mounted on said film receiving portion and in frictional engagement therewith; said clutch means having a plurality of teeth, the ends of which are axially spaced and extend from the periphery of said clutch means beyond the periphery of said film receiving portion for engaging the perforations of said film as it is directed into winding relationship with said film receiving portion.

3,315,912

MOUNTING FOR A FISHING REEL

Rodolfo R. Balaguer, Fort Lauderdale, Fla., assignor, by mesne assignments, to Patent Holding Corporation, Fort Lauderdale, Fla., a corporation of Florida
Original application July 1, 1963, Ser. No. 292,015, now Patent No. 3,195,829, dated July 20, 1965. Divided and this application Oct. 12, 1964, Ser. No. 403,128
6 Claims. (Cl. 242-84.2)

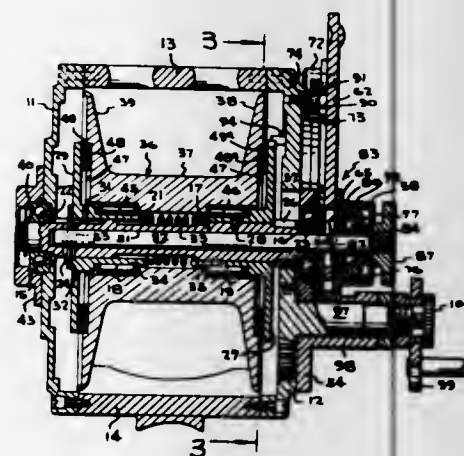


1. For use with a fishing rod, a line-winding reel having a supporting frame, and a mounting for the reel upon the rod consisting of pivotally jointed means extending between the frame and rod transversely of the axes of the reel and rod and in fixed connection with each with the axis of its joint disposed substantially distant from the rod and coplanar of the reel axis but obliquely thereof at approximately 45 degrees whereby the reel may be swiveled through approximately 180 degrees away from and then toward the rod between two operating positions both spaced from the rod and in one of which the reel axis is parallel therewith and transversely thereof in the other.

3,315,913

DRAG MECHANISM FOR A FISHING REEL

Fred M. Gieten, Suwannee, Fla.
(1533 Normandy Way, Leesburg, Fla. 32748)
Filed July 9, 1964, Ser. No. 381,302
3 Claims. (Cl. 242-84.45)



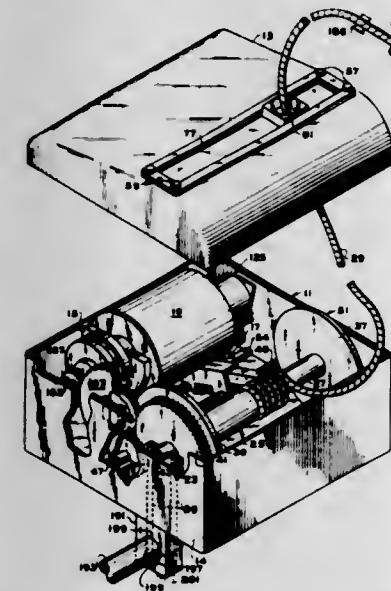
1. In a fishing reel having a fixed mounting frame, a central shaft journaled thereon, means operatively connected to the shaft to provide rotation thereof a flanged spool rotatably carried on the shaft having friction surfaces on the flanged ends, an improved brake for controlling rotation of the spool comprising, first and second clutch plates mounted upon the central shaft and being in non-rotating relation therewith, the clutch plates being so mounted upon the central shaft as to flank the spool, friction members fixedly secured to the clutch plates and adapted for engagement with the corresponding friction surfaces on the spool upon relative movement between the clutch plates and the spool, the first clutch plate being fixedly secured upon the central shaft, the second

clutch plate being slidably mounted upon the central shaft, spring means located upon the central shaft and positioned between the clutch plates adapted to yieldingly urge the clutch plates out of frictional engagement with the spool, a cylindrical recess located along the longitudinal center line of the central shaft and opening at one end thereof for housing means to move the second clutch plate and the spool axially of the central shaft to engage the friction surfaces of the clutch plates and the spool so as to exert braking pressure upon the spool, the means including an elongated draw bar adapted to move in a reciprocative manner within the central shaft cylindrical recess, the draw bar being coupled at one end to the second clutch plate, the other end of the draw bar being threaded and extending exteriorly of the reel mounting frame, a thumb screw adapted to engage the threaded end of the draw bar, a flat lever arm mounted adjacent the frame and fulcrumed thereon, an elongated aperture in one end of the lever arm adapted to be positioned about the draw bar and a plurality of follower pins projecting from the other end toward the frame, an arcuate cam arm eccentrically mounted upon the frame and adapted to engage the follower pins, an inclined cam surface along the portion of the lever arm having the elongated aperture, cooperating cam means positioned to bear against the inclined cam surface, the thumb screw being so positioned to retain the cooperating cam means in intimate contact with the inclined cam surface to operatively couple the lever arm and draw bar, whereby when the lever arm is traveled along the arcuate cam arm the inclined cam surface operatively moves the draw bar axially to frictionally engage the clutch plates friction members against the spool friction members.

3,315,914

SKI ROPE REEL AND TOW MECHANISM

Donald L. Turner, Fort Wayne, Ind.
Filed July 21, 1965, Ser. No. 473,793
10 Claims. (Cl. 242-86.5)

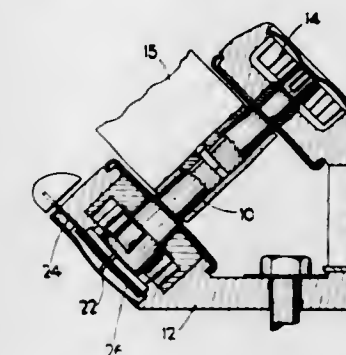


1. A reel and tow for a water ski rope comprising, in combination: an electric motor, a housing having means for supporting said electric motor therein, a rotating mechanism adapted to be disposed in said housing, a magnetic drive means connected between the electric motor and rotating mechanism, and slidable guide means for axially positioning the ski rope on the rotating mechanism including a member adapted to slide back and forth in a rectangular opening in the housing, said member having an opening to permit the ski rope to slide therethrough, electrical control means carried by said member, said electrical means adapted to de-energize the electric motor when the ski rope has been substantially wound on the rotating mechanism.

3,315,915

AUTOMOBILE SAFETY BELT

Eugene J. Vanesse, Jr., Litchfield, Conn., assignor to Defco Incorporated, Litchfield, Conn., a corporation of Connecticut
Filed Oct. 27, 1964, Ser. No. 406,733
4 Claims. (Cl. 242-107.4)

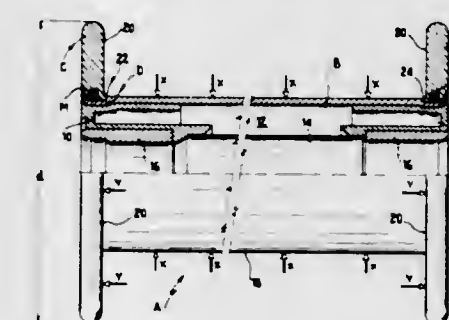


2. A safety belt for automobiles comprising a housing, an arbor mounted for rotation therein, a belt wrapped about said arbor, a spring normally retaining said belt in retracted position, a pawl mounted on said arbor and movable radially outward thereof, a light spring normally forcing said pawl toward its inner position, an internal ratchet gear concentrically surrounding said arbor and in position for engagement of its teeth by said pawl when moved outward against the pressure of said spring, and pivotally mounted members within said housing simultaneously radially movable to move said pawl from its engaged outer position to its inner disengaged position, and manually operable means to move said pivotally mounted members to move said pawl to its inner disengaged position.

3,315,916

BOBBIN CONSTRUCTION

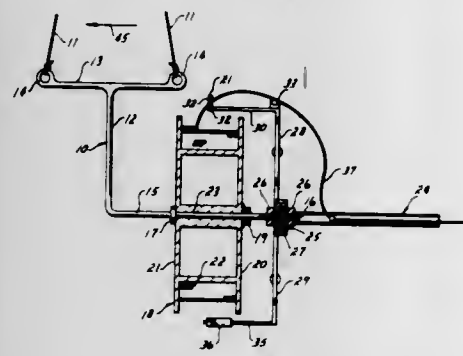
Mario Scaglia, Bergamo, Italy, assignor to M. Scaglia S.p.A., Bergamo, Italy
Filed June 2, 1965, Ser. No. 460,698
Claims priority, application Italy, July 6, 1964, 14,675/64
10 Claims. (Cl. 242-118.6)



1. A bobbin comprising a tube having an end, a flange constituted of resilient material mounted on and encircling the tube at said end, said tube and flange having abutting surfaces and forming a substantially continuous uninterrupted surface for the accommodation of yarn to be wound on the bobbin, said tube having an annular recess of given radial dimension defining a seat for said flange, the abutting surface of the tube being a bounding surface of the recess, said tube including an upturned end portion at the remote end of said tube applied against

the flange to urge the same in a direction away from the end of the tube to cause said abutting surfaces to be forced into contact with one another, said flange having an inner peripheral surface in facing relation with the tube in said seat, said flange having an annular groove opening into said inner peripheral surface, said groove having a depth greater than the radial extent of the recess and providing axial elasticity for said flange for the development of elastic pre-stress between the abutting surfaces with the upturned end portion applied against the flange.

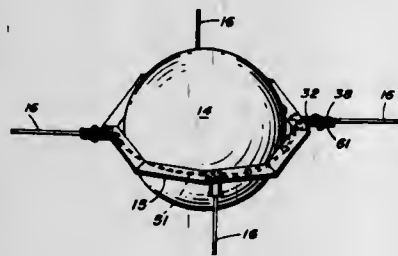
3,315,917
CABLE LAYING DEVICE
Ivan S. Brown, 115 W. Piedmont Ave.,
Phoenix, Ariz. 85041
Filed Aug. 24, 1964, Ser. No. 391,618
6 Claims. (Cl. 242—128)



1. A device for laying cable from a moving air vehicle comprising: A support member adapted to be carried by tension means beneath said vehicle, said support member including an axle portion; fixedly mounted on said axle portion, a spool member adapted to carry cable wound thereon; rotatably mounted on said axle portion, a cable pickup member adapted to rotate around the peripheral diameter of said spool member and pick up and guide cable therefrom; and a feeding member for mechanically guiding cable from said cable pickup member and feeding said cable linearly in line with said axle portion.

3,315,918
HYSTERESIS ROD HINGE
Lee H. Schwerdtfeger and Serge N. Samburoff, both
of Silver Spring, Md., assignors to the United States
of America as represented by the Secretary of the
Navy

Filed June 14, 1965, Ser. No. 463,971
10 Claims. (Cl. 244—1)

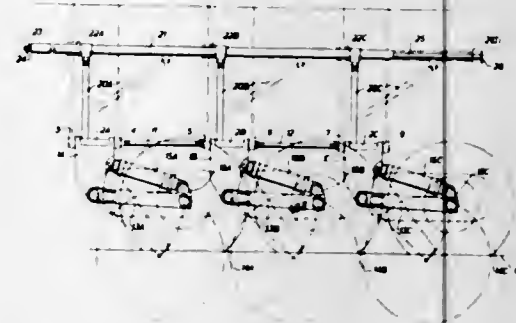


1. In a satellite of substantially spherical form, an apparatus for dissipating the rotational energy about one of its axes comprising
a fixed circumferential exterior band on the satellite;
a plurality of hysteresis rods;
means for attaching the rods to the band for pivotal movement relative to the band; and
means associated with the pivotal means tending to swing the rods about the pivot when said rods are in a position tangent to the satellite and to dampen the

pivotal movement and position the rods normal to the satellite.

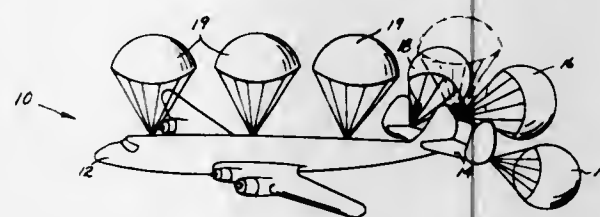
3,315,919
RETRACTABLE UNDERCARRIAGES
Jack Perdue, Great Sankey, Warrington, England, assignor
to Electro-Hydraulics Limited, Warrington, England, a
corporation of England
Filed Nov. 17, 1964, Ser. No. 411,747
Claims priority, application Great Britain, Nov. 18, 1963,
45,483/63; Dec. 30, 1963, 51,158/63; Mar. 5, 1964,
9,363/64

13 Claims. (Cl. 244—102)



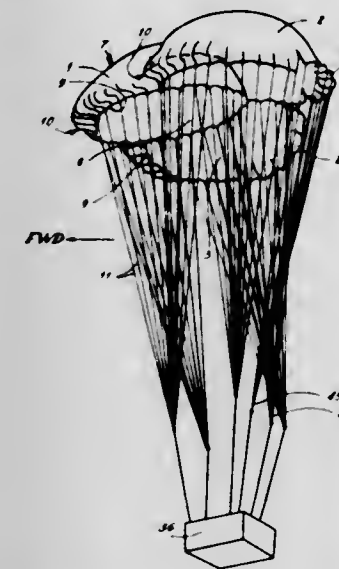
1. An aircraft retractable undercarriage comprising a plurality of wheel assemblies mounted in line astern for sideways pivotal movement, a member pivotally connected to the aircraft and to each wheel assembly, an actuating shaft mounted on the aircraft for movement longitudinally thereof, a retracting rod for each member pivotally sideways connected to said actuating shaft and a part of said member, and power operated means operative to move said shaft, said movement causing said members to pivot about their said connections to the aircraft, thereby, through said retracting rods, raising and lowering said undercarriage.

3,315,920
**EMERGENCY LANDING APPARATUS
FOR AIRCRAFT**
Donald E. Caughron, 4702 Ridgedale,
Granite City, Ill. 62040
Filed May 21, 1965, Ser. No. 457,604
4 Claims. (Cl. 244—139)



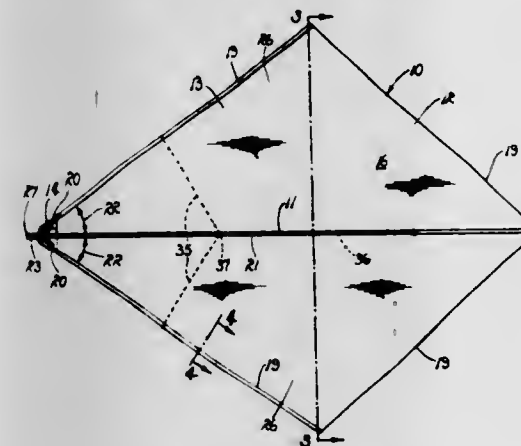
1. In an aircraft having a fuselage with a passenger compartment and a tail section, apparatus for landing the aircraft in an emergency comprising, in combination, a fuselage section mounted beneath said passenger compartment retractable upwardly into the passenger compartment, a floor carried by said fuselage section, compression spring means acting between said fuselage section and said floor yieldably maintaining said floor and fuselage section in spaced apart relationship, releasable lock means releasably securing said fuselage section and said floor in normal assembled relationship within said fuselage, and a plurality of parachute assemblies each including a parachute releasably stored within spaced apart portions of said fuselage and tail section for supporting said aircraft for controlled descent upon failure of motive power for landing upon said fuselage section in response to the release of said parachute assemblies and said lock means.

3,315,921
STEERABLE GLIDING PARACHUTE
Vincent F. Riley, Granada Hills, and Eugene M. Linhart,
Van Nuys, Calif., assignors to Northrop Corporation,
Beverly Hills, Calif., a corporation of California
Filed May 10, 1965, Ser. No. 454,362
12 Claims. (Cl. 244—152)



1. A steerable glide parachute comprising:
(a) a cluster of three canopies intersecting each other to form a forward portion and two rear side portions, said portions being integrally fastened together;
(b) a forwardly extended leading edge on each of said portions rolled under to meet a marginal skirt thereof; and
(c) an extendable glide control flap at the rear of each said rear side portion.

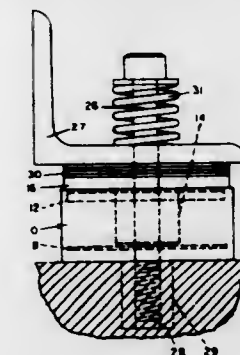
3,315,922
KITE
Harold L. Hull, Hanford, Calif., assignor to Diamond
Plastics, a partnership consisting of Charles M. Uptegrove and Harold L. Hull
Filed Mar. 22, 1965, Ser. No. 441,666
1 Claim. (Cl. 244—153)



A kite comprising a sheet of flexible material substantially impervious to air, said sheet having a symmetrical shape, upper and lower portions, and upper extremity, front and rear surfaces, an axis of symmetry passing through said upper extremity, and air engaging portions disposed in laterally opposite relation to said axis of symmetry; an elongated lateral rib member secured to each air engaging portion, said rib members being disposed in symmetrical relation to the axis and in angular relation to each other to form an angle having an apex disposed on the axis proximal to the upper extremity of said sheet; a central rib member disposed at the rear surface of the sheet adjacent to the axis of symmetry, the lower portion of said sheet providing an aperture on the

axis of symmetry; a spring wire element connecting said lateral rib members resiliently to the central rib member in said symmetrical relation to the axis; and elongated flexible control means having three terminal elements, one of said terminal elements being connected to the central rib and extending through said aperture, the others of said terminal elements being connected respectively to the lateral rib members, said terminal elements joining at a common point of convergence disposed in front of the upper portion of the sheet and at one end of the elongated control means, said kite being adapted to be held captive in an air current of varying intensity with the air current contacting said front surface of the kite and being controllable by said control means, said spring wire element being shaped to grip the central rib member and the lateral rib members in said angular relation and adapted resiliently and relatively to the axis of symmetry to bias the air engaging portions against said air currents coming into contact with the front surface of the kite but permitting said air engaging portions resiliently to assume positions of varying symmetrical angular relation between each other and the axis of symmetry in response to the intensity of the air currents, and said kite being selectively alternatively collapsible about the central rib portion to form a compact package and expandable to a suspensible shape.

3,315,923
**PEDESTAL BLOCKS FOR MACHINE TOOLS
AND THE LIKE**
Raymond E. Young, Harvey, Ill., assignor to Abbyville
Corporation, Chicago, Ill., a corporation of Illinois
Filed Dec. 4, 1964, Ser. No. 416,006
9 Claims. (Cl. 248—24)



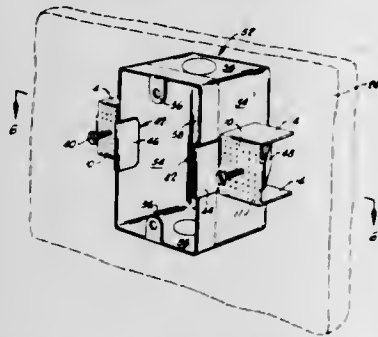
1. A machine tool floor supported pedestal, comprising in combination, a moulded block of elastic polyurethane plastic having substantially flat parallel top and bottom faces; a first foraminated plate of stiff sheet material moulded into and completely encased by the material of the elastic block in proximity to the bottom face of such block and with the material of the block including a sheet of the block material below the foraminated plate for supporting engagement with a floor, said foraminated plate being provided with numerous foraminations, the plastic material extending through the foraminations to bind the sheet of block material below the foraminated plate to the block material above such foraminated plate, said block material being bonded to the top and bottom faces of such foraminated plate; an attaching plate of stiff material moulded into and completely encased by the material of the elastic block in proximity to the top face of such block, said attaching plate being embedded into the block and the block material being bonded to the top and bottom faces of such attaching plate; a central spring receiving socket extending downwardly from the top of the elastic block and through the material of the elastic block with the floor of such socket within the elastic block at a location above the foraminated plate; a vertically compressible spring

located in said socket and having its lower end supported by the floor of the socket and its upper end in proximity to the top face of elastic block; a mounting plate seated against the top face of the plastic block; and means extending between the mounting plate and the attaching plate to connect the mounting plate and the attaching plate together.

3,315,924

ASSEMBLY FOR MOUNTING ELECTRICAL FITTINGS IN NEW WALL AND CEILING CONSTRUCTION

Beverly Greenwood, P.O. Box 755,
Oklahoma City, Okla. 73101
Filed June 1, 1965, Ser. No. 465,242
7 Claims. (Cl. 248-27)

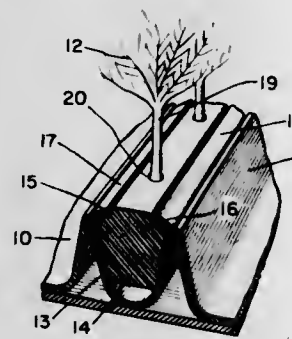


1. A mounting bracket for mounting an electrical box on walls, floors, and ceilings, comprising: a monoplane screw engaging face; a box engaging projection extending generally normal to said screw engaging face; at least one brace flange extending from said screw engaging face and occupying a plane extending substantially normal to said box engaging projection and spaced therefrom to permit one wall of the electrical box to be positioned between said box engaging projection and said brace flange; and an elongated flexible strap extending from the screw engaging face in the same direction as said brace flange and having a plurality of notches therein along a portion of its length.

3,315,925

HOLDER FOR GREENS

Michael J. Pawl, La Habra, Calif., assignor to Market Decorators, Inc., a corporation of California
Filed Apr. 5, 1965, Ser. No. 445,544
3 Claims. (Cl. 248-27.8)



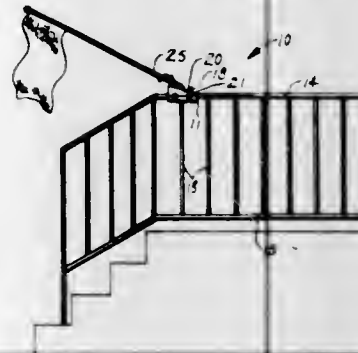
1. A holder for supporting a plurality of greens by their stems in a row for decorative display, including: an elongated flexible member having upper recessed edges defining longitudinally running shoulders; and an elongated strip retainer of general U shape in cross-section for receiving said member, the upper edges of said strip retainer defining the upper ends of the arms of said U shape turning inwardly to engage said longitudinally running shoulders so that said flexible member is supported by said strip retainer, the top surface of said member in-

cluding a plurality of stem receiving openings spaced successively therealong, intermediate said shoulders and extending down into said member, said openings defining holding means for cooperation with said stems to hold said stems in said openings.

3,315,926

RAILING FLAG MOUNT

John J. Tenda and Thomas K. Tenda, both of 4112 W. Crestline St., Chicago, Ill. 60652
Filed June 11, 1965, Ser. No. 463,121
1 Claim. (Cl. 248-42)

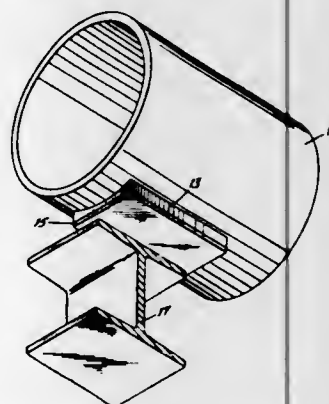


An iron railing flag mount for supporting a flag upon a fence, comprising in combination, a railing clamp and a flag mounting structure, said railing clamp supporting said flag-mounting structure, said railing clamp comprising a rectangular base of wood, a transverse extending rectangular opening on one lateral side of said base to receive a railing post, a longitudinal groove in the upper side of said base to receive a railing, a wedged shaped member hingedly secured to said base, said wedged shaped member in operative position being adjacent the upper side of said base, a plurality of bolts and nuts securing said base and said wedged shaped member releasibly together, said flag mounting structure secured to an upper side of said wedge-shaped member, said flag mounting structure comprising a pair of longitudinally extending, spaced apart, forwardly, upwardly inclined side legs, a downwardly bowed bridge across the upper ends of said side legs to bear against the underside of a flag pole inserted between said side legs, and a pair of spaced apart upwardly bowed bridges across a lower portion of said side legs to bear against the upper side of said flag pole to support said flag pole extending upwardly inclined from said flag mounting structure.

3,315,927

CORROSIONLESS PIPE SLIDE SUPPORT

John F. Malloy, Charleston, and William C. Turner, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
Filed June 27, 1966, Ser. No. 560,772
2 Claims. (Cl. 248-55)



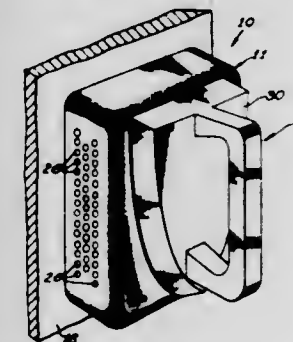
1. A self-supporting, self-lubricating slideable pipe support comprising, in combination, a first plate member and

a second plate member, a first flat surface of said first plate member arranged for slideable contact with a first flat surface of said second plate member, a second arcuately depressed surface of said first plate member adapted to be in contiguous contact with a supported pipe, and a second surface of said second plate member adapted to be in contiguous contact with a structural means adapted to bear a load imposed thereon by a supported pipe and said slideable support, said first and second plate members consisting essentially of carbon.

3,315,928

FLATIRON HOLDER

Ralph J. Morozzo, Rte. 4, Box 182c, and Prentis H. Beck, Rte. 4, Box 191, both of Yakima, Wash. 98902
Filed Mar. 29, 1965, Ser. No. 443,600
8 Claims. (Cl. 248-117.1)

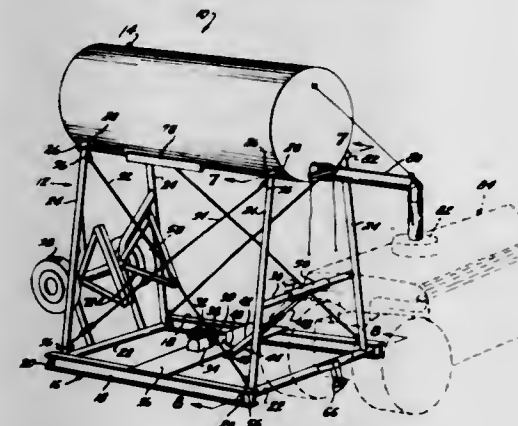


1. A wall mounted holder adapted to hold a flatiron the side walls of which flatiron converge forwardly in horizontal plan and diverge downwardly in transverse section, said holder comprising a sheet metal box having a front wall, side walls and top and bottom walls; and means embodied in said front wall and including a recess formed in said wall said recess having downwardly converging side edges and into which said flatiron fits when pointed downwardly so as to lodge said flatiron in said recess by gravity until lifted therefrom.

3,315,929

PORTABLE COLLAPSIBLE TOWER FOR FLUID TANKS AND THE LIKE

Keril M. Keiser, 409 N. Washington Ave., Glendora, Calif. 91740
Filed Aug. 4, 1964, Ser. No. 387,337
9 Claims. (Cl. 248-129)



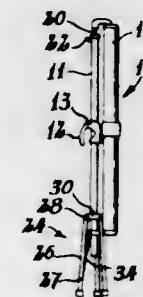
1. A portable collapsible tower comprising a normally substantially horizontal base frame having front and rear ends and a lower ground engaging side, front and rear supporting legs at the upper side and adjacent said front and rear ends, respectively, of said frame, said legs having lower ends adjacent said side frame and upper ends remote from said frame, a connecting member extending between the upper ends of said legs, pivotal connections between said frame and the lower ends of said legs, pivotal connections between said member and the upper ends of

said legs, said pivotal connections having normally horizontal, substantially parallel pivot axes whereby said legs are rotatable forwardly and upwardly relative to said frame to erect positions over the frame and rearwardly and downwardly relative to said frame to collapsed positions wherein said rear legs extend rearwardly of said frame, means for releasably retaining said legs in said erect positions, ground wheels mounted on the rear sides of said rear tower legs intermediate the ends thereof in such manner that said tower is collapsible from its erect position through an intermediate position wherein said frame rests flat on the ground and said wheels engage the ground rearwardly of said frame, and said frame is collapsible beyond said intermediate position to a final position by rotation of said rear legs about the rotation axis of said wheels as a center in a direction to elevate the rear end of said frame out of supporting contact with the ground, and means for retaining said tower in said final position, thus to permit movement of the tower from one location to another.

3,315,930

PORTABLE PROJECTION SCREEN STAND

Glenn L. Cota, Waukegan, Ill., assignor to Radiant Manufacturing Corporation, a corporation of Illinois
Filed May 24, 1965, Ser. No. 458,316
4 Claims. (Cl. 248-171)



1. In a portable projection screen assembly, an elongated standard; stand means on said standard movable between retracted storage position and standard-supporting position, said stand means including a plurality of legs and pivot means for swingably mounting the legs at their upper ends on said standard at a distance spaced from the lower end thereof, a collar movable axially on said standard between the connection of the legs to the standard and the lower end of the standard, bracing links each pivotally secured at each of its opposite ends to one of the legs and to said collar, first spring means between the legs of the stand means and said standard for biasing said legs to retracted storage position, said first spring means comprising a coil spring carried on the pivot means that swingably secures an end of a leg to the standard, and second spring means between each leg and its associated bracing link for urging the legs to retracted storage position, said stand means being constructed and arranged to be moved to standard-supporting position by application of force to one of the legs upon a supporting surface to pivot same outwardly and being adapted to be moved automatically to retracted storage position when the assembly is raised from the supporting surface.

3,315,931

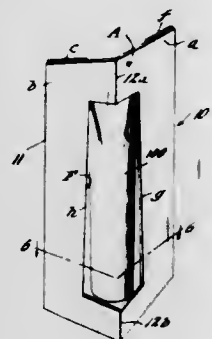
DISPLAY CARTONS

James J. Puckett, Cheektowaga, N.Y., assignor to F. N. Burt Company, Inc., Buffalo, N.Y., a corporation of Delaware

Filed May 15, 1964, Ser. No. 367,829
5 Claims. (Cl. 248-174)

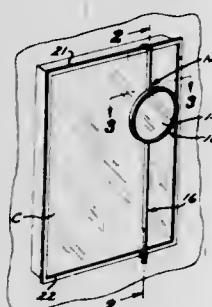
1. A display carton for elongate articles comprising a single sheet of foldable material providing a hollowed-out carton body to cradle said article, and to embrace and retain it in place at the top and bottom thereof while

exposing the medial portion to view; said carton comprising a front wall structure and a rear wall structure; means for securing lateral marginal portions of said wall structures together in angular relationship; each of said wall structures bent along a longitudinal center line to divide it into two angularly related panels, the respective angular corners thus formed facing forwardly and rearwardly of the carton; the front wall structure having an elongated medial opening cut therein; the angled panels and the angular connection of the edges of the wall structures providing a quadrangular cross-section at the lower end of the carton, and a bottom closure structure



thereat serving to rigidly maintain said quadrangular section in rectangular relationship; the angled rearward wall structure alone providing a trough-like intermediate structure for the reception of the article; the forwardly facing angular panel junction of the uppermost portion of the front wall structure above the opening, forming with said angular rear wall panels a flattened quadrangle but free from any bracing structure which would tend to force said flattened quadrangle to strict rectangular configuration; whereby the wall panels are free to assume a partially collapsed, non-rectangular relationship to more snugly grip and retain the upper end portions of the article at such upper part of the carton.

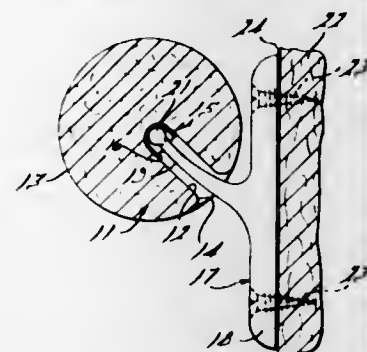
3,315,932
MAGNIFYING MIRROR APPARATUS
Charles A. Chandler, 4223 Chatwin Ave.,
Lakewood, Calif. 90713
Filed May 20, 1965, Ser. No. 457,274
11 Claims. (Cl. 248-226)



1. Magnifying mirror apparatus for use with a cabinet mirror, comprising:
a magnifying mirror;
a vertical post;
upper and lower mounting brackets on the upper and lower ends of said post engageable with said cabinet mirror;
a support bracket having a vertical leg secured to the back of said magnifying mirror, with the upper and lower ends of said leg being formed with tubular mounts slidably received by said post, said support bracket also having a pair of rearwardly and outwardly extending arms formed on their free ends with pads that frictionally engage the front of said cabinet mirror;

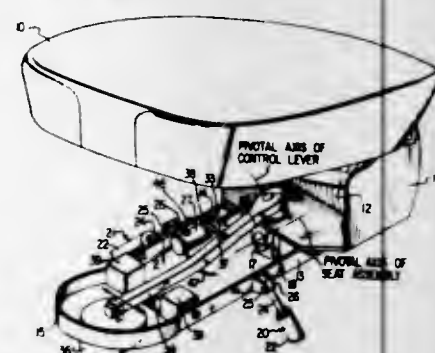
and a pressure pad carried by the vertical leg of said support bracket, said pressure pad being biased into frictional engagement with the front of said vertical post.

3,315,933
SUPPORT FOR SOAP CAKE
Charles H. Tatham, Grosse Pointe Farms, Mich., assignor,
by mesne assignments, to Charles H. Tatham, Grosse
Pointe Farms, Mich.
Filed May 4, 1966, Ser. No. 547,537
5 Claims. (Cl. 248-309)



1. A cake of soap having a recessed portion extending inwardly from the surface thereof and terminating in the interior of the cake of soap with a rounded bottom, and a liner of relatively hard material insoluble in water, said liner being of cup-shaped configuration and having a rounded inner end with no sharp points or edges engaging the bottom of the recessed portion over a substantial area, the length of said liner being substantially less than the length of said recessed portion, whereby the liner is in non-interfering relation with the surface of the cake even after the thickness of the cake has been substantially reduced during use.

3,315,934
SELF-LEVELING SEAT FOR TRACTORS
Ora Quinton Taylor, Rte. 3, Trenton, Tenn. 38382
Filed May 5, 1965, Ser. No. 453,382
8 Claims. (Cl. 248-376)



1. A self-leveling seat for tractors and the like comprising a closed fluid-filled loop, a fluid displacement device connected in said closed loop and operable to displace the fluid therein selectively in either direction, a check valve means connected in said closed loop in series with the fluid displacement device and serving normally to prevent displacement of the fluid in said loop when the seat is substantially level, a two-way tiltable seat structure having a connection with the fluid displacement device, whereby the weight upon the seat structure is the sole operating force for the fluid displacement device and the sole means of pressurizing the fluid within said loop responsive to tilting of the seat in either direction, and a tilt-responsive actuator for the check valve means operable upon tilting of the seat structure in either direction to open the check valve means and allow the fluid in said closed loop to be displaced by said displacement device in a direction to level the seat, thereby returning the seat

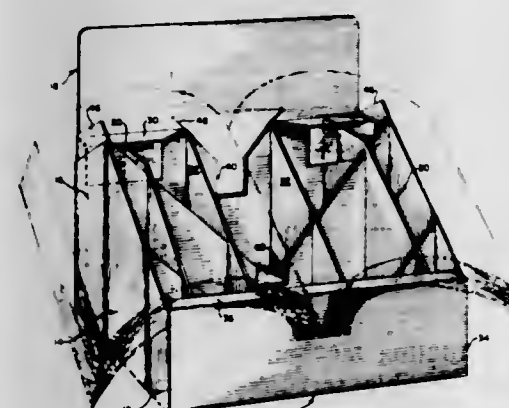
structure to a substantially level position, the check valve means simultaneously preventing displacement of the fluid in the opposite direction in said closed loop.

3,315,935
MOVABLE VEHICLE SEAT CONSTRUCTION, ANCHORING MEANS AND BELT ASSEMBLY THEREFOR
Merton L. Clevett, Jr., Lexington, and Edgar W. Smith, Nicholasville, Ky., assignors to Irving Air Chute Company, Inc., Lexington, Ky., a corporation of New York
Filed Mar. 18, 1965, Ser. No. 440,682
14 Claims. (Cl. 248-429)



1. In a device for use in a vehicle having a fore and aft movable seat and a vehicle frame floor, trackway means mounted on the floor, bracket means mounted on the seat slidable fore and aft on the trackway means, control means for releasably connecting the trackway means to the seat bracket means movable thereon whereby to normally fix the position of the seat against movement fore and aft, an elongated anchoring bar mounted on said floor beneath the seat, a lock member movably mounted on said seat having a releasable positive locked position with respect to said bar, and means to release the lock member from its locked relation with the bar.

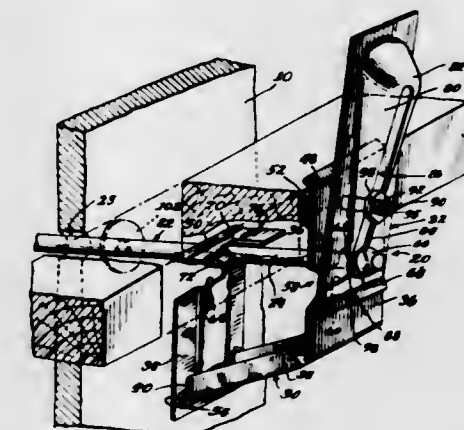
3,315,936
WALLPAPER SAMPLE BOOK HOLDER
Lewis B. Dautch, Williamsville, N.Y., assignor to The Birge Company, Inc., Buffalo, N.Y.
Filed Apr. 1, 1965, Ser. No. 444,527
4 Claims. (Cl. 248-460)



1. A book holding rack comprising a plurality of edge-wise standing plate-like members interfitted and interconnected in parallel-transverse relationships by means of slot formations whereby intersecting plates are disposed in slip-fitted interconnected relation, the upper ends of said plates being cut to define a forwardly pitched valley-shaped profile comprising the upper edge portions of said plate members thereby providing dihedrally opposed land formations adapted to support in outspread lying relation thereon the front and back cover portions of a book, the upper edges of the plate members in the region of intersection of the bottom apex of the valley-shaped profile being downwardly notched to receive in slip-fitting relation therein the back binding portion of the book, said rack having at its front upper edge portion a ledge device

projecting vertically above said land formation profiles whereby to hold the book against downward and forward sliding movements.

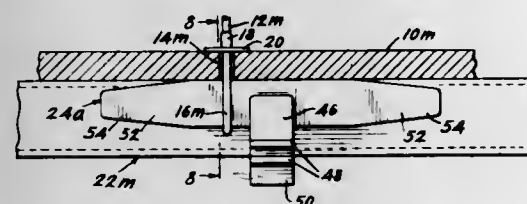
3,315,937
WALER CLAMP ASSEMBLY
George J. Eriksson, Morton Grove, Ill., assignor to Superior Concrete Accessories, Inc., Franklin Park, Ill., a corporation of Delaware
Filed Aug. 27, 1964, Ser. No. 392,486
3 Claims. (Cl. 249-44)



1. A concrete wall form installation including as parts thereof: a pair of flat vertically extending panels arranged in edge-to-edge relationship and provided with means defining a hole at right angles to the plane in which the panels lie, a horizontally disposed tie rod having one end projecting through the hole, terminating a short distance outwards of the outer faces of the panels, and provided on its extremity with an enlargement defining an inwardly facing shoulder, a horizontal waler extending across and butting directly against the outer faces of the panels, and means for clamping the waler hard against the outer faces of the panels in bridging relation relative thereto, said means comprising an inseparable clamp assembly including a bracket part capable of a limited degree of flexing movement, and an attached but separately formed tapered wedge part, said bracket part being of U-shape design and comprising upstanding spaced parallel inner and outer legs and a connecting base extending between and connected to the lower ends of the legs, said legs being in the form of flat plates, the upper edge of the plate which constitutes the inner leg of the bracket part being formed with an outwardly projecting horizontally disposed shelf, the corresponding side edges of said plates being provided therein with horizontally extending open-ended slots which are disposed at substantially the same horizontal level, said slots straddling the projecting end of the tie rod, the slot in the plate which constitutes the inner leg being in the upper end region of the plate, the slot in the plate which constitutes the outer leg being in the central region of the plate, said waler being disposed above the projecting end of the tie rod and resting upon the upper face of the shelf, said plate which constitutes the outer leg projecting upwardly above the other plate and having the upper end portion only of its inner face bearing against the outer side of the waler, said shelf being provided with an outwardly projecting downturned ear which extends below the horizontal tie rod on one side thereof and prevents lateral shifting of the tie rod in the open-ended slot in the plate which constitutes the inner leg, said tapered wedge part defining a tapered rib having a narrow axial slot therein and presenting a region of high offset and a region of low offset, said rib being interposed between the enlargement and outer face of the plate which constitutes the outer leg with the tie rod projecting loosely through said narrow slot, said last mentioned plate being adapted when the wedge part is driven to a home posi-

tion in the direction of its small end to flex and thus constrict the bracket part and force the outer leg of the bracket part against the water to, in turn, force the water hard against the outer faces of the panels, an outwardly projecting guide post and stud carried by the plate which constitutes the outer leg adjacent to the upper end of the plate and projecting loosely through said narrow slot, and means on the outer end of the stud for preventing removal of the wedge part from said stud.

3,315,938
WEDGE-TYPE TIE END LATCHES AND TRACK ASSEMBLIES FOR USE THEREWITH
Harris G. Gates, Englewood, Colo., assignor to Gates & Sons, Inc., Denver, Colo., a corporation of Colorado
Filed Jan. 21, 1963, Ser. No. 252,996
5 Claims. (Cl. 249-46)

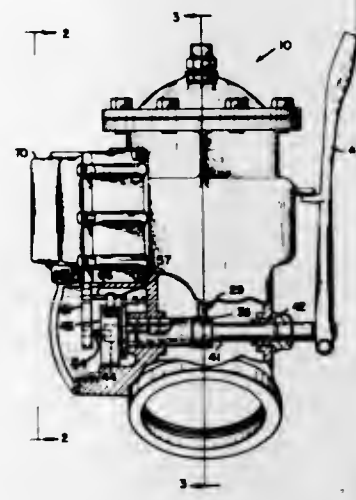


1. In a concrete wall-forming system of the type having a pair of form walls interconnected by a plurality of ties projecting therethrough and adapted to maintain a fixed spaced relation therebetween, the improved means for reinforcing said form walls while simultaneously releasably securing same to the tie ends which comprises: an elongate combination form wall brace and tie end latch track having central longitudinal slot sized to receive the projecting form tie ends, an inner pair of coplanar flanges adapted to engage the exterior face of the adjacent form wall on both sides of the tie row, and an outer pair of coplanar flanges parallel to the inner pair thereof and spaced outwardly therefrom defining rails; and, at least one latch element mounted on each track element for slidable movement from end-to-end thereof; said latch element including slotted projections positioned and adapted to receive the rail-forming flanges of the track, at least one wedge-forming portion formed on said latch element extending in the direction of the slot in the track and adapted upon relative slidable movement to engage one of the form tie ends located therein, said wedge-forming portion including an inclined surface operative upon engagement with the tie end to draw the track up tight against the form wall, and a tool-engaging portion formed on said latch element projecting beyond the track in position to be struck with a tool in the directions to engage or disengage a tie end wherein the wedge-forming portion of the latch element comprises a tapered finger located within the slot in the track and extending in the direction of the length thereof, said finger being adapted to enter the loop in a loop-ended form tie extending into the slot in the track, the inclined surface of said wedge-forming finger being operative upon movement along the track to draw the tie outwardly.

3,315,939
VALVE ACTUATING MECHANISM
Wallace D. Boone and James L. Hughes, Cincinnati, Ohio, assignors to Dover Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Sept. 11, 1964, Ser. No. 395,818
14 Claims. (Cl. 251-67)

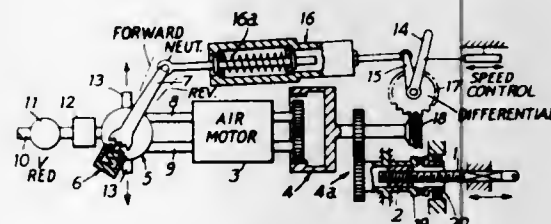
1. In combination, a housing means having an inlet and an outlet interconnected together by a valve seat, a movable valve member for opening and closing said valve seat, means normally tending to move said valve member to its closed position, manual lever means for

moving said valve member to its open position in opposition to said first-named means, and manually and remotely controlled movable means for coupling said manual lever means with said valve member, said movable means when in one position disconnecting said manual lever means from said valve member whereby said first-named means closes said valve member regardless of the



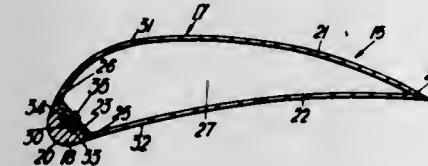
position of said manual means, said movable means including a movable part having an arcuate slot therein and a latch member having a pin connection projecting into said slot, said latch member being adapted to interconnect said manual lever means with said valve member when said movable part is in a position other than said one position thereof.

3,315,940
SERVO-ACTUATING MECHANISMS
Albert Edward Hordley, Locksheath, Southampton, and Peter Bruno Kahn, Catisfield, Fareham, England, assignors to Plessey-UK Limited, Ilford, England, a British company
Filed Oct. 9, 1964, Ser. No. 402,971
Claims priority, application Great Britain, Oct. 17, 1963, 41,056/63
2 Claims. (Cl. 253-1)



1. Servo-actuating mechanism comprising a controlled member, a reversible servomotor operatively connected to said controlled member, a three position switch for selectively energising said reversible servomotor in one or a reverse direction or de-energising said servomotor, a primary control member for determining the position of said controlled member, an element differentially coupled to said primary control member, a bi-directional spring link coupling said element to said switch, indexing means for holding said switch in any of its three positions and such that a force due to movement of said element in a sense to displace said switch from one position to another is initially imparted to said spring link and resisted by said indexing means to hold said switch in said one position until said element has been moved by a predetermined amount, and feed back means coupled to said controlled member and differentially coupled to said element so that said element assumes a neutral position whenever said control member and said controlled member are in corresponding positions.

3,315,941
AEROFOIL BLADE FOR USE IN A HOT FLUID STREAM
Glyn Twiston Davies, Milford, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British company
Filed Feb. 21, 1966, Ser. No. 529,060
Claims priority, application Great Britain, Apr. 27, 1965, 17,759/65
6 Claims. (Cl. 253-77)



1. An aerofoil blade for use in a hot fluid stream having a leading edge part and a remaining part which abut each other and which are respectively provided with flat surfaces, the said parts abutting each other only at said surfaces to resist relative rocking thereof; the leading edge part being made of heat resistant ceramic material which has low heat conductivity and the said remaining part being formed of sheet metal wall members one of which is provided with the respective flat surface; and means securing the said parts together with the flat surfaces in firm abutment, said means comprising a wedge-shaped recess in said leading edge part which tapers towards the trailing edge of the blade, a wedge-shaped key member firmly secured in said recess, and a threaded member which secures the key member to the sheet metal wall member having the said respective flat surface; heating of the blade in the hot fluid stream increasing the force with which the leading edge part is held against the said remaining part so as further to resist said relative rocking.

3,315,942
JACK MEANS FOR A CAMPER UNIT
Harry P. Bubniak, 12342 Devoe, Southgate, Mich. 48192
Filed Sept. 20, 1965, Ser. No. 488,442
8 Claims. (Cl. 254-45)



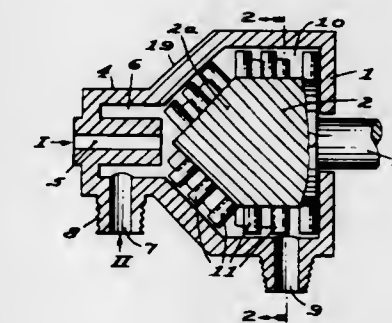
1. A camper unit having a jack including a generally vertically extending support secured to one side thereof, a sleeve, an extensible leg in said sleeve, linkage means pivotally mounted on one end thereof on said support and movably connected to said sleeve on the other end thereof and means associated with said linkage means and said leg operable to move the entire sleeve laterally of said support upon extension of said leg.

3,315,943
MODULAR METAL PICKET FENCE CONSTRUCTION
William A. van den Broek, Buckingham, Pa., assignor to Sylvan Pools, Inc., Doylestown, Pa., a corporation of Pennsylvania
Filed Apr. 28, 1964, Ser. No. 363,227
3 Claims. (Cl. 256-22)



1. A modular metal picket fence comprising a plurality of hollow pickets, an upper rail member having longitudinally spaced apertures each substantially complementary with the interior of a picket, a lower rail member having longitudinally spaced apertures each substantially complementary with the exterior of a picket, post members supporting said upper and lower rail members with respective apertures in alignment, pickets received in the apertures of said lower rail member and the upper ends of said pickets abutting the undersurface of said upper rail member, and retainer members each having a shoulder and a tapered end extending therefrom, the tapered end having a cross-section slightly greater than the interior of a picket, the shoulders of said retainer members abutting the upper surface of said upper rail and the tapered ends received within the apertures thereof and axially wedged into press-fit engagement with the upper interior ends of respective pickets.

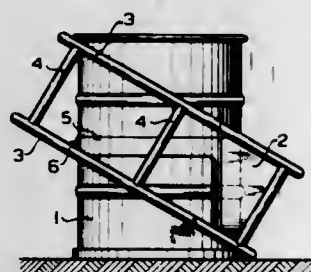
3,315,944
CONTINUOUS MIXING DEVICE FOR THE MANUFACTURE OF PLASTIC MIXTURES
Günter Güstau, Hamburg, Germany, assignor to Cellastol Incorporated, Ann Arbor, Mich., a corporation of Michigan
Filed Oct. 23, 1965, Ser. No. 502,876
Claims priority, application Germany, Apr. 3, 1965, 1 50,379
6 Claims. (Cl. 259-9)



1. A continuous mixing device for mutually reacting compounds utilized in the manufacture of plastic mixtures which comprises a housing having an entrance end and a discharge end and a mixing chamber therebetween, said entrance end having formed therein an unobstructed passage for the ingress of one material, said passage leading to said mixing chamber and being surrounded by an annular wall which forms an annular chamber with said housing, and a second passage in said housing for the ingress of a second material entering the annular chamber, said annular chamber connecting with the mixing chamber, and a mixing device in said mixing chamber

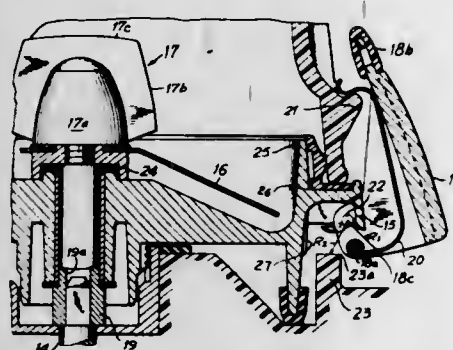
comprising a rotating body member having portions extending to a point adjacent the walls of said housing to sweep the area in said mixing chamber and move materials from said entrance passages to an outlet passage at said discharge end.

3,315,945
MIXING DEVICE
Alfred Schmitt, Ludwigshafen (Rhine), Germany, assignor to J. Engelsmann AG, Ludwigshafen (Rhine), Germany
Filed Dec. 6, 1965, Ser. No. 511,825
5 Claims. (Cl. 259-72)



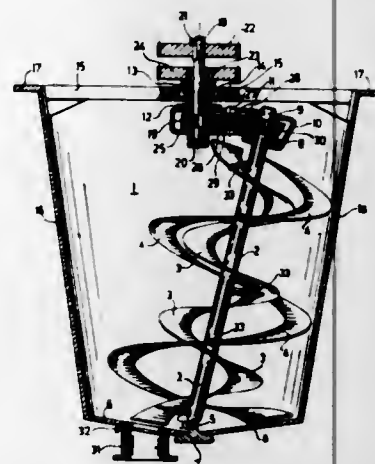
1. A device for mixing fluent material within a generally cylindrical packing or transport container, which comprises a light-weight roll frame having the approximate shape of a cylindrical roller, and adjustable means for supporting and releasably securing such container in said roller with its axis in oblique relation to the roller frame axis, said securing means being movably arranged within said roller frame so as to permit the accommodation of containers of diverse sizes and shapes and variations in the inclination of such container with respect to said roll frame axis.

3,315,946
MIXING AND BLENDING DEVICE
Marvin J. Nissman, Brandywood, Wilmington, Del., assignor to Ronson Corporation, Woodbridge, N.J., a corporation of New Jersey
Filed May 28, 1965, Ser. No. 459,806
8 Claims. (Cl. 259-108)



1. A blender which comprises:
- (a) a support;
 - (b) a motor mounted in said support;
 - (c) a cup base;
 - (d) a shaft journaled on said cup base;
 - (e) an agitator fixed to said shaft;
 - (f) said cup base mounted on said support;
 - (g) a jar on said cup base;
 - (h) latch means extending between said cup base and said jar to releasably hold the jar and cup base together;
 - (i) the output shaft of the motor operatively connected to the cup base shaft when the jar and cup base are latched by said latch means;
 - (j) said support including an interfering edge thereon preventing operation of the agitator unless the jar and cup base are latched together.

3,315,947
MIXING DEVICES
Constant J. Nauta, Bloemendaal, Netherlands, assignor to Nautamix N.V., Haarlem, Netherlands, a limited-liability company
Filed July 13, 1965, Ser. No. 471,584
3 Claims. (Cl. 259-111)



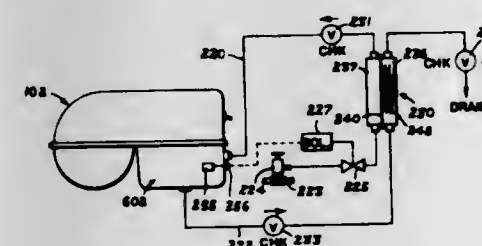
1. In a mixing device for mixing and kneading substances and comprising a mixing vessel to receive said substances having a frusto-conical side wall with a substantially vertical central axis and increasing in diameter in the upward direction and a bottom wall, a mixing member in said vessel having a longitudinal shaft which is inclined with respect to said vertical central axis of the vessel, means carried by said bottom wall of the vessel supporting the lower end of said shaft, and drive means at the top of said vessel supporting the upper end of said shaft and being operative to effect rotation of said mixing member about the axis of said shaft and simultaneous revolving of said mixing member about said vertical central axis of the vessel with the outer periphery of said mixing member, along its entire length, being maintained at a constant distance from said side wall of the vessel; the improvement consisting of first and second conveying means fixedly mounted on said shaft at different radial positions with respect to the latter and being operative, upon said rotation of the mixing member, to convey substances in said vessel longitudinally along said shaft in opposed directions through first and second coaxial, annular zones, respectively, which are longitudinally coextensive along said shaft, said first conveying means having a greater conveying capacity than said second conveying means so that the flow rate of substances conveyed through said first zone in one longitudinal direction is greater than the flow rate of substances conveyed through said second zone in the opposite longitudinal direction, the volume swept by said first and second conveying means upon rotation of said mixing member being substantially less than the volume of said vessel so that substances in the vessel are drawn into, and conveyed through said first zone from one end of the mixing member and only a part of the substances conveyed through said first zone is returned through said second zone toward said one end of the mixing member with the remainder of said substances conveyed through said first zone being discharged from the mixing member to mingle with substances in said vessel outside of said volume swept by the first and second conveying means.

3,315,948
AIR CONDITIONING SYSTEM
Warner W. Martin, Olmstead Falls, Ohio, assignor to The Lau Blower Company, Dayton, Ohio, a corporation of Ohio
Filed Apr. 29, 1965, Ser. No. 451,738
9 Claims. (Cl. 261-26)

1. Apparatus for adding moisture to the air comprising, a humidifier having a reservoir therein, flow control

means for maintaining a preset level of tap water in said reservoir, a highly porous non-absorbent evaporation media, frame means for guiding movement of said media along a predetermined path so that a portion of said media is always submerged in said reservoir, means for moving said media along said path, fan means for forcing air over and through said media to evaporate water from the surfaces thereof, means correlating the speed of movement of said media and the flow of air so that said surfaces of said media remain wet at all times, and a purge unit for removing a preset minimum amount of said highly concentrated water from said reservoir so that said water level control means supplies additional tap water thereby diluting the concentration of minerals in solution in said reservoir to reduce substantially the deposition of said minerals on said media or in said reservoir, and means to cause operation of said purge unit in response to operation of said flow control means to maintain said preset level so that the operation of said purge unit is correlated to the amount of water being evaporated from said media.

6. A purge unit adapted for connection to the reservoir

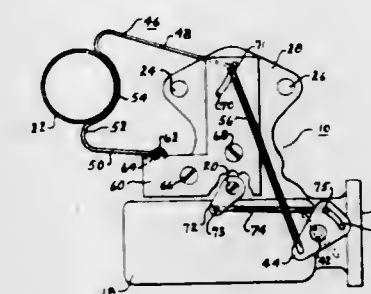


of a device for evaporating water having dissolved minerals therein, comprising a housing partially defining an expandable chamber having an inlet and an outlet thereto, a flexible diaphragm secured to said housing to define one side wall of said expandable chamber within said housing, conduit means for connecting said inlet to the reservoir, means for connecting said inlet to the reservoir, means for connecting said outlet to the drain, one-way valve means associated with each of said inlet and outlet for permitting flow only into said chamber from said inlet and flow only from said chamber through said outlet, motor means mounted on said housing and having a drive shaft, an eccentric cam on said drive shaft disposed in alignment with said diaphragm, means interconnecting said diaphragm and said eccentric cam for reciprocating said diaphragm when said motor rotates, and electrical means for supplying electrical current to said motor means only during the period of operation of the air moving means of the humidifier to remove a portion of the water in the reservoir and thereby to maintain the concentration of dissolved minerals in solution in the reservoir below the level at which precipitation of the minerals will occur.

3,315,949
AUTOMATIC CHOKE
Robert W. Sutton, Grosse Pointe Farms, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 500,558
6 Claims. (Cl. 261-39)

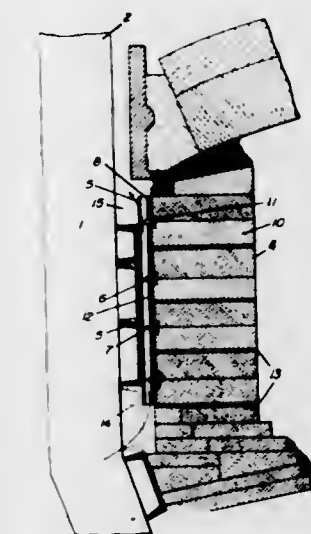
1. A choke control mechanism for a carburetor having an induction passage with a throttle valve and a choke valve therein on rotatable shafts, and for an engine having an exhaust conduit with an exposed metal wall, said mechanism comprising a generally U-shaped bi-metallic element having two arms connected by an intermediate portion of a configuration corresponding to said external wall for metal-to-metal contact therewith, a lever on said choke valve shaft for rotation therewith, a lever con-

nected at one end to said choke valve lever and at the other end to one of said arms, a bracket mounted on the carburetor and having a slot therein for receiving the end of said last mentioned lever and controlling the movement of said last mentioned lever and the rotation of said choke valve, a means on said bracket for anchoring the



other arm of said bi-metallic element, a slot in said choke valve lever, a lever on said throttle valve shaft, and a rod connected at one end to said throttle valve lever and at the other end to said choke valve lever at said slot for opening the choke valve only when the throttle valve is in idle position.

3,315,950
HEATING CHAMBER WALLS, PARTICULARLY THE BACKWALLS OF FURNACES, SUCH AS SIEMENS-MARTIN FURNACES
Kurt Potocnik and Günter Simon, Wiesbaden, Germany, assignors to Didier-Werke AG., Wiesbaden, Germany
Filed Sept. 14, 1964, Ser. No. 396,098
Claims priority, application Germany, Sept. 24, 1963, D 42,550
3 Claims. (Cl. 263-44)



1. Heating chamber walls, particularly for the backwalls of industrial furnaces, such as Siemens-Martin furnaces, comprising an outer wall of massively lined beams, an inner wall bordering the heating chamber spaced from said outer wall, a framework for said inner wall comprising spaced vertical wall columns, a plurality of horizontal beams, said beams bridging the area between two adjacent wall columns, means slidably mounting said beams for vertical movement on said columns, rows of fire bricks, each brick having a recess into which a horizontal beam extends in order to support a row of said fire bricks, cooling means for said inner wall between said outer and inner wall, said horizontal beams each supporting two adjacent rows of bricks whereby each beam may simultaneously hold and vertically move the bricks of two consecutive brick rows.

3,315,951

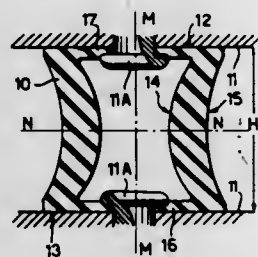
COMPRESSION SPRINGS OF RUBBER

Antonio Boschi and Giovanni Martorana, both of Milan, Italy, assignors to Società Applicazioni Gomma Antivibranti "SAGA" S.p.A., Milan Italy

Filed Apr. 6, 1965, Ser. No. 445,884

Claims priority, application Italy, Apr. 11, 1964, 7,861/64; Jan. 16, 1965, 822/65

7 Claims. (Cl. 267—1)



1. A compression spring comprising a tubular body of a resilient elastomeric material, said tubular body having a pair of mutually parallel end walls and tubular lateral walls, the thickness of said tubular lateral walls continuously increasing from a minimum at each of said end walls to a maximum in a transverse plane midway of said end walls and the internal and external transverse dimensions of the tubular body each continuously decreasing from a maximum at each of said end walls to a minimum in said midway plane.

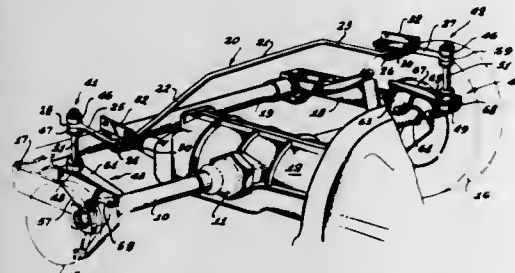
3,315,952

AUTOMOTIVE STABILIZER BAR

Joseph C. Vittone, Riverside, Calif., assignor to European Motor Products, Inc., Riverside, Calif., a corporation of California

Filed May 12, 1965, Ser. No. 455,256

9 Claims. (Cl. 267—11)



1. Stabilizer apparatus for a swing-axle automobile wherein axle housings extend from opposite sides of a transmission case, comprising:

a rigid rod having a mid-portion to be positioned above the transmission case, said rod having terminal leg portions extending in opposite directions from the rod;

means for supporting said terminal legs in fixed spaced relation with the axle housings; and

means for supporting said rod for angular movement about its axis.

3,315,953

HANGERS

Leo Tantges, 1212 7th Ave., Brainerd, Minn. 56401

Filed Dec. 24, 1964, Ser. No. 421,014

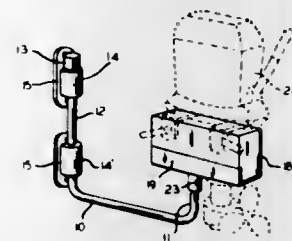
6 Claims. (Cl. 269—50)

1. A hanger for supporting outboard motors comprising:

a hinge means having a forward and a rearward section, said rearward section being adapted for pivotally associating it with a wall for movement of said hinge means toward and away from said wall;

a motor support for the placement thereon of said mo-

tors, said support being rotatably associated with said forward section of said hinge means to provide ease



in servicing said motor when said hinge means is pivoted outwardly from said wall.

3,315,954

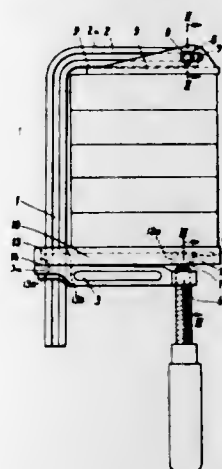
CLAMP

Eugen Mayer, Wolfsweg, Bietigheim, Württemberg, Germany

Filed Aug. 3, 1964, Ser. No. 386,861

Claims priority, application Germany, Aug. 5, 1963, M 57,732

7 Claims. (Cl. 269—167)



1. A clamp comprising a guide rail, an end portion bent at substantially right angles which forms a stationary jaw, a sliding jaw displaceably supported by said guide rail, a tightening element carried by said sliding jaw, a respective lengthwise extending support plate provided for said stationary jaw and said sliding jaw, each lengthwise extending support plate being displaceably mounted relative to the longitudinal axis of the associated jaw, and a support stop provided for each support plate for bracing each support plate against its associated jaw in the region of said guide rail.

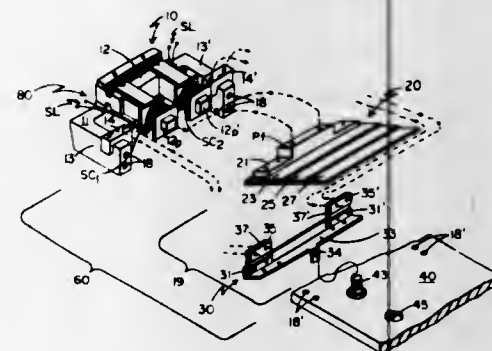
3,315,955

COMPUTER DEVICE

Frank H. Schaller, Needham Heights, Mass., assignor to Honeywell Inc., a corporation of Delaware

Filed May 20, 1965, Ser. No. 457,330

14 Claims. (Cl. 271—3)



6. In a unit record handling apparatus; a record diverting station arranged to direct records along a prescribed direction, said station including actuator means

and ejector means arranged to be driven by said actuator means against said records at times effective to cause said directing, said ejector means comprising a tapered, resilient blade structure adapted to engage said records adjacent the free end thereof.

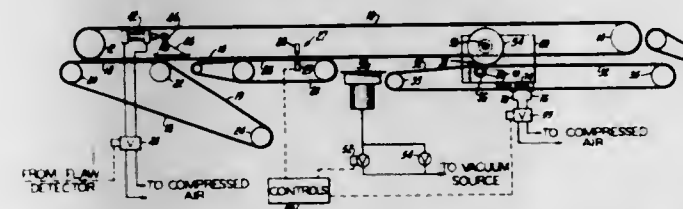
3,315,956

HIGH SPEED SHEET FEEDING AND OVERLAPPING SYSTEM

Merton C. Lyman, Willimantic, Conn., assignor to Smith and Winchester Manufacturing Company, South Windham, Conn., a corporation of Connecticut

Filed June 22, 1964, Ser. No. 376,734

7 Claims. (Cl. 271—46)



1. In a sheet feeding and overlapping mechanism having means for conveying a plurality of sheets along a path, means for overlapping successive sheets and means for detecting an abnormal gap between successive sheets, the improvement comprising sheet retaining means selectively operable on the upstream edge of a sheet for retaining said sheet, feeding means positioned downstream from said retaining means for acting on each of a stream of successive sheets to feed the same along said path, and means responsive to an abnormal gap between successive sheets for simultaneously disabling said feeding means and operating said retaining means, said feeding means being continuously operable when said retaining means is inoperative to effect a positive sheet feeding and braking action on each of a stream of successive sheets.

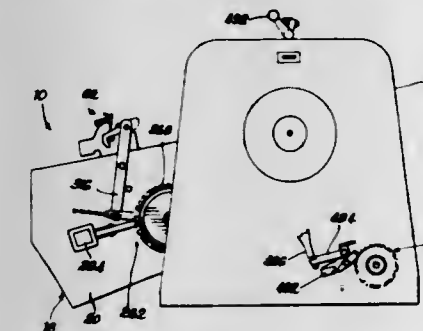
3,315,957

COLLATOR FOR DUPLICATING MACHINES

Anthony James Mazzeo, Chicago, and Wallace Richard Fowle, North Riverside, Ill., assignors to A. B. Dick Company, Niles, Ill., a corporation of Illinois

Filed Mar. 24, 1965, Ser. No. 442,335

17 Claims. (Cl. 271—64)



1. In a device for sorting sheets received from a duplicating machine, the combination comprising a series of spaced receiving trays, a swingable aimer for receiving the sheets and directing them into the successive receiving trays, said aimer having a pair of forwarding rollers mounted thereon and swingable therewith for propelling the sheets and a pair of guide plates converging toward said rollers for directing the sheets to the forwarding rollers, a control mechanism for indexing said aimer to the successive trays, said control mechanism having a series of counter stages for indexing the aimer through successive

steps after a pre-selected number of sheets have been directed into each tray, a power train for deriving power from the duplicating machine to operate said counter stages, said power train including a selectively operable clutch, and means for energizing said clutch in response to the feeding of sheets by said duplicating machine to said sorting device while de-energizing said clutch in response to the absence of fed sheets.

3,315,958

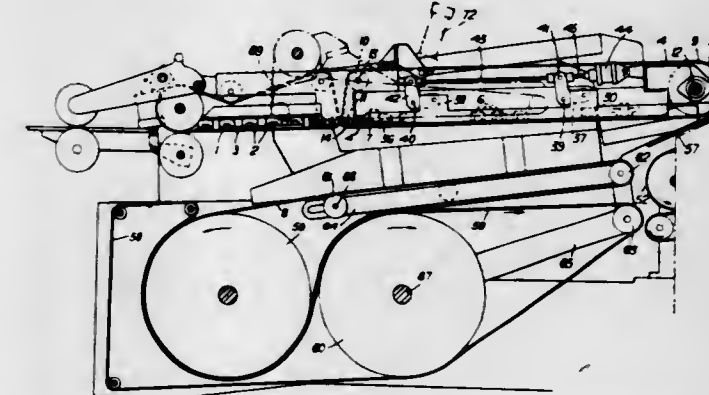
APPARATUS FOR DELIVERING FERROUS METAL SHEETS

Robert Ernest Geeson, Croydon, England, assignor to The Metal Box Company Limited, London, England, a British company

Filed Dec. 4, 1964, Ser. No. 416,040

Claims priority, application Great Britain, Dec. 4, 1963, 47,967/63

9 Claims. (Cl. 271—68)



1. Apparatus for delivering sheets of ferrous metal, comprising endless delivery belts linear movement of which is controlled by a clutch, said delivery belts being supported above a sheet-receiving position to which sheets transported by the belts are to be delivered, magnets co-operating with the delivery belts to cause sheets to adhere thereto for transport thereby, stripper elements co-operating with the delivery belts to disengage a sheet therefrom and move it out of the field of the magnets for gravitational movement to the sheet-receiving position, clutch and stripper element control means arranged to control operation of the clutch and stripper elements, and sensing means operatively connected with said control means and operable when a sheet is in position for release from the delivery belts to cause the clutch temporarily to permit arresting of the movement of the delivery belts and the stripper elements to release the sheet from the belts; said control means for said stripper elements including parallel motion linkage means for moving said stripper elements transversely of said delivery belts with sheet-engaging surfaces of said stripper elements being parallel to said delivery belts.

3,315,959

HINGE AND BRAKING DEVICE FOR STATIONARY ROWING EXERCISING APPARATUS

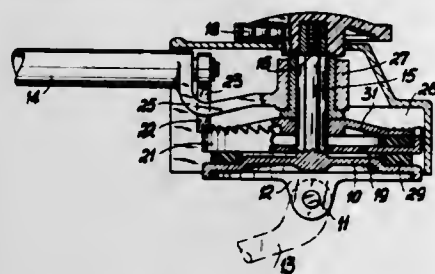
Guido Carnielli, 28 Piazza Luigi di Savoia, Milan, Italy

Filed Sept. 11, 1964, Ser. No. 395,761

3 Claims. (Cl. 272—72)

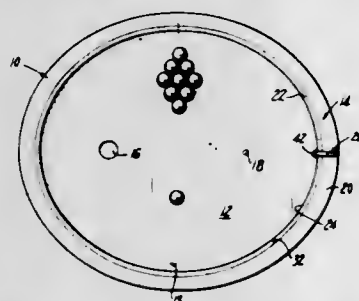
1. A device of the character described, comprising support means including a stationary shaft defining an axis of rotation; a pair of coaxial disk members carried by said shaft, one of said disk members being rigid with said shaft and the other being axially movable thereon; a rotary member carried by said shaft coaxial with and sandwiched between said disk members for rotation about said shaft; friction-promoting means interposed between and frictionally engaging the respective members; compression means carried by said shaft and including a sleeve

surrounding a portion of the shaft and being arranged for axial movement thereon so as to engage and selectively axially deflect said other disk member in direction toward said one disk member for increasing frictional contact between said friction-promoting means and the respective members; actuating means, including a handle arranged for angular displacement relative to said shaft and a hub



rigid with said handle and surrounding said sleeve freely rotatable relative thereto; and cooperating pawl and ratchet means provided on said handle and said rotary member, respectively, and arranged for turning said rotary member relative to said disk members in response to angular displacement of said handle with reference to said shaft.

3,315,960
RAIL BUMPER FOR GAMING TABLE
Arthur P. Frigo, Glenbrook, Conn.
(620 Pelham Road, New Rochelle, N.Y. 10805)
Filed Feb. 23, 1965, Ser. No. 434,411
5 Claims. (Cl. 273-9)

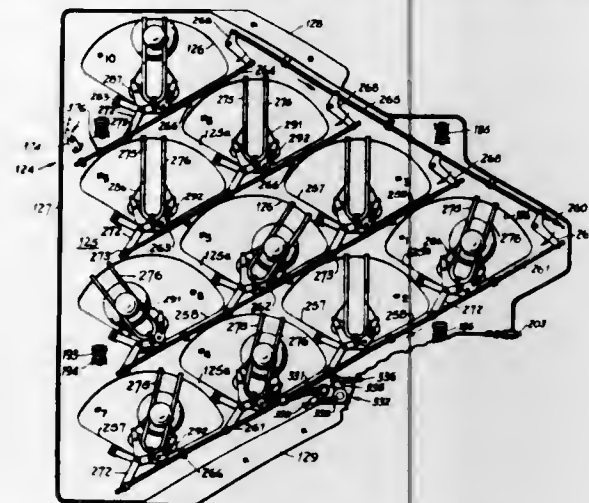


1. A pool table comprising a flat playing surface, a rail about the playing surface having an inner concavely curvilinear cushion forming the perimeter of the playing surface, and a fixed bumper located at a predetermined position along the perimeter of the playing surface, said bumper having a convexly curved inwardly facing edge adjacent to and projecting inwardly from the rail, said bumper edge having a resilient surface positioned inwardly from the rail a distance less than half the height of the rail.

3,315,961
RESPOTTING MECHANISM
Henry C. Congelli, Stamford, and Gordon W. Hays, Springdale, Conn., assignors to American Machine & Foundry Company, a corporation of New Jersey
Original application May 18, 1962, Ser. No. 195,926, now Patent No. 3,245,684, dated Apr. 12, 1966. Divided and this application June 28, 1965, Ser. No. 467,261
16 Claims. (Cl. 273-43)

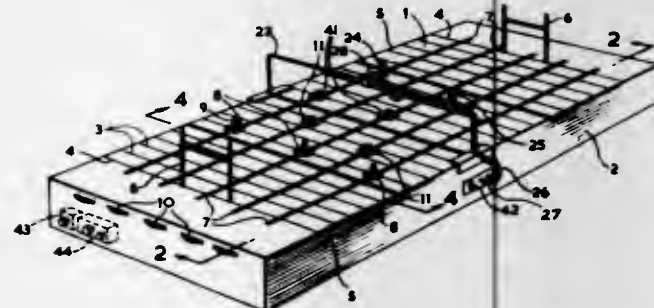
1. In a bowling pin respotting mechanism, the combination of: a table having a plurality of apertures arranged in a triangular formation relative to the pin positions on a bowling lane, said table being adapted to be mounted above an alley for movement relative thereto between a dwell position and a lower position; means for moving said table between said positions through a respotting cycle; a plurality of respotting units carried by said table, each of said respotting units being associated with a different one of said apertures and comprising: a pair of elongated grippers, means pivotally mounting each pair of grippers at one end on said table at a point displaced

laterally of its respective pin position for movement across the associated aperture between an open position and a closed position; and actuating means for moving said grippers between said positions, said respotting units being



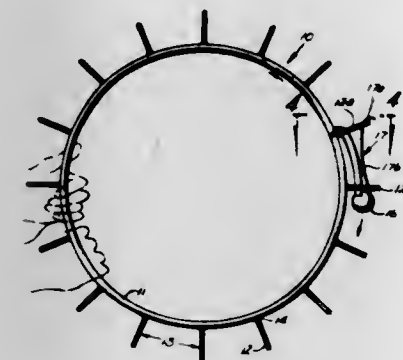
constructed so that the tops of the heads of standing pins are free from engagement with said respotting mechanism at all times; and means for operating said respotting units in a timed relationship to movement of said table.

3,315,962
ELECTRICALLY SIMULATED FOOTBALL GAME APPARATUS
Robert E. Budal, 727 Brant St., Burlington, Ontario, Canada
Filed Dec. 2, 1963, Ser. No. 327,419
15 Claims. (Cl. 273-94)



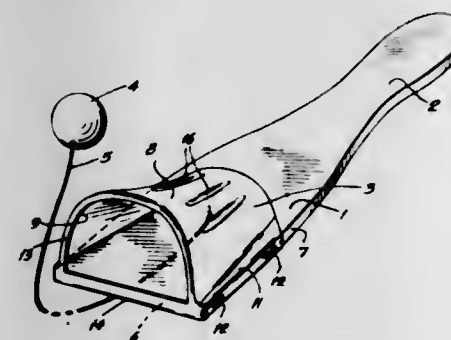
1. An electrically and mechanically operated football game comprising a simulated football field on the upper surface of a supporting box, a plurality of spaced apart longitudinal slots in said field through the upper surface of said box, a simulated player mounted in each of said slots and reciprocally movable through substantially the entire length thereof, said slots containing offensive and defensive players arranged alternately in the slots, each of said offensive players having an electric lamp attached thereto, a simulated quarterback player attached to the box with an electric lamp connected thereto, control means for each movable player at both ends of the box attached to and reciprocally controlling the movement of each player, a power source for said game, electric wiring from said power source through control switches at both ends of the box to said offensive player lamps and said quarterback lamp, said control switches providing means at each end for directing current through said quarterback lamp alone and for directing current through any selected one of said offensive player lamps alone, and an electrical conductor device on each of said offensive and defensive players adapted to touch the conductor of a player in corresponding position in an adjacent slot, said electric wiring also connected to said electrical conductor devices with the connections to the conductor devices being adapted to short out any one of said offensive player lamps upon contact between the conductors of a defensive player and said one offensive player.

3,315,963
ORBITING TOY
Roy T. Masters, 13451-B Riverside Drive, Sherman Oaks, Calif. 91403
Filed Dec. 23, 1964, Ser. No. 420,662
9 Claims. (Cl. 273-95)



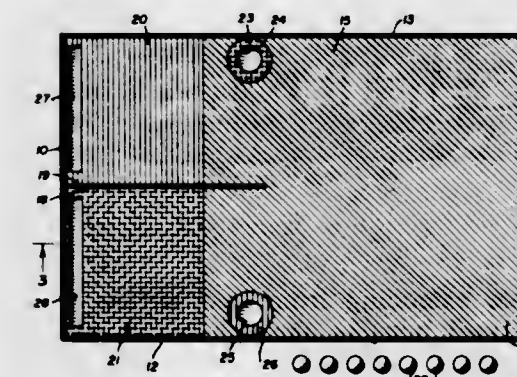
9. An orbiting toy comprising: support means; a plurality of members having openings therethrough and spaced apart on said support means with the holes located transversely to a continuous path; an object smaller than said holes in order to pass through said holes and move along said path; and flexible means extending from said object and normally having a spread larger than said holes, said flexible means being flexed while passing through said holes while said object moves along said path in order to place a drag on the movement of said object.

3,315,964
BALL PROJECTOR AND CATCHER
Paul Gagne, 326 Bagot St., Quebec 8, Quebec, Canada
Filed July 13, 1964, Ser. No. 382,153
5 Claims. (Cl. 273-97)



1. A toy comprising a flat imperforate racket having a front edge and a handle at the opposite end, a ball, an elastic cord attached to said ball and to one of the main faces of said racket whereby said ball can be made to be bounced off said main face in a repeating manner, and a rigid, unitary, molded catching device carried on a second of said main faces, said catching device having generally the shape of a half a truncated cone, the longitudinal edges of which are secured to the longitudinal edges of said racket, the wider end of said catching device being disposed closely adjacent, and generally parallel to the front edge of said racket, said catching device having a front opening for receiving said ball and longitudinal spaced ribs integrally formed in said catching device and protruding inwardly therein for wedging said ball and retaining the same in said catching device.

3,315,965
TWO POCKETED BALL GAME TABLE WITH DIVIDER
Phyllis E. Wlederspan, 3295 S. Bellaire St., Denver, Colo. 80222
Filed Feb. 1, 1965, Ser. No. 429,563
3 Claims. (Cl. 273-125)

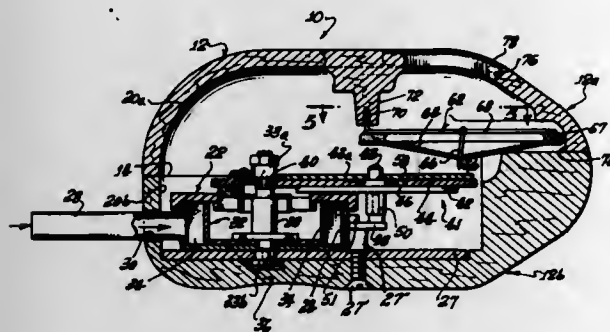


1. A game board comprising: (a) a flat, rectangular, longitudinally-inclined, playing table of greater length than width upon which a ball may be rolled; (b) a wall peripherally surrounding said table and forming two side walls, a front end wall and a rear end wall thereon for confining said ball to said table; (c) a longitudinally inclined bottom member corresponding in size to said table and supported in parallel spaced-relation therebelow; (d) a single goal pocket opening formed through said table adjacent each side wall thereof the remainder of said table being devoid of pocket openings through which said ball may fall onto said bottom member; (e) a medially-positioned, longitudinally-extending divider of less length than said table extending upwardly from and rearwardly on said table from the front end wall to divide the lower forward portion of said table into two adjacent players' areas, each area containing one of said pocket openings, said pocket openings being laterally aligned with each other and being positioned forwardly of the rear extremity of said divider, said divider extending downwardly from said table into contact with said bottom member to divide the forward extremity of the latter into two adjacent scoring areas each positioned immediately below one of said player's areas in which the balls falling through the goal pocket opening of each area will respectively and separately accumulate for scoring purposes.

3,315,966
TOY PHONOGRAPH DEVICE
William R. Allen, 2029 N. Kenmore St., Los Angeles, Calif. 90027
Filed Aug. 17, 1964, Ser. No. 390,102
7 Claims. (Cl. 274-1)

1. In a phonographic device, the combination comprising: a hollow housing including a lower portion and an upper portion hinged to said lower portion for access to the interior of said housing, a supporting plate disposed in the bottom of said lower portion, a record supporting turntable disposed within said housing above said supporting plate, a turbine mounted on said supporting plate and including a turbine wheel drivably coupled to said turntable for driving the latter in rotation, a journal means mounted on said supporting plate affording an axis of rotation for said turntable,

means simultaneously securing said journal means on said supporting plate and securing said supporting plate in said lower housing, and



a mouthpiece extending from said turbine to the exterior of said housing through which air may be blown to effect rotation of said turbine wheel.

3,315,967

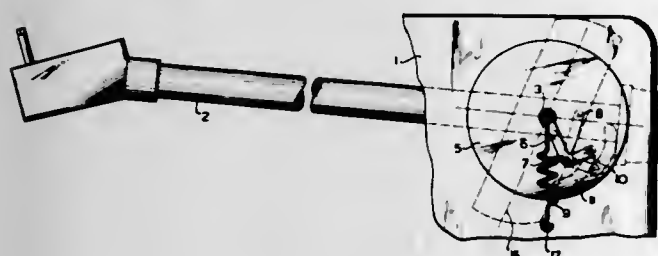
ANTI-SKATING DEVICE

Helmut Laufer, St. Georgen, Black Forest, Germany, assignor to Dual Gebrüder Steldinger, St. Georgen, Germany, a corporation of Germany

Filed Jan. 14, 1966, Ser. No. 520,724

Claims priority, application Germany, Jan. 15, 1965, St 23,210

3 Claims. (Cl. 274—23)

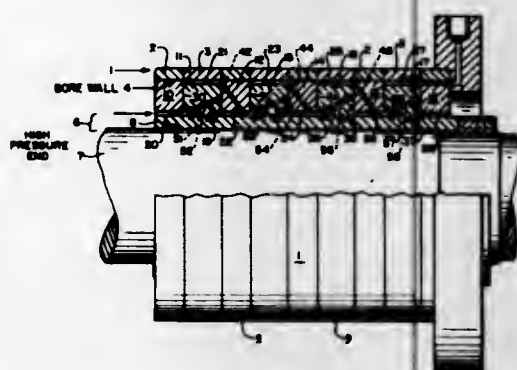


1. In a record player including a pickup arm carrying a pickup at one end, a base plate, said pickup arm being pivotally mounted at the other end about a vertical axis and about a horizontal axis on said base plate, a member fixedly secured to said pickup arm to rotate therewith about said vertical axis, a lever pivotally mounted on said member for a pivot movement between two end positions about an axis disposed parallel to the vertical pivot axis of said pickup arm, means for adjusting said lever, a spring, and

one end of said spring being secured with said base plate and the other end of said spring being connected with said lever, the engaging point of said spring on said lever being chosen such that the latter is disposed in one of its end positions in the vertical pivot axis of said pickup arm and the position of the pivot axis of said lever being chosen such that in all other positions of said lever opposite an increase of the distance of the spring engaging points as a result of a pivoting movement of said pickup arm about its vertical axis, a shortening of the distance of an imaginary connecting line between the spring engaging points with respect to the vertical pivot axis of said pickup arm occurs.

3,315,968
FRICTIONAL RING SEALS FOR ROTATING SHAFTS
Paul C. Hanlon, Louisville, Ky., assignor to Dover Corporation, Washington, D.C., a corporation of Delaware

Filed Oct. 23, 1964, Ser. No. 405,936
5 Claims. (Cl. 277—3)



1. An axially-balanced frictional ring seal for controlling the axial flow of leakage fluid along the rotary shaft of rotary pumps, turbines, compressors and the like, comprising:

- (A) an outer stationary housing part providing a cylindrical bore wall having high and low pressure ends;
- (B) an inner rotatable shaft part operatively mounted for relative rotation within the said bore wall and inwardly spaced therefrom;
- (C) a series of three axially-abutting shaft-encircling rings arranged within said bore wall,

- (1) the first and third rings being mounted on one part through one of their inner and outer peripheries with their other remaining or free peripheries separate from the other part,
- (2) the second ring being mounted on the other part through the other of its inner and outer peripheries with its remaining free periphery separate from said one part,
- (3) said rings cooperating to form

- (a) a first frictional seal extending radially between the adjacent faces of the first and the second rings from an annular inlet adjacent one of its ends to an annular outlet adjacent the other of its ends, and
- (b) a second frictional seal extending radially between the adjacent faces of the second and third rings from an annular inlet adjacent its mid-portion to annular outlets adjacent its opposite inner and outer ends;
- (D) means for feeding leakage fluid at the same pressure to the inlets of the first and second frictional seals; and
- (E) pressure equalizing passageway means interconnecting the outlet of the first frictional seal with both outlets of the second frictional seal.

3,315,969
CRANKSHAFT OIL SEAL WITH TAPERED INSTALLATION LEADER

Richard A. Duff, 903 S. Mill St., Decorah, Iowa 52101

Filed Mar. 29, 1965, Ser. No. 443,373
6 Claims. (Cl. 277—11)



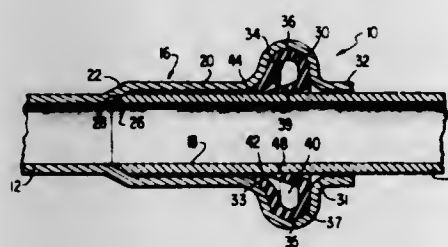
1. In combination with an elongated conventional crankshaft main bearing oil seal member of the type constructed of flexible material, the improvement comprising

a tapered and flexible end portion formed integrally on one end of said seal member of a length adapted to extend at least halfway around an associated crankshaft, said tapered end portion having an elongated, longitudinally extending and flexible pull member embedded therein, one end of said pull member projecting outwardly of the terminal end of said tapered end portion and the other end of said pull member embedded in said tapered end portion including a series of longitudinally spaced and alternately reversing curves formed therein so as to define a zigzag path through said tapered end portion.

3,315,970
FLEXIBLE GASKET FOR HIGH AND LOW PRESSURE PIPE JOINTS

John W. Holloway, 1860 NE. 53rd St., Fort Lauderdale, Fla. 33308

Filed Feb. 8, 1965, Ser. No. 431,090
4 Claims. (Cl. 277—205)



1. A pipe joint comprising a first pipe having an enlarged hub portion at its end, a second pipe telescopically received in the hub portion of the first pipe, the hub portion having a circumferential recess for receiving an annular sealing gasket, and a gasket having a resilient ring-like body substantially completely filling the recess and including a hollow annular central cavity, the walls of which are formed by the gasket body, the end of the radially inner wall of the cavity nearest the end of the second pipe being removed to form an annular opening permitting access to the central cavity and defining thereby a C shaped cross-section for the gasket, the radially outer wall of the central cavity being extended radially inward to form a flexible curving tip portion wedged tightly between the hub portion and the second pipe with its cavity surface in contact with the second pipe, the unconfined inside diameter of the gasket being less than the outside diameter of the second pipe, whereby the radially inner wall of the cavity is displaced when the joint is assembled, the radially inward reaction force caused by such displacement serving to tightly engage the gasket and the second pipe to prevent the flow of fluid therebetween, the annular opening serving to permit the entry of high pressure fluid into the central cavity to expand the sealing gasket thereby increasing its sealing effectiveness, the curved tip portion being tightly engaged between the hub and the second pipe to enhance the sealing properties of the gasket when the internal pressure is below that on the outside of the pipe.

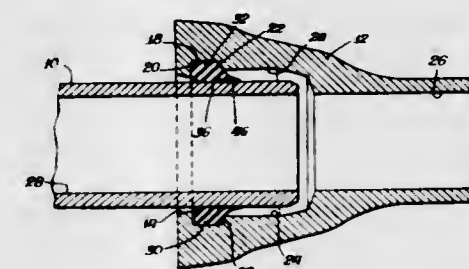
3,315,971
BELL AND SPIGOT JOINT

Jim H. Sakurada, Chicago, Ill., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey

Filed May 2, 1966, Ser. No. 546,634
4 Claims. (Cl. 277—207)

1. A joint for a bell and spigot coupling comprising a bell having an annular groove defined by an annular axially extending wall and axially spaced outer and inner radially extending end walls, a spigot extending into said bell in radially spaced relationship therewith,

and an annular gasket made entirely of resilient material positioned between said bell and spigot, said gasket comprising a main portion having a radially outer annular face engaged with the annular axially extending wall of the groove terminating in two axially spaced radially extending end walls engaged respectively with the outer and inner radially extending end walls of the groove and being compressed axially by the groove end walls, said main portion having also a radially inner face engaged with the spigot and being compressed thereby to provide a low pressure seal adjacent the outer end wall of the bell, said radially inner face of the main portion of the gasket being defined by frusto-conical wall portions in-



intersecting in a radially inwardly projecting annular ridge bearing against the spigot, and said gasket comprising also a high pressure sealing projection extending axially inwardly beyond said groove and bearing against the spigot and being defined by frusto-conical wall portions extending radially and axially inwardly from said main portion of the gasket and intersecting at the axially inner free end of the projection, said main portion ridge and said axially inner free end of said projection having diameters smaller than that of the spigot, and said projection being subjected by the spigot to axial and circumferential tension through its entire length and being acted upon through its entire length by high pressure fluid in the bell clamping it against the spigot to provide a high pressure seal around the spigot.

3,315,972
SEALING ELEMENT FOR SEALING TWO RELATIVELY MOVABLE MEMBERS AGAINST EACH OTHER

Alvar Reinhold Åhbeck, Karlskoga, Sweden, assignor to Aktiebolaget Bofors, Bofors, Sweden, a Swedish corporation

Filed Oct. 19, 1964, Ser. No. 404,983

Claims priority, application Sweden, Oct. 26, 1963, 11,803/63

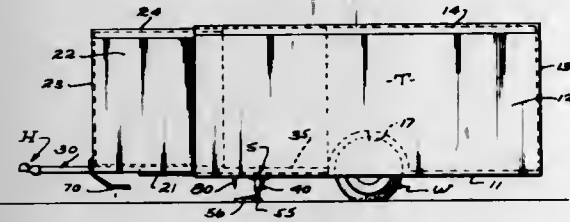
3 Claims. (Cl. 277—237)



1. A sealing device for sealing two relatively movable members against each other, said sealing device comprising a hollow generally cylindrical member; a piston fitted in said cylindrical member freely slidable therein, said piston having in its outer peripheral wall an annular groove; and a solid sealing ring made of elastic material fitted in said groove, said ring having at its outer peripheral wall two juxtaposed circumferential surface portions radially stepped in reference to each other, one of said surface portions having at least partially a smaller diameter than the other, the facing edges of said surface portions being joined by a generally radially directed surface, the surface portion having the larger diameter deforming

against an adjacent wall portion of the cylindrical member thereby sealing the piston against said member and the surface portion having the smaller diameter restricting fluid flow.

3,315,973
TRAILER CONSTRUCTION
Ernest H. Marple, San Gabriel, Calif.
(1224 W. Garvey, Monterey Park, Calif. 91754)
Filed Apr. 9, 1965, Ser. No. 446,857
13 Claims. (Cl. 280—34)

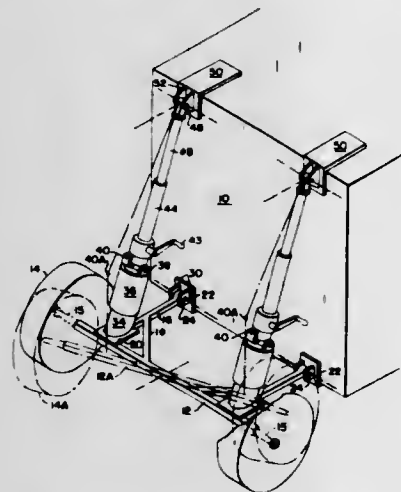


1. An extensible trailer of the character referred to including, an outer elongate primary box section with bottom, side, rear end and top walls, an inner secondary box section with bottom, side, front end and top walls and telescopically engaged in the front end portion of the primary section, guide means between the sections to support the secondary section within the primary section for free longitudinal shifting relative thereto, said primary section having supporting wheels at its opposite sides and intermediate its ends, said secondary section having an elongate tubular tongue with a rear portion fixed to the lower surface of the bottom wall and intermediate the sides of the secondary section and coextensive with the longitudinal extent thereof and a forward portion projecting longitudinally forwardly from the secondary section and carrying a portion of a trailer hitch at its forward terminal end, said tongue opening rearwardly and having a downwardly opening longitudinal slot coextensive therewith, an elongate core slidably engaged in the tongue and coextensive therewith when the secondary section is fully engaged within the primary section, said core having a downwardly projecting longitudinal mounting rib projecting through the slot in the tongue, the rear portion of said rib being fixed to the upper surface of the bottom wall of the primary section.

3,315,974
PORTABLE DOLLY WITH ARTICULATED ADJUSTABLE TRUSS

John R. Weaver, Jr., Rowley, and Charles E. Watt, Jr., Chelmsford, Mass., assignors to Craig Systems Corporation, Lawrence, Mass., a corporation of Massachusetts

Filed Nov. 26, 1965, Ser. No. 509,931
5 Claims. (Cl. 280—43.2)

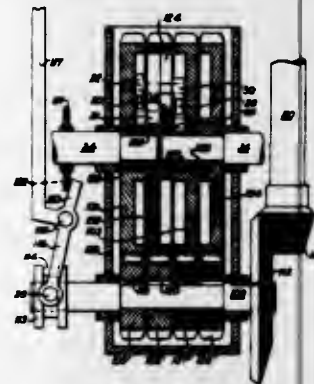


1. A dolly for portably supporting a load at an adjustable elevation and lateral angle relative to a supporting

surface, comprising: an axle adapted to mount wheels rotatably thereon; and an articulated adjustable truss including a frame attached to said axle and having means for pivotal connection to the load to locate said axle for arcuate movement about a first axis defined by said pivotal means, and a pair of adjustable legs affixed at first ends to said frame at points spaced apart longitudinally of said axle, said legs having means at second ends thereof for pivotal connection at spaced points to the load; each of said adjustable legs including jack means and spring-biased telescoping means each extensible longitudinally of the corresponding leg, and a pivot joint located intermediate said jack means and said telescoping means; said pivot joint being constructed and arranged to permit relative angular movement between said jack means and said telescoping means at least about an axis substantially parallel to said first axis; whereby extension and contraction of either leg is accompanied by articulation thereof and by angular movement of said axle about said first axis.

3,315,975
STEERING DIFFERENTIAL FOR TOWED VEHICLES OR AUTOMOBILES
Raymond de Voghel, Marcinelle, Belgium, assignor to Societe Anonyme Glaverbel, Brussels, Belgium, a Belgian company

Filed Jan. 13, 1965, Ser. No. 425,243
Claims priority, application Belgium, Jan. 28, 1964, 515,961, Patent 643,086
12 Claims. (Cl. 280—91)

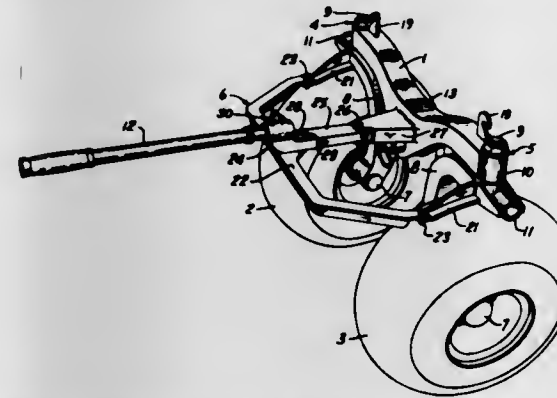


1. A differential steering arrangement for a drawn or self-propelled vehicle having at least one pair of steerable wheels, and means for steering such wheels, comprising a pair of steering shafts associated with said steerable wheels, said shafts having their longitudinal axes substantially parallel to each other and offset laterally from each other, and means connected to the inner ends of said shafts for controlling the deflection of the steerable wheels, including a first pair of cranks, one of which is a fixed crank secured to one of said steering shafts and the other of which is an idler crank freely rotatable about the other of said steering shafts, and a rod connecting the pins of said cranks, a second pair of cranks, one of which is a fixed crank secured to said other steering shaft and the other of which is an idler crank freely rotatable about said one steering shaft, and a rod connecting the pins of said second pair of cranks, and means operatively connecting the like cranks of said pairs thereof in driven relation to said steering means.

3,315,976
TWO WHEEL DOLLY
William E. Thiermann, 10726 N. Wauwatosa Road 76-W, Mequon, Wis. 53092
Filed Mar. 22, 1965, Ser. No. 441,737
4 Claims. (Cl. 280—103)

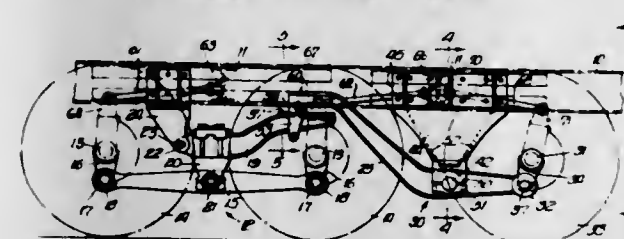
1. A dolly comprising a transverse frame member adapted to support a load, a single pair of wheels supporting said member freely for translation in any direc-

tion, a wheel carrying arm pivotally connecting each wheel to a corresponding end of said transverse member upon a vertical axis centrally of the wheel, a steering arm extending forwardly from each of said wheel carrying arms generally in the longitudinal plane of the corresponding wheel, a steering tie rod connecting said steering arms and pivoted thereto at the forward ends thereof to provide a parallelogram system of steering control for



said wheels, a link pivotally extending from the center of said transverse frame member and having a length corresponding with the length of said steering arms with its outer end pivotally connected to the center of said steering tie rod, handle means for manipulating said dolly, means to removably secure said handle means to the forward end of said link, and additional means for attaching said handle means selectively to either of said wheel carrying arms.

3,315,977
VEHICLE AXLE SUSPENSION
Charles L. Small, Chicago, Ill., assignor to Hendrickson Manufacturing Co., Lyons, Ill., a corporation of Illinois
Filed Sept. 17, 1964, Ser. No. 397,110
4 Claims. (Cl. 280—104.5)



1. A vehicle rear suspension structure adapted for heavily loaded vehicles having a frame with parallel side beams, said suspension structure comprising a tandem wheel suspension unit and a third axle suspension unit both disposed beneath the rear end portion of the permanent frame of the vehicle and in part outside of said side beams, said tandem wheel unit including a pair of axles, a walking beam on each side of the vehicle, means for pivotally attaching the opposite ends of each said walking beam to the adjacent ends of said axles so that the walking beam is disposed below the axles, an elongate rigid casting forming a solid beam member disposed immediately above each said walking beam, a saddle member pivotally connecting the midpoint of said walking beam with said solid beam member at a point intermediate the ends of said solid beam member, an attaching bracket depending from the adjacent vehicle frame side beam and pivotally connected to the forward end of said solid beam member, said solid beam member having means at its opposite end forming a sliding pivotal connection with said third axle unit, said third axle unit including an axle disposed parallel with said tandem axles, an elongate load distributing beam on each side of said vehicle frame which extends beneath and is disposed in part outside of the vehicle side beam, means pivotally connecting the rear end of each said load distrib-

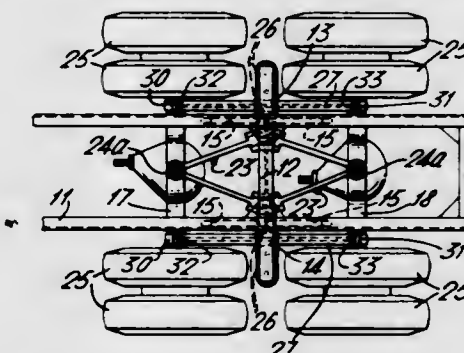
uting beam beneath the adjacent end of the axle of said third axle unit, a transverse shaft having its opposite ends journaled in said load distributing beams intermediate the ends thereof, and a bracket depending from each vehicle frame side beam, said brackets supporting opposite ends of said transverse shaft, and said sliding pivotal connection between the solid beam member of said tandem axle unit and said third axle unit comprising a horizontally disposed bearing plate on the top of the rearward end of the solid beam member and a roller bearing member on the forward end of the adjacent load distributing beam which is positioned to ride on said bearing plate.

3,315,978
AXLE LIFT (RADIUS ROD)
George Chleger, Birmingham, and Adrian F. Hulverson, Grosse Pointe Woods, Mich., assignors to Fruehauf Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 4, 1965, Ser. No. 437,143
4 Claims. (Cl. 280—104.5)



1. A wheel suspension for a heavy duty vehicle comprising a frame, an axle, a rigid bracket fixed relative to said axle, road wheels supported at each end of said axle, spring means for supporting said axle with respect to said frame, a radius rod for locating said axle, means pivotally connecting one end of said radius rod directly to said rigid bracket, means pivotally connecting another portion of said radius rod relative to said frame for locating said axle longitudinally relative to said frame, and an inflatable air bag operatively engaging said frame and an extension of said radius rod for adjusting the angular relationship between said radius rod and said frame to adjust the spacing between said axle and said frame, said air bag being inflatable from a collapsed position wherein said road wheels engage the road to an inflated position wherein said road wheels are spaced from the road.

3,315,979
TANDEM AXLE SUSPENSION
Wallace Gordon Chalmers, 372 Roslyn Ave., Westmount, Montreal 6, Quebec, Canada
Filed July 12, 1965, Ser. No. 471,127
6 Claims. (Cl. 280—104.5)



1. A tandem axle suspension system for load carrying vehicles including a load carrying chassis, tandem axles positioned transversely across said chassis and adapted to

engage wheels at the outer ends thereof, said chassis comprising a substantially rectangular frame having a rigid supporting frame member fixedly attached at one end to each of the longitudinal sides thereof, the other end of each of said supporting frame members extending below the longitudinal sides of said rectangular frame and positioned intermediate said axles, each of said axles provided with a rigid upward extension, each of said rigid upward extensions having respective upper torque rod means flexibly connected thereto, said respective upper torque rod means being flexibly joined at one end thereof to said respective rigid upward extension and being flexibly joined at the other end thereof to said chassis intermediate said axles, lower torque rod means flexibly connected between each of said axles and said other end of said supporting frame, said lower torque rod means being essentially below the level of said rectangular frame and said axles, said upper and lower torque rods resisting transverse, longitudinal and torsional loads imposed upon said axles, equalizing beam means extending longitudinally on each side of said chassis, each of said equalizing beams being retainingly supported at its ends by said axles, being spacedly removed from said lower torque rods, and floating with respect to said chassis, spring means interposed between said chassis and said equalizing beams, said spring means being axially compressible and capable of flexure to permit said beams to tilt and follow the vertical movements of said axles.

3,315,980

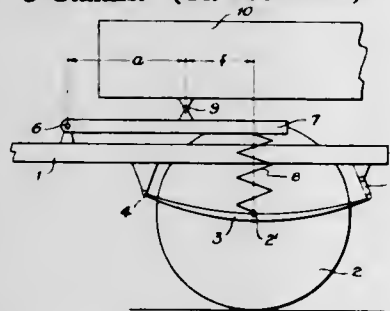
SPRING SUPPORT FOR TRUCK BODIES

Werner Gorge, Gauting, and Alois Moser, Dachau, Germany, assignors to Maschinenfabrik Augsburg-Nürnberg AG, Munich, Germany

Filed Dec. 16, 1964, Ser. No. 418,708

Claims priority, application Germany, Dec. 23, 1963, M 59,366; Nov. 14, 1964, M 63,123

3 Claims. (Cl. 280—124)



1. A vehicle comprising a vehicle frame, vehicle wheels, vehicle wheel support means joined to said vehicle wheels, wheel spring means secured between said wheel support means and said frame, lever means having one end secured to said frame, body spring means mounted between the other end of said lever means and said wheel support means, and a vehicle body carried by said lever means intermediate the securement of said lever means to said frame and said body spring means for transferring proportionate parts of the weight of said vehicle body to said vehicle frame and to said wheel support means.

3,315,981

WHEEL SUSPENSION

Franz G. F. Behles, Ingolstadt, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany

Filed Feb. 26, 1965, Ser. No. 435,617

Claims priority, application Germany, Feb. 29, 1964, D 43,770

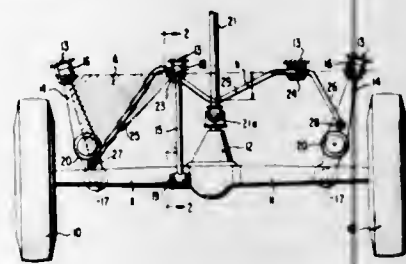
15 Claims. (Cl. 280—124)

1. A wheel suspension for motor vehicles having a vehicle superstructure especially for motor vehicles having a rigid axle, comprising:

axle means for supporting thereon the wheels,

first means including thrust guide means connecting said axle means at each outer end with the vehicle superstructure while allowing substantial movements of said axle means in the lateral direction, and second means including a stabilizer torsion bar spring means spring-supporting said axle means with respect to the vehicle superstructure for transmitting torsion from the deflection of one wheel to the other wheel in case of unequal spring deflections of the two wheels,

said first and second means including bearing joint means for pivotally connecting said thrust guide means and torsion bar spring means at said vehicle superstructure,



said torsion bar spring means having arm portions extending from said bearing joint means to the free ends thereof and the free ends operatively connected with said thrust guide means and said axle means for deflection proportionate to the deflection of the wheels, at least one of the bearing joint means of the torsion bar spring means at the vehicle superstructure being disposed at a relatively large distance in the transverse direction of the vehicle from the bearing joint means of the associated one thrust guide means at the vehicle superstructure in such a manner that the corresponding one arm portion of the torsion bar spring means forms, with said associated thrust guide means, supporting triangle means for absorbing transversely directed forces and pivoting about said joint means at the vehicle superstructure.

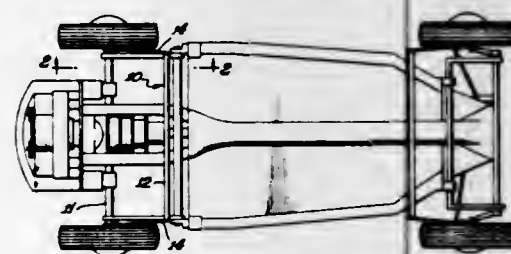
3,315,982

FLOATING STABILIZER FOR WHEELED VEHICLES

Arne Svendsen, 1145 Hastings Ranch Drive, Pasadena, Calif. 91107

Filed Aug. 30, 1965, Ser. No. 483,516

1 Claim. (Cl. 280—124)



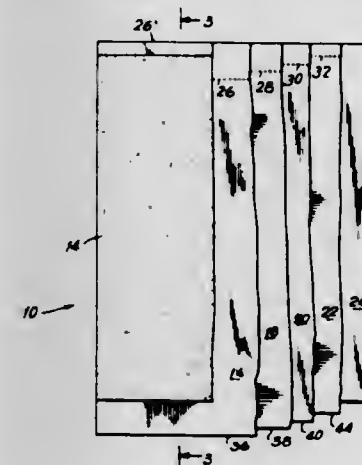
A stabilizer for a vehicle having a frame, ground wheels on opposite sides of said frame, and suspension means independently suspending said wheels from said frame and upon which said wheels are journaled on a transverse wheel axis: said stabilizer comprising a torsion member formed in the shape of a straight bar and extending laterally of said frame spaced from said axis; means supporting said torsion member and consisting of a rigid arm rigidly attached to each end of said torsion member, said arms extending transverse to and substantially at right angles to said torsion member and generally toward said axis and terminating in outer end portions each rigidly secured to adjacent suspension means near said axis at at least two vertically spaced points whereby said rigid arms comprise the sole support for said torsion

member, and operate in the absence of any twisting motion.

3,315,983

ARTICLE FOR MAKING CARBON COPIES

Victor Barouh, Westbury, N.Y., assignor to Eaton Allen Corp., Brooklyn, N.Y., a corporation of New York
Filed Aug. 2, 1965, Ser. No. 476,312
1 Claim. (Cl. 282—22)



A tablet comprising a plurality of copy paper sheets all of different lengths with the uppermost being the longest and the other copy paper sheets being successively shorter, a carbon sheet as the uppermost sheet of the tablet, said carbon sheet being of a shorter length than each of said copy paper sheets, said uppermost carbon sheet being the exact length as the lowermost copy paper sheet, a layer of binding material overlying and embracing said carbon sheet and each of said copy paper sheets at the uppermost edges thereof and defining a flush edge for said tablet, all said sheets being bound together by said layer of binding material at the upper end of said tablet and having their lower ends shingled, each of said paper sheets except the lowermost being perforated adjacent said layer of binding material at a uniform distance from said lower edge of said copy paper sheets and defining a series of copy paper sheets all of which have the same dimension when detached from said tablet.

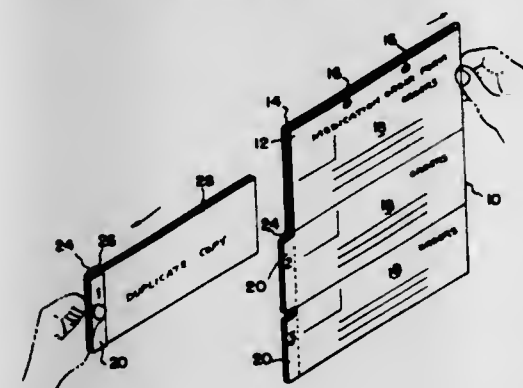
3,315,984

BLANK FORM ASSEMBLY

Richard A. Robertson, Detroit, Mich., assignor to Van Richards Company, Detroit, Mich.

Filed May 16, 1966, Ser. No. 550,528

7 Claims. (Cl. 282—22)



1. A blank form assembly useful as a medication order form in hospitals and the like, comprising:

- a face sheet having areas with printed matter as well as blank areas to be filled in with special matter;
- a backing sheet underlying said face sheet and generally coextensive therewith, and said backing sheet joined to said face sheet along a common edge of joiner;

- a plurality of face sheet tabs forming extensions along an edge of said face sheet and each of said tabs joined to said face sheet by a weakened line of separation;
- a plurality of backing sheet tabs forming extensions along an edge of said backing sheet corresponding to the tab supporting edge of said face sheet and each of said backing sheet tabs associated with one of the face sheet tabs and joined to said backing sheet by a weakened line of separation coinciding with the line of separation of the corresponding face sheet tab;
- a duplicate sheet associated with each of said face sheet tabs and formed of a rectangular sheet material capable of producing visible indicia on said duplicate when discrete areas thereof are subjected to a pressure such as by that produced by a writing pen, said duplicate sheet disposed interjacent said face sheet and said backing sheet and underlying the blank areas of said face sheet to be filled in with special matter, said duplicate sheet joined for removable attachment to said tabs, and having its perimetric edge spaced from the common edge of joined of said face sheet and said backing sheet so that said duplicate sheet may be snapped out from said assembly by applying a gripping effort to said face sheet and said supporting sheet along a common edge and a second gripping effort to the tabs associated with said duplicate sheet so that the tabs may be separated from the face and backing sheets along associated lines of separation without separation from said duplicate sheet.

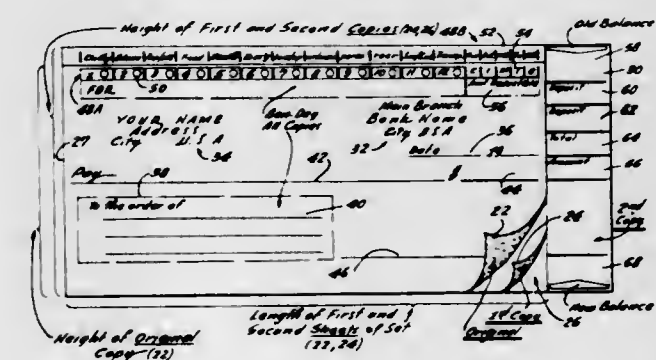
3,315,985

ACCOUNTING SYSTEMS AND DEVICES FOR PRACTICING THE SAME

Norman F. Hall, 1625 Chelsea Road, San Marino, Calif. 91108; Robert E. Bond, 1614 Poppy Peak Drive, Pasadena, Calif. 91105; and Dugald F. Gordon, 1740 Meridian, South Pasadena, Calif. 91030

Filed Aug. 20, 1965, Ser. No. 481,332

7 Claims. (Cl. 282—23)



- In a multiple-copy check, the combination of:
 - an original check having upper and lower faces, first and second longitudinal edges, and first and second transverse edges, said original check being issuable to a selected payee;
 - a first non-negotiable check underlying said original check in registry therewith, said non-negotiable check having an upper face confronting said lower face of said original check and a lateral extension extending laterally beyond said first transverse edge of said original check, said lateral extension providing sufficient area for maintaining a running account of the status of the account from which the original check is drawn;
- means in registry with said original check and said non-negotiable check for transferring information impressed on said upper face of said original check to said upper face of said non-negotiable check; and said original check having a plurality of encoded ac-

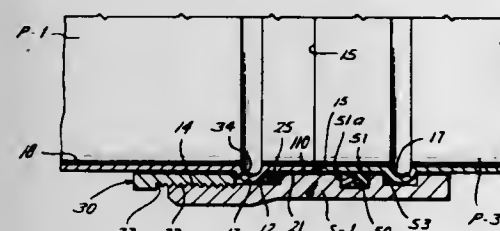
count category designations disposed along one of said edges thereof other than said first transverse edge.

3,315,986
MEANS AND METHODS FOR CONNECTING TUBULAR CONDUITS
 Carl F. Quick, St. Louis County, Mo.
 (11147 Pritchard Drive, St. Louis, Mo. 63136)
 Filed May 5, 1964, Ser. No. 365,099
 5 Claims. (Cl. 285—21)



1. A connecting and repair sleeve for tubular conduits, said sleeve comprising a tubular element formed from heat-shrinkable polymerized chloroprene, said tubular element having an original internal perimetral size smaller than the outside perimetral size of the tubular conduit, and being provided on its outer peripheral surface with a coating of pyrotechnical material, said tubular element having been expanded to a size substantially larger than the outside diametral size of the tubular conduit whereby it can be freely slipped telescopically over said tubular conduit, said coating being applied directly to the outer surface of said tubular element, said coating being of a nature to closely adhere to the outer wall surface of said sleeve within the range of and during contraction of said sleeve, so that said coating remains in continuous contact with the tubular element after it commences to shrink.

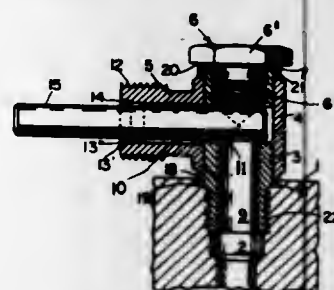
3,315,987
PIPE FITTINGS
 George W. White, Houston, Tex., assignor to Mech-Rand Corporation, Houston, Tex.
 Filed July 13, 1964, Ser. No. 382,325
 2 Claims. (Cl. 285—111)



1. A pipe coupling comprising:
- (a) a pipe section having an annular external bead formed thereon near one end thereof;
 - (b) a tubular member having an end abutting against the said one end of said pipe section;
 - (c) said tubular member having an annular external bead formed thereon near the abutting end thereof;
 - (d) a coupling sleeve having a bore extending through and a counterbore; the bore and counterbore forming a shoulder therebetween; said coupling sleeve encircling the abutting ends and annular beads of said pipe section and said tubular member;
 - (e) the counterbore of said coupling sleeve positioned over the annular external bead on said tubular member;
 - (f) said coupling sleeve having an enlarged internal annular groove fitting over the annular external bead on said pipe section and including means therewith preventing relative axial movement between said sleeve and said pipe section;
 - (g) a first seal member positioned between said sleeve and said pipe section providing fluid-proof connection interiorly of said coupling sleeve between the

- abutting ends and the annular external bead on said pipe section;
- (h) a second seal member disposed in said counterbore between the annular external bead on the tubular member and the shoulder of the counterbore providing fluid-proof connection relative to said coupling sleeve and said tubular member; and
- (i) a locking ring having means thereon coacting with means on said sleeve for securing said second seal member in fluid-proof sealing position and retaining said annular external bead of said tubular member in sealing engagement with said second seal member in said counterbore and maintaining said ends of said pipe section and said tubular member in abutting relationship; said locking ring being movable relative to said tubular member.

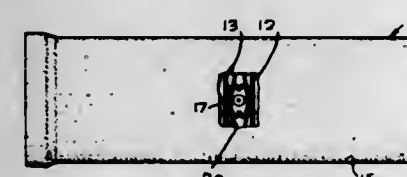
3,315,988
ORIENTABLE CONDUIT CONNECTOR
 Kurt Schroter, Lohmar, Siegburg, Rhineland, Germany, assignor to Jean Walterscheid KG, Lohmar, Siegburg, Rhineland, Germany, a corporation of Germany
 Filed Sept. 13, 1965, Ser. No. 486,772
 Claims priority, application Germany, Aug. 4, 1960, W 28,318
 3 Claims. (Cl. 285—190)



1. A coupling for connecting a fluid conduit to a body having a channel with female connecting means, comprising:
- a generally tubular inner member having a bore extending axially inwardly from one end thereof, said inner member being provided with male connecting means at said one end coacting with said female connecting means to permit relative rotary motion between said inner member and said body with, at most, limited relative axial displacement in a range of operative positions thereof;
 - an outer sleeve member coaxially surrounding said inner member with freedom of relative axial displacement, said inner member having a single radial aperture communicating with said bore and having substantially the same diameter as the latter, said outer member being provided with a radial passage of substantially said diameter connectable to said conduit and substantially registering with said aperture in a predetermined relative angular position of said members within said limited range of operative positions, said members being in fluidtight surface contact with each other around said aperture and said passage;
 - first and second packing rings adjoining opposite ends of said outer member and surrounding said inner member;
 - a clamping element threadedly engaging said inner member at the other end thereof, said clamping element having a flange overlying one of said packing rings, the sum of the thicknesses of said packing rings and the axial length of said outer member being greater than the axial extent by which said inner member protrudes beyond said body throughout said range of operative positions whereby said clamping element exerts axial pressure through said

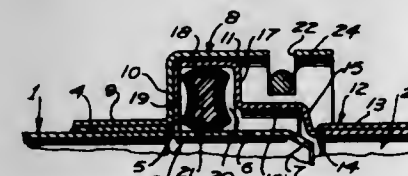
rings and said outer member on said body upon a threading of said one end into said termination with maintenance of said members to form a fluidtight assembly between said element, said outer member and said body in any said operative positions; and means for positively maintaining said members in said predetermined relative angular position upon a loosening of said clamping element to facilitate joint rotation of said members.

3,315,989
SERVICE OUTLET ASSEMBLY FOR REINFORCED CONCRETE PIPE
 Burl B. Ohnstad, South Gate, Calif., assignor to American Pipe and Construction Co., Los Angeles, Calif., a corporation of California
 Filed May 7, 1964, Ser. No. 365,703
 6 Claims. (Cl. 285—197)



1. A service outlet assembly for use in tapping high pressure type concrete pipe embodying a steel shell with a helical wrapping therearound of reinforcement wire under tension and providing a service outlet from the pipe, a tubular boss against said shell between two turns of the wire wrapping, anchor means attached to said two turns, said anchor means comprising a stud on each side of said boss having a base portion beneath the wire turns, a post extending therefrom, a clamp plate receiving said post and overlying said wire turns and means securing the clamp plate to the post, a flange plate partially receiving and abutting said boss, said flange plate receiving said posts of the anchor means, and means securing said flange plate to the posts of said anchors.

3,315,990
VIBRATION DAMPING CONNECTOR FOR CONDUITS
 Jack M. Kramer, Los Alamitos, Calif., assignor to General Connectors Corporation, Burbank, Calif., a corporation of California
 Filed Apr. 6, 1964, Ser. No. 357,729
 1 Claim. (Cl. 285—231)



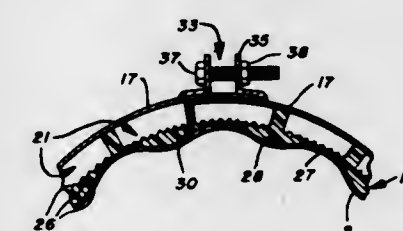
A vibration damping connector for a pair of confronting conduits, said connector comprising:

- (a) an extension structure sealingly secured to confronting ends of said conduits;
- (b) one of said extension structures defining an elongated axially directed channel portion having radially outer and radially inner cylindrical walls and a radial connecting web, said outer wall having spaced slots therein adjacent its extremity;
- (c) a retainer surrounding said extension structure and having retainer portions extending radially inward through said slots;
- (d) the other of said extension structures defining a radially inwardly directed channel portion having radially extending parallel walls and an axially directed cylindrical connecting web having a maximum diameter greater than the minimum diameter of said

retainer, said radially inwardly directed channel portion fitting freely in said axially directed channel portion between its radially directed web and said retainer portions;

(e) and a sealing ring essentially rectangular in cross section sealingly fitting said radially inwardly directed channel portion and sealingly engaging the radially inner wall of said axially directed channel portion.

3,315,991
PIPE COUPLING
 Paul K. Davis, Alameda, Calif., assignor to Davis-Miller Corporation, Hayward, Calif., a corporation of California
 Filed Nov. 17, 1964, Ser. No. 411,809
 4 Claims. (Cl. 285—373)

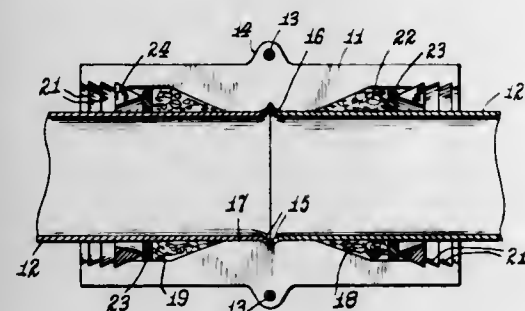


1. A pipe coupling for joining lengths of corrugated sheet metal pipe, comprising:
- (a) an elongated sheet metal strap curved into a band with its opposite ends in overlapping relation adapted to encircle adjacent ends of a pair of corrugated pipe lengths to be coupled;
 - (b) a pair of laterally spaced circumferentially extending radially outwardly projecting ribs formed between lateral edges of said strap and defining radially inwardly opening recesses;
 - (c) said lateral edges of said strap being engageable with outer peripheral surfaces of said pipe lengths to be coupled;
 - (d) a deformable elongated sealing strip received in each of said recesses with its ends in substantially abutting relation;
 - (f) each said sealing strip having a portion projecting radially inwardly from said strap at least a distance equal to the depth of the corrugations in the outer peripheral surfaces of the pipe lengths to be coupled for sealing such strips against such surfaces;
 - (g) means securing said ends of said strap in said overlapped relation;
 - (h) at least one rotation preventing clip member received in each said rib recess and having a pair of spaced flanges projecting radially inwardly of said strap;
 - (i) each of said flanges having an inner edge formed for biting engagement with said surfaces of said pipe lengths to be coupled to preclude relative rotation therebetween.

3,315,992
CONNECTOR
 Michael E. Bergman, 8807 S. Commercial Ave., Chicago, Ill. 60617
 Filed June 7, 1965, Ser. No. 461,639
 2 Claims. (Cl. 285—373)

1. A connector for tubes with outwardly flared ends in contact with one another, said connector comprising a generally tubular body having, from each end to the middle thereof, a first portion with inside diameter substantially larger than the outside diameter of the tubes to be connected, a second portion with frusto-conical inner surface converging toward the opposite end of the body, a third portion with inside diameter substantially fitting around the body of the tubes, and with a groove in said

third portion, just large enough longitudinally of the tubes to fit said outwardly flared ends in such a way that said third portion holds the tube ends against forces tending to separate them; said tubular body being longitudinally split into two mutually similar halves and having means to



hold said halves together and clamp said flared ends into said groove; and a pair of packing retainers, one associated with each first portion of said tubular body and fitting over the corresponding tube body for pressing packing material onto the corresponding frusto-conical surface and thereby onto the tube.

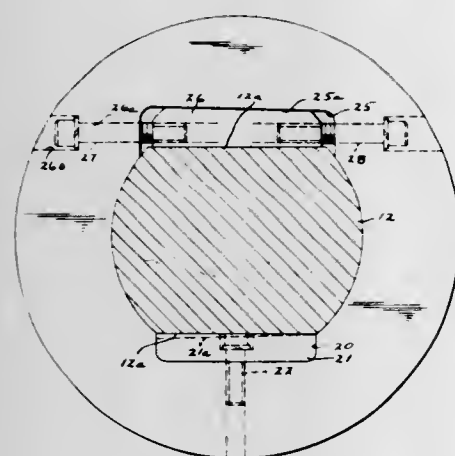
3,315,993

ROLL NECK COUPLING

Robert M. Church, Westfield, N.Y., assignor to Ajax Flexible Coupling Co. Inc., Westfield, N.Y., a corporation of New York

Filed Oct. 9, 1964, Ser. No. 402,726

3 Claims. (Cl. 287—52.05)



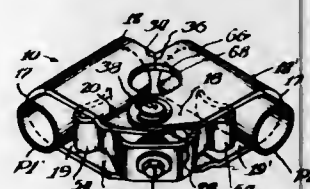
1. In combination with a power drive shaft and a driven shaft, an annular coupling member for connecting said shafts, at least one of said shafts having a portion of generally cylindrical contour with a pair of antipodal flats on the side at the end, said coupling member formed with a recess for receiving said flattened shaft, said recess walls having semi-cylindrical parts for reception of the cylindrical parts of the shaft and first and second flattened parts disposed opposite the flattened parts of the shaft, wedge means disposed between the first flat of the recess and one flat of the shaft, said wedge means being tapered transversely to the axis of the shaft, opposed screw means extending through the wall of the coupling member and engaged in opposite ends of the wedge means to move the wedge means transversely in both directions to the axis of the shaft and coupling, and a fixed key disposed between the second flat of the recess and the other flat of the shaft, said fixed key having an inclined surface engaged with the flat on the shaft holding the shaft with the other flat surface inclined relative to the wedge means.

3,315,994
COUPLING MEANS FOR BUILDING FRAME-
WORKS, RACKS, SCAFFOLDS AND THE
LIKE

Louis L. Rifken, 122 S. Grove, Elgin, Ill. 60120

Filed June 26, 1964, Ser. No. 378,163

5 Claims. (Cl. 287—53.5)



1. A coupling unit comprising a pair of pivotal members pivotally secured together by pivot means, each said pivotal member having a socket, a framework member supported in each said socket, each said pivotal member having a generally semi-circular shaped recess with the semi-circular recesses forming a third socket for supporting a framework member, the third socket extending transversely to the axes of the first two sockets, clamping means attached to said pivot means, said clamping means including at least two resilient members, each of the said first mentioned sockets receiving an end of one of said resilient members to engage the framework members in the first mentioned sockets to clamp said framework members in clamping position.

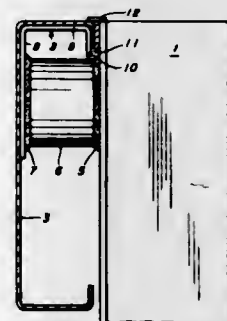
3,315,995

COLUMN AND BEAM CONNECTION

Robert I. Hossli, Forest Hills Borough, and George D. Ratliff, Jr., Churchill Borough, Pa., assignors to United States Steel Corporation, a corporation of Delaware

Filed Apr. 16, 1964, Ser. No. 360,332

1 Claim. (Cl. 287—189.36)



A bracket connection between a column and a C-shaped beam or the like comprising

- a column presenting a generally flat vertical surface at the point of beam connection;
- a first vertical plate element parallel to said column surface and spaced therefrom;
- a horizontal plate element attached to the upper edge of said first vertical plate and extending outwardly from the column;
- a second vertical plate element depending from the remote edge of said horizontal plate, said second vertical plate being parallel to said first vertical plate;
- a section of pipe having first and second parallel faces formed by sectioning the pipe generally perpendicularly to its major axis, said first face being attached to said column surface and said second face being attached to the column-facing surface of said second vertical plate;
- a C-shaped beam adapted to engage with its upper inside surfaces, in generally nesting and wrap-around relationship, the column-facing surface of said first vertical plate, the surface of said horizontal plate, and the outer surface of said second vertical plate,

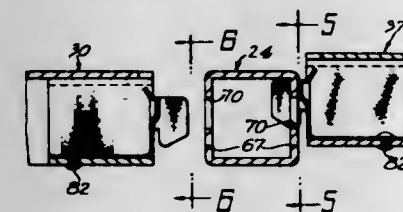
with space remaining between the beam and said column surface; and
(g) a nail inserted in the space between said beam and column surfaces to spring the said plate elements to secure the beam to the column.

3,315,996
COUNTER FRAME LATCH JOINT

Gerald H. Sedo, West Covina, Calif., assignor to M & D Store Fixtures, Inc., a corporation of California

Filed Feb. 9, 1965, Ser. No. 431,399

2 Claims. (Cl. 287—189.36)



2. In a latch joint for use in assembling a frame by demountably connecting hollow sheet metal frame members, the combination of: a hollow horizontal sheet metal frame member having an open end; a sheet metal bracket mounted within said open end portion of said member; a pair of locking feet formed integrally upon said bracket and extending endwise in spaced vertical planes from said open end of said member, said feet forming downward facing hooks; spring catch means mounted within said bracket and including a catch facing upwardly and spring biased outwardly from said open end of said member; and a second hollow sheet metal frame member having a vertical wall, in which is formed a pair of horizontally spaced parallel vertical slots adapted for receiving said feet, the latter then being shiftable downwardly to hook said feet over lower end portions of said slots, said wall also having an aperture between said slots for receiving said catch whereby said members are locked together by said feet with said horizontal member in endwise abutment with said vertical wall of said second member, and disengagement of a said feet is prevented by said catch.

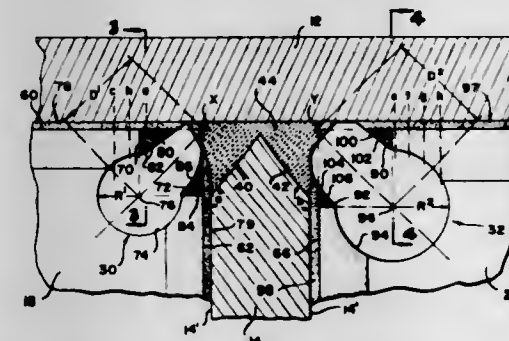
3,315,997

PLATE SNIPE MEANS AND METHOD OF MAKING SAME

Richard P. Flannagan, Newport News, Va., assignor to Newport News Shipbuilding and Dry Dock Company, Newport News, Va., a corporation of Virginia

Filed Mar. 31, 1965, Ser. No. 444,329

14 Claims. (Cl. 287—189.36)



1. Plate snipe means comprising a relatively thick flat plate having adjacent edges extending along lines which intersect one another to define a point, said plate having snipe means adjacent said point and comprising a cutout portion, said cutout portion including a pair of edges each of which extends inwardly from one of said edges formed on the plate and substantially perpendicular thereto, the innermost portions of said inwardly extending edges being

joined by an edge defining a circular arc of approximately 270 degrees so as to reduce stress concentrations in the corner of the plate while retaining sufficient over-all strength of the plate.

3,315,998

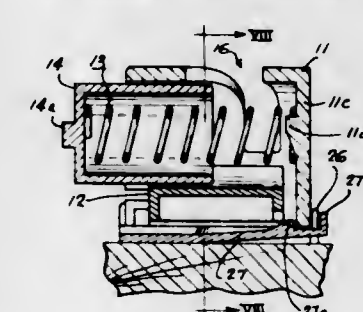
LOCK FOR SLIDING WINDOWS

Raymond Dallaire, 637 Commercial St., St. David, Quebec, Canada

Filed Dec. 4, 1964, Ser. No. 415,951

Claims priority, application Canada, Mar. 31, 1964, 899,084

8 Claims. (Cl. 292—61)



1. A lock comprising in combination a housing having a cylindrical bore therein, one end of said bore being open, the other end being closed, a spiral slot in said cylindrical bore, a hollow cylindrical bolt, a handle projecting from said bolt, said bolt being slidably and rotatably engageable within said bore, spring means within said bore normally urging said bolt in the direction of the open end of said bore, said handle projecting through said slot, said housing having a plurality of lugs projecting from the bottom thereof, a generally flat base member having a relatively low wall at two opposed sides thereof, at least one vertical stop and two horizontal lugs projecting from each of said walls, said lugs on said housing being slidably engageable with said lugs on said base to prevent relative vertical movement therebetween, and spring urged detent means on said base adapted to releasably engage said housing when said base lugs and said housing lugs are engaged, said spring locking means normally preventing relative horizontal movement between said base and said housing.

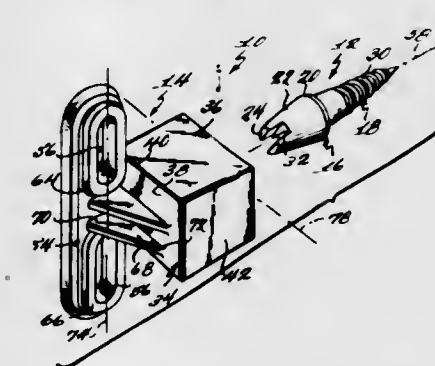
3,315,999

DOOR CATCH

Paul R. T. Hahn, Westfield, Robert Randall, Morristown, and Raymond H. Reiss, Deal, N.J., assignors to Ronthor Reiss Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 12, 1965, Ser. No. 424,960

2 Claims. (Cl. 292—76)



1. A latch mechanism for latching doors and the like to adjacent walls comprising:
a metallic strike having a first end portion, a second end portion, and an enlarged portion therebetween, a first frusto-conical end portion comprising a first annular portion gradually increasing in diameter from

the free end of the first end portion to a maximum diameter at the enlarged portion of the strike and a second annular portion sharply decreasing in diameter from a maximum at the enlarged portion of the strike to a minimum at the interior end of the first end portion, the second end portion being threadably attachable to doors and walls for allowing axial adjustment of the strike and the free end of the first end portion having a transverse groove cut therein for receiving an instrument for operatively effecting the axial movement of the strike;

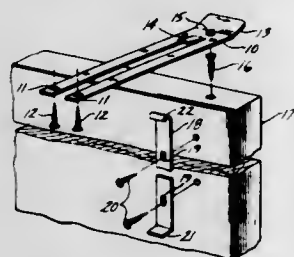
a plastic catch comprising a casing having a pair of longitudinally extending side walls, a transversely extending back wall, and a top wall and defining a pocket in which to receive part of the strike, the side walls being integrally attached at one end to the back wall and having upwardly extending shoulders integrally formed with their free ends, the shoulders extending inwardly towards each other and defining an upwardly extending opening therebetween for receiving and holding the strike within the casing by releasably engaging the second annular portion, the strike being of sufficient length so that the free end of the first annular portion of the strike abuts the back wall, and the shoulder of the catch engages the second annular portion of the strike at a position wherein the side walls of the catch are substantially free of stress, and a flange extending rearwardly of the back wall and integrally connected thereto, the flange having two transverse slots with respect to the longitudinal axis of the strike for receiving two fasteners, the slots allowing transverse movement of the catch for adjustment transverse to the axis of the strike; and

at least one upward support member integrally attached to and extending between the top surface of the flange and the back wall of the catch to provide additional support for the back wall.

3,316,000

DOOR LATCHING ASSEMBLY

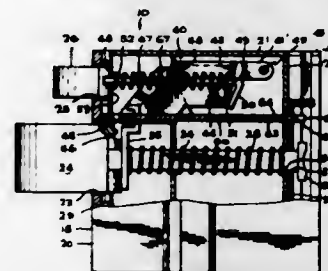
Ralph S. Parson, Edward St., Newington, Conn. 06111
Filed Sept. 23, 1964, Ser. No. 398,665
5 Claims. (Cl. 292-86)



1. A door latching assembly comprising a strike pin mounted to extend from an edge of a pivotable door, a keeper having a locking recess therein and a camming surface on either side of said locking recess for guiding said strike pin into locking engagement with said locking recess, said keeper being mounted in fixed relationship to said door, with said locking recess and said camming surfaces generally aligned with the arc described by said strike pin upon movement of the door about its pivotal axis, said locking recess and one of said camming surfaces of said keeper being engageable with said strike pin upon pivotal movement thereof toward said keeper from either side thereof so that engagement is effected between said strike pin and keeper upon movement of a door from either closed or fully open position, and a disengagement member slidably mountable upon the door to be adjustably extensible therefrom to disengage the locking recess of said keeper from said strike pin.

3,316,001
UNIT LOCK DEADLOCKING BLOCKER LIFTER
Fred J. Russell, 8635 Otis St., South Gate, Calif. 90280,
and Roger J. Nolin, Monterey Park, Calif.; said Nolin
assignor to said Russell

Filed May 5, 1964, Ser. No. 364,988
5 Claims. (Cl. 292-153)

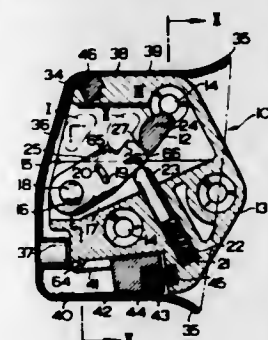


1. In a lock, a frame having separate spaced openings therein, a latch bolt in one of said openings having a movable mounting on said frame for movement to extended and retracted positions, and a reciprocating retractor mounted in the lock in operable engagement with said latch bolt, a guard bolt in another of said openings having a location in said frame separate and spaced from said latch bolt, said guard bolt having a movable mounting on the frame for movement to extended and retracted positions, and a blocker for said latch bolt in substantial alignment with said guard bolt having at one end a pivotal connection to the frame, a projection on said blocker having a blocking position in relation to said latch bolt spanning the space between the latch bolt and the guard bolt and a released position in relation to said latch bolt, means in operable engagement respectively with said guard bolt and said blocker for moving said projection between blocking and released positions, and means for shifting said blocker from blocking to released positions by action of said retractor comprising an inwardly open channel means in said frame forming a slideway, a slide in sliding engagement with said slideway, said slide being located between ends of said slideway and being slidable between said ends, an extension on said slide having an operable engagement with said retractor, a transverse element on the blocker and a lifter on said slide having a camming engagement with said transverse element adapted to tilt said blocker in response to inward sliding movement of said slide whereby to shift said blocker to released position.

3,316,002

LOCKING ARRANGEMENT

Paul Werner, Remscheid-Hasten, Germany, assignor to
Fritz Keiper K.G., Remscheid-Hasten, Germany
Filed Jan. 6, 1965, Ser. No. 424,884
Claims priority, application Germany, Jan. 8, 1964,
K 51,781
12 Claims. (Cl. 292-194)



1. A locking arrangement for a door, especially a vehicle door, comprising, in combination, a lock adapted to be fixed to the door and including an elongated latch having a longitudinal axis extending at right angles to the door, said latch being turnable about said axis and

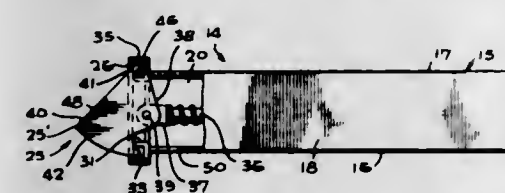
projecting with an end portion thereof beyond the door so that said end portion moves during closing of the door along a predetermined path; support means adapted to be mounted on the door frame; a check lever; pivot means defining a pivot axis substantially parallel to a plane in which said longitudinal axis of said latch moves during closing of said door and mounting said check lever in the region of one end thereof on said support means tiltable about said pivot axis between an active and an inactive position, said lever having a portion spaced from said tilting axis and located in said active position of said lever in said path, said portion of said lever being provided with a pair of bearing surfaces spaced from each other in direction of said path and adapted to engage, respectively, with said end portion of said latch during closing movement of said door, said bearing surfaces being constructed and arranged to prevent, when engaged by said portion of said latch, opening of said door and so that a plane including said longitudinal axis of said latch and said pivot axis passes through a portion of the respective bearing surface engaged by said latch; and biasing means connected to said check lever and biased so as to yieldably maintain the latter in said active position.

3,316,003

PIVOTING REVERSIBLE LATCH BOLT

Fred J. Russell, 8635 Otis St., South Gate, Calif. 90280,
and Roger J. Nolin, Monterey Park, Calif.; said Nolin
assignor to said Russell

Filed Apr. 23, 1965, Ser. No. 450,461
2 Claims. (Cl. 292-244)



1. In a door lock comprising a case and an end wall for the case having an opening therein, the combination of a latch bolt means including a head and a shaft having a pivotal attachment to said head, said latch bolt means having a rotatable and endwise reciprocating movement in said case, a strike face on a side of the head opposite said pivotal attachment and having a bearing portion at one end of the strike face, a pair of longitudinally spaced outwardly opening bearing pockets on each side of said end wall adjacent said opening and providing a space between each said pair of pockets, a pair of laterally extending bearing pins on opposite sides of said head at said bearing portion, said bearing pins having retained positions in one of said pairs of bearing pockets when said strike face is facing in one direction and having retained positions in the other of said pairs of pockets when said strike plate is facing in an opposite direction, whereby said latch bolt can be located in position on the case to accommodate a door swinging in either direction, overlying said end wall, said bearing pockets and said bearing pins, and fastening means accessible from the exterior for removably holding said front cover plate in place.

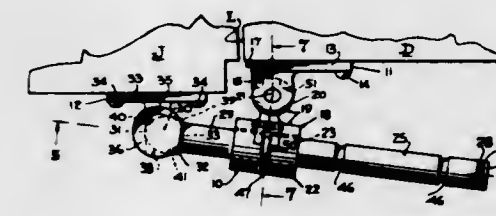
3,316,004

SAFETY LATCH FOR DOOR

John A. Wilhelm, 349 Wainwright,
San Jose, Calif. 95128
Filed Aug. 30, 1965, Ser. No. 483,579
4 Claims. (Cl. 292-267)

1. The combination with a hinged door and its frame of a door latch comprising:
a metallic plate secured to such door and having a

pair of vertically spaced ears extending inwardly therefrom,
a pair of integral hubs offset perpendicular to each other, means for pivotally mounting one of said hubs between said vertically spaced ears,
a rod mounted for axial sliding movement in the other one of said hubs and for swinging movement in a horizontal plane with the latter about the pivotal axis of said one of said hubs,
said rod having an enlarged bullet-like head terminating in a shoulder at its juncture with said rod,
a metallic keeper secured to such frame and having a

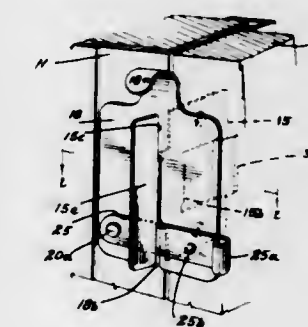


recess formed therein with an entrance opening adapted to receive said bullet-like head of said rod when the door is in closed condition relative to such jamb; said keeper having vertically spaced, inwardly extending lips angularly inward from the entrance opening of said recess for engaging behind the shoulder between said rod and said bullet-like head for keeping the latter within said recess when said rod is disposed angularly inward relative to the entrance opening of said recess, and
means between said other one of said hubs and said rod for limiting relative axial sliding movement of the latter relative to said other one of said hubs.

3,316,005

DOOR LOCKING DEVICES

William Oesler, 57 Union St. E., Apt. 203,
Waterloo, Ontario, Canada
Filed Apr. 7, 1965, Ser. No. 446,197
11 Claims. (Cl. 292-296)



11. A locking device for a door closable against a jamb comprising a strike plate having an outer portion with latch-receiving means and attachable to the jamb, an inner latch camming portion projecting inwardly from the jamb, a locking plate applicable to the inner side of the door between the portions of the strike plate and co-operative with said inner portion to bar the door from being opened, and a projection from the jamb toward the door forming a bar to the insertion of an implement in the direction of the locking plate, said projection being a flange struck out of the strike plate and bridging the space between the door and the jamb.

3,316,006

MORTISE LOCK HUB COVER

Fred J. Russell, 8635 Otis St., South Gate, Calif. 90280, and Roger J. Nolin, Monterey Park, Calif.; said Nolin assignor to said Russell

Filed Apr. 23, 1965, Ser. No. 450,462
3 Claims. (Cl. 292-337)



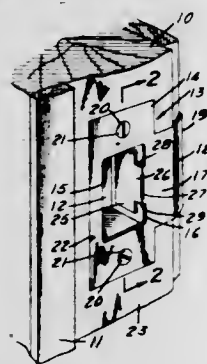
1. In a mortise lock, a case including a removable cover plate on one side of the case, a lock mechanism in said case having operating parts located therein, a portion of said operating parts constituting a partial lock mechanism, said case having an opening therein surrounding said partial lock mechanism, sections of said cover at the perimeter of said opening being depressed, a removable sub-cover of substantially the same size as said opening and resting on said sections so that the exterior of the sub-cover does not project beyond the exterior of the cover, and releasable means securing said removable sub-cover to said case.

3,316,007

STRIKE WITH RELIEVED TAB

Fred J. Russell, 8635 Otis St., South Gate, Calif. 90280

Filed Mar. 1, 1965, Ser. No. 435,935
1 Claim. (Cl. 292-341.12)



An adjustable strike plate for a door lock comprising a sheet metal member adapted to be mounted over a latch bolt hole in a door frame, said member comprising a relatively flat portion having a latch bolt opening therein, a lip adjacent the keeper edge and extending outwardly therefrom presenting a sloping face for engagement by a latch bolt, a keeper tab comprising a part of said relatively flat portion which initially occupied at least a part of the area of the latch bolt opening, said keeper tab having one edge thereof forming a junction with said flat portion, said keeper tab having an inwardly bent position for insertion into said latch bolt hole, opposite side edges of said keeper tab at said junction, each having a cutout opening greater in depth than the outward flow of metal at the junction, whereby to reduce metal strength at the junction, to avoid spread of metal beyond said opposite side edges, and to provide access for an adjusting tool to change the position of both sides of said keeper tab.

3,316,008

GOLF BALL STORAGE DEVICE AND RETRIEVER

William T. Baugh, Jr., 833 Linda Lane, Charlotte, N.C. 28211

Filed June 16, 1965, Ser. No. 464,272
5 Claims. (Cl. 294-19)

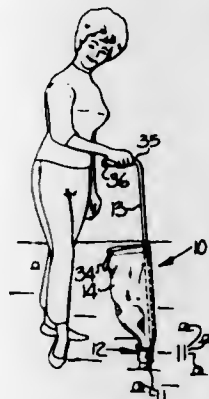
1. A device adapted to be conveniently manipulated by a single hand of a user standing in normal erect posi-

tion for retrieving and storing golf balls lying upon the ground in vertically and laterally spaced random relationship to the hand of the user, comprising:

an elongate handle member adapted during normal use of the device to be gripped adjacent one end thereof by the hand of the user and to be angularly extended downwardly and laterally outwardly therefrom toward golf balls to be retrieved;

an elongate rigid cylindrical tubular member having one end thereof open to define a golf-ball entrance opening and the opposite end thereof open to define a golf-ball discharge opening and having a height to accommodate no more than three golf balls therein;

means carried by said tubular member adjacent said entrance opening thereof for permitting passage through said entrance opening and into said tubular member of golf balls brought into relative engagement and movement therewith by downward displacement of said tubular member while oriented



substantially vertically above the golf balls with said entrance opening thereof lowermost, and for preventing passage of retrieved golf balls within said tubular member therefrom through said entrance opening; means connecting said tubular member to said handle member adjacent the other end thereof and at an acute angular relationship relative thereto in which the central axis of said tubular member intersects the central axis of said handle member a predetermined distance above the discharge opening for positioning said tubular member in a substantially vertical attitude with respect to the ground with said entrance opening thereof lowermost upon said handle member being angularly extended by the user during normal use of the device, and golf ball receiving and storing means encircling the upper extremity of said tubular member and the lower extremity of said handle member and operatively communicating with said discharge opening for receiving golf balls therefrom.

3,316,009

COUPLING ADAPTOR

Raymond C. Tait, Cleveland Heights, Ohio, assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio

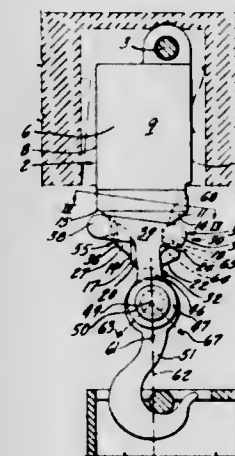
Filed Feb. 18, 1966, Ser. No. 428,562
7 Claims. (Cl. 294-82)

1. In combination with an L-shaped lifting device having front, rear and lateral sides and comprising an upper body, a stem projecting downwardly therefrom, a foot projecting frontwardly from the stem in spaced relation with the body, and a locking means disposed rearward of the stem and retractable from a normal downward position of rest;

an adaptor for connecting said device with a load and comprising:

(A) a rigid collar providing an opening for receiving the stem and the locking means in back-to-

back relationship with a front section of the collar resting on an upper surface of the foot and a rear section of the collar resting against said lock means, said rear and front collar sections being connected by stem-flanking lateral section; and



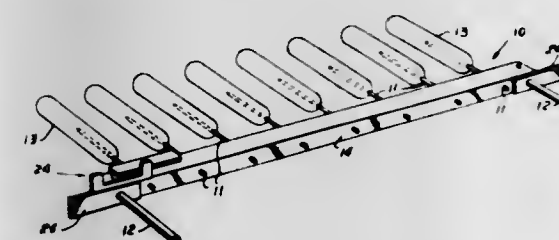
(B) load-supporting means having upper termini fixed to said lateral collar sections and including means for connecting with a load spaced downwardly with respect to the collar as to dispose the connecting means underneath the device during use.

3,316,010

STICK HOLDER FOR FOOD ITEMS

Thomas F. Lowrance, 3626 Samuell Blvd., Dallas, Tex. 75223

Filed July 16, 1965, Ser. No. 472,479
1 Claim. (Cl. 294-87)



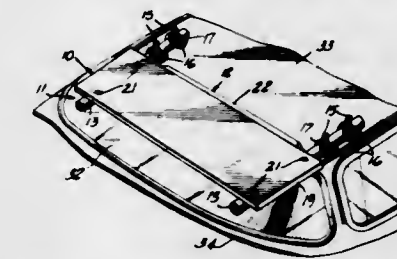
An elongated stick holder and dipping tool comprising a pair of elongated tubular elements of relatively larger and smaller transverse dimensions arranged in axially aligned, telescoping relation to each other, said tubular elements each having a series of longitudinally spaced holes in two opposite sides thereof for selective engagement by a plurality of sticks, said holes being arranged in pairs and a pair of holes of one of the tubular elements being aligned with a corresponding pair of holes of the other of the tubular elements in one position of the tubular elements relative to each other, whereby said sticks may be readily passed through the aligned holes, yieldable means adjacent one end of the holder acting on said tubular elements to bias them in longitudinal direction relative to each other whereby said sticks are adapted to be securely clamped between the corresponding holes of the respective tubular elements, and a crank lever adjacent the end of the holder opposite said one end thereof acting on said tubular elements to move them longitudinally relative to each other in a direction opposite said first mentioned direction, against the resistance of said yieldable means, whereby said sticks are adapted to be disengaged from the holder.

3,316,011

WINDSHIELD WEATHER VISOR

John P. Francis, 20 Boston St., Haverhill, Mass. 01830

Filed Jan. 3, 1966, Ser. No. 518,484
2 Claims. (Cl. 296-95)



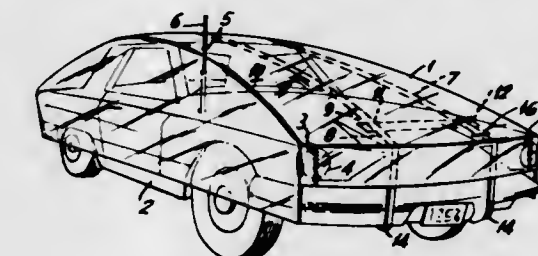
1. A weather visor for the windshield of a motor vehicle secured to the roof top thereof comprising a removably attached visor panel, longitudinally disposed laterally spaced apart visor supports, said visor panel being removably attached to and overlying the said visor supports, roof engaging means mounted on the roof top and engaging the rear portion of said supports in supporting said supports therefrom and over the roof top and the windshield area, and a removably attached weather flap provided with laterally spaced apart apertures, said apertures of said flap adapted to slidably engage the said longitudinally disposed visor supports for the longitudinally movable support of said weather flap, said weather flap frictionally engaging the underside of the rear lateral portion of said visor panel and extending downwardly therefrom onto the roof top, the extreme lower lateral portion of said downwardly extending weather flap adapted to frictionally engage the lateral contour of the roof top upon the longitudinal adjustment of said weather flap.

3,316,012

AUTOMOBILE COVER

Juergen F. Thier, 93-10 Lamont Ave., Elmhurst, N.Y. 11373

Filed Oct. 23, 1965, Ser. No. 503,368
7 Claims. (Cl. 296-136)



1. An automobile cover comprising a body, a first longitudinal strap attached at one end of said body, a second longitudinal strap attached at the other end of said body, guide means, each said strap slideably engaged by said guide means, said guide means adapted to guide such said strap along the length of said body, and hooks adapted to engage an automobile one hook at each end of said first and second straps.

3,316,013

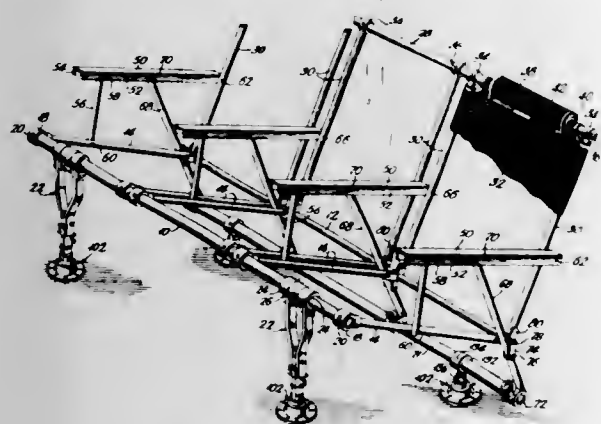
FOLDING SEAT CONSTRUCTION

Vernon T. Abel and Theodore C. Thomas, both of Ellicott City, Md., assignors to C. R. Daniels, Inc., a corporation of New York

Filed Aug. 13, 1965, Ser. No. 479,549
14 Claims. (Cl. 297-16)

1. A folding seat construction comprising at least one seat portion, front support rail means, rear support rail means, a plurality of side support members extending between said front and rear support rail means and cooperating therewith to form a framework, at least one back rest pivotally connected to said side support mem-

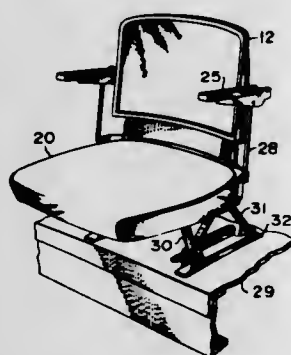
bers, a plurality of arm rests pivotally connected at the rear end thereof to said back rest, a rear transverse frame member, a plurality of rear legs each pivotally connected at the upper end thereof to an arm rest and rigidly connected at the lower end to said rear transverse frame member, connector means engaging said transverse frame member to secure said transverse frame member to a supporting surface, a plurality of collapsible front legs



pivotally connected to said front support rail means, each of said front legs including an upper portion and a lower portion essentially aligned with each other in the erected position of the seat construction, connector means adapted to connect the bottom end of said lower portions of said front legs to a supporting surface, and locking means in one position thereof preventing collapse of said front legs.

3,316,014 TELESCOPING CHAIR

Chester J. Barecki, Grand Rapids, Mich., assignor to American Seating Company, Grand Rapids, Mich., a corporation of New Jersey
Filed Nov. 19, 1965, Ser. No. 508,747
1 Claim. (Cl. 297-35)

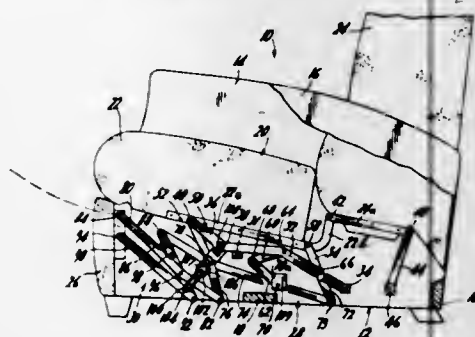


In a telescoping chair structure in which a seat base is supported by pivotally-mounted legs, said base having at its rear on one side thereof an upwardly-extending back support portion, a seat carried by said base, a seat back having a side bar pivotally mounted on said upwardly-extending base portion by pin and slot connections, a collar on said portion receiving and locking said bar against movement when the back is in lower position but permitting said back to swing forwardly when the back is raised to cause the bottom of the bar to clear the collar, an arm rest pivotally mounted at an intermediate point on a side of said seat back, and cooperating means on said base and arm rest for folding said arm rest alongside said seat base when said seat is swung forwardly, said cooperating means comprising a rigid link pivotally connected at one end to a strap extending forwardly from said upwardly-extending base portion and at the other end to said arm rest at an intermediate point.

3,316,015 RECLINING CHAIR OF THE MULTIPLE MOVEMENT TYPE

Peter S. Fletcher, 200 NW. 15th St.,
Delray Beach, Fla. 33444
Original application Mar. 18, 1964, Ser. No. 352,891.
Divided and this application Feb. 24, 1966, Ser. No. 529,788

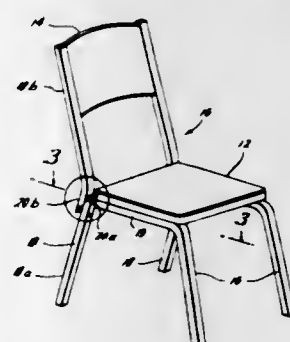
5 Claims. (Cl. 297-89)



1. In a reclining chair having an arm frame, a body-supporting unit including a pivotally interconnected seat and back-rest, a mounting linkage mounting said body-supporting unit for movement through a first movement phase from an upright sitting position to an intermediate, tilted sitting position with the angle between said seat and back-rest remaining substantially constant and then through a second movement phase to a fully reclined position with the angle between said seat and back-rest increasing, said mounting linkage including a carrier link pivotally mounted on said arm frame and stationary during said first movement phase and pivoting upwardly during said second movement phase, the improvement comprising a sequencing link for blocking movement of said carrier link and maintaining the angle between said seat and back-rest substantially constant during said first movement phase, said sequencing link comprising a link secured to said arm frame at a sequencing pivot, lost motion means interconnecting said sequencing link and said carrier link, said sequencing link blocking movement of said pivotal interconnection out of its position coaxial with said sequencing pivot until the completion of said first movement phase.

3,316,016 STACK CHAIR

Warren D. Petersen, Huntington Beach, Calif., assignor to Schlumberger Limited (Schlumberger N.V.), New York, N.Y., a corporation of the Netherlands Antilles
Filed May 18, 1966, Ser. No. 451,116
2 Claims. (Cl. 297-239)

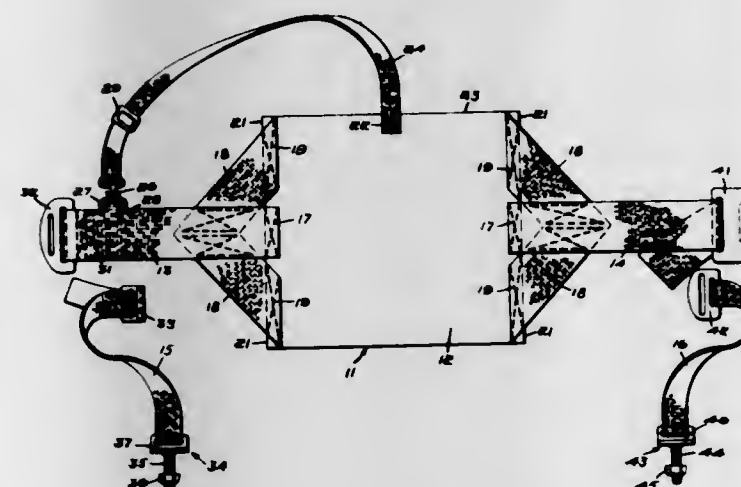


1. A stacking chair comprising a rigid chair structure including a seat, a back rest, front legs and functionally integral, rear members on said chair, said rear members having a spacing therebetween which is greater than the width of said seat directly in front of said members, each of said rear members having leg portions and back rest portions with parts thereof extended coextensively with one another at the location of the seat to form a forward, upwardly facing abutment at the end of said leg portion part and a rearward, downwardly facing abutment at the

end of said back rest portion part, said abutments being comprised of plastic inserts having stepped locking surfaces arranged along an inclined plane relative to the plane of the seat to form an acute angle, said abutments having a vertical spacing therebetween which is greater than the thickness of said seat.

3,316,017 SAFETY SEAT BELT

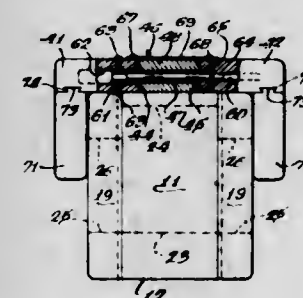
Francis M. Knight, 28 Reed St.,
Marblehead, Mass. 01945
Filed July 28, 1965, Ser. No. 475,408
15 Claims. (Cl. 297-385)



1. A safety device for use in vehicles and comprising an elongated restraining belt having a pair of relatively nonelastic length portions straddling and serially connected to a relatively elastic length portion of substantially shorter length than the combined lengths of said nonelastic length portions, connector means connected to at least one end of said elongated restraining belt and adapted to allow securement of said elongated restraining belt to the vehicle, and adjustment means for adjusting the overall length of said restraining belt.

3,316,018 EXPANSIBLE CHAIR

Robert C. Stith, 146 W. 59th St.,
Chicago, Ill. 60621
Filed Feb. 23, 1966, Ser. No. 536,514
7 Claims. (Cl. 297-440)

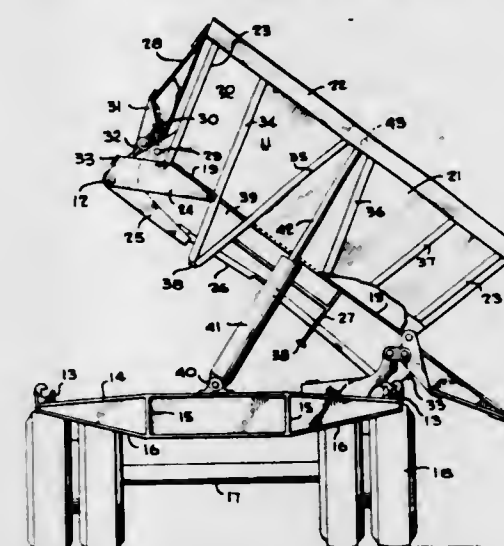


1. Expansible furniture comprising: a first seat member having an upper surface adapted to support a person, and opposite longitudinal side faces; first guide means on each side face for slidably supporting an expansion seat member; expansion seat members, each having an upper surface adapted to support a person, and opposite longitudinal side faces; second guide means on at least one side face of each expansion seat member for longitudinal sliding coaction with the first guide means on one side face of said first seat member to removably mount said expansion seat members on said first seat member, the coacting guide means on the side faces of the first seat member and the expansion seat members being arranged so that the upper surfaces of the first seat member and the expansion seat

members are generally horizontally aligned; third guide means extending transversely across said first seat member; back rest members, each having fourth guide means at the lower portion thereof slidably cooperating with said third guide means so as to mount said back rest members on said first seat member for movement toward and away from one another between an expanded and a contracted position; a back rest insert member, said back rest insert member being received between said back rest members when they are in the expanded position; fifth guide means at the lower portion of said back rest insert member and cooperable with said first guide means to mount said back rest insert member on said first seat member; arm rests, one for each of the outermost back rest members, and each having sixth guide means on the rear surface thereof; and seventh guide means on each of the outermost back rest members slidably cooperating with said sixth guide means to removably mount said arm rests on said outermost back rest members.

3,316,019 LATERALLY TILTABLE DUMP VEHICLE

Fred Fort Flowers, P.O. Box 238,
Findlay, Ohio 45840
Filed Mar. 29, 1965, Ser. No. 443,244
9 Claims. (Cl. 298-17.6)



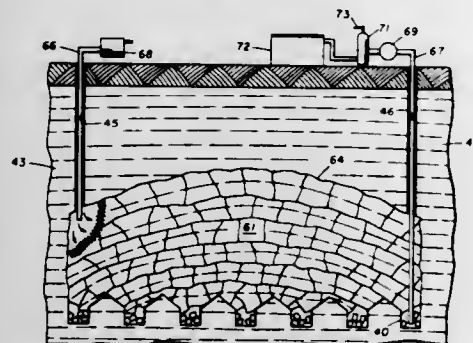
1. In combination with the underframe of a vehicle having trunnion bearings on each side, a dump body having trunnions removably carried in said bearings, down-turning side doors pivotally mounted on the body, fixed ends for the body, floor plate means on the body and extending beyond each end, and a pair of ribs attached to each side of the body ends, connected to and extending below the floor plate means at respective side and having their lower ends meeting and resting on the underframe.

3,316,020 IN SITU RETORTING METHOD EMPLOYED IN OIL SHALE

Eric V. Bergstrom, Byram, Conn., assignor to Mobil Oil Corporation, a corporation of New York
Filed Nov. 23, 1964, Ser. No. 412,951
14 Claims. (Cl. 299-2)

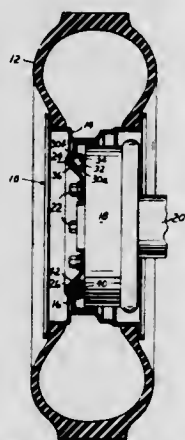
1. A method for retorting oil shale in situ, comprising the steps:
(a) providing in the horizontal parallel passageways with an intervening wall between adjacent passageways in the oil shale at a spacing between passageways greater than the superimposed roof of strata can span without an intervening wall in place between said passageway,
(b) displacing horizontally a portion throughout each intervening wall into the adjacent passageways to

produce an excavation extending horizontally between passageways and vertically to provide a void for receiving the volumetric increase of debris created upon at least one roof failure whereby roof failure occurs forming in the superimposed roof of strata an arch spanning the excavation and supported



at its ends on solid oil shale each side of the excavation with the resulting debris received in the void provided by the excavation, and
(c) introducing a combustion-supporting fluid into the resulting debris in the oil shale under conditions effecting in situ combustion to evolve shale oil products, and recovering the shale oil products.

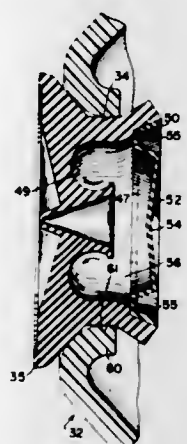
3,316,021
WHEEL BALANCER
Virgil H. Salathiel, 1312 Slocum St.,
Dallas, Tex. 75207
Filed Jan. 4, 1965, Ser. No. 423,131
2 Claims. (Cl. 301-5)



1. In a dynamic wheel balancing attachment the combination with a vehicle wheel adapted to be connected to a brake drum, said wheel having a rim and a tire mounted thereon, said wheel having a substantially central brake drum engaging web, said web having a reinforcing rib concentric with its axes and turned arcuately outward from the plane forming said brake drum engaging web and forming an annular recess on the inner surface of said web outwardly of the central brake drum engaging web, of: an endless ring comprising a pair of mating ring sections each having arcuate outer surfaces and opposite flat mating surface for joining said sections together, said ring sections each having an annular groove, semicircular in cross section, formed in its flat mating surface for forming an endless cavity having a uniform cross section throughout its entire periphery in any radial plane containing the ring axis, the external diameter of the ring being substantially maximum internal diameter of the annular recess, bonding material joining said endless ring to the web surface forming the annular recess; a quantity of steel balls disposed and freely movable within the cavity, the diameter of said steel balls being greater than one-half the cross section diameter of the cavity, said balls, when positioned in point contact with each other, occupying substantially one-third of the cir-

cumferential distance of the cavity; and a fluid of low viscosity, in combination with the balls, filling substantially three-quarters of the annulus of said cavity, the viscosity of said fluid and its incomplete filling of the cavity forming an air space along the periphery of said cavity during rotation of the ring and permitting movement of said balls and an even distribution of the fluid around the balls within the cavity providing a dampening effect against quick movement of said balls, whereby centrifugal force disperses said low viscosity fluid and said steel balls around said cavity in wheel and tire balancing position, said steel balls having a higher density than the fluid.

3,316,022
HUB CAP ASSEMBLY
Robert O. Isenbarger, Chicago, Ill., assignor to Chicago Rawhide Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 15, 1965, Ser. No. 496,610
5 Claims. (Cl. 301-108)

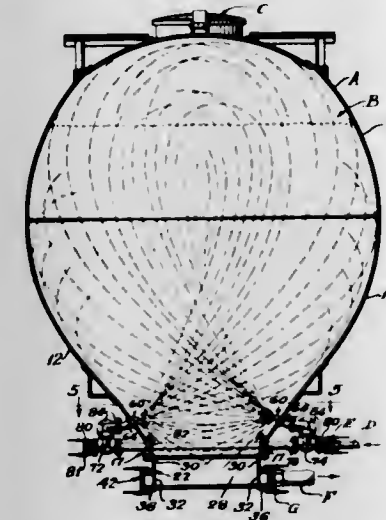


1. A filler plug adapted for use in hub assemblies and the like, said filler plug comprising an annular body portion having an outwardly flaring mounting portion adapted for press-in constrictive fluidtight engagement with an opening in a hub cap, said body portion further including a disk-like face portion having an integral horn-shaped vent portion extending rearwardly within said mounting portion, said horn-shaped vent portion having a narrow slit at the intersection with said disk portion extending through said face portion to form a normally closed valve, a diaphragm covering said horn-shaped vent portion, said diaphragm being carried by said mounting portion and having a series of perforations adjacent the marginal edges thereof to permit indirect communication with said horn-shaped vent portion through said diaphragm while preventing direct contact of lubricant therewith.

3,316,023
SPARGER TYPE COVERED HOPPER CAR
Clarence J. Koranda, Western Springs, Ill., assignor to North American Car Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 16, 1964, Ser. No. 418,800
14 Claims. (Cl. 302-16)

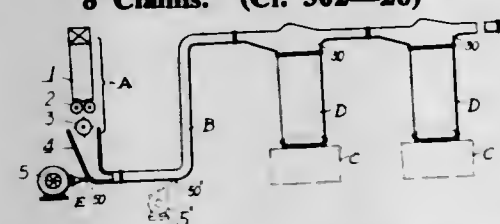
1. The method of unloading dry bulk commodity from a sparger type railroad car having a hopper which is substantially inverted pear-shaped in transverse vertical section comprising the step of introducing from points within the lower portion of the hopper and adjacent to opposite sides thereof streams of liquid into the hopper in upward and lateral directions at opposite sides of the geometric center of the hopper, into direct contact with the commodity, for creating within the hopper an agitated, turbulent swirling admixture of the liquid and commodity to form a slurry, and the step of withdrawing the slurry from

the bottom of the hopper, said streams being directed in paths to cause the liquid to contact the entire interior surface of the hopper, after removal of substantially all com-



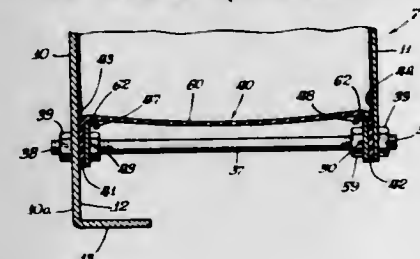
modity in the form of a slurry from the hopper, to insure complete removal of all commodity from and thoroughly cleanse the entire surface of the hopper.

3,316,024
METHOD OF PNEUMATIC CONVEYANCE AND DISTRIBUTION OF FIBER MATERIAL AND APPARATUS THEREFOR
Yasuhiro Nakano, Kobe-shi, Hyogo-ken, Japan, assignor to Nihon Spindle Seizo Kabushiki Kaisha & Nitto Boseki Kabushiki Kaisha
Filed Aug. 6, 1965, Ser. No. 477,807
Claims priority, application Japan, Aug. 12, 1964, 39/46,376
8 Claims. (Cl. 302-26)



1. A method for pneumatic conveyance and distribution of fiber material which comprises introducing a continuous current of air into a duct conveying opened fiber material from a feeding means through said duct by the medium of said air current, and modulating the velocity of the conveying air current while maintaining sufficient air velocity and current to convey said fiber in said duct while concurrently maintaining uninterrupted said introduction of air thereby to distribute and supply the stock to reserve boxes formed branching from said duct.

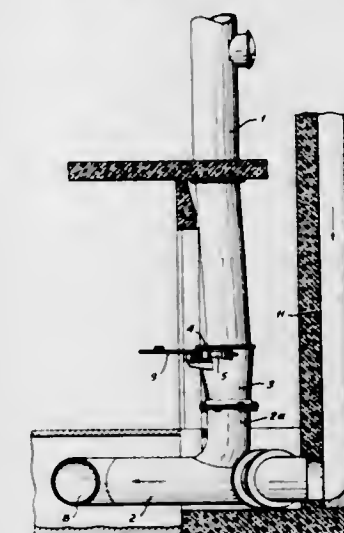
3,316,025
PNEUMATIC CONVEYING SYSTEM FOR CROP HARVESTING DEVICES
Herbert D. Sullivan, Chicago, Ill., and Perry T. Isbell, Memphis, Tenn.
Filed June 23, 1965, Ser. No. 466,270
18 Claims. (Cl. 302-37)



1. In a crop harvester having a picking unit operative for picking crop particles from plants and also having a

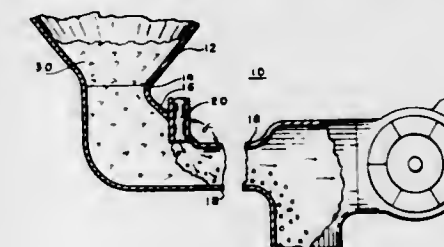
receptacle for the crop particles, the combination comprising, means for producing a fluid stream and conducting it from the picking unit to the receptacle and comprising a casing with an impeller, said casing having a wall at one side of the impeller, said wall being adjustable axially of the impeller, said wall being adjustable axially of the impeller for varying the pumping action developed by the impeller, the fluid stream being effective for lifting crop particles in the picking unit and carrying them in the stream to the receptacle.

3,316,026
ARRANGEMENT IN REFUSE DISPOSAL CHUTES
Olof Henrik Hallström, Kammakargatan 6,
Stockholm, Sweden
Filed Apr. 9, 1965, Ser. No. 446,984
2 Claims. (Cl. 302-51)



1. A refuse disposal chute valve comprising a valve housing, and a sliding valve body arranged at the upper portion of said valve housing, said valve housing adapted to be connected between the lower end of a refuse disposal chute and a suction pipe, said valve housing having a considerably larger cross-sectional flow area than said chute and having an air inlet opening outside the flow area of said chute, said air inlet opening being uncovered by said sliding valve body before the flow area of said chute is uncovered when said valve is opened.

3,316,027
APPARATUS AND METHOD FOR DISCHARGING RECEPTACLES
Robert D. Lloyd, North Wilbraham, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Jan. 4, 1965, Ser. No. 422,967
1 Claim. (Cl. 302-52)



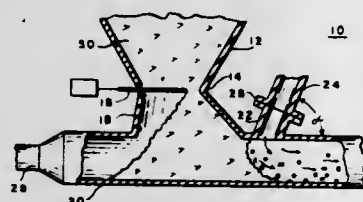
An apparatus designed to eliminate bridging when finely divided materials are being discharged from a receptacle into a transfer conduit which comprises, in combination, a receptacle, capable of containing finely divided material, having a discharge opening disposed in the bottom thereof, a material transfer conduit position under and in communication with said discharge opening, a

vacuum source associated with said transfer conduit capable of exerting a negative pressure in the vicinity of said discharge opening, and an open sleeve member having a cross section $\frac{1}{4}$ to $\frac{3}{4}$ times the cross section of said material transfer conduit traversing the wall of said transfer conduit next to and downstream of said discharge opening at an angle traversing the surface of repose of material entering said material transfer conduit from said discharge opening.

3,316,028

METHOD AND APPARATUS FOR REMOVING BLOCKAGE OF MATERIAL IN TRANSPORTING CONDUITS

Robert D. Lloyd, North Wilbraham, Mass., assignor to Monsanto Company, a corporation of Delaware
Filed Jan. 4, 1965, Ser. No. 423,056
1 Claim. (Cl. 302-52)

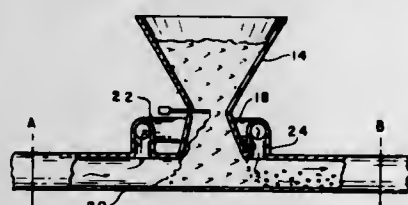


An apparatus designed to clear material blockage which may occur when finely divided materials are being discharged from a receptacle into a transfer conduit which comprises in combination; a receptacle, capable of containing finely divided material, having a discharge opening disposed in the bottom thereof; a material transfer conduit positioned under and in communication with said discharge opening; and a pressure producing device, said device comprising a nozzle having a cross-section $\frac{1}{4}$ to $\frac{3}{4}$ times the cross-section of said material transfer conduit and traversing the wall of said transfer conduit next to and downstream of said discharge opening at an angle traversing the surface of repose of materials entering said transfer conduit from said discharge opening, and said nozzle being connected to a positive air source.

3,316,029

APPARATUS FOR DISCHARGING RECEPTACLES

Robert D. Lloyd, North Wilbraham, Mass., assignor to Monsanto Company, a corporation of Delaware
Filed Jan. 4, 1965, Ser. No. 423,216
2 Claims. (Cl. 302-52)



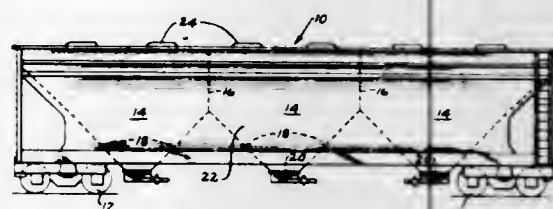
1. An apparatus adapted to automatically react to eliminate material blockage which may occur when materials are being discharged from a receptacle into a transfer conduit which comprises, in combination, a receptacle capable of containing finely divided material, having a discharge opening disposed in the bottom thereof, an unobstructed material transfer conduit communicating with said discharge opening and an unobstructed bypass conduit having a cross-section $\frac{1}{4}$ to $\frac{3}{4}$ times the cross-section of said material transfer conduit and having one end communicating with the transfer conduit on the upstream side of said discharge opening and its other end communicating with the transfer conduit on the downstream side of said discharge opening at an angle traversing the surface of repose of material entering said material transfer conduit from said discharge opening.

3,316,030

HOPPER STRUCTURE

Willard E. Kemp, Bridgeton, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

Filed Mar. 8, 1965, Ser. No. 437,741
11 Claims. (Cl. 302-52)

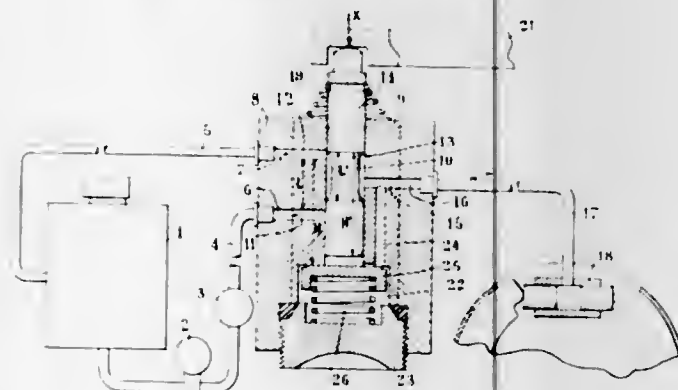


1. A bottom outlet structure adapted to pneumatically unload finely-divided material comprising, a plurality of downward funneling surfaces leading to a bottom discharge opening, a generally rectangular gate mounted for sliding movement in a generally horizontal plane between open and closed positions relative to the discharge opening, a generally rectangular housing beneath said gate having an inner surface forming a continuation of said bottom discharge opening, a bottom cover adjacent the bottom of said housing and movable between closed and open positions relative to the bottom discharge opening, means to slide the gate unidirectionally from one side of said generally rectangular frame over which the gate moves between open and closed positions relative to the discharge opening, the gate moving toward said one side when opened and moving away from said one side when being closed, said gate and bottom cover being in a generally parallel relation to each other and forming when the gate is between open and closed positions a pneumatic discharge chamber therebetween having a generally uniform cross-sectional area, and a pneumatic material discharge conduit carried by said bottom cover communicating with said pneumatic discharge chamber when the cover is closed to receive finely-divided material from said chamber and to discharge the material pneumatically.

3,316,031

HYDRAULIC BRAKING SYSTEM DISTRIBUTOR WITH DAMPING MEANS

Edmond Henry-Biabaud, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France
Filed July 19, 1965, Ser. No. 472,834
Claims priority, application France, July 22, 1964, 982,601, Patent 1,409,846
3 Claims. (Cl. 303-50)



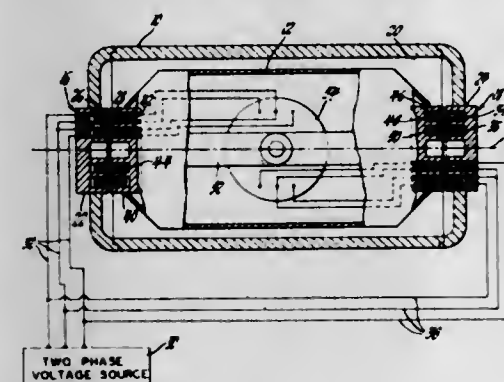
1. Distributor of a hydraulic braking system of a vehicle which is responsive to a brake pedal, said distributor being disposed between a source of fluid under pressure and at least one brake cylinder and comprising a body, a bore formed in said body, a slide valve movable in said bore between an inoperative position and a braking position and responsive to said brake pedal, a chamber formed in said distributor body, said bore leading into said chamber through an orifice, the end of said slide valve,

in the inoperative position of said slide valve, being spaced from said orifice, a vibration damping piston housed in said chamber and spaced from said slide valve, a spring disposed in said chamber and urging said piston against said orifice of said bore in which said slide valve is mounted, whereby said slide valve will engage and move said damping piston only during the last fraction of the slide valve stroke to its braking position.

3,316,032

POLY-PHASE MAGNETIC SUSPENSION TRANSFORMER

Robert F. Wolf, Radford, Va., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 17, 1964, Ser. No. 345,439
5 Claims. (Cl. 308-10)



1. A combination magnetic suspension system and power supply transformer comprising, a freely suspended body having an axis of symmetry, first and second electromagnets disposed adjacent but spaced from opposite ends of the body along a suspension axis normally corresponding with the axis of symmetry, each of the electromagnets including a plurality of primary coils disposed substantially normal to and coaxial with said suspension axis, each of the primary coils being electrically independent from the others of said plurality, a source of polyphase alternating voltage, the number of phases of the voltage corresponding to the number of coils in each of the pluralities of coils, the phases of the voltage source being connected in order across respective primary coils in each of the first and second electromagnets, first and second pluralities of secondary coils equal in number to the number of primary windings disposed on opposite ends of the body adjacent the primary coils of the first and second electromagnets respectively and coaxial therewith, each of the secondary coils being electrically independent from the others of said pluralities, first and second magnetic means disposed on the body in magnetic proximity to the first and second electromagnets and adjacent the secondary coils for transferring polyphase electrical energy between the primary and secondary coils and responsive to the first and second electromagnets for suspending the body by the attractive magnetic forces between the respective electromagnets and magnetic means, a polyphase electrical load carried by the body, and circuit means connecting the secondary coils of the first and second electromagnets to the load.

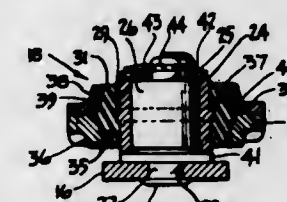
3,316,033

BEARING ASSEMBLY

Peter C. Bila, Buffalo, N.Y., assignor to Trico Products Corporation, Buffalo, N.Y.
Filed Aug. 26, 1963, Ser. No. 304,395
3 Claims. (Cl. 308-26)

1. A windshield wiper transmission system for transmitting the output of a wiper motor to oscillatory movement of a pair of wiper arms comprising articulated linkage including an elongated link, said elongated link having sleeve bearing means at an end thereof for journal-

ing a stud secured adjacent an end of a wiper arm pivot shaft crankarm to permit canting and rotational movement of said elongated link, said sleeve bearing means comprising a substantially cylindrical resilient bearing mounting element, a cylindrical sleeve bearing of anti-friction material frictionally retained in said bearing mounting element, an opening in said elongated link circumscribed by a first bearing retaining flange of partial spherical configuration, said bearing mounting element being seated in said first bearing retaining flange, a bearing retaining plate having an opening circumscribed by a second bearing retaining flange of partial spherical configuration, means for securing said bearing plate to said first link with said first and second bearing retaining flanges in opposition and with said resilient bearing mounting member confined in nonadhering relationship between said first and second bearing retaining flanges and with a compressive force between the external surface of said

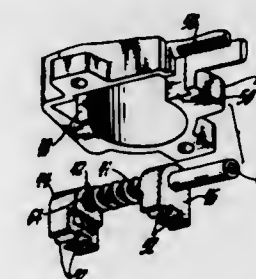


bearing and an internal surface formed by said first and second bearing retaining flanges, first retaining means on said elongated link at the junction between said link and said bearing retaining plate for engaging the external surface of said resilient bearing mounting member and second retaining means on the external surface of said cylindrical sleeve bearing for engaging the internal surface of said resilient bearing mounting member, said first and second retaining means and said first and second retaining flanges cooperating to retain said bearing means firmly mounted on said elongated link and to compress said bearing mounting element while permitting said resiliency of said bearing mounting element to permit relative canting movement between said elongated link and said cylindrical sleeve bearing element during relative rotational movement between said cylindrical sleeve bearing element and said stud, said stud being journaled in said cylindrical sleeve bearing element.

3,316,034

SLIP-IN BEARING

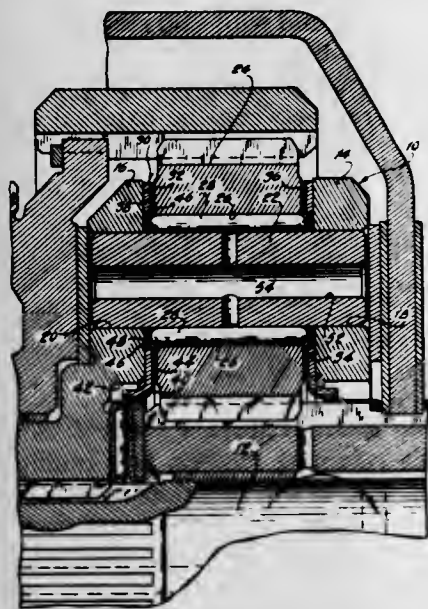
Bert Ray Wanlass, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 14, 1964, Ser. No. 382,460
5 Claims. (Cl. 308-26)



1. In combination, a housing adapted to be mounted on a support, a pocket formed in said housing slidably receiving a bearing therein, spaced support surfaces in said pocket contacting said bearing, said bearing being assembled in said pocket, spaced support surfaces on said bearing contacting said housing pocket support surfaces and cooperating therewith to permit slidable motion of said bearing relative to said housing and to prevent all other motion of said bearing relative to said housing,

biasing means for opposing slidable motion of said bearing relative to said pocket when said housing is mounted on said support, and means rotatable with respect to said housing supported for rotation by said bearing.

3,316,035
NEEDLE BEARING AND RETAINER ASSEMBLY FOR GEARS
 Karol Zuber, Southfield, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
 Filed June 9, 1965, Ser. No. 462,596
 4 Claims. (Cl. 308—35)

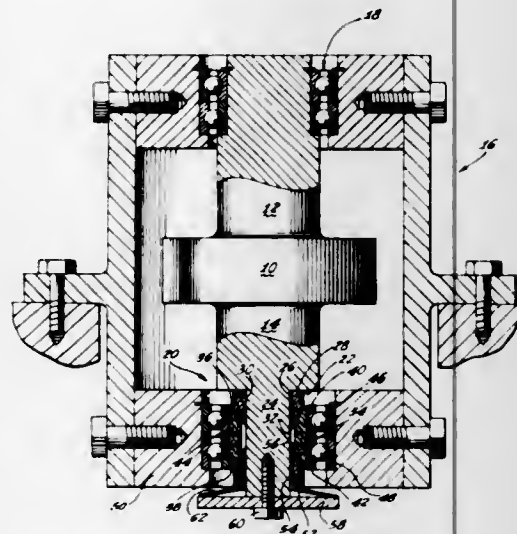


1. A needle bearing assembly journaling a gear element on a mounting shaft comprising a bore formed in said element, said shaft being received through said bore, a plurality of needle rollers in said bore surrounding said shaft and extending in the direction of the axis of said shaft, annular thrust bearing surfaces formed on opposed sides of said element, the axial length of said rollers being at least as great as the distance between said thrust bearing surfaces, a pair of thrust washers surrounding said shaft, one washer being situated on each side of said element in engaged relationship with respect to said thrust bearing surfaces, said one thrust washer having a central opening with a diameter greater than the diameter of said shaft, and a hardened thrust ring disposed in said one thrust washer opening, said thrust ring surrounding said shaft and having an axial width that is less than the axial width of said one thrust washer.

3,316,036
DAMPED BEARING
 Erling J. Bligard, Woodland Hills, Alfred H. Colton, Jr., Encino, and Howard G. Thrasher, Tarzana, Calif., assignors to Litton Systems, Inc., Beverly Hills, Calif.
 Filed Dec. 11, 1964, Ser. No. 417,543
 14 Claims. (Cl. 308—184)

1. In combination:
 - a shaft;
 - a first collar, restrained against at least axial and radial motion relative to said shaft, having a convex conical surface on one end thereof;
 - a second collar having an inner diameter greater than the inner diameter and less than the outer diameter of said first collar, having a circularly cylindrical damping surface with a predetermined coefficient of friction on the outer periphery thereof, and having concave conical surfaces on the ends thereof, the said conical surface on a first said end having an apex angle substantially the same as the apex angle of said conical surface of said first collar;
 - a third collar having a sliding fit on such shaft and

restrained against radial motion relative to said shaft including a convex conical end surface having an apex angle substantially the same as the apex angle of said second conical surface on said second collar; said collars being positioned on said shaft to cause the first conical surface of said second collar to mate said conical surface on said first collar and to cause said conical surface on said third collar to mate said second conical surface on said second collar;



- a Belleville spring engaging said third collar and said shaft for forcing said third collar into engagement with said second collar and said second collar into engagement with said first collar to center said second collar and to force said second collar to deflect in a radial direction; and
- means forming a substantially circularly cylindrical surface substantially enclosing and frictionally engaging said damping surface while allowing relative motion between said enclosing and said damping surface.

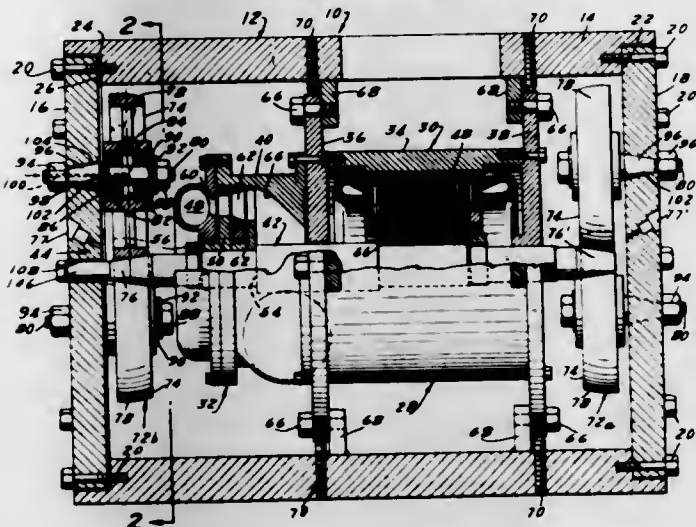
3,316,037
NEEDLE BEARINGS FOR BOTTOM ROLLERS OF STRETCHERS IN SPINNING MACHINES
 Georg Schaeffler, Herzogenaurach, near Nurnberg, Germany, assignor to Industriewerk Schaeffler o.H.G., Herzogenaurach, Germany, a corporation of Germany
 Filed Dec. 18, 1964, Ser. No. 419,378
 Claims priority, application Germany, Jan. 23, 1964, J 12,363
 4 Claims. (Cl. 308—187)



1. A needle bearing for the bottom rollers of stretchers of spinning machines comprising a housing with a rectangular upper part and a semi-cylindrical lower part with a bore therein, a thin-walled needle race pressed into the said bore and needles accommodated and guided in a cage on the said race, the said upper part having a hollow space for storing lubricant connected with the bearing interior by a break in the said race and sealed at the top with a transparent plate.

3,316,038
HIGH SPEED TURBO-ELECTRIC GENERATOR
BEARING

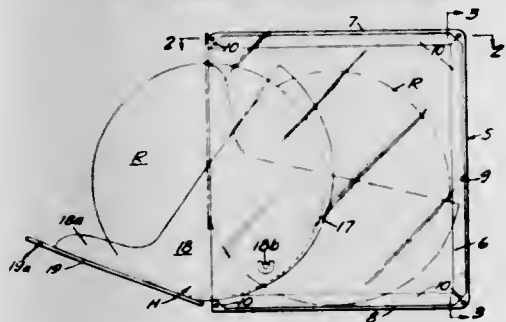
Zoltan Vigh, 150 E. Highland, Apt. H,
 Sierra Madre, Calif. 91024
 Filed July 14, 1964, Ser. No. 382,487
 11 Claims. (Cl. 308-203)



1. In combination: a support, a main shaft having an outwardly facing conical bearing surface at each opposite end, a set of bearing at each end, each set comprising a plurality of bearing shafts each having a supported end mounted on the support in initially substantially parallel relationship with said main shaft and having an unsupported end, each said bearing shaft having an idler bearing roller on the unsupported end, said bearing rollers being spaced about and peripherally engaging said main shaft to rotatably support the latter, resilient means mounting the supported end only of each of the bearing shafts of one of said sets in non-rotatable position on said support for rotation of each roller about an axis generally parallel to said main shaft, said means being angularly yieldable to enable said bearing shafts and the rollers thereon to deflect angularly uniformly toward and away from said main shaft, the peripheral shaft-engaging surface of each roller of both of said sets being convexly curved in axial section, whereby said roller surfaces remain in effective bearing contact with said shaft irrespective of the angle between the axis of each roller and the axis of said shaft.

3,316,039
SECTIONAL DEVICE FOR STORING AND
HANDLING TAPE REELS AND THE
LIKE

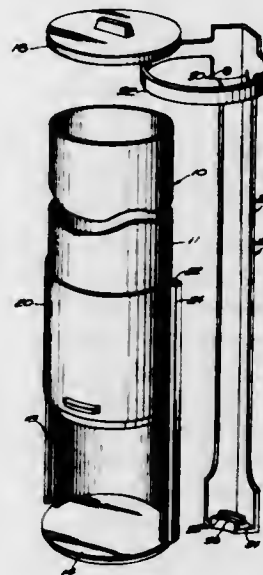
Walter Vernon Drobny, Minnetonka, Minn.
 (E422 38th Ave., Spokane, Wash. 99203)
 Filed Aug. 12, 1964, Ser. No. 389,155
 3 Claims. (Cl. 312-20)



1. Sectional library construction for protective storage and handling of tape reels and the like having in combination,
 a plurality of similar interconnectible vertical housing units,
 each comprising a substantially rectangular shell having a relatively large-area, vertical side wall, and

narrow top, bottom and rear walls perpendicularly affixed thereto,
 said shell configuration leaving the front and one side of said housing unit open,
 marginal coupling elements adjacent upper and lower edges of said side wall of each unit and complementary marginal coupling elements adjacent the upper and lower edges of said narrow top and bottom walls,
 the coupling elements of one housing unit releasably and snugly interlocking with the complementary coupling elements of a second unit when said units are pressed together in horizontally aligned, corresponding relation,
 the vertical large side wall of one unit then serving also as a side wall of an adjacent unit,
 a carrier holder for each unit comprising a channeled member having a bottom of curved shape for vertically supporting a tape reel or the like and having a rectangular closure plate extending approximately tangential to said curved bottom and fitting over and substantially covering the front opening of a unit,
 means for rotatably mounting each of said holders between two spaced side walls of two adjacent housing units to effect inward storage disposal of a holder within the confines of a housing unit and the adjacent wall of an adjacent unit and to also effect outward swinging of said holder forwardly of the forward opening of its related shell unit to facilitate removal of the reel or the like contained in said holder,
 and a vertical starter cover of shape and size to close the open side of an end housing unit when several of said units are interconnected in multiple,
 said starter cover having marginal coupling elements adjacent upper and lower edges thereof substantially identical to said coupling elements adjacent the upper and lower edges of said side wall of each unit.

3,316,040
STORAGE UNIT FOR TISSUE ROLLS
 Thomas J. McGann, 1152 Commonwealth Ave.,
 Allston, Mass. 02134
 Filed May 12, 1965, Ser. No. 455,086
 1 Claim. (Cl. 312-45)



A wall mounted device for storing tissue rolls and the like, comprising in combination
 (a) an elongated tubular housing adapted to accommodate a plurality of tissue rolls stacked in end-to-end relation, and
 (b) a bracket for detachably mounting said housing to said wall in a vertical position,

- (c) a bottom wall mounted across the lower end of said housing to support the stacked rolls,
- (d) said housing being formed with an opening through the side wall thereof immediately adjacent said bottom wall,
- (e) said opening being dimensioned to permit lateral removal of the lowermost roll in said stack,
- (f) a hoop formed in the upper part of said bracket for engagement about the upper portion of said housing when inserted therein,
- (g) a horizontally extending shoulder formed in the lower part of said bracket for supporting the lower portion of said housing when placed thereon,
- (h) said bracket being formed with an angular configuration lengthwise thereof whereby said bracket may be mounted in a corner of said wall.

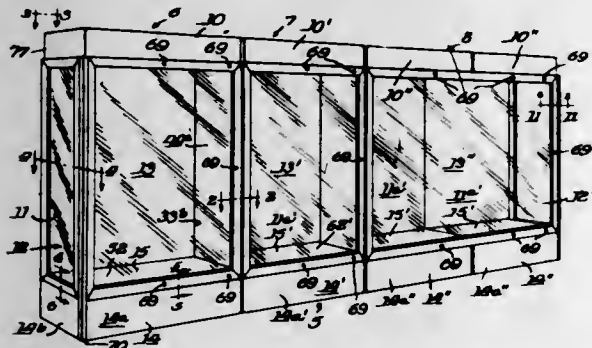
3,316,041

MODULAR DISPLAY CASE

Donald E. Nelson, Statesville, N.C., assignor to Kewaunee Technical Furniture Company, Statesville, N.C., a corporation of North Carolina

Filed Apr. 15, 1964, Ser. No. 359,983

15 Claims. (Cl. 312-140)



1. A modular display case comprising a structural frame including symmetrically formed vertical frame members and spaced symmetrical top and bottom horizontal frame members, said vertical and top and bottom horizontal frame members being cross-shaped in cross-section, said top and bottom horizontal frame members at the respective ends complementally formed to vertically spaced symmetrical locking means formed on the vertical frame members for interlocking the horizontal frame members to the vertically spaced frame members providing vertically spaced bottom and top horizontal frames for a bottom wall structure and a light box structure disposed at the top of the display case and arranged to illuminate the interior of the display case, bracket means operatively affixed horizontally at each juncture of the horizontal and vertical frame members for affixing the frame members in the erected position of the display case, vertical spacing of the horizontal frame members and horizontal spacing of the vertical frame members at predetermined spacings forming areas for detachably positioning component end panels and front and rear panels, certain of said areas between said horizontal frame members for detachably mounting window sashes and a rear closure panel for the display case, the other of said end and front areas above and below the horizontal frame members detachably mounting component closure panels therefor for completing the modular display case, certain of said horizontal frame members formed in predetermined lengths for the width of the display case, others of said horizontal frame members formed in predetermined lengths for the length of the display case, and said vertical frame members formed in predetermined lengths, so that a modular display case is provided for availability in different sizes of varying lengths and widths and of the same height for longitudinally assembled modular display cases.

3,316,042

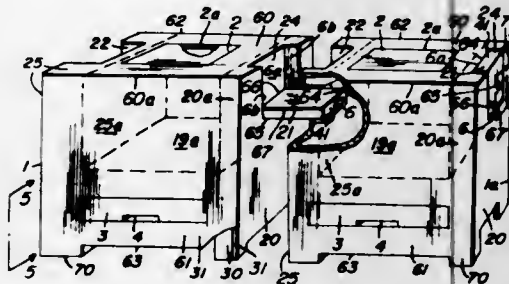
ENCLOSURE COMPRISING OUTSIDE SHELF AND INSIDE COMPARTMENT MACHINE INSTALLATIONALLY DISPOSED

Thomas P. O'Donnell, 220 Highland Blvd.,

Brooklyn, N.Y. 11207

Filed Dec. 7, 1964, Ser. No. 416,234

9 Claims. (Cl. 312-198)



2. In an article of manufacture, an enclosure comprising an exterior construction thereof comprising a top portion, side portions, and a bottom portion, and a suitably sized L shaped formation having sides formed interiorly into a suitable portion thereof, a separate shelf being constructed so that it has a size so that a bottom side portion thereof is used in a pivotal attachment with a complementary bottom side portion of said formation so that it moveably fits therewith for being raisably lowered, and so that when it is in a closed vertical position a top portion thereof extends above a said top portion of said enclosure and is ready for being a handle which is grasped by using a part of a hand which is used for pivotally moving it to a raisably lowered horizontal position in which it is a stationary shelf in which position a bottom portion thereof is removably laid onto a disposed bottom portion of said formation which is used for holding it in said shelf position, first means for forming a suitable attachment being formed into said bottom side portion of said shelf and said formation and being disposed for having means for pivotally attaching one with the other attached therewith, means for forming a pivotal attachment.

3,316,043

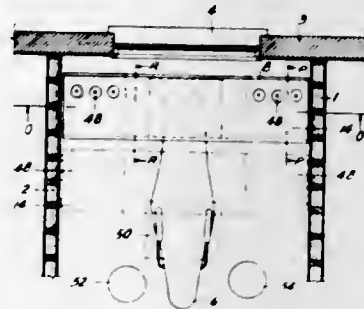
DENTAL OPERATORY UNIT

William Melvin Taskey, 15219 83rd Ave.,

Edmonton, Alberta, Canada

Filed June 1, 1965, Ser. No. 460,208

1 Claim. (Cl. 312-209)



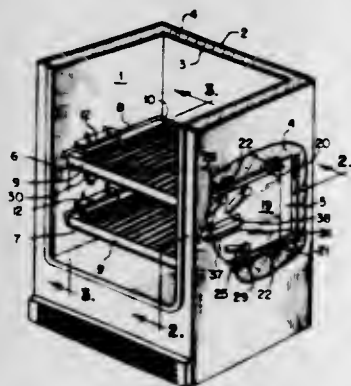
In combination, walls and a floor, a dental patient's support chair for supporting a patient in the supine position above the floor and between the walls and at a height whereby a dentist seated alongside the patient may perform dental work on the patient without rising from the seated position, and a dental operatory unit having spaced cabinets interconnected by a horizontal top working surface, a slidable pull-out instrument tray positioned between the cabinets and below the said top and retractable powered dental tools located at each side of the said tray and below the said top, means suspending the said unit above the floor, such means comprising a substantially horizontal track secured to each of the walls and a roller assembly mounted at each end of the dental

operatory unit adjacent the top working surface and adapted to engage rollably in a track whereby the unit may be moved from a position completely over a patient in the chair with a cabinet and powered tools at each side of the chair and with the said tray in the pulled-out position located immediately forward of and adjacent the mouth of the patient, to a position forward of the chair whereby the patient may be raised from the supine position to the seated position and may leave the chair from either side without hindrance from the dental operatory unit, the position of the unit when completely over the patient being such that a dentist seated at either side of the patient will have access to the contents of the contents of the cabinet and to the powered dental tools at that side of the patient and to the instrument tray without strain and without rising from the seated position and wherein the bottoms of the cabinets are sufficiently raised from the floor to not interfere with the feet and legs of a dentist seated alongside the patient.

3,316,044

APPARATUS FOR ADJUSTING VERTICALLY SPACED SHELVES

Richard J. Carbary, La Grange, Ill., assignor to General Electric Company, a corporation of New York
Filed Oct. 14, 1965, Ser. No. 496,004
10 Claims. (Cl. 312-214)



1. In a cabinet having a pair of opposed walls supporting upper and lower shelves therein:

- (a) adjustable means mounting said upper and lower shelves in said cabinet, said adjustable means being movable relative to said opposed supporting walls for simultaneously raising and lowering said shelves relative to each other;
- (b) said adjustable means comprising a pair of parallel, vertically disposed actuating members mounted for reciprocal horizontal movement relative to their respective opposed supporting walls; and
- (c) means on said vertically disposed actuating members for mounting said upper and lower shelves for opposite vertical reciprocatory movement when said vertically disposed actuating members are horizontally reciprocated relative to said support walls.

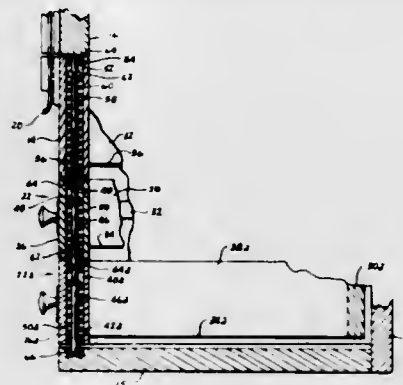
3,316,045

LOCK MECHANISM FOR PLURAL DRAWERS

Harold E. Leland, Kettering, Ohio, assignor to H. Gerstner & Sons, Dayton, Ohio, a corporation of Ohio
Filed Oct. 1, 1965, Ser. No. 492,228
3 Claims. (Cl. 312-220)

1. In a case having a hinged cover member pivotal between open and closed positions, a panel member one margin of which meets a wall portion of said cover member in the closed position of said cover member, and a plurality of drawers mounted adjacently for sliding movement through an aperture disposed in said panel member and spaced from said one margin, said adjacent drawers having axially alignable locking pins displaceable axially, one pin against the other, to lock said drawers one to the

other, the improvement wherein said panel member has a bore therein communicating between said aperture and said one margin, an actuator rod disposed in said bore and having a length exceeding the length of said bore, bias means coacting between said rod and said panel member biasing said rod toward said one margin, limit means coacting between said panel member and said rod to limit the movement of one end of said rod through said one margin and support said actuator rod with its opposite end adjacent said aperture, said cover member, upon being

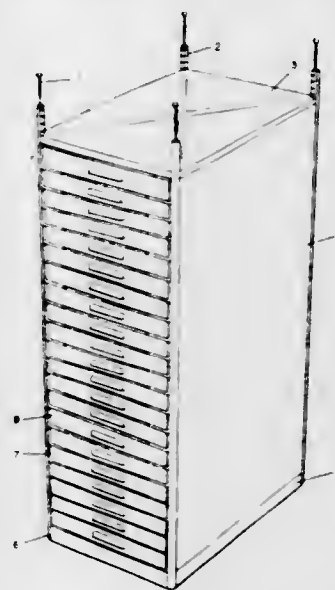


pivoted to said closed position, engaging said one end of said actuator rod to move said actuator rod against the bias of said bias means and thereby cause said opposite end of said actuator rod to enter said aperture said drawers being slidable to positions wherein the pins in said drawers are aligned axially with said actuator rod and the pin in one of said drawers is adjacent said opposite end of said actuator rod, whereupon closure of said cover member will cause said actuator rod to enter said one drawer and displace the pin therein into the next adjacent drawer thereby locking said drawers to said panel member.

3,316,046

CHART AND DRAWING FILE DEVICE

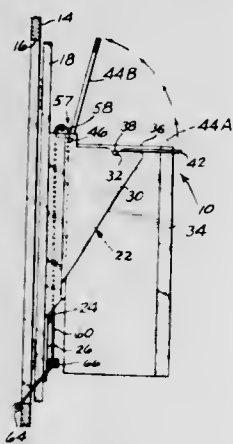
Giles D. Stephens, 4190 Balsam St., Wheat Ridge, Colo. 80033, and Robert C. Morsink, 8672 W. Brittany Drive, Littleton, Colo. 80120
Filed June 14, 1965, Ser. No. 463,632
6 Claims. (Cl. 312-253)



1. In a filing cabinet for sheet material, four upright members including extensible and retractable compression means at the upper end and a base member at the lower end of each upright member for securing the ends of the upright members between upper and lower stationary surfaces in a rectangular pattern to form a cabinet enclosure, pairs of elongated coacting guide members disposed in vertically spaced relationship within said enclosure, means for disposing the guide members of each coacting pair at a selected elevation on separate upright members in a

range throughout the lengthwise extent of said upright members and disposing horizontal surface portions thereof in parallel relation along opposite sides of the cabinet structure, holder means for sheet material seated on horizontal surface portions of the coacting guide members of each pair and substantially filling the space therebetween, said holder means being slidable along said horizontal surface portions from an enclosed position within the cabinet to a second position outside the cabinet, and closure means adapted for detachable connection with each of said upright members at selected elevations for closing at least the top and sides of said enclosure.

3,316,047
CONTAINER APPARATUS
 William C. Murphy, 3020 SW. 12th Ave.,
 Portland, Oreg. 97201
 Filed June 11, 1965, Ser. No. 463,270
 3 Claims. (Cl. 312-275)

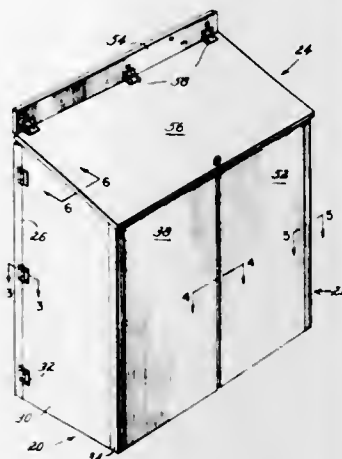


1. The combination of
 - a cabinet having a cabinet frame including a door frame defining a door opening for access into the cabinet,
 - a movable door mounted on said cabinet for opening and closing said door opening,
 - a bracket secured to said door,
 - a container removably seated on said bracket, said container having an open top,
 - a lid pivoted to said bracket for movement about a horizontal axis, having an over-center position relative to the ground with the lid upright in said over-center position,
 - said lid being swingable forwardly and backwardly through its said over-center position with said container removed from said bracket,
 - a tab secured to said lid, operable with said container seated on said bracket to confine said lid to swinging movement in a region forwardly of its said over-center position,
 - said region where movement is afforded the lid by said tab including a position for said lid where it covers the open top of said container with said door closing said door opening, and
 - actuator means connecting said lid and said cabinet frame, operable upon movement of said door away from said door opening to shift said lid away from said open container top.

3,316,048
TANK COVER
 William G. Levy, P.O. Box 179,
 North Conway, N.H. 03860
 Filed Feb. 25, 1966, Ser. No. 530,189
 4 Claims. (Cl. 312-290)

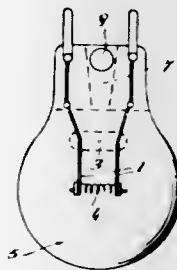
1. A tank cover for battled gas tanks and similar articles adapted to be mounted on a suitable wall support having, in combination, a left hand side wall and door

unit and a right hand side wall and door unit, each said unit comprising a plurality of hinged together side wall panel and door elements, and including a hinge connection for hinging the said side wall and door unit to a suitable wall support for movement between a closed and a folded back position, and a cover unit comprising a



cover and a hinge connection attaching said cover to said wall support for movement between a closed down position and a raised open position, and devices on the inner face of said cover operative for the closed position of said tank cover to engage and lock said left and right hand side wall and door units in the closed position.

3,316,049
INCANDESCENT ELECTRIC LAMPS
 Herbert William Brown, 69 Lewis St.,
 Derby, England
 Filed Jan. 29, 1965, Ser. No. 428,988
 4 Claims. (Cl. 316-21)



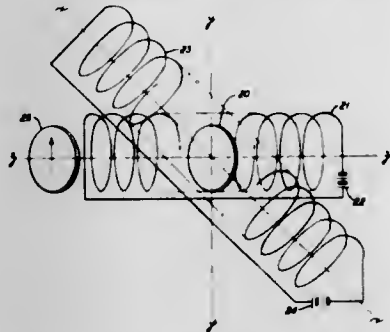
1. A method of manufacture of an incandescent electric lamp without the aid of an exhaust tube, consisting essentially of the steps of clamping a pair of lead-in wires having prongs at their other ends, attaching a filament to the opposite ends of said lead-in wires, locating a glass bulb over said filament and lead-in wires the neck of which bulb has been softened by heating, pinching the neck to form a gas-tight seal around the inner end of each of said prongs and the portion of lead-in wire connected thereto and simultaneously forming an aperture in the pinched base mass of glass, said aperture tapering inwards, locating a mass of fusible substance in said aperture so as to permit the passage of gas through said aperture, locating a plurality of such lamps in a chamber with their prongs uppermost, heating the chamber to a suitable temperature, evacuating the chamber, admitting an inert gas to the chamber at the desired pressure so as to fill each bulb prior to the sealing thereof, and raising the temperature of the chamber at least in the region of the pinched base of each bulb to soften said fusible mass and thereby seal said aperture.

3,316,050
OPTICAL MODULATOR EMPLOYING THE DI-CHROIC ABSORPTION OF ANTIFERROMAGNETIC NiF_2

James Ferguson and Darwin L. Wood, Murray Hill, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Aug. 9, 1963, Ser. No. 301,030

5 Claims. (Cl. 350-1)



1. An optical modulator comprising a single crystal of NiF_2 cut in a wafer shape having the c -axis and one a -axis in the plane of the wafer, means for maintaining the wafer at a temperature below 73°K. , means for directing light radiation through said crystal wafer in the direction approximately corresponding with the other a -axis, means for impressing a modulating magnetic field on said crystal, said field having a vector component in a direction normal to the a -axis of spin polarization of the crystal.

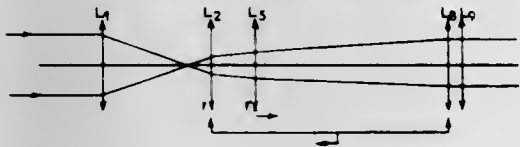
3,316,051
OPTICAL SYSTEM OF VARIABLE FOCAL LENGTH HAVING THREE CONSECUTIVE MOVABLE ELEMENTS

Jean-Michel Baluteau, Livry-Gargan, France, assignor to Societe d'Optique et de Mecanique de Haute Precision, Paris, France, a French company

Filed July 8, 1963, Ser. No. 293,358

Claims priority, application France, July 11, 1962, 903,659

3 Claims. (Cl. 350-43)



1. Optical system of variable focal length, comprising three consecutive elements movable with respect to a fixed object, each element being equivalent to a thin lens, to two end movable elements being identical and having identical displacements, a control device for said movable optical elements imparting substantially proportional simultaneous displacement to said end elements in the same direction and to said intermediate element in the opposite direction over definite distances, the system giving an image of the fixed object which image passes four times through a fixed plane when said optical elements traverse said definite distances, said end elements having a focal length f and a displacement over a distance d , said intermediate element having a focal length f' and a displacement between said end elements over a distance $2x$, said intermediate element contacting one of said end elements at the ends of its displacement, the magnification g of the system having a predetermined value defined by the inequalities $g < -1$ or $g > 1$, the values of f , f' , d and $2x$ then being determined by the formulae:

$$f = -\frac{1}{1+g}$$

$$d = \frac{g-1}{g}$$

$$\frac{1}{f'} = \frac{1+1}{2x+1}$$

$$p' = \frac{1}{2} - \frac{g^2+2g-1}{2g(1+g^2)}$$

$$x^2 - x(p'+1) - (1+p') = 0$$

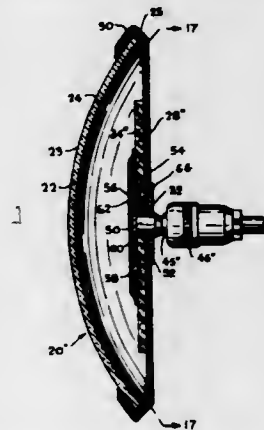
the system being further characterized by $g=1.3$, $f=-0.434782$, $d=0.230769$, $p'=-0.970403$ and $f'=0.578937$.

3,316,052
MEANS OF MOUNTING GLASS OR MIRROR TO BACKING

William Ross, 56 Ferndale Road, Paramus, N.J. 07652

Filed Dec. 13, 1962, Ser. No. 244,520

2 Claims. (Cl. 350-293)



1. A mirror assembly comprising a transparent body having a continuous peripheral edge and opposed convex and concave sides, a light reflective coating on the concave side of said body, an adhesive tape overlaying and covering said edge, a thin flat metal disk disposed on the concave side of said body, said disk having spaced peripheral tabs bent over the peripheral edge of said body and engaged thereat on said tape, a stiffener block on the inner surface of said disk, an elongated metal plate mounted flatwise on said block, said metal disk, block and metal plate having aligned openings, a connecting rivet extending through said aligned openings securing said disk, block and plate to each other flatwise, the inner end of said rivet being peened over the inner metal plate and a ball mounted on the outer end of the rivet adapted to coact with a member of a universal joint.

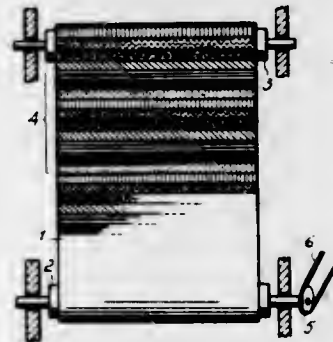
3,316,053
DIFFUSE REFLECTION OBSERVATION PROJECTION SCREEN

Adelmo Giacometti, Via XXII Marzo 22, Milan, Italy

Filed Sept. 25, 1964, Ser. No. 399,962

Claims priority, application Italy, Oct. 3, 1963, 20,359/63, Patent 706,208

3 Claims. (Cl. 352-86)



1. The combination of a movable projection screen and a projector of images projecting images on said movable

screen independently of the motion of said movable projection screen, the movable projection screen comprising, a reflection surface having a plurality of narrow substantially parallel and contiguous colored strips defining said surface and driving means for causing a continuous motion of said surface in a direction tangential to said sur-

face and transverse to said colored strips said driving means imparting such a speed to said colored strips as to obtain a visual perception of a substantially even colour reflecting with stereoscopic effect the images projected thereon.

CHEMICAL

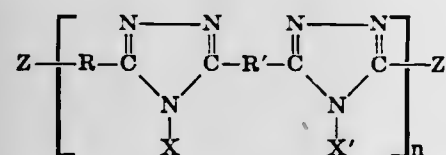
3,316,054 PROCESS FOR DYEING POLYOLEFINIC MATERIALS

Yoshio Tsunoda, Tokyo, Toru Taneda, Ibaragi-shi, Kiyoshi Akamatsu, Toyonaka-shi, Toshio Okamoto, Kyoto, and Kenichi Matsui, Takatsuki-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed Mar. 11, 1964, Ser. No. 351,211
Claims priority, application Japan, Dec. 23, 1960, 35/49,776

5 Claims. (Cl. 8-100)

1. In a process for dyeing shaped articles produced from polyolefin material selected from the group consisting of polyethylene, polypropylene and polybutenes, the improvement comprising improving the dyeability of the polyolefin article by reacting the article with a monocyclic aromatic carboxylic acid which contains one benzene ring, said polyolefins having been modified by the addition thereto 1 to 20% by weight of a material having a melting point between 100° and 300° C. and having the following general formula



wherein R and R' are members selected from the group consisting of alkylene, phenylene, cycloalkylene, pyridyl and naphthyl, the alkylene being represented by the formula $(\text{CH}_2)_m$ wherein m is a number between 2 and 10; X and X' are members selected from the group consisting of hydrogen, alkyl, alkenyl, phenyl, naphthyl, amino, benzalamino, formalamino, acetamino, carbamylamino, pyrrolyl and pyridyl radicals, the alkyl radical having from 1 to 18 carbon atoms and being linear or branched, the alkenyl radical having from 2 to 18 carbon atoms; Z and Z' are selected from the group consisting of carboxyl and hydrazide radicals; and n is a number greater than one.

3,316,055 PURIFICATION OF DRY CLEANING SOLVENTS WITH BONE CHAR

Alfonso Moncada, 21 3rd Place 11231; Vincent Moncada, 4015 5th Ave. 11232; and John Moncada, 150 21st St. 11232, all of Brooklyn, N.Y.

Filed Dec. 19, 1962, Ser. No. 245,816
16 Claims. (Cl. 8-142)

1. In a dry cleaning operation wherein garments and the like are washed by contact with a dry cleaning solvent liquid to remove contaminants such as solvent soluble free fatty acids, the dry cleaning solvent liquid, now containing free fatty acids dissolved therein, removed from contact with the garments and treated for the removal of solvent soluble contaminants therein by contact with a solid adsorbent, the improvement which consists essentially of employing as said solid adsorbent particle-form bone char whereby the solvent soluble free fatty acids are preferentially removed from said dry cleaning solvent liquid and converted by said bone char to the corresponding calcium soaps.

3,316,056 STEAM AEROSOL

Robert L. Johnson and William D. MacRae, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 8, 1963, Ser. No. 278,995
3 Claims. (Cl. 21-57)

1. Technique of distributing upon, with penetration into, a water-insoluble fibrous substance susceptible of degradation through the vital processes of a living organism, of an organic residual pesticidal substance soluble, together with emulsifying agent, in an organic solvent, which comprises the steps of preparing a solution of pesticidal organic substance and of emulsifying agent together in organic solvent, introducing the resulting solution into a flowing current of steam at such rate that the said steam substantially wholly entrains the said solution, conveying the resulting steam to a locus to be treated, releasing the said steam near to the locus to be treated; the said emulsifying agent being characterized by being (a) essentially unreactive alone or with pesticide at a temperature from approximately room temperature to approximately steam temperature, (b) not wholly volatile in steam at the employed temperature, (c) forming a liquid colloidal emulsion of the pesticide when cosolutions thereof with said pesticide are dispersed in water.

3,316,057

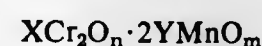
METHOD OF TREATING EXHAUST GASES OF INTERNAL COMBUSTION ENGINES

Benjamin W. Howk, West Chester, Pa., and Alvin B. Stiles, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Original application May 19, 1961, Ser. No. 109,483, now Patent No. 3,216,954, dated Nov. 9, 1965. Divided and this application June 22, 1965, Ser. No. 466,069

6 Claims. (Cl. 23-2)

1. A process for treatment of automobile exhaust gases comprising passing said gases over a catalyst which is manganochromia-manganite, the crystallites of which are kept apart by crystallites of a refractory which melts above 1000° C., said manganochromia-manganite being a complex product of the character described having the empirical formula:



where

the ratio of $Y:X=3:0.5$ to $3:30$
 $n=2, 3$, and 6 , and
 $m=1, 1.33, 1.5, 2$, and 2.5 ,

the formula being a summation of the proportion of its content of MnO , MnO_2 , Mn_2O_3 , Mn_3O_4 , Mn_2O_5 , Cr_2O_3 , $\text{Cr}_2\text{O}_3 \cdot \text{MnO}_2$, $\text{CrO} \cdot \text{Mn}_2\text{O}_3$, $\text{CrO}_3 \cdot \text{MnO}$, $\text{Cr}_2\text{O}_3 \cdot \text{MnO}$.

3,316,058 PROCESS FOR THE EXTRACTION OF TUNGSTEN FROM AQUEOUS SOLUTION

Charles L. Chaney, Del Mar, Calif., assignor to the United States of America as represented by the Secretary of the Interior

No Drawing. Filed Dec. 19, 1962, Ser. No. 247,452
8 Claims. (Cl. 23-19)

1. A process for extraction of tungsten from aqueous solution comprising adjusting the pH of the solution to about 3.5 to about 5.5 with an acid selected from the group consisting of citric acid, tartaric acid, and acetic acid and, thereafter contacting the solution with aniline to form an aniline extract phase containing a tungsten-aniline complex and an aqueous raffinate phase, separating the extract and raffinate phases and recovering the tungsten from the extract phase.

3,316,059 PROCESS FOR THE ACID OXIDATION OF LEAD AND ZINC SULPHIDES

Andrew Imre Vizsolyi, Vancouver, British Columbia, and Herbert Veltman, Fort Saskatchewan, Alberta, Canada, assignors to Sherritt Gordon Mines Limited, Toronto, Ontario, Canada, a company of Canada

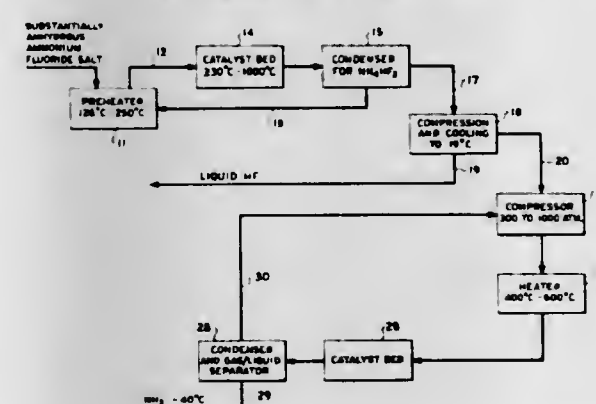
No Drawing. Filed Oct. 29, 1962, Ser. No. 233,941
3 Claims. (Cl. 23-125)

1. In a process for the oxidation of mineral sulphides substantially free of oxidizable iron which contain values of at least one non-ferrous metal selected from the group consisting of lead and zinc in which the mineral sulphides are reacted at a temperature above about 90° C. but below the melting point of sulphur in an aqueous sulphuric acid solution with a free oxygen bearing gas, the improvement which comprises the step of providing in said aqueous solution from an extraneous source oxidizable iron in amount at least sufficient to provide a total oxidizable iron content in said solution equivalent to about 5% by weight of the lead plus zinc content of said mineral sulphides.

3,316,060 RECOVERY OF ANHYDROUS HYDROGEN FLUORIDE FROM GASEOUS MIXTURES

Theodore Henry Dexter, Lewiston, and John A. Peterson, Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

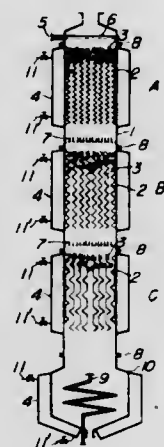
Filed May 27, 1964, Ser. No. 370,414
4 Claims. (Cl. 23-153)



3,316,064

APPARATUS FOR CONTINUOUS POLYCONDENSATION REACTION

Tsuneo Kuzuoka, Tokyo, and Seichi Kikkawa, and Hiroshi Murayama, Hitachi-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Apr. 30, 1964, Ser. No. 363,899
17 Claims. (Cl. 23-283)



1. An apparatus for continuous polycondensation comprising a reaction vessel having at least one reaction unit, an inlet provided at the top of said reaction vessel for introducing reactant material into said reaction vessel, an outlet provided at the bottom of said reaction vessel for discharging the products of polycondensation, heating means encompassing substantially the outer periphery of each of said reaction units, packing disposed in said reaction unit substantially parallel to the inner walls of said reaction unit, both the inner surfaces of said reaction unit and said packing having corrugated surfaces which are exposed to contact with the reactants, a header attached to said packing and having associated therewith a heat exchange means, at least one reaction material redistribution means disposed between said inlet and said outlet, a sparger provided in the lowermost portion of said reaction vessel, a half-esterification unit communicating with said inlet and condenser means communicating with the top of said reaction vessel.

3,316,065

METHOD FOR REPROCESSING FUEL ELEMENTS WITH FISSIONABLE MATERIAL IN CARBIDE FORM WHICH ARE SPENT IN NUCLEAR REACTORS

Peter Baertschi, Birsfelden, Basel-Land, Hans-Rudolf von Gunten, Nussbaumen, Aargau, and Harry-Ernst Züst, Zurich, Switzerland, assignors to Gesellschaft zur Förderung der Forschung an der Eidgenössischen Technischen Hochschule, Zurich, Switzerland

No Drawing. Filed Dec. 9, 1963, Ser. No. 329,053
Claims priority, application Switzerland, Dec. 12, 1962, 14,672/62

8 Claims. (Cl. 23-324)

1. A method of reprocessing an elongated rod-like fuel element containing fissionable material clad or encased in graphite which are spent in nuclear reactors including the steps of: introducing the entire fuel element to be reprocessed into a combustion zone, initiating burning of the fuel element and delivering external heating power to the combustion zone during such burning for maintaining the burning process to which the entire fuel element is subjected, supplying a combustion-supporting medium into said combustion zone, and burning the entire fuel element to ash containing a concentrate of fissionable material in said combustion-supporting medium.

3,316,066
PROCESS FOR SELECTIVELY SEPARATING CESIUM CATIONS

Jakob van Rouendal Smit, 27 22nd St., Menlo Park, Pretoria, Transvaal, Republic of South Africa
Filed Sept. 19, 1963, Ser. No. 310,974
Claims priority, application Republic of South Africa, Apr. 3, 1958, 1,157/58
10 Claims. (Cl. 23-338)

1. A process for selectively separating cesium cations from an aqueous solution of fission products containing cesium 137 and impurities, which process comprises: percolating the aqueous solution through a bed of an ion exchanger comprising as its ion exchanging constituent a solid heteropolyacid salt of which the cationic part is at least partly composed of ammonium radicals and of which the anionic part comprises: (i) a co-ordinating radical selected from the group consisting of molybdate and tungstate radical, and (ii) a hetero-radical selected from the group consisting of phosphate and arsenate radicals, thereby loading the bed with cesium; percolating through the bed at least one further aqueous liquid essentially inert to the anionic part of the ion exchanger to remove at least the bulk of all impurities previously retained by the bed from the bed while retaining at least part of the cesium adsorbed by the bed; maintaining a pH below 6.0 in all aqueous liquids throughout their percolation through the bed, at least one of the said aqueous liquids having a pH not exceeding 2.7 during its percolation through the entire bed; and recovering a concentrated cesium product from the bed.

3,316,067

METHOD FOR PREPARATION OF ALUMINUM HYDRIDE ADDITION COMPOUNDS

Neil R. Fetter, Arlington, Calif., and Bodo K. W. Bartocha, Indian Head, Md., assignors to the United States of America as represented by the Secretary of the Navy
No Drawing. Filed Apr. 3, 1962, Ser. No. 184,860
11 Claims. (Cl. 23-356)

1. A process for the preparation of aluminum hydride addition compounds from the reaction of a member selected from the group consisting of aluminum hydride etherate and aluminum hydride trimethylamine with a member selected from the group consisting of trimethylhydrazine, 1,1-diethylhydrazine, 1,1-dimethylhydrazine, monomethylhydrazine and hydrazine at a reaction temperature of about -196° C., warming to a temperature of about 25° C. and stirring until a precipitate forms.

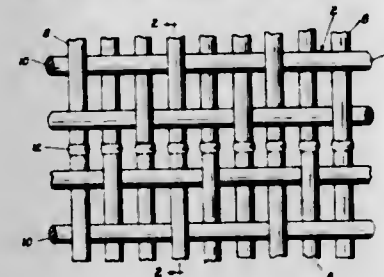
3,316,068

WIRE BELT FOR USE IN PAPER MAKING MACHINES

Alfred G. Hose, Cleveland, and Laurence D. Kunsman, Willoughby, Ohio, assignors to The Lindsay Wire Weaving Company, Cleveland, Ohio, a corporation of Ohio
Continuation of application Ser. No. 181,208, Mar. 20, 1962. This application Oct. 21, 1965, Ser. No. 505,131
1 Claim. (Cl. 29-183)

A wire belt made of interwoven sets of hard-drawn warp and shuttle wires for use with Fourdrinier type paper making machines, the warp wires essentially consisting of about 7.2% to 8.0% tin, about 0.25% to 0.35% phosphorus, iron less than about 0.05% maximum, with the balance being substantially all copper, and having a yield strength, as finished, in excess of 100,000 p.s.i. with an elongation in five inches of about 2%, resulting from cold reduction of the cross-sectional area of the wire in excess of 90%, heating the wire at a temperature between

about 800° F. to 1000° F., and further cold reduction of the cross-sectional area of the wire of about 30%; the shuttle wires essentially consisting of about 14.0% to 16.0% zinc, lead less than about 0.05% maximum, iron and nickel less than about 0.05% maximum, phosphorous less than about 0.005% maximum, with the balance being

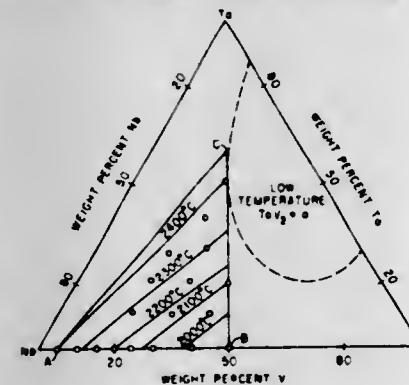


substantially all copper, and a yield strength, as finished, of about 45,000 p.s.i. with an elongation in five inches of about 6% resulting from cold reduction of the cross-sectional area of the wire in excess of 90%, heating the wire at a temperature between about 900° F. to 1100° F., and further cold reduction of the cross-sectional area of the wire of about 8%.

3,316,069

REFRACTORY METAL BRAZING PRODUCT AND PROCESS

James C. Marshall, James A. McGurty, and George Kortan, Cincinnati, Ohio, assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Feb. 20, 1964, Ser. No. 346,361
2 Claims. (Cl. 29-198)



2. A composite structure comprising at least two structural portions of refractory material joined to one another by a fused brazing alloy, said refractory material being selected from the group of metals and alloys consisting of the metals tungsten, tantalum, molybdenum, niobium, and alloys containing at least 50 weight percent of at least one of said metals, and said fused brazing alloy having a brazing alloy composition, prior to brazing, consisting of 4 to 50 weight percent vanadium, 20 to 96 weight percent niobium, and up to 60 weight percent tantalum, the joint provided by the fused brazing alloy being characterized by having a melting temperature greater than the melting temperature of the brazing alloy.

3,316,070

METHOD FOR PREVENTING CARBONACEOUS DEPOSITS IN DIESEL ENGINES

James F. Scott, Briarcliff Manor, N.Y., assignor to The Perolin Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 30, 1963, Ser. No. 305,815
8 Claims. (Cl. 44-51)

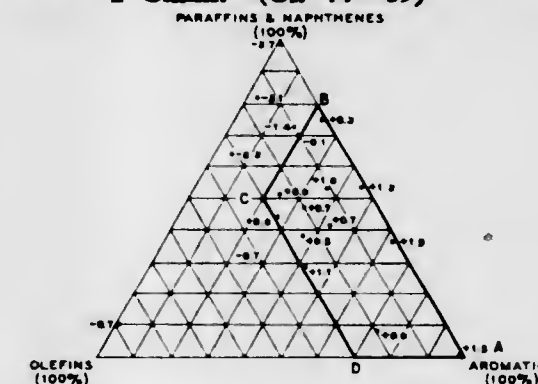
1. The method of preventing fouling of ports and valves by carbonaceous deposits in heavy diesel engines of the type used in the marine field that comprises operating such engines with a treated fuel consisting of a

uniform blend of an oil selected from the group consisting of diesel oil, residual fuel oil, and mixtures thereof, with a silicon containing compound selected from the group consisting of organic and inorganic silicon compounds which provide free SiO₂ at fuel combustion temperature, said silicon compound being present in an amount to provide the equivalent of about 30 to 300 p.p.m. of SiO₂ in said treated fuel.

3,316,071

GASOLINE COMPOSITION

Maurice R. Barusch, Richmond, Wallace L. Richardson, Lafayette, George J. Kautsky, Richmond Annex, and Donel R. Olson, San Pablo, Calif., assignors to Chevron Research Company, a corporation of Delaware
Filed Sept. 26, 1958, Ser. No. 765,920
(Filed under Rule 47(a) and 35 U.S.C. 116)
1 Claim. (Cl. 44-69)



A hydrocarbon base fuel, boiling in the gasoline boiling range, adapted for use in spark ignition internal combustion engines, having a clear Research octane number of at least 90, said fuel being characterized in that the hydrocarbon composition thereof lies within the 4-sided figure of FIGURE 1, which 4-sided figure is identified by the fact that its area lies within the straight lines connecting A, B, C, and D; said fuel containing from about one to about four milliliters of lead tetramethyl per gallon, said fuel having a Motor Method octane number and an average Road octane number greater than the corresponding octane numbers of a mixture of said hydrocarbon composition containing a molar equivalent of tetraethyl lead.

3,316,072

ABRASIVE COATED BACKING OF SHEATHED SYNTHETIC FIBER YARNS

Ronald Voss, Stockport, England, assignor, by mesne assignments, to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 10, 1963, Ser. No. 315,342
Claims priority, application Great Britain, Oct. 25, 1962, 40,473/62

10 Claims. (Cl. 51-294)

1. An abrasive coated cloth consisting essentially of a backing, abrasive grains, and an adhesive bonding said grains to said backing, said backing consisting essentially of a woven fabric comprising sheathed synthetic fiber yarns, said yarns consisting of a core of synthetic fiber impenetrable by said adhesive surrounded by a sheath of cellulose fibers.

3,316,073

PROCESS FOR MAKING METAL BONDED DIAMOND TOOLS EMPLOYING SPHERICAL PELLETS OF METALLIC POWDER-COATED DIAMOND GRITS

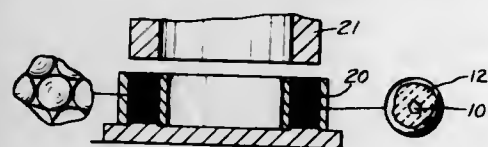
John G. Kelso, Shrewsbury, Mass., assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts

Filed Aug. 2, 1961, Ser. No. 128,895

2 Claims. (Cl. 51-309)

2. A mass of spherical pellets for making a diamond abrasive tool each pellet consisting of an individual

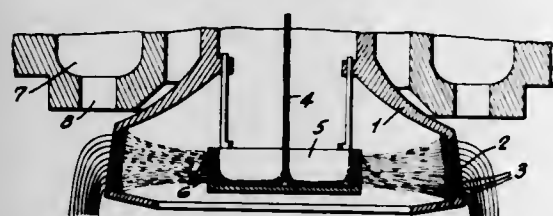
diamond abrasive grain of grit 60 or coarser surrounded by a temporarily self-sustaining powdered unsintered



tungsten carbide-cobalt powder, the bulk of the pellets having a bond volume to abrasive volume of at least 9 to 1.

3,316,074

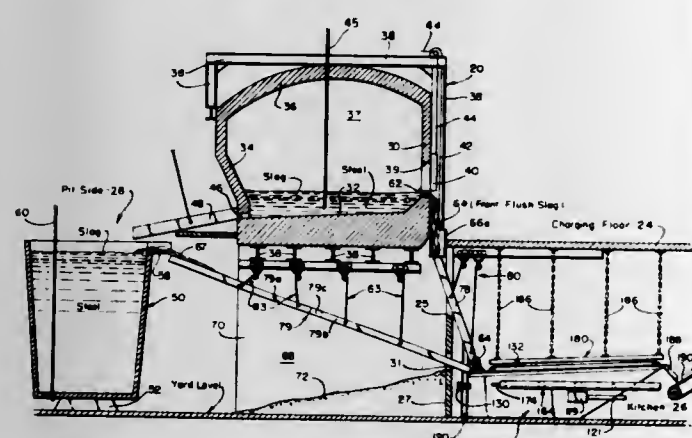
METALLIC ELEMENTS ADAPTED TO COME IN CONTACT WITH MELTED GLASS
Bernard Laurent, Paris, and Igor Fezenko, Mitry-Mory, France, assignors to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France, a corporation of France
Filed Oct. 25, 1963, Ser. No. 319,050
Claims priority, application France, Nov. 6, 1962, 914,567
5 Claims. (Cl. 65-1)



1. Metallic pieces formed with orifices of small diameter through which pass filaments of molten plastic material at high temperature having a strong corrosive influence on the metal, said pieces being formed, at least in part, of an alloy having good mechanical resistance and high corrosion resistance and consisting essentially of the following ingredients in the respective proportions by weight: chromium ranging from above 25% to 33%; nickel ranging from approximately 45% to 53%; a combined niobium and tantalum content ranging from approximately 3.5% to 6% with the tantalum content in minor amount ranging up to 0.5%; tungsten from approximately 1% to 5%; carbon ranging from approximately 0.3% to less than 0.5%; with the remainder iron.

3,316,075

STEEL SLAG HANDLING SYSTEM
John J. Grady, New Florence, Pa., assignor to International Steel Slag Corporation, Washington, D.C., a corporation of the District of Columbia
Filed Jan. 27, 1965, Ser. No. 428,519
16 Claims. (Cl. 65-19)



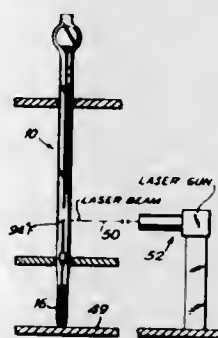
1. A method of handling molten steel slag characterized in that it comprises: pouring molten steel slag into a receptacle; injecting at least one jet stream of water into said receptacle so as to intercept said molten steel slag to granulate the molten slag into particles; the water

stream being injected with a jet velocity of at least about 25.0 f.p.s. and at least about 400 g.p.m. for a molten slag input rate of up to about 2 tons per minute, the water stream being injected with a jet velocity of at least about 30 to 36.5 f.p.s. and at least about 500 to 600 g.p.m. for a molten slag input rate of 2 to about 4 tons per minute, the water stream being injected with a jet velocity of at least about 36.5 to 55 f.p.s. and at least about 1200 to 1800 g.p.m. for a slag input rate of 4 to about 7 tons per minute, and the water stream being injected with a jet velocity of at least about 55 to 61 f.p.s. and at least about 1800 to 2000 g.p.m. for a slag input rate of 7-8 tons per minute; maintaining water accumulating in said receptacle at a level below said jet stream while said molten steel slag is being poured into the receptacle so that the molten steel slag intercepts said jet stream above water accumulated in the receptacle; and removing resultant granulated slag particles from said receptacle while the granulation of the molten steel slag is in progress.

13. In combination with an open hearth steelmaking furnace in a furnace building having a charging floor in front of the furnace and a kitchen below such charging floor, the furnace having at least one door and spillway opening extending through said charging floor adjacent said furnace door for passage therethrough of molten front flush steel slag discharged through said door in operation, an apparatus for handling such molten slag characterized in that it comprises: a slag granulator including a receptacle disposed in said kitchen and away from below said slag spillway; slag transfer means movable between a first position in which molten slag discharged through said spillway in the charging floor in operation will pour into said granulator receptacle and a second position in which such molten slag will not pour into said granulator receptacle; said granulator including means for directing at least one jet stream of water to intercept said molten slag poured into said receptacle and in sufficient quantity to granulate the slag into particles; means for limiting a water bath accumulating in said receptacle at all times during operation to a level below the region of interception of the molten slag by said water jet stream; and means for removing resultant granulated slag from said granulator receptacle and out of said kitchen while granulation of the slag is in progress at substantially the rate of molten slag input.

3,316,076

METHOD OF MARKING MERCURY GLASS THERMOMETERS
Seymour N. Blackman, 431 E. Palisade Ave., Englewood, N.J. 07631
Filed Dec. 18, 1964, Ser. No. 419,523
11 Claims. (Cl. 65-30)



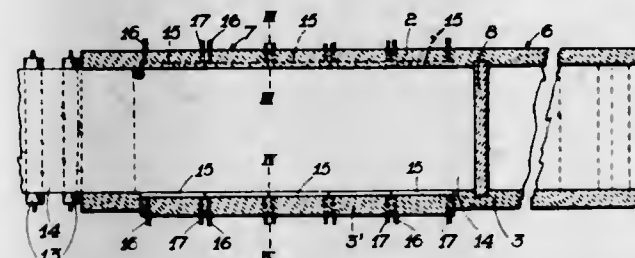
1. A method of stain marking a mercury glass thermometer comprising:

(a) providing a sealed scalarly unmarked thermometer blank composed of a reservoir bulb and a shaft having a bore communicating at one end with the bulb and at the other end with a calibrating chamber, the blank containing an excess of mercury;

- (b) ascertaining within the range of the markings to be applied, the mercury column temperature rise characteristic of said sealed thermometer blank by measuring the difference in the heights of the mercury column in the bore at two different specific temperatures;
- (c) providing a graduated scale, the graduations of which are mutually spaced apart to match the mercury column temperature rise characteristics of the blank;
- (d) then using said scale to apply to the shaft in the linear area to be marked heat stainable material in the configuration of such graduations and without consideration of precise registration between the actual level of the mercury column for any temperature and the corresponding scale graduation for that temperature;
- (e) then applying heat to the sealed blank so as to stain mark the glass shaft with a scale of stained graduations corresponding to the aforesaid scale;
- (f) then cooling the scale stained blank to room temperature;
- (g) then transferring sufficient mercury into the calibration chamber of the sealed blank to precisely register the actual level of the column of mercury for all temperatures within the range of markings with the scale graduations for those temperatures; and
- (h) then removing the calibrating chamber and the mercury therein.

3,316,077

PROCESS AND ARRANGEMENT FOR THE CONTINUOUS MANUFACTURE OF SHEET GLASS ON A MOLTEN METAL BATH.
Emile Plumet, Gilly, Belgium, assignor to Glaverbel, Brussels, Belgium, a Belgian company
Filed Sept. 3, 1963, Ser. No. 306,183
Claims priority, application Belgium, Sept. 29, 1962, 42,437
6 Claims. (Cl. 65-65)



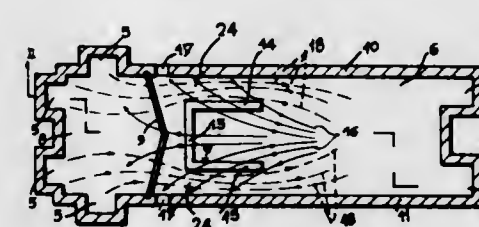
1. The process of continuously manufacturing sheet glass which comprises the steps of discharging the hot molten glass coming from a melting furnace to provide an initial ribbon of molten glass having a width equal to the width of the final glass ribbon and of the surface of a metal bath having a ribbon forming zone adjacent to the melting furnace, and feeding such initial ribbon of molten glass onto such bath surface at the entry end of said forming zone so that the glass covers the entire surface of such zone, forming the final glass ribbon of uniform width in such zone while the glass is at a temperature sufficiently high for the glass not to adhere to the side wall portions of said zone, advancing the thus formed glass ribbon without change in such uniform width thereof through an adjoining solidification zone of the metal bath in which the width of the surface of such bath is the same as that of the glass ribbon so that the latter completely covers such surface and the side edges of such glass ribbon contact longitudinal side wall portions of such solidification zone throughout the length thereof, cooling both side edges of the glass ribbon as the ribbon enters such solidification zone and substantially continuously for the major part of the length of such solidification zone, to reduce

the tendency of the glass material in such side edges to adhere to other materials to such extent that the glass ribbon advances through such solidification zone without appreciable resistance caused by friction along the side edges thereof, and as the glass ribbon advances through such solidification zone, progressively cooling the body of such glass ribbon.

2. Apparatus for continuously manufacturing sheet glass comprising, in combination, a melting furnace, an elongated tank containing a bath of molten metal and including a first ribbon forming zone at the entry end thereof and a second solidification zone adjoining said ribbon forming zone, means for forming in said first ribbon forming zone a ribbon of molten glass having a width equal to the distance between the side wall surfaces of the tank that define the side edges of the surface level of the bath at the discharge end of said ribbon forming zone, said forming means comprising a conduit connecting said furnace to the entry end of said first zone and having a width at its discharge end substantially equal to said ribbon width so that the glass discharged by said conduit is in the form of a ribbon of the said width and covers the entire surface of the molten metal in said first zone, means for advancing the ribbon of molten glass from said ribbon forming zone through said second solidification zone, said solidification zone having longitudinally extending side wall portions defining the side edges of the surface level of the portion of the bath therein and disposed at the level of the glass ribbon passing through such zone, said side wall portions being spaced apart a distance similar to that between said side wall surfaces of said first zone and equal to the width of the ribbon formed in said first zone, whereby the glass ribbon will cover the entire surface of the molten bath in said solidification zone and the side edges thereof will contact said longitudinally extending side wall portions throughout their lengths, means for cooling said side wall portions in said second zone to cool the contacting edges of the glass ribbon and reduce the tendency of the glass material in such side edges to adhere to such side wall portions to such extent that the glass ribbon advances through said solidification zone without appreciable resistance caused by friction along the side edges thereof, and means in said solidification zone for progressively cooling the body of the glass ribbon as it advances through such zone.

3,316,078

METHOD AND TANK FURNACE FOR GLASS MAKING
Edgard Brichard, Jumet, Michel Lambert, Charleroi, and André Malicoff, Liessewege, Belgium, assignors to Glaverbel, Brussels, Belgium
Filed Sept. 18, 1963, Ser. No. 309,684
Claims priority, application Luxembourg, Sept. 20, 1962, 42,388
10 Claims. (Cl. 65-134)



1. In a glass melting tank having side walls and a bottom, and being provided from one end to the other, with a charging zone, a melting zone, a refining zone and a cooled working zone in which the glass cools before reaching a removal region therein, an improvement comprising floater means near the entrance of the working zone for arresting residues on the molten glass, at least one side wall having a sight hole for skimming off the floating residues arrested by said floater means, and a

transverse wall rising from the bottom of the tank and leaving at least one passage allowing the upper layers of refined glass to flow from the refining zone into the working zone, said transverse wall being spaced from at least one side wall near the bottom of the tank in order to allow the return towards the melting zone, along the bottom, of cooled glass which has not been removed at the removal region.

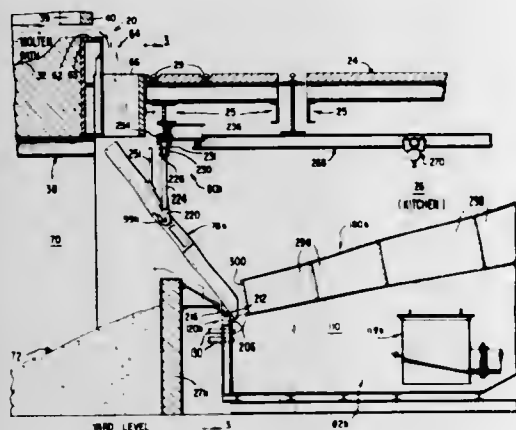
8. A method for deflecting towards at least one of the side walls of a glass melting tank, silica-rich melt residues which cover a central zone of a glass bath in the tank which flows from a charging zone to a refining zone and to a cooled working zone, said method comprising returning cooler glass from the working zone, in countercurrent flow with the bath, towards the charging zone, diverting the flow of said cooler glass to pass in a submerged zone adjacent at least one of said wall of the tank, to effect local cooling of the upper surface of the bath and cause the central portion of the bath to follow a deflected path towards the one said side wall of the tank whereby impurities on the upper surface of the bath in said central portion may be removed from the tank.

3,316,079

STEEL SLAG HANDLING SYSTEM

John J. Grady, Michigan City, Ind., assignor to International Steel Slag Corporation, Washington, D.C., a corporation of the District of Columbia

Continuation of application Ser. No. 304,932, Aug. 27, 1963. This application May 18, 1966, Ser. No. 551,168
19 Claims. (Cl. 65—141)



1. An apparatus for handling slag from an open hearth furnace having at least one charging door and located in a furnace building including a charging floor and kitchen below the charging floor on one side of the furnace, said apparatus comprising: granulator means in said kitchen including means for subjecting molten slag transferred from the furnace to a cooling medium in sufficient quantity to granulate the molten slag into relatively small pieces of ferrous and non-ferrous materials; an opening in said charging floor below said charging door through which front flushed slag may pass; a movable slag runner having a first portion movably mounted for feeding slag to said granulator means and a second portion disposable below said opening in the charging floor for receiving slag front flushed from said furnace through said opening; means for laterally moving said second portion of the slag runner to dispose said second runner portion below said charging floor opening so that slag front flushed from the furnace therethrough is transferred to said granulator means, said means also serving to displace said slag runner a sufficient distance from below said charging floor opening so that slag which is flushed therethrough is not conveyed to said granulator means.

3,316,080

METHOD FOR INHIBITING GROWTH OF WEEDS AND GRASSES

Takayuki Inoue, Kichiro Kato, Teruhiko Toyama, and Mitsunori Takagi, Ohmuta-shi, Fukuoka-ken, Japan, assignors to Mitsui Kagaku Kogyo Kabushiki Kaisha, Chuo-ku, Tokyo, Japan, a corporation of Japan
No Drawing. Filed May 19, 1964, Ser. No. 368,733
Claims priority, application Japan, May 23, 1963, 38/25,610

1 Claim. (Cl. 71—23)

A method for inhibiting growth of weeds and grasses which comprises applying to the locus to be protected from weeds and grasses in an amount sufficient to exert herbicidal action thereon and at a rate from about 5 to about 100 grams of 2,4,6-trichlorophenyl-4'-nitrophenyl-ether, said application being made during the period up until the early stages of the germination of the weeds and grasses.

3,316,081

SELF-FLUXING FEED STOCK FOR IRON AND STEEL PRODUCING FURNACES AND METHOD FOR PRODUCING SAME

Billy B. Bratton, 1461 Maple Drive, Apt. 10, Pittsburgh, Pa. 15227

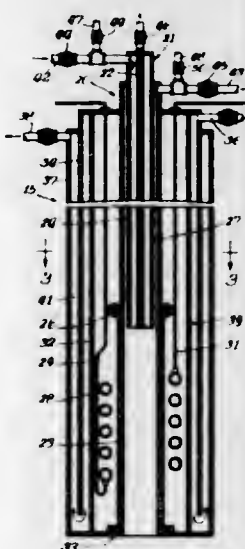
No Drawing. Filed Sept. 10, 1963, Ser. No. 307,811
7 Claims. (Cl. 75—3)

1. A method of making self-fluxing feed stock for iron and steel producing furnaces comprising mixing a quantity of finely divided iron-bearing material of at least 50% iron content together with flux-containing material in an amount sufficient to make the final mixed material self-fluxing, at least a portion of said flux-containing material being molten slag in a quantity sufficient at least to fill the void spaces between the solid materials and form a matrix therefor, forming briquettes of the mix, and thereafter allowing the briquettes to cool and harden, said mixing with the molten slag being accomplished under a partial vacuum.

3,316,082

OXYGEN STEELMAKING

Albert M. Barloga, Calumet City, and Arthur T. Morgan, South Holland, Ill., assignors to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Filed Dec. 8, 1964, Ser. No. 416,850
8 Claims. (Cl. 75—12)



2. A method of operating a top blown basic oxygen converter which comprises the steps of: charging said converter with raw materials, including molten metal and solid scrap; inserting into the converter a combined induction plasma torch and oxygen lance device, said device comprising elongated tubular means, a high fre-

quency induction coil disposed around the lower end portion of said tubular means, and valve-controlled means at the upper end portion of said tubular means for supplying a plasma-forming gas to said tubular means when the device is used as a plasma torch and for supplying oxygen thereto when the device is used as an oxygen lance; supplying electric power to said coil, supplying a plasma-forming gas to said tubular means, and initiating operation of said device as a plasma torch; continuing said operation for a time sufficient to melt said scrap; and thereafter discontinuing the power supply to said coil and introducing oxygen through said tubular means so as to operate said device as an oxygen lance for refining the molten metal.

3,316,083

BRIQUETTING OF FOUNDRY MATERIALS

Jack P. Parsons, Bethany, Ill., assignor to Mueller Co., Decatur, Ill., a corporation of Illinois

No Drawing. Filed June 10, 1964, Ser. No. 374,184
9 Claims. (Cl. 75—44)

1. A method for making briquettes consisting essentially in mixing metal borings and turnings with a briquetting composition consisting essentially of aqueous sodium silicate, water-soluble starch, and water, compressing the resulting mixture into a briquette and drying the same by exposure to ambient air conditions.

7. A dried briquette suitable for addition to melting furnaces consisting essentially of 100 parts finely divided metal borings and turnings about 1 to 3.3 parts sodium silicate and about 3 to 10 parts water-soluble starch.

3,316,084

FORGING STEEL FOR ELEVATED TEMPERATURE SERVICE

Samuel J. Manganello, Penn Hills Township, Allegheny County, Pa., assignor to United States Steel Corporation, a corporation of Delaware

No Drawing. Filed May 18, 1964, Ser. No. 368,404
1 Claim. (Cl. 75—128)

A heavy forging steel for elevated temperature service characterized by a minimum room temperature yield strength of 85,000 p.s.i., a maximum Charpy V-notch 50 percent shear fracture transition temperature of 250° F. and good stress-rupture properties in the range of 950 to 1200° F., said steel consisting essentially of

Carbon	0.25/0.35
Nickel	0.70/1.25
Chromium	0.85/1.45
Vanadium	0.20/0.65
Manganese	0.30/0.75
Molybdenum	1.6/2.25
Nitrogen	max. 0.015
Silicon	max. .40
Aluminum	max. .05

with the balance iron and residual impurities.

3,316,085

MARTENSITIC STAINLESS STEEL

Willard E. Grundman and Mary E. Potter, Thornton Township, Cook County, Ill., assignors to United States Steel Corporation, a corporation of Delaware
No Drawing. Filed May 21, 1964, Ser. No. 369,286
2 Claims. (Cl. 75—128)

1. Martensitic stainless steel characterized by a room temperature tensile strength in excess of 160,000 p.s.i. and a Charpy V-notch impact strength in excess of 15

foot-pounds at minus 40° F. after austenitizing and tempering, said steel consisting essentially of

	Wt. percent
Carbon	.10—.25
Manganese	.10—.60
Silicon	.20—.80
Chromium	11.00—14.00
Nickel	1.5—2.5
Molybdenum	1.0—2.0
Vanadium	.25—.55

wherein with the carbon content in excess of .15% the vanadium content is in excess of .35% with the balance iron and residual impurities.

3,316,086

MANGANESE-BASE BRAZING ALLOYS

Arthur T. Cape, Monterey, Calif., assignor to Coast Metals, Inc., Little Ferry, N.J., a corporation of Delaware

No Drawing. Filed June 16, 1964, Ser. No. 375,659
3 Claims. (Cl. 75—134)

1. A brazing alloy consisting of about 50 to about 60% manganese, about 18 to about 24% nickel, and about 18 to about 24% cobalt, the cobalt being present in an amount not less than and preferably greater than the amount of nickel.

3,316,087

PHOTOCONDUCTOR COATINGS FOR ELECTROPHOTOGRAPHY

Johannes Munder and Oskar Sus, Wiesbaden-Blebrich, Germany, assignors, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.
No Drawing. Filed Oct. 21, 1960, Ser. No. 63,981
Claims priority, application Germany, Oct. 31, 1959, K 39,057

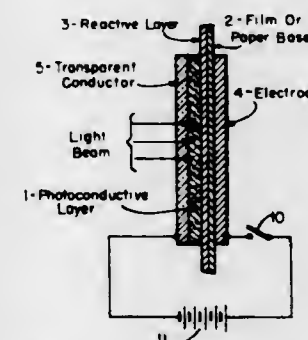
14 Claims. (Cl. 96—1)

1. A photographic reproduction process which comprises exposing an electrostatically charged, supported photoconductive insulating layer to light under a master and developing the resulting image with an electroscopic material, the photoconductive layer comprising as a photoconductor a compound selected from the group consisting of linear polymers of aromatic esters of acrylic and α -alkyl acrylic acid.

3,316,088

PROCESS OF ELECTROPHOTOGRAPHY BASED ON ELECTROPHOTOLYTIC REACTIONS AND ELEMENT THEREFOR

Roland M. Schaffert, Saratoga, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Feb. 11, 1963, Ser. No. 257,671
11 Claims. (Cl. 96—1.5)



2. An electrophotographic element generally unaffected by ordinary room light adapted to form an image by selective decomposition under the influence of simultaneous application of an electric field and imagewise illumination in the ultraviolet electromagnetic radiation range up to about 5900 Angstroms in said range comprising a

photoconductive layer capable of forming a latent conduction image corresponding to an optical image, and adjacent thereto and in contact therewith, a photoelectro-reactive layer containing a material selected from the group consisting of heavy metal azide, heavy metal acetylide, heavy metal fulminate and heavy metal perchlorate which is decomposable by dielectric breakdown under the combined action of the radiant energy which is absorbed in said material and of said electrical field applied through said conduction image to said photoelectro-reactive layer, and said simultaneous application of electric field and illumination producing decomposition products which are made visible in said photoelectro-reactive layer due to said dielectric breakdown at said imagewise exposure of the element to said electromagnetic radiation.

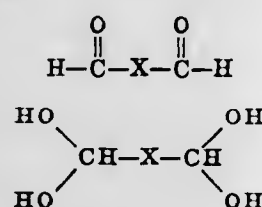
3,316,089

PHOTOGRAPHIC PRODUCTS AND PROCESSES UTILIZING CROSS-LINKING AGENTS CONTAINING INTRALINEAR QUATERNARY NITROGEN ATOMS

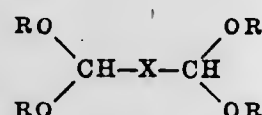
Howard C. Haas, Arlington, and Lloyd D. Taylor, Everett, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed July 3, 1963, Ser. No. 292,733
5 Claims. (Cl. 96-29)

4. In a diffusion transfer process which comprises the steps of developing an exposed photosensitive element comprising a plurality of layers including a silver halide emulsion layer, with a diffusion transfer processing composition, forming thereby an imagewise distribution of image-forming components in said photosensitive element, as a function of the point-to-point degree of exposure thereof, and transferring, at least part of said imagewise distribution, by diffusion, to a contiguous image-receiving layer to provide thereto a transfer image, the improvement which comprises at least one of said plurality of layers including a polymer which comprises the reaction product of (a) a polymer containing groups selected from the group consisting of free hydroxyl, mercapto and amino groups with (b) a compound selected from the group consisting of



and



wherein X is a divalent organic radical containing carbon and hydrogen and at least one intralinear quaternary nitrogen atom and each R is a lower alkyl radical.

3,316,090

PHOTOGRAPHIC PRODUCT AND PROCESS

Howard G. Rogers, Weston, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed July 8, 1963, Ser. No. 293,449
8 Claims. (Cl. 96-29)



5. A process of preparing a photographic image in color which is both a reflection print and a transparency which comprises the steps of developing an exposed

photosensitive element containing a developable image; forming an imagewise distribution of color image-forming constituents as a product of said development; transferring said imagewise distribution, by imbibition, to a print-receptive element comprising a first and a second color image-receiving means having a layer of a permeable translucent material positioned therebetween to format said first color image-receiving means a first color image in terms of a first portion of said imagewise distribution of color image-forming constituents; and diffusing depthwise a second portion of said imagewise distribution through said first color image-receiving means and said permeable translucent material to said second color image-receiving means to form thereat a second color image, said first and second color images being substantially identical in terms of color and subject matter.

3,316,091

LIGHT SENSITIVE PHOTOGRAPHIC MATERIAL

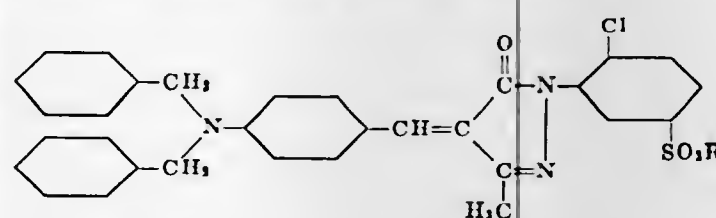
Carlo Rossi and Helmut Boehl, Bottmingen, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Original application Jan. 14, 1960, Ser. No. 2,360. Divided and this application Sept. 16, 1963, Ser. No. 309,321

Claims priority, application Switzerland, Jan. 26, 1959, 68,743

3 Claims. (Cl. 96-84)

1. Light sensitive photographic material which contains a layer selected from the group consisting of a filter layer and an anti-halation layer, the filter and anti-halation dyestuffs of which correspond to the formula



in which R stands for a member selected from the group consisting of a hydrogen atom and an alkali metal atom.

3,316,092

DIAZOTYPE MATERIAL COMPRISING A METAL SULFATE NITROGENOUS COMPOUND AND POLYMERIC ANHYDRIDE

Robert J. Klimkowski, Luigi Amariti, and Gerson E. Beauchamp, Chicago, Ill., assignors to Eugene Dietzgen Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed May 9, 1963, Ser. No. 279,331

4 Claims. (Cl. 96-91)

1. Reproduction material which comprises: a supported layer of a visibly heat-sensitive composition, said composition comprising a mixture of a coupling diazo compound; an azo coupling component; a nitrogenous compound producing an alkaline reaction when heated, said nitrogenous compound being present in an amount sufficient to effect coupling of said diazo compound and said coupling component when heated; and a suspension of a metal sulfate selected from the group consisting of cadmium sulfate, zinc sulfate, nickel sulfate, cobalt sulfate, aluminum sulfate, magnesium sulfate, and ceric ammonium sulfate and a linear polymeric anhydride, said anhydride being the interpolymer of methyl vinyl ether and maleic anhydride, the ratio of nitrogenous compound to anhydride by weight being from about 1:1 to 20:1.

3,316,093

COLORED PHOTOIMAGES FROM FERRIC SALTS OF PHENOLIC α -HYDROXY ACIDS

Edward Cerwonka, Binghamton, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 2, 1964, Ser. No. 335,399

18 Claims. (Cl. 96-92)

1. A method of forming colored photographic images which comprises coating a support sheet with a light-sensitive coating composition which comprises an aqueous solution of a ferric salt, a phenolic α -hydroxy acid, and a hydrophilic colloidal binder, exposing the coated support to actinic radiation, developing an image in exposed areas by application of aqueous hydrogen peroxide, and washing out the undeveloped areas to leave a color image in exposed areas.

3,316,094

METHOD OF INCORPORATING COLOR COUPLERS IN HYDROPHILIC COLLOIDS

Aaron Ben-Ezra, Binghamton, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 11, 1963, Ser. No. 264,040

4 Claims. (Cl. 96-100)

1. The method of incorporating in a light-sensitive gelatin halide emulsion, a color former fast to diffusion and capable of forming upon color development with a primary aromatic amino developing agent, a dye image selected from the class consisting of azomethine, indo-aniline and phenazonium dye images, said color former containing a benzimidazole nucleus connected through its carbon atoms in the 2-position to the residue of the color-forming molecule which is reactive with the oxidation product of a primary developing agent and which contains a reactive group selected from the class consisting of a reactive methylene and phenolic hydroxy group, said benzimidazole nucleus being substituted on one of the nitrogen atoms by an aliphatic hydrocarbon radical containing at least 10 carbon atoms and substituted in the benzene portion by a water solubilizing group which comprises dissolving said color former in butyrolactone, diluting the resultant solution with an aqueous solution containing a surface active agent and then adding the resultant dispersion to the liquid gelatin silver halide emulsion prior to coating it upon a suitable support.

3,316,095

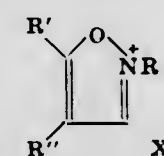
HARDENERS FOR INCORPORATED COUPLER EMULSIONS

John H. Van Campen and James L. Graham, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 13, 1965, Ser. No. 495,723

9 Claims. (Cl. 96-100)

1. A photographic element which comprises a support having thereon a plurality of layers in which at least one of said layers contains gelatin-silver halide photographic emulsion, at least one of said layers contains pyrazolone coupler and at least one of said layers contains a hardener having the formula



in which R is an aliphatic hydrocarbon group of 1-4 carbon atoms either with or without a sulfonate anion thereon, R' and R'' are each one of the following: hydrogen, unsubstituted alkyl, unsubstituted aryl, alkyl or aryl substituted with halogen, hydroxyl or sulfonate anion, a

simple heterocyclic ring such as furyl or R' and R'' together form an alicyclic ring and X is an anion which contributes to the water solubility of the compound such as perchlorate, paratoluene-sulfonate or the like, unless sulfonate anion is already present, attached to R, R' or R''.

3,316,096

SENSITIZED, STABILIZED EVAPORATED SILVER HALIDE FILMS

Arthur A. Rasch and Wilbur C. Hodges, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 26, 1965, Ser. No. 428,204

6 Claims. (Cl. 96-108)

1. A photographic element comprising a support having coated thereon separate contiguous layers of vacuum deposited light-sensitive silver halide and vacuum deposited alkali metal halide salt.

3,316,097

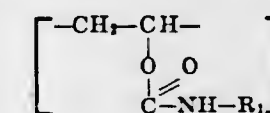
PHOTOGRAPHIC ELEMENT

Louis M. Minsk and Edward P. Abel, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

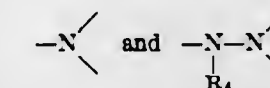
No Drawing. Filed Dec. 21, 1964, Ser. No. 420,203

8 Claims. (Cl. 96-114)

1. A gelatin silver halide photographic emulsion having good covering power of developed silver containing about 5 to 50%, based on the weight of the gelatin, of a polymer containing repeating units having the following formula:



wherein R₁ is a carbon chain of from 1 to 5 carbon atoms, substituted with from 1 to 3 substituents having the formula -COXR₂R₃, X being selected from the group consisting of



R₄ being selected from the group consisting of hydrogen and alkyl groups of 1 to 5 carbon atoms; and R₂ and R₃ each are selected from the group consisting of hydrogen; alkyl groups of 1 to 5 carbon atoms; alkoxy substituted alkyl groups having 1 to 5 carbon atoms; and hydroxy substituted alkyl groups of from 1 to 5 carbon atoms.

3,316,098

CHEESE MADE BY THE HIGH TEMPERATURE TREATMENT OF MILK

Peter P. Noznick and Robert H. Bundus, Chicago, Ill., assignors to Beatrice Foods Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Mar. 15, 1963, Ser. No. 265,363

26 Claims. (Cl. 99-116)

1. The process of making cheese comprising heating the milk at a temperature and for a time between about 185° F. for 1000 seconds to 305° F. for 0.7 second to obtain maximum yields while maintaining desirable body and flavor and thereafter culturing the milk to a pH of 4.3 to 5.1.

20. A cheese prepared by the process of claim 1 in which the ratio of casein protein to casein nitrogen is not greater than 0.051 and wherein the ratio of sulfur to protein nitrogen is at least 0.05.

3,316,099
PREPARATION OF SYNTHETIC MEAT FLAVOR AND THE REACTION PRODUCT
 Theodore M. Hoersch, Park Forest, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois
 No Drawing. Filed Apr. 28, 1965, Ser. No. 451,608
 8 Claims. (Cl. 99—140)

1. A process for preparing a synthetic meat flavor which comprises: mixing an edible nitrite with a mixture of amino acids, and reacting the mixture under a semi-impermeable layer of an oil.

3,316,100
STERILIZATION OF SPICES BY IN SITU SALT FORMATION
 Murray M. Scharf, Chicago, Ill., assignor to Milani Foods, Inc., Los Angeles, Calif., a corporation of Illinois
 No Drawing. Filed May 12, 1965, Ser. No. 455,327
 13 Claims. (Cl. 99—140)

1. The method of treating natural spices comprising the steps of:

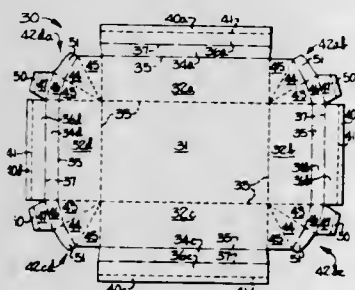
mixing ground spices with an edible acid to provide a substantially uniform acid-impregnated mass of spice particles;

adding an edible alkali to the said mass to neutralize said acid in situ within said mass, thereby reducing the micro-organism population normally present in said spices and softening the cellular structure of said spice particles.

3,316,101
STABILIZING CAROTENOID COMPOSITIONS
 Benjamin Borenstein, Teaneck, and Raymond Howard Bunnell, Branchville, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
 No Drawing. Filed Aug. 3, 1965, Ser. No. 476,992
 13 Claims. (Cl. 99—148)

1. A particulate product comprising a gelatin having dispersed therein particles of a composition comprising a carotenoid having at least one carbonyl group and being of less than two microns in size and an alkali metal bisulfite in a molar amount of at least 25% of the molar quantity of carotenoid in said composition.

3,316,102
FOOD TRAY BLANK, CONTAINER, AND PACKAGE
 Martin Doll and Gregory W. Doll, both of Patterson, N.C.
 Filed June 28, 1965, Ser. No. 467,309
 18 Claims. (Cl. 99—171)



1. A suitably cut and scored blank adapted to be folded and erected into a food product container comprising:

- a polygonal central panel adapted to form the bottom of the container when the blank is erected;
- an elongate side panel coextensive with and hingedly connected along its inner side edge to each side edge of said central panel and adapted to form a side wall of the container upon erection;
- an elongate first side flap coextensive with and hingedly connected along its inner side edge to the outer side edge of each side panel and adapted to

define a portion of a container rim upon erection;

- an elongate second side flap coextensive with and hingedly connected along its inner side edge to the outer side edge of each first side flap and adapted to reinforce a portion of said container rim upon erection;

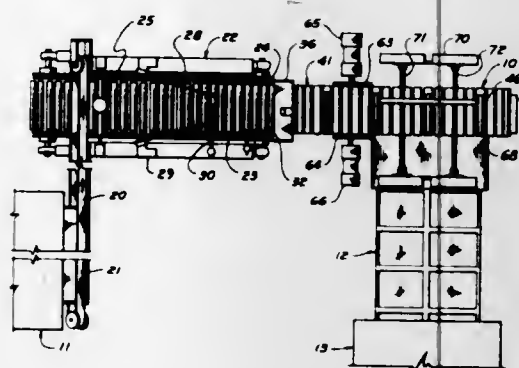
- a group of serially arranged, hingedly interconnected gusset panels disposed between each pair of adjacent side panels and hingedly connected to at least one adjacent side panel, and one gusset panel of each group being adapted to form a corner wall upon erection;

- an elongate first corner flap coextensive with and hingedly connected along its inner side edge to the outer side edge of said one gusset panel of each group and adapted to define a portion of a container rim upon erection;

- an elongate second corner flap coextensive with and hingedly connected along its inner edge to the outer side edge of each first corner flap and adapted to reinforce a portion of said container rim upon erection; and

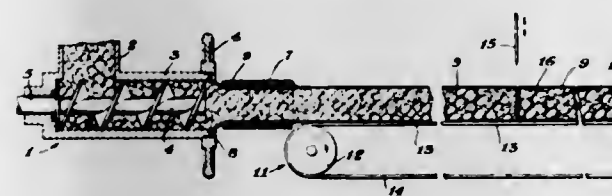
- a locking tab hingedly connected to the outer side edge of a gusset panel immediately adjacent said one gusset panel of each group of panels and adapted to be sandwiched between adjacent first and second flaps upon erection.

3,316,103
METHOD OF PACKAGING SAUSAGES AND APPARATUS THEREFOR
 Thomas M. Scopelito, Chicago, Roy G. Hlavacek, Oak Park, and Howard P. Bonhelmer, Western Springs, Ill., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois
 Filed Feb. 27, 1964, Ser. No. 347,929
 19 Claims. (Cl. 99—174)



1. An improved method for collating sausages into groups of a specified number for packaging, said method comprising: moving a plurality of successive substantially parallel sausages in a given direction and path lateral to their longitudinal axes; sensing the passage of each sausage passing a point in said path to count a desired number of sausages; spinning each sausage in said given direction just in advance of said point to assist the sausage in passing said point; halting the motion of a first sausage at a location beyond said point and thereby arresting the motion of a number of subsequent sausages after passing said point to assemble a first quantity of said desired number of sausages; confining said number of sausages to a single layer; thereafter advancing said layer of sausages beyond said location in said direction upon sensing said desired number of sausages at said point and halting the next succeeding sausage to assemble a subsequent layer; aligning the end of said sausages in said first layer; and then transferring said first layer of sausages in a longitudinal direction from said path as a unit.

3,316,104
METHOD OF PROCESSING BONELESS MEAT PIECES FOR SUBSEQUENT GRINDING
 Robert C. Lulewicz, Saginaw, Mich., assignor to Cubb-Pac Corporation, Pittsburgh, Pa., a corporation of Delaware
 Filed Apr. 3, 1964, Ser. No. 357,128
 5 Claims. (Cl. 99—194)



1. A method of processing boneless meat pieces for subsequent grinding comprising forming said pieces into an annular tube; driving said tube in one direction; compacting said tube radially inwardly to form a substantially solid bar of substantially uniform diameter and adapted to be accommodated in a meat grinder; extruding said bar into an elongated casing; supporting and moving the encased bar in the direction and at substantially the speed of its extrusion; and slicing said encased bar into substantially uniform lengths of between one and two feet.

3,316,105
PATTERN WAX COMPOSITIONS
 Roy C. Feagin, Mountain Lakes, N.J., assignor to Howe Sound Company, a corporation of Delaware
 No Drawing. Filed Aug. 23, 1963, Ser. No. 304,253
 10 Claims. (Cl. 106—38.8)

1. A low-shrinkage wax-base pattern composition for making eliminable casting patterns consisting essentially of a wax admixed with from about 5% to 50% by weight of a filler compound which is substantially insoluble in and has a melting point higher than the wax and has a structure conforming to the formula:



where R_1 and R_2 are substituents selected from the group consisting of unsubstituted aliphatic radicals having from 8 to 24 carbon atoms and corresponding hydroxy, amino, carboxy and cyclic aliphatic substituted radicals, and R_3 is selected from the group consisting of unsubstituted aliphatic radicals having from 2 to 10 carbon atoms and corresponding hydroxy, amino, carboxy and cyclic aliphatic substituted radicals, said composition having suitable flow characteristics and being a homogeneous mixture.

3,316,106
REFRACTORY COMPOSITIONS AND METHOD FOR PREPARING SAME
 John H. Montague, Oreland, and Jesse A. Miller, Willow Grove, Pa., assignors, by mesne assignments, to International Minerals & Chemical Corporation, Skokie, Ill., a corporation of New York
 No Drawing. Filed July 21, 1965, Ser. No. 473,866
 5 Claims. (Cl. 106—58)

1. A refractory bond forming material consisting essentially of the reaction product of olivine fines, sulfuric acid and water, said materials being in the ratio of 100 ml. 1:1 sulfuric acid per 100 grams olivine and from 65 to 100 ml. water per 100 grams olivine.

3,316,107
FIRE CHROME-MAGNESITE REFRACTORIES
 Peter H. Havranek, Pittsburgh, Pa., assignor to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
 No Drawing. Filed July 8, 1965, Ser. No. 470,585
 The portion of the term of the patent subsequent to July 13, 1983, has been disclaimed
 5 Claims. (Cl. 106—59)

1. A burned chrome-magnesite refractory made from a refractory sized graded brickmaking batch, said batch consisting of chrome ore and magnesite in a weight ratio between 50:50 and 70:30 and a compound of titanium yielding from 0.5 to 3% TiO_2 , there being no more than about 3.0%, by weight, SiO_2 in the total batch, substantially all said magnesite being -28 mesh, the chrome ore being substantially all -3½+65 mesh, at least about 20% of the batch, by weight, being minus 28 mesh chrome ore, said refractory being fired at a temperature of at least 2800° F.

3,316,108
ALUMINA TITANATE BONDED MAGNESIA
 Richard N. Blomberg, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
 No Drawing. Filed May 21, 1963, Ser. No. 282,175
 5 Claims. (Cl. 106—62)

4. A molded, fired refractory consisting essentially of, on a weight basis, between about 8.6 and 91.7% magnesia, between about 4.4 and 48.4% Mg_2TiO_4 and between about 3.9 and 43% MgAl_2O_4 , the alumina and titania in said refractory being present in about equimolar amounts.

3,316,109
COATING COMPOSITION
 Henry W. Rimbach, Cedar Grove, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
 Filed Mar. 11, 1963, Ser. No. 264,248
 2 Claims. (Cl. 106—65)

1. A composition for adhering phosphor powder to a surface, said composition consisting essentially of:

- a liquid vehicle consisting essentially of from 80% to 70% by weight of methanol or ethanol and from 20% to 30% by weight of ethylene glycol monobutyl ether acetate or diethyl glycol monoethyl ether acetate; and

- inorganic binder material at least a substantial proportion of which is suspended in finely divided form throughout said liquid vehicle, said binder material consisting essentially of alumina or alumina plus boric oxide, said alumina present in amount of from 1.5 grams to 15 grams per 100 cc. of total liquid in said composition, and said boric oxide present in amount up to 8.5 grams per 100 cc. of total liquid in said composition.

3,316,110
REFRACTORY COMPOSITIONS AND PROCESSES
 Harold J. Herbst, Wheat Ridge, Colo., and John E. Lyon, Florissant, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
 No Drawing. Filed Oct. 7, 1964, Ser. No. 402,345
 15 Claims. (Cl. 106—65)

2. A composition suitable for the manufacture of refractories consisting of a mixture of (1) from about 1% to about 10% by weight, based on the weight of the composition, of water, (2) from about 1% to about 8% by weight, based on the weight of the composition, of an acid of a phosphorus oxide, (3) from about 1% to about 8% by weight, based on the weight of the composition, of a polycarboxylic acid, and (4) the remainder of said composition consisting of an inorganic material selected

from the group consisting of (a) aluminum oxide and (b) a mixture of aluminum oxide and a refractory clay, said refractory clay consisting of from about 3% to about 15% by weight, of the weight of the composition.

3,316,111

BRICK FOR IMPROVED SERVICE LIFE IN CERTAIN FERRUGINOUS ENVIRONMENTS

Roger Snellman, Birmingham, Mich., and Jack L. Cunningham, Pittsburgh, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 17, 1965, Ser. No. 457,253

4 Claims. (Cl. 106-65)

2. A non-shrinking high alumina refractory brick which is resistant to wetting and penetration by the slags of ferruginous metallurgical processes, said high alumina refractory brick analyzing, on the basis of an oxide analysis, from at least 55 to 75%, by weight, of Al_2O_3 , there being up to 10% of oxides other than SiO_2 , the remainder of the brick being SiO_2 , said brick being impregnated throughout with medium pitch.

3,316,112

STABILIZED PROTEINACEOUS ADHESIVES

Ralph R. Langner, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 19, 1963, Ser. No. 331,954

7 Claims. (Cl. 106-124)

1. A proteinaceous adhesive composition consisting essentially of a protein of the group consisting of casein, blood proteins, and soybean proteins and as stabilizing additives therefor about 0.001% to about 1% by weight on a dry basis of a quaternary ammonium salt of hexamethylenetetramine with an organic halide and about 0.1% to about 15% by weight of urea.

3,316,113

METHOD OF MOLDING CASEIN COMPOSITIONS

Egon Frankl, 77 East Blvd., Rochester, N.Y. 14610

No Drawing. Filed Jan. 14, 1965, Ser. No. 425,603

3 Claims. (Cl. 106-146)

1. A method of forming hardened casein articles which comprises extruding a mixture comprising about 60 parts of casein, 2.4-4.0 parts of an alkali metal bisulfate and 10-24 parts of trioxane dissolved in 10-50 parts of a solvent for the trioxane, said solvent being a casein-compatible organic liquid boiling above 135° C. and selected from the group consisting of aliphatic alcohols, aliphatic diols and dialkyl formamides and curing the extrudate for at least eight hours at about 90-100° C.

3,316,114

PROCESS FOR COLORING ORGANIC PRODUCTS WITH PIGMENT DYESTUFFS

Armin Caliezi, deceased, late of Basel, Switzerland, by Elsa Caliezi, administratrix, Basel, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a firm of Switzerland

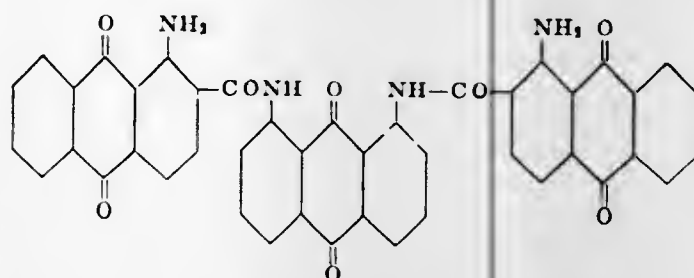
No Drawing. Continuation of application Ser. No. 131,012, Aug. 11, 1961. This application Apr. 13, 1966, Ser. No. 543,490

Claims priority, application Switzerland, Dec. 16, 1957, 53,799/57

9 Claims. (Cl. 106-163)

1. High molecular organic materials selected from the group consisting of cellulose, cellulose-esters, casein, vinyl-polymers, aminoplasts, and alkyd resins having in-

corporated therein, as pigment, in finely divided form a dyestuff of the formula



3,316,115

MARKING COMPOSITION

Marion D. Barnes, Washington, D.C., and John M. Dale, San Antonio, Tex., assignors, by mesne assignments, to Research Corporation, New York, N.Y., a non-profit corporation of New York

No Drawing. Filed Jan. 2, 1963, Ser. No. 248,885

14 Claims. (Cl. 106-287)

1. A composition for use in marking roads and the like, said composition consisting essentially of a major amount of sulphur and a plasticizing amount of at least one polysulphide polymer plasticizer therefor selected from the group consisting of arylene polysulphides and aliphatic polysulphides containing aliphatic ether chains joining the sulphur atoms therein.

3,316,116

PROCESS FOR THE PRODUCTION OF FINELY DISPERSED CALCIUM SILICATE FILLERS

Ernst Podschus, Leverkusen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

Filed Apr. 14, 1964, Ser. No. 359,780

Claims priority, application Germany, Oct. 15, 1960, F 32,353; Dec. 18, 1961, F 35,583; June 6, 1962, F 37,002

15 Claims. (Cl. 106-306)

1. A dry loose finely dispersed calcium silicate filler, having the disturbed lattice of tobermorite containing interstratified mixed hydrates, said tobermorite-like phase showing at least the following 4 X-ray diffraction lines: 3.06; 2.79; 1.83; 1.66 Å., and no more than the following 7 X-ray diffraction lines: 3.06; 2.79; 1.83; 1.66; 1.40 Å., said calcium silicate fillers having a molar ratio of $CaO:SiO_2$ of between 1:1.5 and 1:2, a specific surface area of about 300 to 400 sq. m./g. according to BET, a sedimentation volume of about 60 to 110 ml. and an oil absorption value higher than 2.0 ml./g.

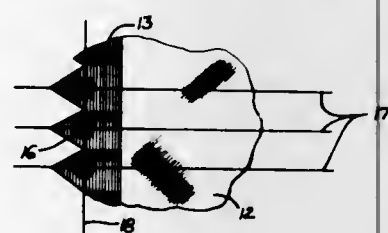
3,316,117

RAVEL RESISTANT TEXTILE PRODUCTS

Alfred T. Clifford, Ware Shoals, Wesley K. Fooshe, Jr., Greenwood, and Graves T. Gore, Ware Shoals, S.C., assignors to Riegel Textile Corporation, a corporation of Delaware

Filed July 15, 1963, Ser. No. 295,080

1 Claim. (Cl. 117-4)



A textile fabric product comprising a main portion, pinked unhemmed edges having outer and inner points

therein, and spaced non-contacting dot deposits of small amounts of ravel-preventing composition impregnated in the fabric adjacent said pinked edges and located at the juncture of an axis parallel to said pinked edges and tangent with said inner points in said pinked edges and axes perpendicular to said pinked edges and passing through said outer points in said pinked edges for providing maximum ravel resistance in said pinked edges and for retaining pinked edges which are soft and pliable and have similar characteristics to said main portion of said fabric product.

3,316,118

MIXED RESIN ADHESIVE COMPOSITION FOR SECURING HYDROPHOBIC CALCIUM TUNGSTATE SALT LAYER TO HYDROPHILIC BASE

Peter A. Landskroener, Binghamton, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 29, 1963, Ser. No. 327,061

6 Claims. (Cl. 117-33.5)

1. A fluorescent screen material comprising a base sheet, a layer of calcium tungstate salt in a water-insoluble resinous binder, and an adhesive layer holding permanently said salt layer to said base sheet and sealing said sheet against moisture vapors, said last mentioned layer consisting essentially of a mixture of (a) a polycarbonate resin and (b) a copolyester of an alkylene glycol having from 2 to 6 carbon atoms with a plurality of dibasic acids, at least one of which is a phthalic acid and at least two of which are acyclic acids having from 4 to 10 carbon atoms in a linear carbon chain linking the two carboxy groups.

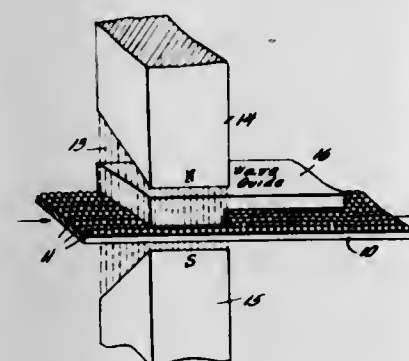
3,316,119

RECORDING MEMBER FOR VISIBLY RECORDING RADIO FREQUENCY MICROWAVES

Harold C. Anderson, Silver Spring, and Kenneth E. Peltzer, College Park, Md., assignors to Litton Systems, Inc., College Park, Md.

Original application Dec. 5, 1960, Ser. No. 73,695, now Patent No. 3,243,784. Divided and this application Nov. 1, 1961, Ser. No. 149,320

29 Claims. (Cl. 117-36.8)



1. A recording member for radio frequency microwaves comprising an elongated record member, a plurality of small capsules dispersed along said member in at least two dimensions, each capsule containing a spin resonant material that is frequency sensitive and absorptive of energy from the radio frequency to microwaves to produce heat and optical indicator means associated with the capsules on the recording member to optically indicate the selective regions on the tape where the heat is produced.

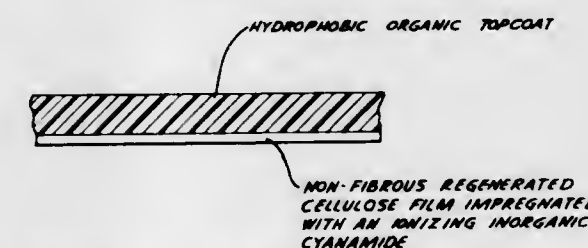
3,316,120

PROCESS FOR PREPARING TOPCOATED PLASTICIZED NON-FIBROUS REGENERATED CELLULOSE FILM AND THE RESULTANT PRODUCT

Emil A. Vitalis and Clemmon Porter, both of Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed June 3, 1966, Ser. No. 562,039

4 Claims. (Cl. 117-76)



1. A process for the manufacture of topcoated non-fibrous regenerated cellulose film, which consists essentially in impregnating said film with an aqueous solution containing between 5% and 33% by weight of an ionizing inorganic cyanamide, heating said film at a temperature between about 150° F. and 250° F. for a time sufficient to dry said film and insufficient to convert said cyanamide to water-insoluble state, and topcoating said film with hydrophobic organic topcoat material.

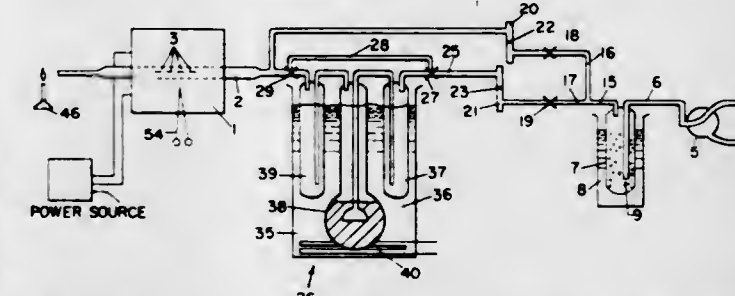
3,316,121

EPITAXIAL DEPOSITION PROCESS

Beia Lombos and Thomas R. Somogyi, Ottawa, Ontario, Canada, assignors to Northern Electric Company Limited, Montreal, Quebec, Canada

Filed Oct. 2, 1963, Ser. No. 313,294

3 Claims. (Cl. 117-106)



1. The method of depositing a solid from a gas phase epitaxially onto a solid phase wherein a gas thermally convertible to solid is passed over and along a crystalline surface of a solid upon which epitaxial deposition is to be made, the rate of deposition of solid from said gas being temperature dependent, said surface extending in the direction of flow of said gas, said deposition reducing the concentration of active elements in said gas whereby altering the rate of deposition of solid as the gas progresses along the surface, which comprises the step of, varying the temperature of said surface, in the direction of gas flow, for altering the equilibrium constant for the gas/solid reaction in a direction to increase the rate of deposition, for a given concentration of active elements in the gas, as the concentration of said elements in said gas is reduced.

3,316,122

PROCESS OF BONDING NONWOVEN FABRIC WITH CHLORINATED ATACTIC POLYPROPYLENE AND THE BONDED FABRIC

Walter B. Armour, Plainfield, N.J., Gerald H. Brown, Syracuse, N.Y., and Emil D. Mazzarella, Plainfield, N.J., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 20, 1964, Ser. No. 346,092

8 Claims. (Cl. 117-136)

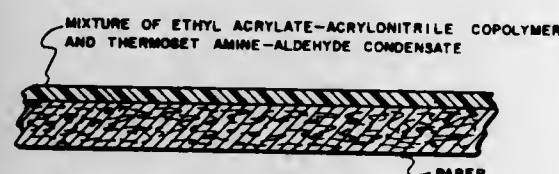
1. The process of making a bonded nonwoven fabric characterized by its resistance to fire, softness and strength,

said process comprising applying to a web of fibers a binding agent consisting essentially of chlorinated atactic polypropylene dispersed in a liquid medium.

3,316,123

PAPER CARRYING NON-BLOCKING FLEXIBLE GREASE-PROOF VINYL POLYMER COATING
Anthony Ralph Savina, Stamford, and Daniel Dickerson Ritson, Riverside, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Jan. 28, 1964, Ser. No. 341,492
5 Claims. (Cl. 117-155)



1. Paper coated on at least one side with a flexible uniform grease- and water-resistant composition consisting essentially of ethyl acrylate and acrylonitrile copolymerized in weight ratio between 4:1 and 6:5 to a molecular weight in excess of 1,000,000, and a thermoset amine-formaldehyde condensate in amount between 10% and 75% of the weight of said ethyl acrylate and acrylonitrile copolymer as anti-blocking agent.

3,316,124

PRODUCTION OF CATALYZED CARBON ELECTRODE

Marvin L. Kronenberg, Cleveland, Ohio, assignor to Union Carbide Corporation, a corporation of New York
Filed Apr. 15, 1963, Ser. No. 273,061
15 Claims. (Cl. 117-227)

1. A method for preparing catalyzed carbon powder suitable for use in the manufacture of catalyzed carbon electrodes, which method comprises preparing finely divided particles of activated carbon; catalyzing said particles of activated carbon by reacting thereon an alkaline solution of salt of at least one metal selected from the group consisting of cobalt, rhodium, iridium, palladium, platinum, silver, gold, ruthenium and osmium and a reducing agent for the metal moiety of said salt so as to deposit said metal as a catalyst on said carbon particles; and removing the reaction products from the catalyzed carbon particles.

3,316,125

ELECTROCHEMICAL CELLS

Alkis C. Makrides, Newton, Mass., assignor to Tyco Laboratories, Inc., Waltham, Mass., a corporation of Massachusetts

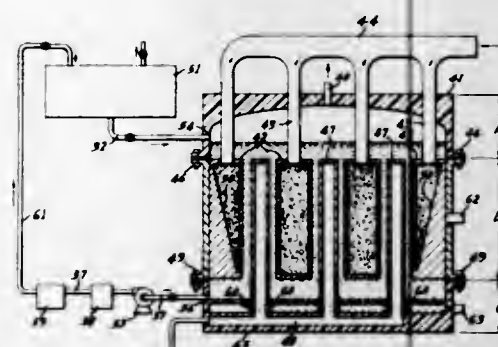
Filed Sept. 21, 1964, Ser. No. 397,813
11 Claims. (Cl. 136-6)

1. Method of extending the shelf life of a current producing battery cell of the kind comprising a cathode, an electrolyte, and an anode characterized by an anodic polarization curve conforming generally to the curve of FIG. 1 and exhibiting a potential in the active region of its anodic polarization, said method comprising the steps of passing through said cell by means of an external power supply an anodic current sufficient to shift the potential at said anode to a level in the passive region of said curve, and thereafter passing through said cell by means of an external current-limiting device connected across said cathode and anode a smaller anodic current sufficient to maintain the potential at said anode at a level in said passive region.

3,316,126

FUEL CELL

Joseph Adrien M. Leduc, Short Hills, N.J., assignor to Pullman Incorporated, a corporation of Delaware
Filed Mar. 1, 1962, Ser. No. 176,533
4 Claims. (Cl. 136-86)



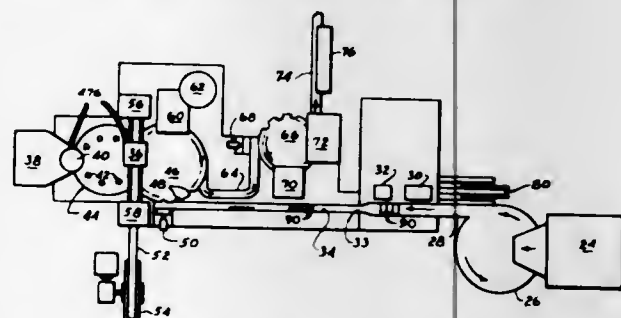
1. A fuel cell for the generation of electrical energy in which a solid reactant is used at one of the electrode means and in which a gaseous reactant is contacted with the opposing electrode means which comprises in combination a cell body having a liquid electrolyte bath contained therein, said cell body comprising an upper section and a lower section having a separable middle section therebetween, said middle section comprising an electrically conductive outer casing having positioned therein and in electrical association with said outer casing a plurality of electrode means having an inner chamber adapted to be fed a solid reactant, said lower section of the cell body having positioned therein a plurality of gas diffusion electrodes comprising an outer porous surface and an inner chamber adapted to be fed a gaseous reactant, said gas diffusion electrodes extending upwardly from the said lower section and into the middle section in alternating spaced relationship to the electrodes in association with the middle section, the inner chamber of the electrode means in association with the middle section being enclosed on the side which opposes a gas diffusion electrode by a wall having openings therein by means of which solid reactant contained in the inner chamber is contacted with liquid electrolyte, said cell body being further provided with inlet means for feeding solid reactant to the inner chamber of the electrodes in association with the middle section, and with inlet means for feeding gaseous reactant to the cell such that gaseous reactant may be fed to the inner chamber of the gas diffusion electrodes.

3,316,127

METHOD AND APPARATUS FOR MANUFACTURE OF DRY CELLS

Anton H. Oswald, Wayne, N.J., assignor to Bright Star Industries, Inc., Clifton, N.Y., a corporation of New Jersey

Filed Feb. 12, 1965, Ser. No. 432,276
14 Claims. (Cl. 136-175)



1. In the manufacture of a dry cell having a metal can, a liner, a carbon rod, and a mix between the rod and the liner, the method which includes shaping a

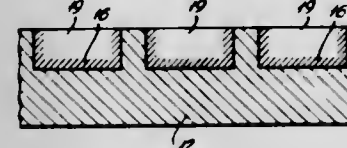
measured quantity of the mix, disposing the same over a lined can, disposing a wipedown washer between the mix and a mix inserting plunger, and using the plunger to move the wipedown washer against the mix during insertion of the mix into the lined can.

3,316,128

SEMICONDUCTOR DEVICE

Hiroe Osafune and Toshio Kurosawa, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan
Filed Oct. 15, 1963, Ser. No. 316,316
Claims priority, application Japan, Oct. 15, 1962, 37/45,812

1 Claim. (Cl. 148-33.5)



An integral semiconductor structure comprising, a wafer of given type conductivity, discrete regions of semiconductor material of opposite type conductivity epitaxially formed at a plurality of predetermined places in said wafer, each of said discrete regions being positioned in a different recess provided therefor generally below the outer surface of said wafer, said wafer further having portions thereof disposed between said discrete regions, said discrete regions being separated from one another by P-N junctions, each of said junctions being formed from one of said wafer portions and a portion of one of said discrete regions, said discrete regions having a given amount of impurity therein, each discrete region further including an intermediate barrier layer, each intermediate barrier layer being formed generally below said surface of said wafer in its associated recess, each barrier layer further being formed at the periphery of its associated discrete region and in contiguous physical relation with said wafer, said intermediate barrier layer having the same type conductivity as said discrete regions, and said intermediate layer further having an impurity concentration lower than that of the remaining portions of said discrete regions.

3,316,129

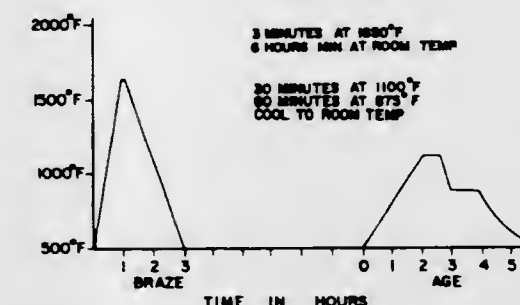
METALLURGICAL CONDITIONING PROCESS FOR PRECIPITATION-HARDENING STAINLESS STEELS

William A. Token, Fort Worth, Tex., and John J. Heldt, San Jose, Calif., assignors to General Dynamics Corporation, Fort Worth, Tex., a corporation of Delaware
Filed Jan. 7, 1964, Ser. No. 336,131
6 Claims. (Cl. 148-135)

1. An improved metallurgical conditioning process for treating semiaustenitic, precipitation hardening, stainless steel to produce a substantially more ductile alloy while retaining state-of-the-art tensile strengths and other desirable metallurgical characteristics, which process consists in the steps of:

exposing object workpiece to a temperature of from about 1400° F. to about 1700° F. for not less than about two (2) minutes and not more than about fifteen (15) minutes; then decreasing said temperature to not more than about

80° F. and not less than about 60° F. and retaining at this temperature for at least about six (6) hours; then increasing said temperature to not more than about 1200° F. and not less than about 1000° F. for at least about fifteen (15) minutes; then



decreasing said temperature to not less than about 850° F. and not more than about 950° F. and retaining the object workpiece at such temperature for at least about one hour; and cooling to room temperature.

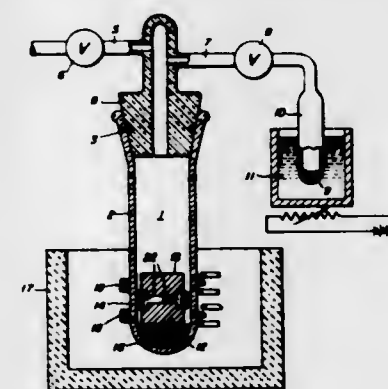
3,316,130

EPITAXIAL GROWTH OF SEMICONDUCTOR DEVICES

William C. Dash, deceased, late of Schenectady County, N.Y., by Evelyn M. Dash, executrix, Schenectady County, N.Y., and Ernest A. Taft, Jr., Schenectady County, N.Y., assignors to General Electric Company, a corporation of New York

Filed May 7, 1963, Ser. No. 278,787

10 Claims. (Cl. 148-175)



1. A method of growing a semiconductor device in the form of a single crystal comprising the steps of:

- (a) placing a single crystal substrate of an electronic semiconductive material selected from the group consisting of germanium and silicon within an evacuable enclosure, said substrate having one surface substantially coplanar with one plane of said crystal;
- (b) disposing a source body of the same semiconductive material a sufficient distance from said one surface of said substrate to limit turbulence between said body and said substrate;
- (c) heating said source and said substrate, said substrate being heated to a higher temperature than said source; and
- (d) introducing an atmosphere of iodine vapor between said source and said substrate to a pressure in the range of 0.5 to 5 mm. of Hg while continuing said heating to cause semiconductive material of said source to be epitaxially deposited on said substrate by an iodine transport process.

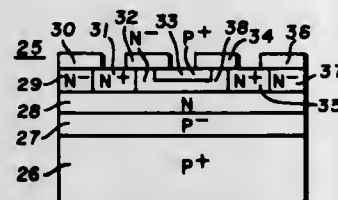
3,316,131

METHOD OF PRODUCING A FIELD-EFFECT TRANSISTOR

Emery Clarence Wisman, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Aug. 15, 1963, Ser. No. 302,427

4 Claims. (Cl. 148—175)



1. The method of making a semiconductor device of the field-effect type comprising the steps of: epitaxially growing a layer of P-type semiconductor material on a major face of a high resistivity semiconductor substrate, lapping the other major face of said substrate to reduce the substrate thickness to between 0.2 to 0.6 mil, epitaxially growing a second layer of N-doped semiconductor material on said lapped major face of said substrate, diffusing two N⁺ regions into said N-doped layer, and diffusing a P⁺ region into said N-doped layer intermediate said two N⁺ regions.

3,316,132

STABLE EXPLOSIVE COMPOSITION CONTAINING A POLYHYDRIC ALCOHOL NITRATE AND ALKALI METAL SALICYLATE

Silas D. Lewis, New Britain, Pa., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 15, 1964, Ser. No. 404,179

11 Claims. (Cl. 149—101)

1. A composition comprising a polyhydric alcohol nitrate and an alkali metal salicylate.

7. The method of stabilizing a polyhydric alcohol nitrate compound comprising intimately mixing a polyhydric alcohol nitrate with an alkali metal salicylate.

3,316,133

PROCESS FOR ALUMINUM CAPACITOR ELECTRODES

George A. Shirn, Williamstown, and William J. Pfister, Cheshire, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts

Filed Jan. 31, 1964, Ser. No. 341,599

2 Claims. (Cl. 156—2)

1. The process of making a porous aluminum pellet electrode comprising forming an intimate mixture of a continuous phase of molten aluminum with a leachable, molten immiscible metal of the group consisting of thallium, bismuth, cadmium, potassium, sodium, lead, cesium and gallium; and a leachable nonmolten, metal wool of the group consisting of nickel wool, steel wool, copper wool, brass wool and bronze wool; solidifying said mixture and leaching said leachable metals from said aluminum.

3,316,134

METHOD AND APPARATUS FOR PRODUCING MULTICONDUCTOR RIBBON CABLE

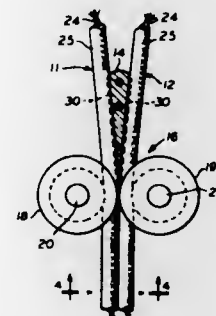
Manuel A. Durakis, Brooklyn, N.Y., and William J. Lucas, Morgan, N.J., assignors to General Cable Corporation, New York, N.Y., a corporation of New Jersey

Filed Dec. 27, 1963, Ser. No. 333,908

9 Claims. (Cl. 156—47)

1. In the manufacture of ribbon cables by passing thermoplastic insulated wires past a heating blade that

brings the confronting faces of the insulation to a welding temperature, and by bringing the heated surfaces of the insulation into contact to weld the insulated wires together in a ribbon cable, the improvement which comprises softening the insulation by localized heat applied to confronting faces and confining the softened insulation of at least one wire along parallel zones spaced from one another by a zone substantially narrower than each of



the wires and across which the locally-softened insulation is unconfined and flows radially to form a ridge on the peripheral surface of the insulation of one of the wires at a location confronting the other wire and while the insulation is heated to a welding temperature, then bringing the top of the ridge together with the other wire at welding temperature to form a web that joins the insulated wires in a ribbon cable with all parts of the insulation other than said ridge spaced from one another.

3,316,135

METHOD AND APPARATUS FOR FRICTION WELDING PLASTIC CLOSURES TO PLASTIC CONTAINERS

Gaylord W. Brown and Donald J. Rise, Beaverton, Mich., assignors to Brown Machine Co., Beaverton, Mich., a corporation of Michigan

Filed Aug. 23, 1963, Ser. No. 304,169

14 Claims. (Cl. 156—69)



7. A method of friction welding a heat fusible plastic closure part to a heat fusible plastic container part on which it is disposed in preassembled relation but in which relation it is not actually secured to said container part, said method comprising separating said parts from one another; rotating said parts relatively to one another while they are separated; and reengaging said parts as they are relatively rotated to friction weld said parts together.

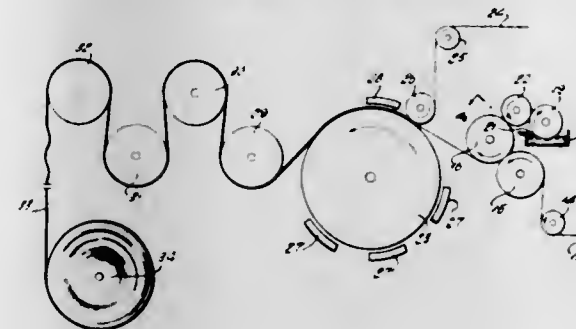
3,316,136

METHOD AND APPARATUS FOR MAKING COMPOSITE CONTOURED FABRIC

Joseph Pufahl, 81 Gerard Ave., New Hyde Park, N.Y. 11040

Filed May 27, 1963, Ser. No. 283,522

7 Claims. (Cl. 156—160)



7. The method of manufacturing a composite fabric comprising the steps of continuously transporting a sheet of elastic base material by spaced sets of rollers having predetermined peripheral velocities, stretching said base material to increase the area during transportation thereof, continuously applying an overlying sheet of unstressed material to said base material with an adhesive applied to selected areas of the base material to secure said sheets one to the other and then releasing the stress in said base material to cause said overlying layer to gather in the unadhered areas.

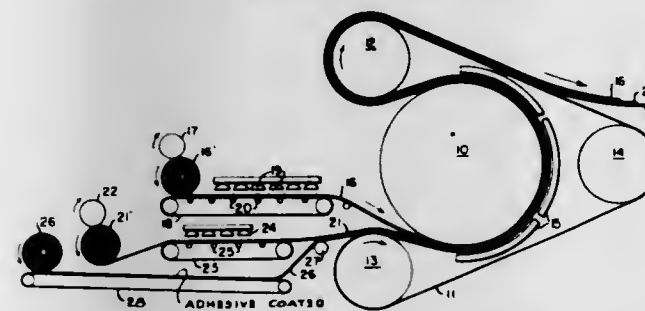
3,316,137

CONTINUOUS PROCESS OF MAKING SPONGE-BACKED FLOORING

Reuben Wisotzky, Lexington, Mass., assignor to American Biltrite Rubber Co., Inc., Dover, Del., a corporation of Delaware

Filed May 12, 1964, Ser. No. 373,123

7 Claims. (Cl. 156—209)



1. The continuous process of making cushion-backed flooring characterized by the steps of separately preheating an uncured face ply of elastomeric plastic material to molding temperature of 285—385° F., separately preheating an uncured intermediate ply of the same material to approximately the same temperature, passing between heated molding surfaces the two preheated plies together with a previously unheated sponge cushion ply having an adhesive-coated surface, applying heat to the sponge cushion ply while in contact with one of said preheated plies through the medium of one of said molding surfaces and thus bonding all plies in a molded cushion-backed flooring.

3,316,138

METHOD OF PROCESSING CLUTCH PLATES

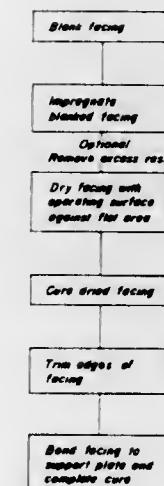
Garthwood R. Taylor, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 22, 1961, Ser. No. 140,010

3 Claims. (Cl. 156—267)

3. In a method for making a clutch plate adapted to operate in a fluid vehicle and consisting of a metal back-

ing member having a porous facing bonded to at least one side thereof, the steps comprising; forming an oversize annulus from porous, fibrous paper-like materials, impregnating the oversize annulus in a thermosetting resin solution, removing any excess resin so as to retain the porous character of the material, immediately placing the impregnated annulus upon a flat surface leaving one side of the annulus exposed, evaporating said solvent at ambient temperatures from the exposed side



thereby increasing the resin concentration at said side, said flat surface acting to prevent escape from said friction surface, curing the resin in the annulus while the annulus is still on said flat surface, trimming the inner and outer edges of the annulus to bring the same to the desired size and to expose raw edges thereon, and then bonding said facing to a metal support plate wherein the surface of the facing opposite to that which was against the flat surface is coextensively adhered to the support plate.

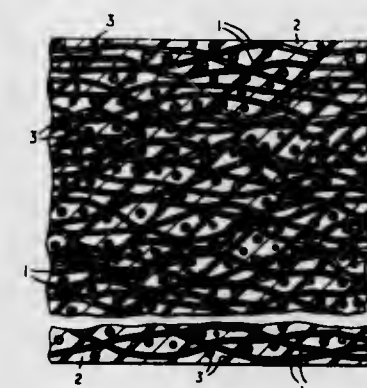
3,316,139

PLASTIC STRUCTURE CONTAINING FIBROUS LAYERS AND HOLLOW GLASS SPHERES

Harvey E. Alford, Amherst, and Franklin Veatch, Lyndhurst, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

Filed Dec. 31, 1964, Ser. No. 422,704

7 Claims. (Cl. 161—72)



1. A shaped, filled, plastic structure characterized by a high flexural strength, tensile strength and modulus in flexure, consisting essentially of

(a) at least two contiguous layers of a porous reinforcing material selected from the group consisting of paper, woven textile fibers, carded nonwoven fiber mats and felts, nonwoven chopped fiber mats and felts random only in two dimensions, nonwoven continuous fiber mats, and stitched nonwoven chopped fiber mats, the said layers being in an amount within

- the range from about 2 to about 50% by weight of the structure;
- (b) a plurality of hollow discrete spheres of synthetic fused water-insoluble alkali metal silicate-based glass, which spheres have clear, smooth surfaces, diameters of from 5 to 5000 microns, a wall thickness of from 0.5 to 10% of their diameters, and a gas density of 0.1 to 0.75 g./cc.; and
- (c) a continuous matrix of a synthetic organic resin bonding the porous reinforcing layers and the plurality of hollow glass spheres together, said hollow glass spheres being present in an amount within the range from about 1 to about 300% by weight of the resin.

3,316,140

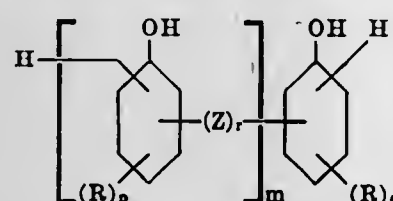
THERMOSETTING RESINS PREPARED BY REACTING FORMALDEHYDE WITH THE REACTION PRODUCT OF A PHENOL WITH CHLOROMETHYLATED DIPHENYL OXIDE

Lawrence F. Sonnabend, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

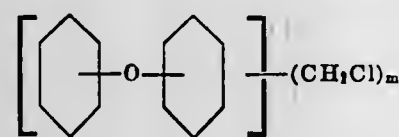
Filed Apr. 3, 1963, Ser. No. 270,247

5 Claims. (Cl. 161—198)

1. A method for preparing a thermosetting resin which comprises reacting together for between about ¼ and 4 hours at a temperature of from about 50 to about 100° C. a formaldehyde-yielding material with at least two phenolic activated hydrogens in (A) a phenolic compound derived by condensing (1) from 1 to 10 moles of a hydroxy aromatic compound having the formula



wherein Z represents a radical selected from the group consisting of oxygen, —SO₂— and alkylidene, r represents an integer from 0 to 1, m represents an integer from 0 to 5, R represents a member selected from the group consisting of lower alkyl radicals, bromine, chlorine, and phenyl, and p represents an integer from 0 to 2, and provided that at least two of the positions ortho and para to a hydroxyl are free of substituents, with (2) a chloromethylated diphenyl oxide having the formula



wherein m represents an integer from 1 to 4 and (B) from 0 to 150% by weight of a phenol, having at least two reactive hydrogens, based on the phenolic compound.

2. A thermoset resin comprising the reaction product of from 1 to 4 moles of formaldehyde, derived from a formaldehyde-yielding material, per mole of (A) a condensation product of 1 mole of bis(chloromethylated) diphenyl oxide and 1 to 10 moles of phenol having at least two of the positions ortho and para free of substituents and (B) from 0 to 150% by weight of (A) of phenol, the reaction to obtain the reaction product being carried out at a temperature of from about 50° to about 100° C. for from about ¼ to about 4 hours.

4. A laminate prepared by impregnating a plurality of strata with the resin of claim 2 and heating the same under pressure of at least 200 p.s.i. and at from about 100° C. to about 300° C. for from ½ to 80 hours.

PROCESS OF DEWATERING SULPHATE PULP TO CONTAIN LESS SHIVES THEREIN

Carl Arne Bergholm and Gustaf Erik Malm, Sundsvall, and Johan Åström, Obbola, Sweden, and Klaus Ferdinand Sylla, Bremen, Germany, assignors to Svenska Cellulosa Aktiebolaget, Sundsvall, Sweden

Filed Oct. 2, 1964, Ser. No. 401,118

Claims priority, application Sweden, Oct. 5, 1963,

10,927/63

2 Claims. (Cl. 162—100)

1. A process for manufacturing sulphate cellulose pulp which comprises dewatering a pulp having a dry solids content of at least 1% by weight and not more than about 4.5% by weight by a pressing operation to a pressed pulp having a dry solids content of 40–60%, subjecting the resulting pressed pulp to a fluffing operation, and drying the resulting fluffed pulp and contacting it concurrently with a heated drying gas until its average dry content is 90 to 95% by weight, the pulp slurry prior to the dewatering step being acidified so that the pH of the water in the dewatering step is 3–7 and the pH of a baled and stored pulp is 5–7.

3,316,142

METHOD AND APPARATUS FOR REMOVING WATER FROM A PULP SUSPENSION AND PARTICULARLY IN FORMING A PAPER WEB

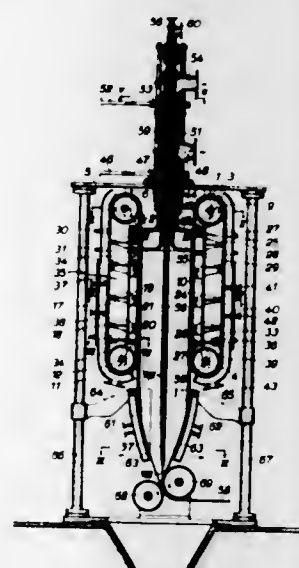
Axel Ole William Gahmberg, Helsinki, Finland (Nitttykumpu 11F, Nitttykumpu, Finland)

Filed Nov. 26, 1963, Ser. No. 330,513

Claims priority, application Finland, Nov. 26, 1962,

2,118/62

14 Claims. (Cl. 162—201)



1. Apparatus for forming a pulp web comprising a plurality of assemblies cooperatively defining a hollow cylinder, said assemblies including respective endless wire cloths bounding said cylinder and means for advancing each said wire cloth along a path in which the cloth advances axially along the cylinder and at substantially the same rate as the other cloths, and means extending within the cylinder at one end thereof for radially discharging pulp suspension against the wire cloths to form a cylindrical web thereon which is advanced axially towards the opposite end of the cylinder.

13. A method for forming a web of pulp material comprising radially discharging a pulp suspension onto the interior of a cylinder having an internal surface which continuously and uniformly advances in a longitudinal direction to form a cylindrical web which longitudinally advances with said internal surface and passing heated drying air axially through the cylindrical web in a direction opposite to its longitudinal advancement.

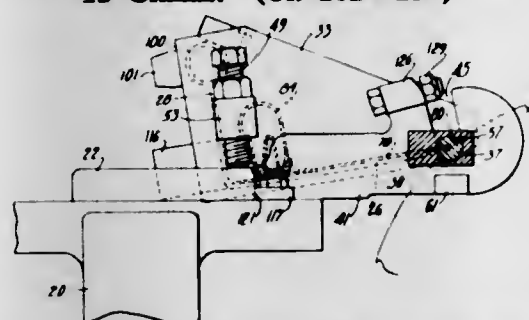
3,316,143

LIQUID SPREADING CHEMICAL AND WATER BOX FOR USE WITH A ROTATING ROLL

Eugene F. Reynolds, Foxboro, and William Kleimola, East Walpole, Mass., assignors to Bird Machine Company, South Walpole, Mass., a corporation of Massachusetts

Filed Oct. 21, 1964, Ser. No. 405,396

13 Claims. (Cl. 162—232)



1. A liquid spreading chemical and water box device for use with a rotating roll, comprising a box body having a free forward edge, an apron cloth carried by said box body with an edge lip extending beyond said free edge, means for supporting said box body across said roll with said free edge adjacent the surface of said roll and the edge lip of said apron cloth in liquid spreading contact with said rotating roll across its surface, said means defining a pivot axis substantially coincident with the line of initial contact between said edge lip and roll, said box being mounted for pivotal movement about said pivot axis, whereby said box body can be pivoted to adjust the head of liquid against said roll without substantially shifting said line of initial contact, and means for maintaining said box body in a desired pivotal position.

3,316,144

FLUID FLOW DISTRIBUTION DEVICE IN A SIDE ENTRY INLET HEADBOX FOR PAPERMAKING

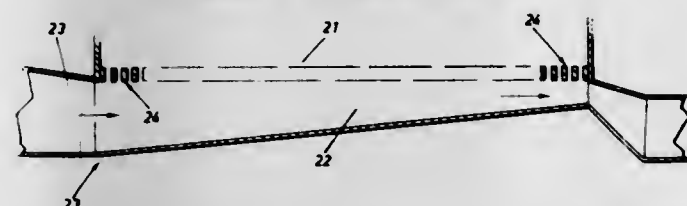
Douglas Wigham Knowles, Erindale, Ontario, Canada, assignor, by mesne assignments, to Canadian General Electric Company, Limited, Toronto, Ontario, Canada

Filed Sept. 29, 1964, Ser. No. 400,262

Claims priority, application Canada, July 21, 1964,

907,661

2 Claims. (Cl. 162—343)



1. In a side entry tapered manifold stock inlet to a headbox, a distributor plate comprising a series of grids positioned transversely of the elongated entry connecting the stock inlet to the headbox and positioned in planes substantially parallel with the opposed side walls of the headbox, the lower edge of each said grid being tapered upward, in a direction substantially parallel to the flow of stock thereby when in operation.

3,316,145

O,O-DIMETHYL S-(1-SUCCINIMIDOETHYL) PHOSPHORODITHIOATE AND INSECTICIDAL COMPOSITIONS CONTAINING THE SAME

Albert H. Haubeln, Newark, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Jan. 11, 1965, Ser. No. 424,843

6 Claims. (Cl. 167—33)

1. As an insecticidally active compound having a high residual activity O,O-dimethyl S-(1-succinimidoethyl) phosphorodithioate.

3,316,146

METHOD OF INDUCING SEDATION AND MUSCLE RELAXATION

William J. Wechter, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Mar. 30, 1964, Ser. No. 355,951

1 Claim. (Cl. 167—52)

A process for inducing sedation and muscular relaxation comprising the administration to an animal of an effective amount of 3α-hydroxy-5β-pregnane-11,20-dione 20-cyclic (ethylene acetal) in combination with a pharmaceutical carrier.

3,316,147

COCCIDIAL COMPOSITIONS CONTAINING LOWER ALKYL ESTERS OF 6,7-DI(LOWER) ALKOXY-4-HYDROXY-3-QUINOLINE-CARBOXYLIC ACID

Edward John Watson, Jr., Norwich, N.Y., assignor to The Norwich Pharmacal Company, a corporation of New York

No Drawing. Original application Apr. 15, 1963, Ser. No. 272,858. Divided and this application July 27, 1965, Ser. No. 486,583

1 Claim. (Cl. 167—53.1)

A composition having anticoccidial properties and suitable for administration to animals, comprising 0.006 to about 0.1% by weight of at least one lower alkyl ester of 6,7-di(lower)alkoxy-4-hydroxy-3-quinolinecarboxylic acid in which the ether groups contain from two to four carbon atoms in admixture with an edible carrier.

3,316,148

ENOMYCIN AND PROCESS FOR PREPARATION

Hamao Umezawa, 23 Kita, 4-chome, Toyotama, Nerima-ku, Tokyo, Japan

No Drawing. Filed Nov. 6, 1963, Ser. No. 321,679

Claims priority, application Japan, Nov. 30, 1962, 37/52,634

4 Claims. (Cl. 167—65)

3. The process of producing a biologically active substance, identified as enomycin, which comprises cultivating an enomycin-producing strain of *Streptomyces mauvecolor* A.T.C.C. 14911 under submerged aerobic conditions in an aqueous carbohydrate solution containing a nitrogenous nutrient at a temperature of substantially from 22° to 32° C. and for between about one and five days.

3,316,149

ANTIBIOTIC SHOWDOMYCIN AND A METHOD OF PRODUCING SAME

Haruo Nishimura, Ashiya-shi, Japan, assignor to Shionogi & Co., Ltd., Osaka, Japan

Filed Nov. 19, 1963, Ser. No. 325,524

10 Claims. (Cl. 167—65)

10. The antibiotic, showdomycin, effective in inhibiting the growth of gram-positive and gram-negative microorganisms, said antibiotic being a white needle crystal melting at 153° C., containing the elements carbon, hydrogen, oxygen and nitrogen in substantially the following proportions by weight:

	Percent
Carbon	47.31
Hydrogen	5.07
Oxygen	40.84
Nitrogen	6.06

having an optical rotation of $[\alpha]_D^{22.5} = +49.9^\circ (\pm 3^\circ)$ when dissolved in water (c=1%), having a molecular formula C₉H₁₁O₆N and a molecular weight of 230 and

showing the ultraviolet spectrum and the infrared spectrum as in the attached drawings, FIG. 1 and FIG. 2, respectively.

3,316,150 STABLE SUSPENSIONS OF ACETYL SALICYLIC ACID

Marvin Faeges, 3806 Bainbridge Road,
Cleveland Heights, Ohio 44118

No Drawing. Filed Feb. 26, 1964, Ser. No. 347,352
6 Claims. (Cl. 167—65)

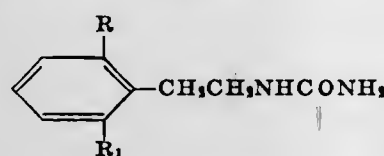
1. A pharmaceutical preparation consisting of a stable suspension of powdered acetylsalicylic acid U.S.P. mechanically dispersed in glycerin U.S.P. in a weight/volume proportion of approximately 8 to 10 grams of acetylsalicylic acid to yield 30 ml. of product.

3,316,151 METHODS AND COMPOSITIONS FOR INDUCING TRANQUILIZING, MUSCLE RELAXANT AND DEPRESSANT ACTIVITY

Albert Lawrence Green, Welwyn Garden City, and
George Lawrence Willey, Harpenden, England, as-
signors to Smith Kline & French Laboratories, Phila-
delphia, Pa., a corporation of Pennsylvania
No Drawing. Filed June 15, 1964, Ser. No. 375,332
Claims priority, application Great Britain, June 17, 1963,
24,116/63

7 Claims. (Cl. 167—65)

1. A method for inducing tranquilizing, muscle relaxant and depressant activity comprising administering internally to animals a pharmaceutically effective amount of a compound of the formula;



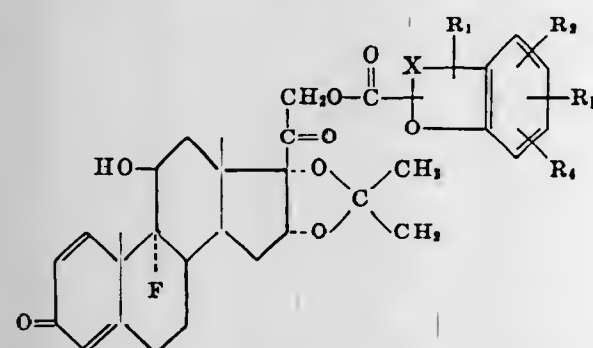
in which R and R₁ are members selected from the group consisting of methyl and ethyl.

3,316,152 NOVEL ESTERS OF TRIAMCINOLONE ACETONIDE

Joachim Heider and Gerhard Dahms, Biberach an der
Riss, and Dietrich Jerchel, Ingelheim am Rhine, Ger-
many, assignors to Boehringer Ingelheim G.m.b.H.,
Ingelheim am Rhine, Germany, a corporation of Ger-
many
No Drawing. Filed Jan. 28, 1965, Ser. No. 428,874
Claims priority, application Germany, Jan. 31, 1964,
T 25,530

21 Claims. (Cl. 167—65)

18. A composition having glucocorticoidal and anti-
phlogistic properties comprised of 0.002 to 0.1% of a
triamcinolone acetonide ester of the formula



wherein R₁ is selected from the group consisting of hy-
drogen, lower alkyl of 1 to 7 carbon atoms and phenyl,
R₂ is selected from the group consisting of hydrogen,

halogen, nitro, lower alkyl and lower alkoxy of 1 to 7
carbon atoms, benzyloxy, R₃ is selected from the group
consisting of hydrogen, halogen, nitro and lower alkyl
and lower alkoxy of 1 to 7 carbon atoms, R₄ is selected
from the group consisting of hydrogen and lower alkoxy
of 1 to 7 carbon atoms and X is selected from the group
consisting of —CH₂—CH₂—O—, —CH₂—CH₂— and
—CH=CH— and a major amount of a topical pharma-
ceutical carrier.

3,316,153 VIRUS PURIFICATION

Richard M. Van Frank, Indianapolis, Ind., assignor to
Eli Lilly and Company, Indianapolis, Ind., a corpora-
tion of Indiana

No Drawing. Filed Mar. 29, 1965, Ser. No. 443,685
10 Claims. (Cl. 167—78)

1. In a method for the purification and concentration
of an impure virus preparation containing proteinaceous
impurities, which method includes the steps of contacting
said impure virus preparation in an aqueous medium
with in situ precipitated calcium phosphate under con-
ditions effective to selectively adsorb said virus thereon
while substantially rejecting the impurities, and recover-
ing said virus from the resulting adsorbate in substantial-
ly purified and concentrated form, the improved method
for said recovery which comprises contacting said ad-
sorbate with an aqueous solution of ethylenediaminetetra-
acetic acid of pH 7.8–8.3, whereby the calcium phos-
phate in said adsorbate is converted into a complex with
said ethylenediaminetetraacetic acid and is dispersed in
said solution, and whereby said virus is released from said
adsorbate.

3,316,154 CHEWING GUM CONTAINING GAS AND A MEDICAMENT

Harold M. Sellers, Houston, Tex.
(214 Clay St., Sharpsburg, Pa. 15215)

Filed July 12, 1963, Ser. No. 294,538
7 Claims. (Cl. 167—82)

2. A mass of chewing gum containing at least one
chamber in which a gas is entrapped under pressure, said
gas constituting a carrier for a medicant in a gaseous or
vapor form, said chamber being adapted to be burst by
the kneading of the gum mass due to the chewing thereof
for releasing the medicant containing gas into the mouth.

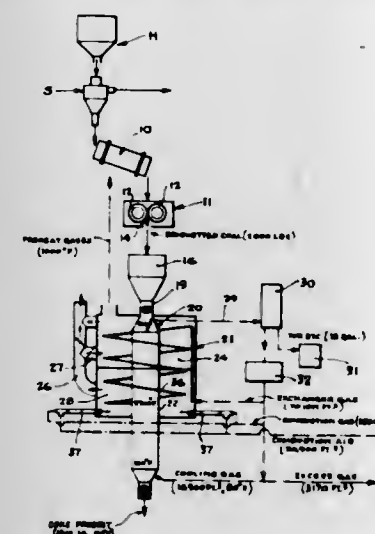
3,316,155 COKING PROCESS

Michael O. Holowaty, Gary, and Charles R. Jackson,
Hammond, Ind., assignors to Inland Steel Company,
Chicago, Ill., a corporation of Delaware

Filed Jan. 25, 1963, Ser. No. 253,856
6 Claims. (Cl. 201—6)

1. A process of producing metallurgical coke bri-
quettes from 100% Illinois type coal which comprises;
preheating 100% Illinois type coal in a finely divided
form to incipient fluidity without effecting volatilization
of the coal having a particle size less than —10 mesh size
with at least 90% being less than —20 mesh, forming
briquettes of said coal by applying simultaneously pres-
sure and heat to said coal while the coal remains at said
incipient fluidity, said heat applied during briquetting
being sufficient to form a thin shell of coke about the
entire surface of said briquettes without significantly re-
ducing the volatile matter content of said briquettes at a
rate of between about 1.5° F and 3.5° F. per minute, and
gradually heating said briquettes through the plastic stage
such that at least a portion of the volatile matter released
by said coal is retained within the said briquettes and
supplies the entire binding agent required for said bri-

quettes, and continuing said heating above the carboniza-
tion temperature of said coal to form metallurgical coke



briquettes having a maximum of about 1% residual vola-
tile matter.

3,316,156 SYNTHESIS OF STEROIDS

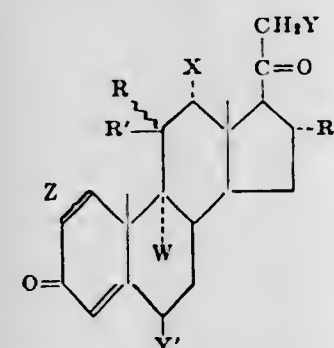
Saul L. Neldleman, Lawrence Township, Samuel C. Pan,
Metuchen, and Patrick A. Diassi, Westfield, N.J., as-
signors, by mesne assignments, to E. R. Squibb & Sons,
Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 26, 1965, Ser. No. 443,080
6 Claims. (Cl. 195—51)

1. A process for preparing a 17 α -hydroxy-16,20-diketo
steroid of the pregnane series which comprises subjecting
a 17-unsubstituted 16,20-diketo steroid of the pregnane
series under aerobic conditions to the action of peroxi-
dase in the presence of hydrogen peroxide and recovering
the 17 α -hydroxy-16,20-diketo steroid formed.

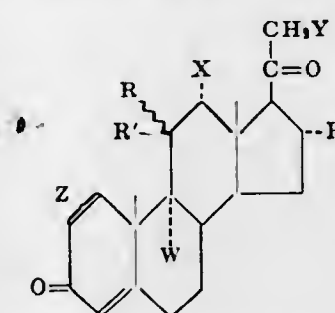
3,316,157 SYNTHESIS OF STEROIDS

Patrick Andrew Diassi, Westfield, and Pacifico Anthony
Principe, South River, N.J., assignors to E. R. Squibb
& Sons, Inc., New York, N.Y., a corporation of
Delaware
No Drawing. Original application Dec. 18, 1963, Ser.
No. 331,627. Divided and this application June 2,
1965, Ser. No. 473,262
3 Claims. (Cl. 195—51)

1. A process for preparing compounds of the formula



wherein Z is selected from the group consisting of a sin-
gle and double bond; X is lower alkyl; R' is hydrogen, R
is hydroxy, and together R and R' is oxo; Y is selected
from the group consisting of hydrogen, hydroxy and
acyloxy wherein the acyl radical is of a hydrocarbon car-
boxylic acid of less than twelve carbon atoms; Y' is se-
lected from the group consisting of hydroxy and acyloxy
wherein the acyl radical is of a hydrocarbon carboxylic
acid of less than twelve carbon atoms; W is selected from
the group consisting of hydrogen and halo; and R'' is
selected from the group consisting of hydrogen and hy-



droxy, which comprises subjecting a compound selected
from the group consisting of steroids of the formula
to the action of a microorganism, *Trichothecium roseum*,
and separating and recovering the above recited reaction
product.

ERRATUM

For Class 201—6 see:
Patent No. 3,316,155

3,316,158 FOAM METAL CONSTRUCTION AND A METHOD FOR MAKING IT

Donald G. Du Pree, Tujunga, and Donald E. Stewart,
Arcadia, Calif.; said Stewart assignor to Electro-Op-
tical Systems, Inc., Pasadena, Calif.
Filed Apr. 1, 1963, Ser. No. 269,514
4 Claims. (Cl. 204—7)



1. A method of electroplating a honeycombed back-
ing structure for the support of a thin-walled structure
previously electroplated in a desired shape, said method
comprising the steps of: establishing a substantially un-
agitated electroplating bath; immersing a mandrel having
the configuration of the thin-walled structure in said
bath and mounting it therein as the cathode thereof;
electrodepositing metal onto said mandrel and simulta-
neously therewith first continuously removing gas bub-
bles forming around said mandrel cathode until the thin-
walled structure is formed thereon and thereafter, until
the backing structure is formed, intermittently removing
said gas bubbles at a frequency corresponding to the size
of the honeycomb porosity desired.

4. An electroformed member comprising: a body
structure having anterior and posterior portions, said
anterior portion being a thin metal skin that has been
electroformed in a desired shape and said posterior por-
tion being a honeycombed metal layer that rigidly sup-
ports and maintains said metal skin in its shape, said
metal layer being integral with and made of the same
metal as said metal skin.

3,316,159 PROCESS FOR MAKING A HIGH SURFACE AREA ELECTRODE

Demetrios V. Louzos, Rocky River, Ohio, assignor to
Union Carbide Corporation, a corporation of New
York
No Drawing. Filed Dec. 31, 1963, Ser. No. 334,913
4 Claims. (Cl. 204—23)

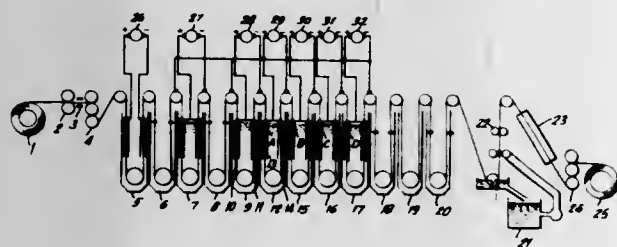
1. A process for making articles for use as electrodes
in which the active material is a material selected from

the group consisting of cadmium, nickel, silver, lead, zinc and lead oxide which comprises providing a mixture of finely divided electrically conductive material and finely divided soluble material which forms upon dissolution an ion containing the metal constituent of the selected material; compression molding said mixture to form a body containing said admixed electrically conductive material and said soluble material, immersing said compression molded body in an aqueous solution to cause dissolution of said soluble material and electrically energizing said compression molded body to cause electrodeposition of the selected material onto said conductive particles.

3,316,160

PROCESS FOR ELECTROLYTIC CHROMIUM-PLATING STEEL STRIPS WITHOUT A BLuish TINT WHILE USING TWO OR MORE PLATING TANKS
Hiromu Uchida, Osamu Yanabu, Takashi Hada, Takeo Adachi and Jun Tsujimoto, all of Hyogo-ken, Japan, assignors to Fuji Iron & Steel Co., Ltd., Tokyo, Japan
Filed Aug. 7, 1963, Ser. No. 300,589

Claims priority, application Japan, Aug. 16, 1962, 37/35,474; Dec. 3, 1962, 37/54,480
8 Claims. (Cl. 204-28)



1. A process for obtaining an electrolytic chromium-plated steel strip or wire having a lustrous chromium coating, characterized by the absence of a bluish tint, comprising the steps of passing the steel strip or wire through more than two plating paths; in the second path and in each succeeding path the second path, initially subjecting the steel strip or wire to a cathodic treatment at a low current density of 0.1 to 10 a/dm.²; thereafter, in each plating path, chromium-plating the steel strip or wire; and intermediate each plating path withdrawing the steel strip or wire from the plating solution.

3,316,161

ELECTROCHEMICAL PROCESS OF AND APPARATUS FOR REPLACING HYDROGEN IN OXIDIZABLE CHEMICAL COMPOUNDS BY A FUNCTIONAL GROUP

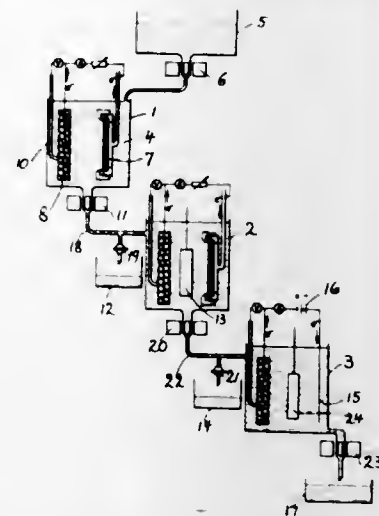
Margarete Jung, Nieder-Eschbach, Taunus, and Gerhard Grueneberg, Bonn (Rhine), Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft and Varta Aktiengesellschaft, Berlin and Erlangen, and Hagen, Westphalia, Germany, respectively, both corporations of Germany

Filed May 31, 1963, Ser. No. 284,558
Claims priority, application Germany, June 2, 1962, A 40,356

19 Claims. (Cl. 204-79)

1. A process for electrochemically dehydrogenating an organic fuel compound into another organic compound, said organic fuel having a plurality of reactive hydrogen atoms which are electrochemically oxidizable in successive stages which comprises contacting the organic fuel with a dehydrogenation electrode to activate a hydrogen atom in said fuel, maintaining the electrode at a measured potential below that of oxygen dissociation during operation of the electrode, discontinuing operation of the electrode when a marked change of potential is measured, at which point at least one reactive hydrogen has been removed from and replaced on the fuel compound, the

same having been converted into a lesser hydrogenated other organic compound, and separating at least a portion



of the lesser hydrogenated compound obtained at that stage.

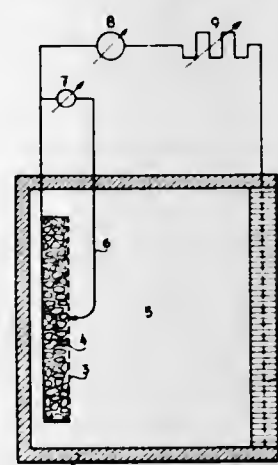
3,316,162

PROCESS FOR ELECTROCHEMICALLY OXIDIZING ω -HYDROXYCARBOXYLIC ACIDS TO α,ω -DICARBOXYLIC ACIDS

Otto Heuse, Kronberg, Taunus, Manfred Beldt, Kelkheim, Taunus, and Rudolf Wirtz, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

Filed Sept. 27, 1963, Ser. No. 312,087
Claims priority, application Germany, Oct. 3, 1962, F 37,951

5 Claims. (Cl. 204-79)



1. A process for electrochemically oxidizing ω -hydroxycarboxylic acids to α,ω -dicarboxylic acids comprising introducing a hydrogen solvent anode and a cathode which are electrically interconnected into an aqueous alkaline solution of an ω -hydroxycarboxylic acid and maintaining the anode at a potential within the range of -0.7 and -1.2 volts as compared with a calomel comparison electrode.

3,316,163

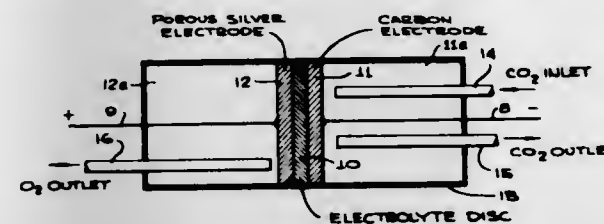
ELECTROCHEMICAL METHOD FOR CONVERSION OF CARBON DIOXIDE

Willem Oser, Palisades Park, N.J., assignor to Isomet Corporation, Palisades Park, N.J., a corporation of New Jersey

Filed May 2, 1961, Ser. No. 107,241
7 Claims. (Cl. 204-129)

1. A process for the production of O₂ from CO₂, comprising electrochemically decomposing CO₂ into O₂ and a carbon by-product in a cell having for an electrolyte a mixed oxide solid solution having a complete cation lat-

tice and a deficient anion lattice by applying a voltage across the cell such that the electrode at which the CO₂ is fed is the negative electrode while the other electrode



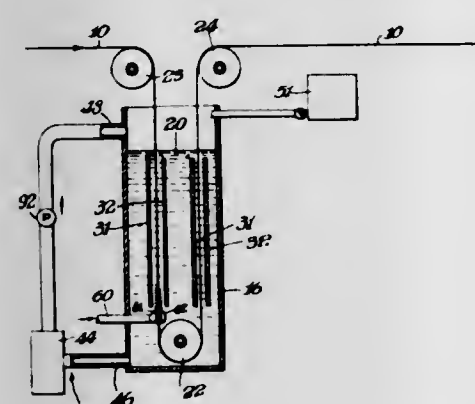
on the other side of the solid electrolyte is the positive electrode, the whole cell being operated in a temperature range above 400° C.

3,316,164

ETCHING OF ALUMINUM FOIL

Charles E. Welch, Jr., Williamstown, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts

Filed Apr. 23, 1964, Ser. No. 362,065
9 Claims. (Cl. 204-141)



1. A process for electrolytically etching aluminum foil which process comprises subjecting the aluminum foil to anodic treatment in an aqueous solution consisting essentially of 10 to 20 grams NaHSO₄ and at least 200 grams NaCl per liter, the solution being at a pH between about 0.5 and 2.8, and the treatment being carried out at a temperature of from 85 to 100° C. and with an anodic current density of from about 5 to 10 amperes per square inch.

3,316,165

METHOD FOR PREPARING DYEABLE POLYOLEFIN COMPOSITIONS

Charles R. Pfeiffer, Newport News, Va., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

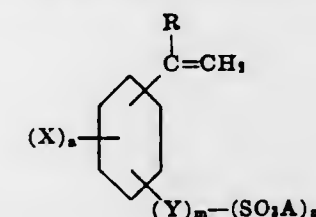
No Drawing. Filed May 1, 1963, Ser. No. 277,127
10 Claims. (Cl. 204-159.17)

1. Method for the preparation of a dye-receptive, light-stable polyolefin shaped article which consists essentially of

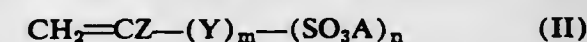
- forming an intimate mixture of from about 0.25 to about 10 weight percent, based on the weight of the mixture, of a finely divided, porous, heat stable, polar inorganic solid with a polymer of a 2 to 8 carbon atom aliphatic hydrocarbon olefin monomer;
- subjecting said mixture to a fabrication treatment to form a shaped article thereof;
- impregnating said shaped article with from about 0.5 to 20 weight percent, based on the total composition weight, of a sulfonated monomer from a solution having the capacity to at least partially swell said shaped article and to at least partially solubilize said sulfonated monomer, said solution

being maintained at between about 60° and 100° C., and

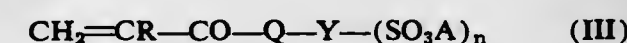
(d) subsequently, exposing said impregnated shaped article to ultraviolet light radiation to cause polymerization of said impregnated sulfonated monomer; said sulfonated monomer selected from the group consisting of sulfonated aromatic monomers of the structural formula;



wherein R is selected from the group consisting of hydrogen, and methyl; X is individually selected from the group consisting of hydrogen, chlorine, bromine, and alkyl radicals containing from 1 to 8 carbon atoms; Y is selected from the group consisting of bivalent and trivalent hydrocarbon radicals containing 1 to 4 carbon atoms; A is selected from the group consisting of hydrogen, alkali metals, and alkyl radicals containing 1 to 5 carbon atoms; a is an integer from 1 to 4; m has a numerical value in whole units of 0 to 1; n is an integer from 1 to 2; sulfonated olefin monomers of the structural formula:



wherein Z is selected from the group consisting of hydrogen, chlorine, bromine, carboxyl radicals, carboxymethyl radicals, sulfo radicals, cyano radicals, aryl radicals containing from 6 to about 12 carbon atoms, and alkyl radicals containing from 1 to 8 carbon atoms; and Y, A, m and n are as defined above for monomer (I); and sulfonated acrylate and methacrylate monomers of the structural formula:



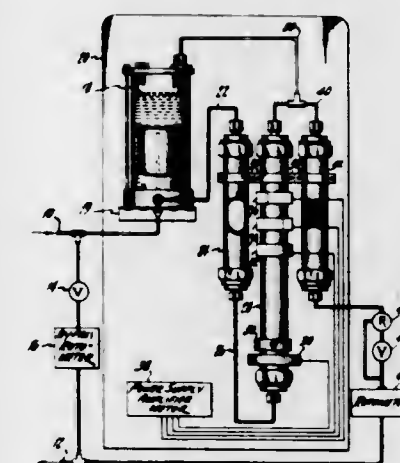
wherein Q is selected from the group consisting of divalent sulfur, oxygen, and amide nitrogen; and R, Y, A, and n are as defined above for monomer (I).

3,316,166

OXYGEN ANALYZER

Gustav Bergson, Jenkintown, and Peter Ketelsen, Willow Grove, Pa.; said Ketelsen assignor to Manufacturers Engineering and Equipment Corporation, a corporation of Pennsylvania

Filed May 15, 1963, Ser. No. 280,669
1 Claim. (Cl. 204-195)



Apparatus for the quantitative analysis of oxygen in a flowing gas stream comprising in combination of an elec-

olytic cell provided with a porous cathode element, an anode element in contact with an aqueous electrolyte solution, a gas sample supplying conduit opening adjacent said cathode element to direct said flowing gas stream through said porous cathode element into intimate contact therewith and with said electrolyte solution to thereby effect electrolytic reduction of the oxygen in said flowing gas stream, a gas stream outlet port for said electrolytic cell, a wetter for humidifying said flowing gas stream to substantially an equilibrium condition for the temperature of said electrolyte prior to the time said gas stream is applied to said conduit opening, said wetter comprising an enclosure for an aqueous solution, means providing a porous container within said enclosure, said porous container sealed to prevent the entry therein of said solution except by diffusion of the solution through the porous walls thereof, gas inlet and outlet means into said container wherein gas admitted to said container through said gas inlet means is exposed to that portion of said solution which has diffused to the inner wall of said porous container, means for coupling the gas outlet means of said wetter to said conduit opening, and a gas stream feedback connection communicating between the gas stream outlet port for said electrolytic cell and the interior of said enclosure.

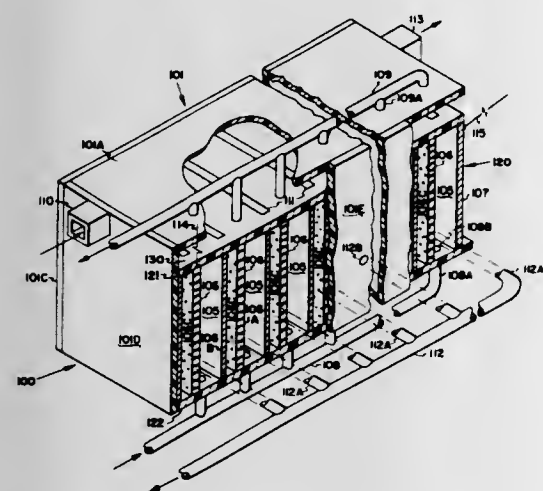
3,316,167

MULTI-CELL REACTOR IN SERIES

John V. Clarke, Jr., Cranford, and Charles H. Worsham, Fanwood, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Sept. 1, 1961, Ser. No. 135,670

1 Claim. (Cl. 204-268)



An electrochemical reactor having a plurality of electrochemical cells in series electrical connection and comprising in combination two nonconductive support members in parallel relationship; a row of hollow bipolar electrodes extending at right angles from said support members so as to divide the space between said support members into essentially equal and parallel, rectangular channels; nonconductive enclosure means sealingly associated with said channels so as to form adjacent reaction vessels each having two opposite side walls formed by said electrodes; a plurality of conduit means communicating with each of said vessels; and conductor means associated with the terminal electrodes of said row establishing therewith an electrical circuit, wherein each of said hollow bipolar electrodes comprises a porous carbon plate sealingly associated in direct abutting relationship with a U-shaped integrally formed metal anode plate so as to form an oxidant receiving chamber and is asso-

ciated with inlet and outlet means admitting of the passage of an oxidizing gas through said oxidant receiving chamber.

3,316,168

METHOD OF BLENDING GASOLINE BY CORRELATING THE RATIOS OF VAPOR TO LIQUID VOLUME OVER TEMPERATURE OF INDIVIDUAL COMPONENTS AND THE RESULTANT BLEND

Paul R. Mernitz, Alma, Mich., assignor to Leonard Refineries, Inc., Alma, Mich., a corporation of Michigan

No Drawing. Filed Sept. 11, 1964, Ser. No. 395,908

2 Claims. (Cl. 208-17)

1. The method of blending gasoline from a plurality of blending stocks with the use of the following formula:

$$\frac{V_1}{\sqrt{T_1-C}} + \frac{V_2}{\sqrt{T_2-C}} + \frac{V_3}{\sqrt{T_3-C}} + \dots + \frac{V_n}{\sqrt{T_n-C}} = \frac{1}{\sqrt{T_B-C}}$$

Where:

V_1, V_2, V_3, V_n are the respective percents by volume of the blending stocks

T_1, T_2, T_3, T_n are the respective temperatures at which the blending stocks attain a preselected vapor-to-liquid ratio

C is a preselected base temperature

T_B is the temperature at which the blend of the component blending stocks attains a preselected vapor-to-liquid ratio comprising the steps of heating a quantity of each blending stock in a closed container to determine the temperature at which each stock attains a preselected vapor-to-liquid ratio, then, for blending stocks which attain the preselected vapor-to-liquid ratio at a temperature equal to or lower than the preselected base temperature, determining an effective temperature value therefor by the steps of first blending a gasoline of a plurality of blending stocks including the blending stock for which an effective temperature value is to be determined, then heating a quantity of said blend in a closed container to determine the temperature at which the blend of the component blending stocks attains the preselected vapor-to-liquid ratio, then by use of the above formula, determining the effective temperature value for the blending stock in question, then determining the temperature at which different blends of preselected proportions of the blending stocks attain the preselected vapor-to-liquid ratio in accordance with the above formula, and then blending a gasoline from the blending stocks which most nearly has a composition in accordance with desired performance and desired economic results and which has a T_B equal to or greater than the preselected value.

3,316,169

CATALYTIC HYDROCRACKING OF HYDROCARBONS WITH THE USE OF HALOGEN AND SULFUR ACTIVATORS

Reese A. Peck, Fishkill, Donald A. Messing, Glenham, and Edward T. Child, Brinckerhoff, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 16, 1964, Ser. No. 404,498

4 Claims. (Cl. 208-111)

1. In a process in which a hydrocarbon charge stock containing more than 5 p.p.m. nitrogen and boiling in the gas oil range is contacted with a hydrocracking catalyst under hydrocracking conditions and in which the catalyst is subjected to a loss in activity, the improvement which comprises reducing the rate of loss of activity of the catalyst by conducting said hydrocracking in the presence of a halogen compound and a sulfur compound

present in an amount sufficient to supply at least 60 p.p.m. sulfur by weight based on the hydrocarbon charge, the halogen to nitrogen atomic ratio being between 17 and 99.

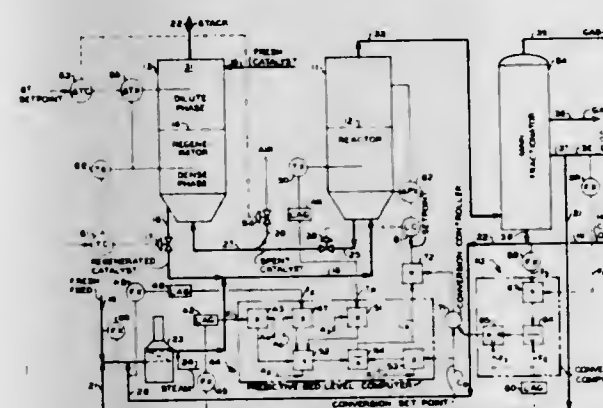
3,316,170

CONTROL SYSTEM FOR MAXIMUM HEAT UTILIZATION IN PROCESS FOR FLUID CATALYTIC DECOMPOSITION CONVERSION OF HYDROCARBONS

William S. Stewart, Bartlesville, Okla., and William E. Barr, Phillips, Tex., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Jan. 3, 1966, Ser. No. 518,225

6 Claims. (Cl. 208-164)



1. In a process for the fluidized catalytic decomposition conversion of hydrocarbons wherein regenerated catalyst is withdrawn from a regeneration zone having a dense-phase and a dilute-phase and introduced into a hydrocarbon feed stream, the resulting combined stream is introduced into a fluidized catalytic decomposition conversion reaction zone, the reaction effluent is withdrawn from said reaction zone and separated into at least one converted product fraction and at least one unconverted product fraction, spent catalyst is withdrawn from said reaction zone, a stream of air is admixed with the thus withdrawn spent catalyst, and the mixture of spent catalyst and air is passed into said regeneration zone; the improvement comprising establishing a first signal proportional to the desired value of conversion, establishing a second signal proportional to the temperature within said reaction zone, establishing responsive to said first and second signals of a third signal representative of the predicted value of the level of the catalyst bed in said reaction zone required to maintain the value of actual conversion equal to said desired value of conversion, establishing a fourth signal representative of the actual level of the catalyst bed in said reaction zone, establishing responsive to a comparison of said third and fourth signals a fifth signal representative of the difference between said third and fourth signals, manipulating the rate of withdrawal of spent catalyst from said reaction zone responsive to said fifth signal to vary the actual level of the catalyst bed as required to maintain the conversion at said desired value of conversion, establishing a sixth signal representative of the temperature in the dense-phase of said regenerator, and manipulating the rate of withdrawal of regenerated catalyst from said regeneration zone and the introduction thereof into said hydrocarbon feed responsive to said sixth signal to maintain said temperature in said dense-phase substantially constant and to transfer, by way of the withdrawn regenerated catalyst, excess heat from said regeneration zone into said reaction zone to maintain the temperature in said reaction zone at the maximum value possible for the condition necessary to produce said desired value of conversion.

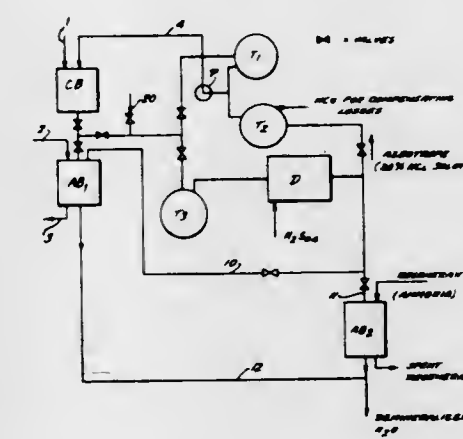
3,316,171
PROCESS FOR REGENERATING CATIONIC RESINS

Nunzio Mastroianni, Piazza Risorgimento 10, Milan, Italy

Filed Aug. 26, 1963, Ser. No. 304,392

Claims priority, application Italy, Aug. 25, 1962, 16,873/62

17 Claims. (Cl. 210-34)



1. A process of regenerating cationic exchange resins, comprising the steps of treating an at least partially spent cationic exchange resin containing monovalent and bivalent cations with a solution containing a monobasic acid so as to regenerate said cationic exchange resins and to form a solution containing the salified monobasic acid; distilling the thus formed solution with a polybasic acid of greater strength and lesser volatility than said monobasic acid so as to react said polybasic acid and said salified monobasic acid, thereby freeing said monobasic acid under formation of a salt of said polybasic acid; recovering said monobasic acid; and recycling the latter for the subsequent treating of at least partially spent cationic exchange resin.

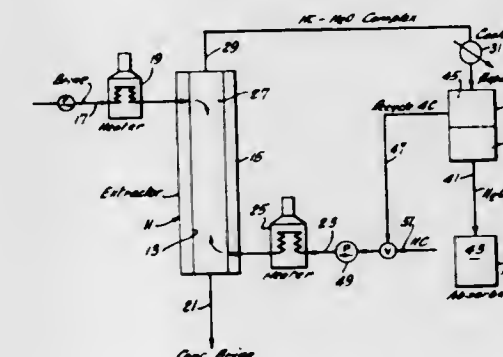
3,316,172

REMOVING WATER FROM BRINE

Howard V. Hess, Glenham, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 16, 1963, Ser. No. 310,515

19 Claims. (Cl. 210-59)



1. A process for extracting water from brine comprising bringing into contact with one another in an extraction zone hot brine and a hot hydrocarbon liquid consisting essentially of hydrocarbons containing not less than 6 and not more than 30 carbon atoms per molecule characterized by the ability to extract more water at a high temperature than at a lower temperature thereby extracting water into said hydrocarbon liquid and forming a complex therewith, removing said complex from contact with residual brine, cooling said complex to form a water phase and hydrocarbon phase, and separating said water phase from said hydrocarbon phase.

3,316,173 PROCESS FOR TREATING WATER WITH BROMINE

Jack F. Mills, Robert D. Goodenough, and William F. Nekervis, all of Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 283,596, May 27, 1963. This application June 1, 1966, Ser. No. 537,246

5 Claims. (Cl. 210-62)

1. In a process for treating an aqueous solution with bromine, the improvement which comprises: passing the aqueous solution through a bed of a water-insoluble anion exchange resin in polybromide form, whereby bromine is removed from the polybromide resin by the aqueous solution.

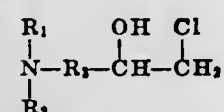
3,316,174 AGENTS FOR PREVENTING THE ELECTROSTATIC CHARGE OF SHAPED ARTICLES

Wolfgang Carl, Dormagen, Dietrich Glablsch, Leverkusen, and Alfred Reichle and Martin Wandel, Dormagen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed June 14, 1963, Ser. No. 287,796
Claims priority, application Germany, July 3, 1962, F 37,215; Apr. 11, 1963, F 39,465

6 Claims. (Cl. 252-88)

1. A method for imparting a wash-fast antistatic finish to a material comprising at least one member selected from the group consisting of polyacrylonitriles, polyamides, polyacrylics, polyesters and shaped articles thereof, comprising spraying or impregnating the material with a solution or emulsion consisting essentially of a substantial antistatic amount of a composition selected from the group consisting of



and the corresponding epoxide, wherein

R_1 is a member selected from the group consisting of an aliphatic hydrocarbon moiety containing not more than 6 carbon atoms, and cyano-substituted aliphatic hydrocarbon moiety containing not more than 6 carbon atoms;

R_2 is alkyl having 6-18 carbon atoms; and

R_3 is an alkylene moiety of 1-3 carbon atoms.

3,316,175
STABILIZATION OF ORGANIC SUBSTANCES
Edwin J. Latos, Chicago, and Charles M. Hayes, Hoffman Estates, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Original application Dec. 12, 1963, Ser. No. 330,008. Divided and this application Dec. 10, 1965, Ser. No. 513,079

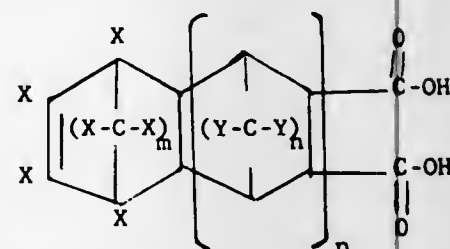
10 Claims. (Cl. 252-32.5)

1. An organic substrate subject to deterioration during storage, transportation and use containing, as an inhibitor against said deterioration, a small but stabilizing concentration of the phosphate salt of the reaction product of compound (a) and compound (b) formed by reaction of said compounds at a temperature of from about 10° to about 250° C. in a proportion of from one mole of compound (a) with from one to two moles of compound (b), said compound (b) being selected from the group consisting of:

- (1) alkylene polyamine having from 2 to 4 nitrogen atoms per molecule and containing from 2 to 6 carbon atoms per alkylene group,
- (2) alkylene polyamine having from 2 to 4 nitrogen atoms per molecule and containing from 2 to 6 carbon atoms per alkylene group and having on at least one of the nitrogen atoms an alkyl of from 1 to 20 carbon atoms,

bon atoms per alkylene group and having on at least one of the nitrogen atoms an alkyl of from 1 to 20 carbon atoms,

- (3) N-alkyldiaminoalkane in which the alkyl contains from about 8 to about 25 carbon atoms and the alkane moiety contains from 2 to 6 carbon atoms,
- (4) ortho-, meta- and para-phenylenediamine,
- (5) N-alkyl and N,N'-dialkyl phenylenediamine in which each alkyl contains from 1 to about 12 carbon atoms,
- (6) diaminodiphenyl alkane containing from 1 to about 6 carbon atoms in the alkane moiety, and
- (7) diaminodiphenyl ether, diaminodiphenyl sulfide, diaminodiphenyl amine and said diaminodiphenyl compounds having on at least one of the nitrogen atoms an alkyl of from 1 to about 16 carbon atoms, and said compounds (a) being selected from the group consisting of polyhalopolyhydopolycyclicdicarboxylic acid and corresponding anhydride, said acid having the formula:



in which X is chlorine, bromine, hydrogen or alkyl of from 1 to 10 carbon atoms, at least two of the X's being chlorine or bromine, Y is chlorine, bromine, hydrogen or alkyl of 1 to 10 carbon atoms, m is an integer of from 1 to 4, n ranges from 0 to 4, and p ranges from 0 to 4, said phosphate salt being formed by the reaction at a temperature of from ambient to about 70° C. of one mole proportion of said reaction product of compound (a) and compound (b) with from about 0.5 to about 4 mole proportions of a phosphorus compound selected from the group consisting of

- (1) phosphoric acid,
- (2) alkyl phosphate and alkyl thiophosphate containing alkyl of from 1 to about 20 carbon atoms,
- (3) phosphate and dithiophosphate of oxyalkylenated aliphatic alcohol containing from 4 to 20 carbon atoms and from 1 to 12 oxyalkylene groups of from 2 to 6 carbon atoms,
- (4) phosphate and dithiophosphate of oxyalkylenated phenol containing from 1 to 12 oxyalkylene groups of from 2 to 6 carbon atoms, and
- (5) phosphate and dithiophosphate of oxyalkylenated alkyl phenol containing from 1 to 3 alkyls of from 1 to 20 carbon atoms each and containing from 1 to 12 oxyalkylene groups of from 2 to 6 carbon atoms.

3,316,176
PAPER MAKING PROCESS
Raymond J. Michalski, Riverdale, Reed S. Robertson, Glen Ellyn, Edgar A. Steck, La Grange, and William M. Stephenson, Park Forest, Ill., assignors to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
Filed Feb. 12, 1964, Ser. No. 344,320

1 Claim. (Cl. 252-47)



A composition useful in improving the operational efficiency of a Fourdrinier papermaking machine which

comprises 7.5-10.0 parts by weight of 2-mercaptobenzothiazole and one part of benzotriazole.

3,316,177 FUNCTIONAL FLUID CONTAINING A SLUDGE INHIBITING DETERGENT COMPRISING THE POLYAMINE SALT OF THE REACTION PRO- DUCT OF MALEIC ANHYDRIDE AND AN OXI- DIZED INTERPOLYMER OF PROPYLENE AND ETHYLENE

Casper J. Dorer, Jr., Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

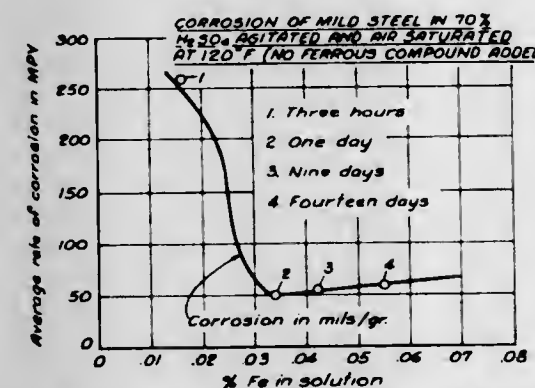
No Drawing. Filed Dec. 7, 1964, Ser. No. 416,618
9 Claims. (Cl. 252-51.5)

6. A lubricating composition comprising a major proportion of a lubricating oil and a minor proportion, sufficient to impart sludge-inhibiting and detergent properties thereto, of a nitrogen-containing composition prepared by the process comprising reacting an oxidized, degraded interpolpolymer of propylene and ethylene, said oxidized, degraded interpolpolymer having a molecular weight of at least about 1000 and being obtained by heating said interpolpolymer at a temperature of at least about 100° C. in the presence of oxygen to cause a substantial reduction in the molecular weight of said interpolpolymer, with from about 1% to about 20% by weight of maleic anhydride to form an acidic intermediate and neutralizing said acidic intermediate with an alkylene polyamine.

3,316,178
THERMOSTABLE DIELECTRIC MATERIAL
James E. Millington, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Nov. 12, 1964, Ser. No. 412,583
7 Claims. (Cl. 252-63.7)

1. A thermally upgraded cellulosic paper dielectric for transformers of the type operated in a petroleum oil environment comprising a cellulosic paper dielectric impregnated with an amine selected from the group consisting of ethanalamine, diethanolamine, triethanolamine, methylethanolamine, methyldiethanolamine, 1,1-dimethylamino-2-propanol, t-butylaminoethanol, tetrakis-(2-hydroxyethyl)-ethylenediamine tris-hydroxymethylaminomethane, tetra (2-hydroxypropyl) ethylenediamine, 9-diethanolamine-10-hydroxystearylamine, and 1,9-bis (diethanolamino)10-hydroxyoctadecane in an amount such that said cellulosic paper dielectric has an amino nitrogen content of from about 0.2% to about 1.0% by weight.

3,316,179
**INHIBITION OF CORROSION OF SULFURIC
ACID ON CARBON STEEL**
Clayton W. Hoonstra and Paul R. Handt, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Aug. 24, 1965, Ser. No. 483,029
13 Claims. (Cl. 252-147)



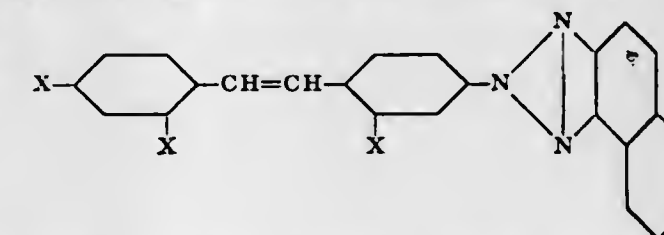
1. The method of treating carbon steel which consists essentially of contacting said steel with an aqueous

composition consisting essentially of (1) between about 40 percent by weight and the point of saturation of H_2SO_4 , (2) a metal ion-yielding source material selected from the class consisting of chromic and aluminum compounds and chromium and aluminum metal and mixtures thereof in an amount sufficient to yield by weight in said solution at least about 0.005 percent by weight of trivalent chromium ions when the metal ion-yielding source yields chromic ions and at least about 0.01 percent of trivalent aluminum ions when the metal ion-yielding source yields aluminum ions, and (3) the balance substantially water.

3,316,180 CHLORINATED NAPHTHOTRIAZOLE BRIGHT- ENERS FOR POLYALKYLENE FIBERS AND PLASTICS

Albert F. Strobel, Delmar, and Sigmund C. Catino, Castleton, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed July 30, 1963, Ser. No. 299,685
6 Claims. (Cl. 252-301.2)

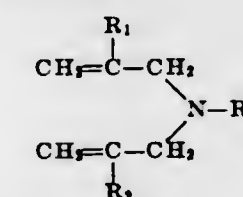
1. A polyalkylene plastic composition containing, in an amount sufficient to optically brighten said plastic, a brightening agent having the following formula:



wherein X represents a member selected from the class consisting of hydrogen and chlorine, at least one of the X's in the outer ring being chlorine.

3,316,181
**PROCESS FOR BREAKING EMULSIONS OF THE
OIL-IN-WATER TYPE**
John J. Sackis, Chicago, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Nov. 23, 1965, Ser. No. 509,431
9 Claims. (Cl. 252-344)

1. A method of breaking emulsions of the type comprising an oil phase dispersed in a non-oily continuous phase which comprises the steps of treating the emulsion with at least a demulsifying amount of a cationic copolymer having a molecular weight of at least 2000 and obtained by copolymerization of acrylamide and a bis-ethylenically unsaturated compound represented by the following structural formula:



where R_1 and R_2 each represent a member of the class consisting of hydrogen and methyl, and R_3 is selected from the group consisting of hydrogen and lower alkyl radicals, and separating said phases.

9. A method of breaking emulsions of the type comprising an oil-phase dispersed in a non-oily continuous phase which comprises the step of treating the emulsion with at least a demulsifying amount of a copolymeric polyacrylamide demulsifier having a molecular weight of at least 2000 and derived by copolymerizing acrylamide and a cationic comonomer selected from the group consisting of diallylamine, diethylaminoethyl methacrylate, vinyl pyridine, and diethylaminoethyl acrylate and separating said phases.

3,316,182

CATALYSTS FOR SYNTHESIS OF ACRYLONITRILE FROM OLEFINS, AMMONIA AND OXYGEN
Edgar L. McDaniel and Howard S. Young, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 19, 1966, Ser. No. 521,499
5 Claims. (Cl. 252-451)

3. A process for preparing a catalyst composition which comprises heating a mixture consisting essentially of from about 1 to 42 parts by weight of bismuth nitrate and from 1 to 27 parts by weight of ammonium dodecamolybdate, at a temperature of from 450-600° C., until calcination is complete.

5. The process according to claim 3 in which said ammonium dodecamolybdate is added to a silica sol to form a slurry, said bismuth nitrate is added to said slurry, the resulting mixture is heated to form a gel and said gel is calcined at 450° C. to 600° C.

3,316,183

SHAPED CARBON ARTICLES AND METHOD OF MAKING

Laurence F. King, Mooretown, Ontario, and Warren D. Robertson and Clellie Truman Steele, Sarnia, Ontario, Canada, assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Dec. 12, 1963, Ser. No. 329,994
9 Claims. (Cl. 252-510)

1. A binder for the manufacture of shaped carbon articles consisting essentially of a petroleum pitch binder having a softening point of about 175 to 250° F. having dispersed therein from about 1 to about 10 wt. percent, based upon said residuum, of a carbon black having an average particle size of less than 100 millimicrons and a surface area of at least about 15 sq. meters per gram.

3,316,184

BARIUM TITANATE CERAMIC COMPOSITION
Kaneomi Nagase, Kyoto, Hiromitsu Taki, Sakai-shi, and Tsuneharu Nitta, Osaka, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
Filed July 30, 1965, Ser. No. 476,021

Claims priority, application Japan, May 9, 1962, 37/18,937; Nov. 19, 1962, 37/51,758; Feb. 20, 1963, 38/8,957; Mar. 13, 1963, 38/14,396
5 Claims. (Cl. 252-520)

1. A semiconductive ceramic material formed from a solid solution in perovskite structure having a positive temperature coefficient of electrical resistivity, and consisting essentially of 1.00 mol of titanium dioxide, and of a total of one mol of (a) up to 0.9999 mol of barium oxide and (b) from 0.0001 to 0.085 mol of silver oxide.

3,316,185

CURABLE POLYEPOXIDE COMPOSITIONS CONTAINING A GLYCOL DIAMINE

Norman H. Reinking, Millington, N.J., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Nov. 21, 1960, Ser. No. 70,446
12 Claims. (Cl. 260-2)

1. Curable composition comprising a polyepoxide having an epoxy equivalency of more than one wherein the oxygen of each epoxy group is attached to vicinal carbon atoms and a liquid glycol diamine having the general formula:



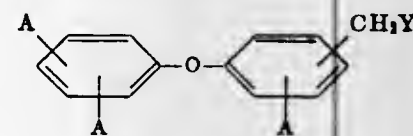
wherein n is an integer having a value of from 2 to 3 inclusive and x is an integer having a value of 1 to 3 inclusive, said diamine being present in an amount sufficient to cure said composition to an infusible product.

3,316,186

SOLUBLE DIPHENYL ETHER POLYMERS
Gerald R. Geyer, Melvin J. Hatch, and Hugh B. Smith, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed July 31, 1963, Ser. No. 299,073
24 Claims. (Cl. 260-2.1)

1. A soluble methylenediphenyl ether polymer prepared by the condensation polymerization of a reactive aromatic material which:

(a) consists in major proportion by weight of a diphenyl ether of the formula:

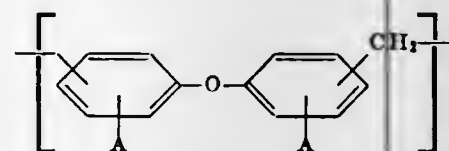


wherein each A independently is H or $-\text{CH}_2\text{Y}$ and Y is Cl, Br, OH or OR where R is a C_1-C_4 alkyl group, and

(b) contains an average of about 1.5 to 3.5 $-\text{CH}_2\text{Y}$ groups per reactive aromatic molecule;

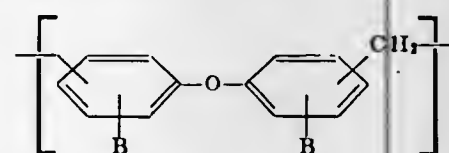
said polymerization being achieved in the presence of:

(c) an inert diluent selected from a group consisting of aliphatic hydrocarbons, halogenated aliphatic hydrocarbons and halogenated aromatic hydrocarbons having a boiling point between 30° and 150° C., and
(d) a Friedel-Crafts catalyst at a temperature of about 0° to 85° C. to yield a polymer which consists essentially in a plurality of methylenediphenyl ether groups of the formula:



wherein A is H or $-\text{CH}_2\text{Y}$ as defined above.

15. A soluble cationic methylenediphenyl ether polymer consisting essentially of a plurality of methylenediphenyl ether groups of the formula:



wherein B is H or $-\text{CH}_2\text{Z}$ and Z is an ammonium, sulfonium or phosphonium group, and containing an average of at least 0.05 $-\text{CH}_2\text{Z}$ groups per methylenediphenyl ether group, said cationic polymer being obtained by reacting a soluble methylenediphenyl ether polymer prepared by the process of claim 9 with a suitable amine, sulfide or phosphine to introduce the cationic group Z.

3,316,187

BINDER COMPOSITION

George J. Grosner, Milford, and Edward V. Huda, Stratford, Conn., assignors to Raybestos-Manhattan, Inc., Passaic, N.J., a corporation of New Jersey
No Drawing. Filed Nov. 13, 1961, Ser. No. 152,058
9 Claims. (Cl. 260-2.5)

1. A plastic, aqueous binder composition comprising a mixture of the following in percent by volume: minute gas filled hollow cured phenol formaldehyde microballoons from about 20 to about 75%, plasticizer from about 2 to about 35% of the group consisting of aqueous latices of synthetic rubbers and synthetic resins, water from about 15 to about 40%, and synthetic ambient temperature curable epoxy resin and curing agent therefor from about 10 to about 60%.

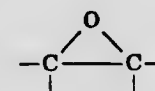
3,316,188

DIELECTRIC LENS MATERIAL COMPRISING A HALOGENATED EPOXY RESIN COMPOSITION AND A POLYMERIZED VEGETABLE OIL DERIVED POLYAMIDE RESIN

Sven U. K. A. Richter, Springfield, and Herbert S. Schnitzer, Longmeadow, Mass., assignors to De Bell & Richardson, Inc., Hazardville, Conn., a corporation of Connecticut
No Drawing. Continuation of application Ser. No. 852,927, Nov. 16, 1959, now Patent No. 3,198,756, dated Aug. 3, 1965. This application Mar. 10, 1965, Ser. No. 438,759

2 Claims. (Cl. 260-2.5)

1. A foamed dielectric lens material comprising the thermoset foam product of the reaction of an epoxy resin curing agent with an epoxy resin compound having at least two epoxide groups



per molecule and containing halogen atoms attached to the resin molecules in an amount not less than 1% or more than 20% by weight based on the total weight of the foam, a decomposable blowing agent, a polymerized vegetable oil derived polyamide resin, the foam containing antimony oxide in an amount not less than 1% and not essentially greater, by weight, than the weight percentage of halogen present in the resin.

3,316,189

PRINTING INK COMPRISING POLYOL, POLYISOCYANATE AND POLYMERIC RESIN HARDENER

George M. Adams, Palos Heights, Ill., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Oct. 4, 1963, Ser. No. 313,744
15 Claims. (Cl. 260-13)

1. A printing ink composition comprising (1) a polyol prepolymer, selected from the group consisting of polyester polyol prepolymer obtained from the esterification products of polyhydric alcohols and polycarboxylic acids, castor polyol prepolymers obtained from the polyol derivatives of castor oil, and polyether polyol prepolymers obtained from the alkylene oxide adducts of polyhydroxy alkanes, trialkanol amines, or polyamines (2) a polyisocyanate prepolymer, obtained from the reaction product of an organic polyisocyanate and a polyhydric alcohol (3) a polymeric resin hardener selected from the group consisting of cellulose acetate butyrate, cellulose butyrate, cellulose acetate propionate, partially hydrolyzed polyvinyl chloride-acetate, or polyvinyl butyral and which is compatible with said polyol prepolymer and said polyisocyanate and which contains at least one group per molecule which can react with isocyanate groups, said reactive groups of said polymeric resin hardener being selected from the class consisting of hydroxyl groups, amine groups, amide groups or carboxylic acid groups (4) a pigment and (5) a solvent for the polymeric components of the composition, wherein said polyisocyanate prepolymer is present in an amount such that the available free isocyanate groups to available free polyol hydroxyl groups are in a ratio of from between about 2:1 to 5:1; and wherein said polymeric resin hardener is present in an amount effective to prevent offset of said ink composition without imparting brittleness thereto, said printing ink composition being further characterized in that it is capable of being applied to a polymeric substrate and permitted to polymerize thereon in situ to a completely cured state.

3,316,190

NON-STICKY WATER-SOLUBLE POLYVINYL ALCOHOL FILM

Hideo Suzumura, Katsuaki Hirano, and Teichiro Chiba, Kurashiki, Japan, assignors to Kurashiki Rayon Co., Ltd., Kurashiki-shi, Japan, a corporation of Japan
No Drawing. Filed May 17, 1962, Ser. No. 195,385

Claims priority, application Japan, May 27, 1961, 36/18,653

10 Claims. (Cl. 260-17.4)

2. A cold water-soluble polyvinyl alcohol film which is non-sticky at high humidity comprising polyvinyl alcohol, from 2% to 50% by weight of a water-soluble starch, based on the weight of polyvinyl alcohol, and from 0.2% to 20% by weight of a surface active agent having an HLB in the range of 8 to 20, based on the weight of polyvinyl alcohol.

3,316,191

CURING EPOXY RESINS

Lewis Montesano, Upper Montclair, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
No Drawing. Filed Aug. 8, 1961, Ser. No. 129,949

4 Claims. (Cl. 260-18)

1. A method for curing a polyepoxy-polyhydroxy ether resin comprising a glycidyl ether of a polyhydric phenol having a 1,2-epoxy equivalency greater than 1 which comprises admixing the said resin with a curing agent selected from the group consisting of primary polyamines, secondary polyamines and polyamides, said primary and secondary polyamines having at least one available hydrogen atom attached to each of at least two amino nitrogen atoms per molecule, said polyamides containing terminal groups selected from among amine groups, carboxyl groups and mixtures thereof, the number of free groups in said polyamide ranging from 200-320, together with an accelerator consisting essentially of dodecyl succinic anhydride in an amount within the range of 1-10 parts, by weight, per 100 parts, by weight, of epoxy resin and up to 1 part, by weight, per 2 parts, by weight, of curing agent.

3,316,192

BLENDS COMPRISING POLYVINYL CHLORIDE, POLYMETHYL METHACRYLATE AND A STABILIZER

Arthur David Seibel, Parkersburg, W. Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Sept. 24, 1965, Ser. No. 490,136

6 Claims. (Cl. 260-23)

1. A stable homogenous blend consisting essentially of polyvinyl chloride, and at least one acrylic resin of the class consisting of copolymers of methyl methacrylate and lower alkyl acrylates and methyl methacrylate homopolymer, said acrylic resin having an inherent viscosity of 0.3 to 0.6, when said acrylic resin is a copolymer, the amount of lower alkyl acrylate in said copolymer being 0.02 to 25% by weight of the copolymer, the amount of polyvinyl chloride in said blend being from 50 to 80 parts by weight per 100 parts of resin, the amount of acrylic resin in said blend being from 20 to 50 parts by weight per 100 parts of resin, when said acrylic resin contains less than about 5% lower alkyl acrylates, said acrylic resin containing at least one bivalent sulfur compound having the formula $\text{R}_1-\text{S}-\text{R}_2$ where R_1 is an organic radical containing 1 to 20 carbon atoms and R_2 is selected from the class consisting of hydrogen and organic radicals having 1 to 20 carbon atoms, said bivalent sulfur compound being present in said acrylic resin in an amount such that the sulfur

content of said acrylic resin is .1 to 2% by weight of the acrylic resin, said blend being stabilized with at least one dehydrochlorination inhibitor selected from the class consisting of dialkyl tin mercaptides, dialkyl tin carboxylates, and dialkyl tin alkoxides, having 1 to 10 carbon atoms in each alkyl group, fatty acid salt of a metal of the class consisting of zinc, lead, cadmium, calcium, and strontium having 7 to 24 carbon atoms, barium phenolates, dialkyl zinc mercaptides having 1 to 10 carbon atoms in each alkyl group, epoxidized oils having 10 to 100 carbon atoms and an oxigene oxygen content of 5 to 10% by weight of the oil, diglycidyl ethers of polyhydric phenols having 17 to 50 carbon atoms, 3:4 epoxy 6-methyl-cyclohexyl methyl 3:4 epoxy 6-methyl cyclohexane carboxylate, alkyl phosphites having 1-20 carbon atoms and triphenyl phosphite, in the amount of .5 to 4% by weight of the blend, said blend having a viscosity range of 10,000 to 50,000 poises at 180° C. at a shear rate of 100 sec.⁻¹ and a viscosity range of 3,000 to 8,000 poises at 180° C. at a shear rate of 1,000 sec.⁻¹.

3,316,193

POLYESTER RESINS PREPARED FROM TRIMETHYLOL PROPANE DIALLYL ETHER

Herbert Walter Chatfield, Croydon, England, assignor, by mesne assignments, to Vantorex Limited, Loughborough, England
No Drawing. Filed Dec. 26, 1962, Ser. No. 247,272
Claims priority, application Great Britain, Jan. 4, 1962, 338/62

6 Claims. (Cl. 260—23.5)

5. A method of obtaining an air drying resin which comprises reacting resin forming proportions of trimethylol propane diallyl ether, phthalic anhydride and drying oil fatty acids at a temperature of from about 190° C. to 240° C. under conditions conducive to esterification until a resin is obtained which is soluble in xylol.

3,316,194

POLYSULFIDE POLYMER COMPOSITION AND METHOD

Dana C. Payne, Redwood City, and Frank D. Gaus, Lafayette, Calif., assignors to Frank D. Gaus, doing business as Superior Products Company, Oakland, Calif.
No Drawing. Filed Mar. 18, 1963, Ser. No. 266,074

9 Claims. (Cl. 260—28)

1. An elastomeric composition comprising the homogeneous vulcanized product of thiol terminated liquid polysulfide, solid non-thiol terminated polymeric polysulfide formed as the reaction product of a polyhalide and alkaline polysulfide, and coal tar.

7. The method of improving the elastomeric properties of a vulcanized liquid polysulfide having vulcanizable thiol terminals which consists in admixing with the liquid polysulfide prior to vulcanizing a solid non-thiol terminated polymeric polysulfide formed as the reaction product of polyhalide and alkaline polysulfide.

3,316,195

CURABLE BINDER COMPOSITION COMPRISING EPOXY RESIN, CURING AGENT, AND POLYMERIC LATEX

George J. Grosner, Milford, and Edward V. Huda, Stratford, Conn., assignors to Raybestos-Manhattan, Inc., Passaic, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 13, 1961, Ser. No. 152,057

13 Claims. (Cl. 260—29.6)

1. A plastic, aqueous binder composition comprising a synthetic ambient temperature curable liquid epoxide resin, ambient temperature curing agent for said resin, an aqueous plasticizer for said composition of the group

consisting of synthetic rubber and synthetic resin latexes, and glass fiber of up to 1/4 inch average length.

3,316,196

POLYVINYL ACETATE PLASTICIZED WITH SUCCINIMIDE

William F. Hill, Jr., South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Original application Oct. 9, 1958, Ser. No. 766,188. Divided and this application May 4, 1962, Ser. No. 192,330

3 Claims. (Cl. 260—29.6)

1. A substantially dry-blend composition capable of forming continuous, flexible coatings on substrates at room temperature when applied as an aqueous dispersion which consists essentially of finely-divided polyvinyl acetate and in admixture therewith about 5 to about 60 weight percent, based on the weight of polyvinyl acetate, of succinimide.

2. A process for producing plasticized polyvinyl acetate compositions capable of forming continuous, flexible coatings on substrates at room temperature which comprises dispersing in an aqueous vehicle a substantially dry-blend composition consisting essentially of finely-divided polyvinyl acetate and in admixture therewith about 5 to about 60 weight percent, based on the weight of polyvinyl acetate, of succinimide.

3,316,197

POLYVINYL ACETATE COMPOSITIONS

William F. Hill, Jr., South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Original application Oct. 9, 1958, Ser. No. 766,188. Divided and this application May 4, 1962, Ser. No. 192,333

3 Claims. (Cl. 260—29.6)

1. A substantially dry-blend composition capable of forming continuous, flexible coatings on substrates at room temperature when applied as an aqueous dispersion which consists essentially of finely-divided polyvinyl acetate and in admixture therewith about 5 to about 60 weight percent, based on the weight of polyvinyl acetate, of succinonitrile.

2. A process for producing plasticized polyvinyl acetate compositions capable of forming continuous, flexible coatings on substrates at room temperature which comprises dispersing in an aqueous vehicle a substantially dry-blend composition consisting essentially of finely-divided polyvinyl acetate and in admixture therewith about 5 to about 60 weight percent, based on the weight of polyvinyl acetate, of succinonitrile.

3,316,198

BLENDS OF VINYL ACETATE HOMOPOLYMERS AND VINYL ACETATE COPOLYMERS

Norman A. Van Gorder, Scotch Plains, and Gerard James Giuliano, Chatham, N.J., assignors to Celanese Corporation, a corporation of Delaware

No Drawing. Filed May 17, 1963, Ser. No. 281,352

7 Claims. (Cl. 260—29.6)

1. An opaque film backing capable of being removably adhered to a photographic film base through a non-curl layer; said opaque film backing comprising a blend of (1) a homopolymer of a vinyl acetate, (2) an interpolymers of a vinyl acetate and at least one lower alkyl acrylate selected from the group consisting of ethyl acrylate, butyl acrylate and 2-ethylhexyl acrylate, and (3) an opacifying agent selected from the group consisting of carbon black, lithopone, calcium carbonate and titanium dioxide.

6. An aqueous dispersion of a mixture of a vinyl acetate homopolymer; an interpolymers consisting of vinyl acetate and a lower alkyl acrylate selected from the group consisting of ethyl acrylate, butyl acrylate and 2-ethylhexyl acrylate; and an opacifying agent selected from the group consisting of carbon black, lithopone, calcium carbonate and titanium dioxide.

3,316,199

LATEX COMPRISING THE POLYMERIZATION PRODUCT OF AMORPHOUS POLYISOBUTYLENE, A VINYL AROMATIC COMPOUND AND AN ALKYL ACRYLATE

Ira Arthur Murphy, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 13, 1963, Ser. No. 287,493

16 Claims. (Cl. 260—29.6)

1. A stable, film-forming latex comprising the polymerization product of an aqueous dispersion of

(1) from about 20 to about 35 percent by weight of an amorphous polybutene having a Staudinger molecular weight of from about 300 to about 11,000 dissolved in

(2) a monomer mixture comprising

(a) from about 20 to about 42 percent by weight of a vinyl aromatic compound, and

(b) from about 23 to about 60 percent by weight of an alkyl ester of acrylic acid in which the alkyl portion has from 4 to 10 carbon atoms,

all percentages being based on the total weight of the amorphous polybutene and the monomer mixture; said polybutene consisting predominantly of units from isobutylene, with minor amounts of units from other butenes.

3,316,200

STABLE DISPERSIONS

Robert J. Hatala, St. Petersburg, Fla., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 6, 1964, Ser. No. 387,983

21 Claims. (Cl. 260—29.6)

1. An aqueous dispersion which comprises a water insoluble interpolymers and an anionic surfactant, said interpolymers consisting essentially of:

(A) monomer units selected from the group consisting of primary alkyl acrylates in which the alkyl group has from 1 to 18 carbon atoms, secondary alkyl acrylates in which the alkyl group has from 1 to 18 carbon atoms, primary alkyl methacrylates in which the alkyl group has from 5 to 18 carbon atoms, and secondary alkyl methacrylates in which the alkyl group has from 5 to 18 carbon atoms;

(B) monomer units selected from the group consisting of alkyl methacrylates in which the alkyl group has from 1 to 4 carbon atoms, tert-pentyl methacrylate, tert-butyl acrylate, tert-pentyl acrylate, cyclohexyl acrylate, cyclohexyl methacrylate, acrylonitrile and methacrylonitrile, styrene and vinyl acetate, the weight proportions of (A) units to (B) units being from 13:1 to 1:20; and

(C) about 0.1 to 10% by weight based on total interpolymers weight of ionogenic units of acid monomers selected from the group consisting of acids having a pKa value up to about 4.2 and having at least one polymerizable vinyl group and water soluble salts of said acids, said anionic surfactant being in an amount of from 0.1% to 12% by weight based on total weight of interpolymers.

3,316,201

PROCESS FOR THE MANUFACTURE OF CONCENTRATED AQUEOUS DISPERSIONS OF FLUORINATED OLEFIN POLYMERS

Helmut Hahn, Frankfurt am Main, Claus Beermann, Neu-Isenburg, and Dieter Ulmschneider, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

Filed Dec. 22, 1964, Ser. No. 420,385

Claims priority, application Germany, Dec. 27, 1963, F 41,644

3 Claims. (Cl. 260—29.6)

1. A process for the manufacture of a concentrated dispersion of a fluorinated olefin polymer in water as the sole continuous phase which comprises adding 1 to 10 percent by weight, calculated on the solids content of the dispersion, of a surface-active agent of the group consisting of p-octylphenol-polyethyleneglycol ether and p-nonylphenol-polyethyleneglycol ether to a dilute dispersion of said fluorinated olefin polymer in water as the sole continuous phase and distilling the major portion of the water from the dispersion in vacuo at a temperature of 10 to 60° C. while preventing penetration of air or other gas into the dispersion.

3,316,202

LATICES OF CARBOXYL-CONTAINING POLYMERS OF CONJUGATED DIENES CROSS-LINKED WITH POLYALKYLENIMINES

Joseph F. Abere, White Bear Lake, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Original application Nov. 18, 1960, Ser. No. 70,115, now Patent No. 3,267,054. Divided and this application Jan. 18, 1965, Ser. No. 426,380

6 Claims. (Cl. 260—29.7)

1. An aqueous emulsion comprising a water insoluble polymer of a hydrocarbon conjugated diene having a plurality of carboxyl groups per molecule selected from the group consisting of (a) a copolymer of an alpha-beta unsaturated monocarboxylic acid and a conjugated diene and (b) a carboxylated polymer of a conjugated diene, a polyalkylenimine curing agent having a plurality of azirane rings and an emulsifying agent.

3,316,203

SOLVENT RESISTANT PAVING COMPOSITION CONTAINING A SYNTHETIC HYDROCARBON RESIN AND AN ETHYLENE-ALKYL ACRYLATE COPOLYMER

John E. Dereich, Pittsburgh, and James R. Patterson, Carnegie, Pa., assignors to Neville Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed May 2, 1963, Ser. No. 277,462

14 Claims. (Cl. 260—33.6)

1. A gasoline resistant binder composition characterized by a gasoline solubility rating (using mechanical shaker) of not more than 60%, a ductility of more than 45, and a ring-and-ball softening point between about 45° and 90° C.; which composition consists essentially of

(1) 100 parts of a hydrocarbon base consisting essentially of (a) about 18 to 100 percent of a hydrocarbon resin selected from the group consisting of coumarone-indene resins and petroleum resins derived by polymerization of cracked hydrocarbon streams and having a number average molecular weight between about 250 and 5,000, a ring-and-ball softening point in the range between about 0° and 250° C., an iodine number between about 0 to 250, and a Neville color not higher than 10, (b) 0 to 10 percent of a hydrocarbon rubber, and (c) 0 to about 82 percent of a hydrocarbon plasticizer oil which is substantially free of material boiling below 300° C.; and

(2) a compatible amount in the range of from about 3 to 15 parts of a solid resinous copolymer composed of about 95 to 99 mole percent of combined ethylene and correspondingly about 5 to 1 mole percent of combined alkyl acrylate containing from 1 to 12 carbon atoms per alkyl group, said copolymer having a density of from about 0.915 to about 0.94 gram per cm.³ at 23° C.

3,316,204

PIGMENTED FORMALDEHYDE-BASED THERMOSETTING RESIN COMPOSITIONS

Gerald Lederer, Hartburn, Stockton-on-Tees, England, assignor to British Titan Products Company Limited, Billingham, England, a company incorporated of Great Britain

No Drawing. Filed July 13, 1962, Ser. No. 209,786
Claims priority, application Great Britain, July 27, 1961, 27,310/61

11 Claims. (Cl. 260—38)

1. Pigmented resin composition comprising a formaldehyde-based thermosetting resin having incorporated therein pigmentary titanium dioxide particles; said particles having a surface coating consisting of a mixture of from about 0.1 to about 2.0 percent by weight stannic oxide, about 0.5 to about 7.0 percent by weight aluminum oxide and up to about 5 percent by weight silica based on the weight of the coated pigment; said pigmented composition being resistant to discoloration when exposed to ultraviolet radiation.

3,316,205

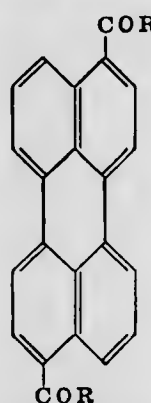
COLORED PLASTIC COMPOSITIONS AND COLORS THEREFOR

Chi K. Dien, Buffalo, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Jan. 21, 1964, Ser. No. 339,117

10 Claims. (Cl. 260—41)

1. A colored composition comprising a synthetic resin, and a compound having the formula



COR being an acyl radical wherein R is a group selected from the class consisting of aliphatic, cycloaliphatic, aromatic, and heterocyclic groups.

3,316,206

THERMO-STABILIZED COPOLYMERS OF TRIOXANE WITH UREA COMPOUNDS

Hans Dieter Hermann, Edgar Fischer, and Günther Roos, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Apr. 22, 1963, Ser. No. 274,813
Claims priority, application Germany, Apr. 28, 1962, F 36,666

3 Claims. (Cl. 260—45.8)

1. A copolymer whose repeating units consist essentially of —OCH₂— groups interspersed with 0.1 to 50% by weight of —OCH₂CH₂—(R₃)_n— groups in which R₃

is selected from the group consisting of methylene, lower alkyl-substituted methylene and lower alkyl-substituted oxymethylene radicals and n is 0 to 2, said copolymer being in intimate admixture with from 0.01 to 10% by weight of N,N'-bis-(1-aminoethyl) - urea, 2-amino-2-ureidobutyric acid ester, bis-(ureidomethyl)-amine, tris-(ureidomethyl) - amine, dipropylene-triamine-diurea, N-bis-(ureidoethyl)-2 - nitriloethylamine, 2,4-bis-ureidodiphenylamine, N-bis-(ureidoethyl) - 2 - nitrilo-octadecylamine or 1,6-bis-(2-pyridylcarbonylureido)-hexamethylene.

3,316,207

STABILIZED COPOLYMERS OF TRIOXANE

Hans Dieter Hermann and Edgar Fischer, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Apr. 26, 1963, Ser. No. 276,062

Claims priority, application Germany, Apr. 28, 1962, F 36,665

2 Claims. (Cl. 260—45.8)

1. A stabilized copolymer of trioxane with ethylene oxide, ethylene glycol, 1,3-butane diol, 1,4-butane diol, diethylene glycol or 1,4-butene diol-2 containing within the range of 0.01 to 10% by weight of a member selected from the group consisting of

- N,N'-bis-3-ethylene imino-propyl oxalic acid diamide,
- N-stearyl-N',N'-ethylene urea,
- hexamethylene-1,6-bis-ethylene urea,
- γ-ureidobutyric acid ester of phenoxyethanol,
- 2,3-di(butyrolactamureido) toluene,
- 1,5-di(butyrolactamureido) naphthalene,
- copolyamide of hexamethylene diamine thioglycolic acid, epsilon-aminocaproic acid and adipic acid hexamethylene diamine,
- polyacrolein oxime,
- N-stearyl-N-methyl-N-3-indolylmethyl amine,
- 5-amino-3-acetylamin-indazole,
- indene-2-carboxylic acid amide and
- cyanacetic acid amide.

2. A composition as defined in claim 1 containing, in addition, 0.01 to 10% by weight dioctyl diphenylamine or 2,2'-methylene-bis-(4-methyl-6-tert. butylphenol).

3,316,208

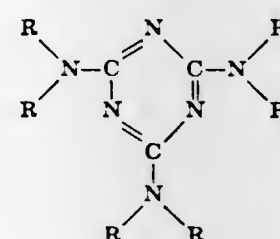
UNSATURATED NITRILE POLYMERS STABILIZED BY SUBSTITUTED MELAMINES AND PHENOLS

Yoon Chai Lee and Speros P. Nemphos, Springfield, Mass., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Sept. 23, 1963, Ser. No. 310,892

12 Claims. (Cl. 260—45.8)

1. A composition which comprises an interpolymer of a monovinylidene aromatic hydrocarbon and an unsaturated nitrile polymer, said interpolymer containing 10–90% by weight of a combined unsaturated nitrile of the group consisting of acrylonitrile, methacrylonitrile, ethacrylonitrile, propacrylonitrile, butacrylonitrile, and mixtures thereof in intimate admixture with 0.01–5.0% by weight of an alkyl phenol and about 0.005–0.1% by weight on the weight of the polymer, of a stabilizer corresponding to the formula:



wherein one R represents a member of the group consisting of —CH₂CH₂OH, —CH₂CHOHCH₃, —CH₂OCH₃, and —CH₂OCH₂CH₃ and the remaining R's are independently selected from the group consisting of —H, —CH₂CH₂OH, —CH₂CHOHCH₃, —CH₂OCH₃, and —CH₂OCH₂CH₃.

3,316,209

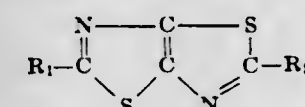
STABILIZATION OF ORGANIC MATERIAL WITH SUBSTITUTED THIAZOLO - [5,4 - d] - THIAZOLE STABILIZERS

John D. Spivack, Spring Valley, David H. Steinberg, Bronx, and Martin Dexter, Briarcliff Manor, N.Y., assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Original application May 9, 1962, Ser. No. 193,601, now Patent No. 3,282,951, dated Nov. 1, 1966. Divided and this application Apr. 2, 1965, Ser. No. 450,568

5 Claims. (Cl. 260—45.8)

1. Composition of matter which comprises (1) polyolefins or high impact polystyrene copolymers of butadiene and styrene, and (2) a stabilizer compound of the formula:



wherein R₁ and R₂ are each independently alkylhydroxy-phenyl having at least one alkyl radical in ortho position to the hydroxyl group on the phenyl nucleus.

3,316,210

THERMOSETTING AZIRIDINE RESINS

Greene W. Strother, Jr., Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 21, 1963, Ser. No. 303,657

9 Claims. (Cl. 260—47)

1. A thermosettable, thermoplastic resin consisting essentially of the condensation product of a diphenol selected from the group consisting of 4,4'-dihydroxy biphenyl, and biphenyl compounds wherein the phenyl groups are joined by an alkyl, sulfonyl, or thio group, nuclear halogenated compounds of said diphenols, and mixtures thereof, and a polyfunctional aziridine compound wherein a mixture containing about 1 to 3 aziridine rings for every 2 hydroxyl groups in said diphenol is reacted at a temperature of about 60–120° C. until about 60–70 percent of said aziridine rings have reacted.

3,316,211

PROCESS OF PREPARING AROMATIC POLYAMIDE-ESTERS

Rudolph J. Angelo, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

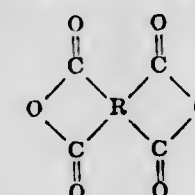
No Drawing. Filed Sept. 25, 1963, Ser. No. 311,307

5 Claims. (Cl. 260—47)

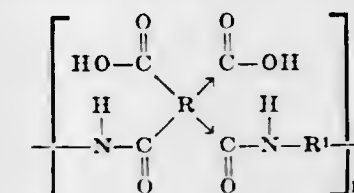
1. A process for preparing shapable polymeric compositions which comprises reacting at least one diamine having the structural formula



wherein R¹ is arylene, the two amino groups of said diamine each attached to separate carbon atoms of R¹; with at least one aromatic tetracarboxylic acid dianhydride,



wherein the four carbonyl groups of said dianhydride are directly attached to an aromatic ring of said dianhydride in an organic solvent for at least said diamine, said solvent being inert to the system, while maintaining the temperature throughout the reaction sufficiently below 175° C. to form a polymeric component containing at least about 50 percent of a polyamide-acid of the formula:



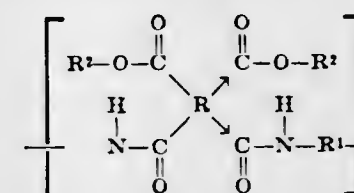
wherein the arrow denotes isomerism;

R is an aromatic tetravalent organic radical;

R¹ is arylene; and

n is an integer sufficiently high to provide a film-forming polymer;

treating said polyamide-acid with diazomethane to form a polyamide-ester of the formula



wherein the arrow denotes isomerism;

R is an aromatic tetravalent organic radical;

R¹ is arylene;

R² is methyl; and

n is an integer sufficiently high to provide a film-forming polymer.

3,316,212

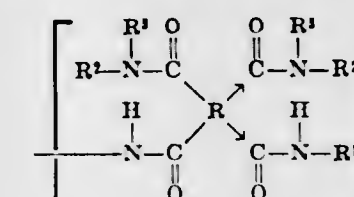
AROMATIC POLYAMIDE-AMIDES

Rudolph J. Angelo, Wilmington, Del., and William Earl Tatum, Tonawanda, N.Y., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 21, 1963, Ser. No. 325,442

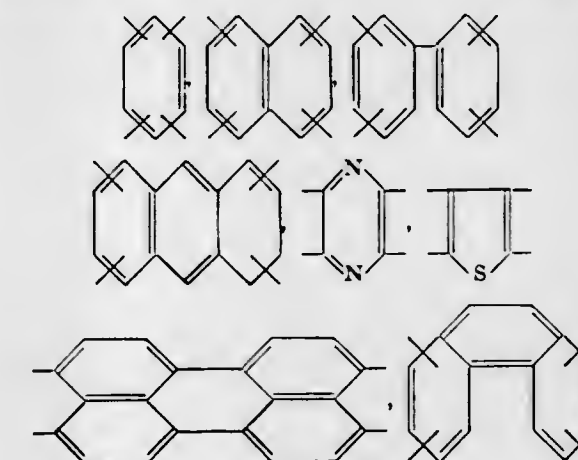
11 Claims. (Cl. 260—47)

1. A polymer consisting essentially of recurring units of

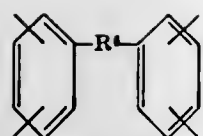


wherein the arrow denotes isomerism;

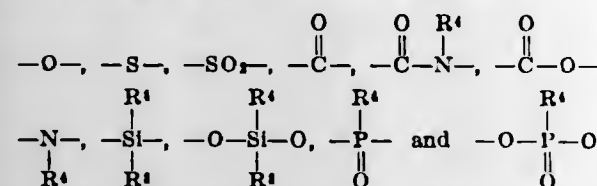
R is a radical selected from the group consisting of



and



where R^a is selected from the group consisting of an alkylene chains having 1-3 carbon atoms,



where R^4 and R^5 are selected from the group consisting of alkyl and aryl;

R^1 is arylene;

and R^2 and R^3 are selected from the group consisting of the substituents on the amine nitrogen in ammonia, methyl amine, dimethyl amine, ethyl amine, diethyl amine, propyl amine, ethylenediamine, aniline, N-methylaniline, o-toluidine, m-toluidine, p-chloroaniline, 2,3-xylidine, 2,4-xylidine, 2,5-xylidine, 2,6-xylidine, 3,4-xylidine, and 3,5-xylidine.

3,316,213

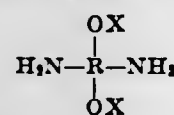
PROCESS FOR PREPARING AROMATIC POLYAMIDES AND POLYOXAZOLES

Charles E. Berr, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

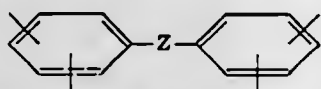
No Drawing. Filed Dec. 16, 1963, Ser. No. 330,538

2 Claims. (Cl. 260-47)

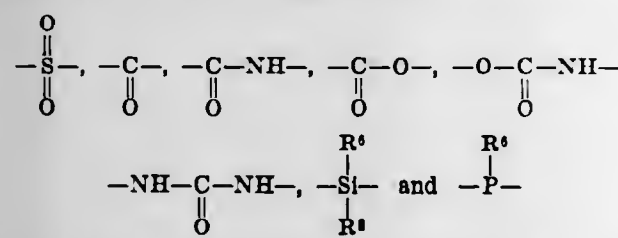
1. In a process for preparing a polybenzoxazole wherein at least one diamine having the structural formula



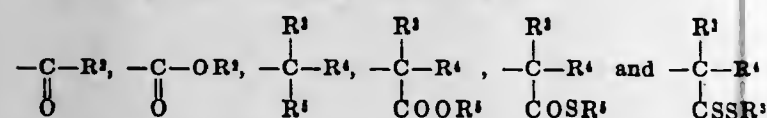
wherein R is an aromatic tetravalent radical selected from the group consisting of hydrocarbon radicals and radicals of the structure



where Z is selected from the group consisting of a divalent perhalocarbon radical, oxygen, sulfur,



where R^6 is selected from the group consisting of hydrogen and lower alkyl, each amino group of said diamine attached directly to a carbon atom of a ring of said aromatic tetravalent radical ortho or peri to the carbon atom to which an -OX is directly attached, and X is selected from the group consisting of hydrogen,



wherein R^2 is lower alkyl and R^3 , R^4 and R^5 are each selected from the group consisting of hydrogen and lower alkyl, is heated with at least one diaryl ester of an aromatic dicarboxylic acid at a temperature sufficient to produce a viscous melt and below about 250° C. to form a polymeric composition composed of polyamide; said polyamide having an inherent viscosity of at least 0.1 as meas-

ured at 30° C. on an 0.5% by weight solution in concentrated sulfuric acid, and said polyamide is then formed into a shaped article; the improvement comprising heating said article to a temperature of at least 275° C. for a time sufficient to convert the polyamide of said article to the corresponding polybenzoxazole having an inherent viscosity of at least 0.1 as measured at 30° C. on an 0.5% by weight solution in concentrated sulfuric acid.

3,316,214

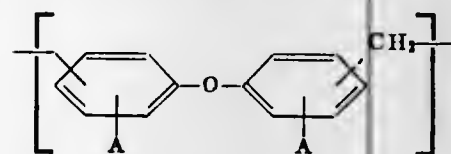
SOLUBLE ANIONIC (METHYLENEDIPHENYL ETHER) POLYMERS

Gerald R. Geyer, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 14, 1964, Ser. No. 367,575

9 Claims. (Cl. 260-47)

1. A soluble functional anionic polymer comprising in major molar proportions a plurality of (methylenediphenyl ether) moieties of the formula:



wherein

each A individually is a member of the group consisting of -H, -R, and -CH₂R;

R is an anionic moiety containing a functional group selected from the class consisting of -SO₃M, -COOM, -PO₃M₂ and -HPO₃M wherein M is a monovalent cation; and the (methylenediphenyl ether) moieties contain an average of at least 0.05 anionic groups (R).

3,316,215

EPOXY RESIN AND METHOD OF ACCELERATING THE CURING PROCESS THEREOF

Werner Möller, Regensburg, Switzerland, assignor to Oerlikon Engineering Company, Zurich, Switzerland, a corporation of Switzerland

Filed Feb. 23, 1965, Ser. No. 434,192

7 Claims. (Cl. 260-47)

1. A process for accelerating the curing of an epoxy resin at a hardening temperature without correspondingly accelerating an increase in its viscosity at lower temperatures of use, which consists in incorporating from 0.015 to 0.15 percent, by weight, of sodium in a resin composed of anhydrous bis-phenol-A-diglycidyl-ether containing hydroxyl groups and having an epoxy equivalent weight between 150 and 500.

3,316,216

POLYFLUOROKETONE/1,2-EPOXIDE COPOLYMERS AND METHOD FOR MAKING SAME

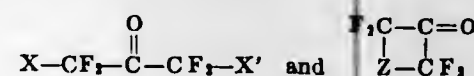
Frank Shumate Fawcett, Wilmington, and Edward George Howard, Jr., Hockessin, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 11, 1964, Ser. No. 351,217

23 Claims. (Cl. 260-43)

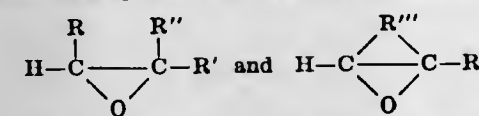
1. The process which comprises reacting:

(a) at least one polyfluoroketone of the group consisting of



wherein X and X' are selected from the class consisting of hydrogen, fluorine, chlorine, bromine and polyfluoroalkyl of up to 18 carbons and Z is polyfluoroalkylene of 1-3 carbons; with

(b) at least one epoxide of the group consisting of



wherein R, R' and R'' are selected from the class consisting of hydrogen; cyano; carboxy; alkyl, alkenyl, alkoxyalkyl, haloalkyl in which the halogen is of atomic number 9-35, hydroxyalkyl, alkoxyalkyl, carbocycloxyalkylenyl, carbacyl, carboxyalkylenyl and alkoxyalkylenyl of up to 18 carbons; aryl and aryloxyalkyl of up to 14 carbons; aralkyl of up to 12 carbons; and cycloalkyl of up to 7 carbons; and R''' is alkylene of 2-6 carbons;

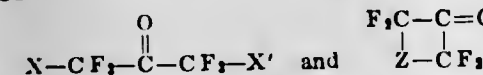
(c) at a temperature in the range -80° C. to +200° C.; and

(d) in the presence of a catalytic amount of a catalyst of the group consisting of alkyl sulfoxides of up to 18 carbons; alkali metal fluorides, cyanides, cyanates and thiocyanates and alkoxides and acylates of up to 18 carbons; tetraalkyl-, trialkylaryl-, and trialkylaralkylammonium hydroxides, chlorides, and cyanides of up to 18 carbons; pyridine; tertiary lower-alkyl amines; and phosphine oxides;

(e) the mole ratio of polyfluoroketone to epoxide being in the range 0.01:1 to 1:1.

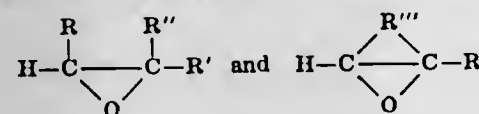
10. An addition copolymer of:

(a) at least one polyfluoroketone of the group consisting of



wherein X and X' are selected from the class consisting of hydrogen, fluorine, chlorine, bromine and polyfluoroalkyl of up to 18 carbons and Z is polyfluoroalkylene of 1-3 carbons; and

(b) at least one epoxide of the group consisting of



wherein R, R' and R'' are selected from the class consisting of hydrogen; cyano; carboxy; alkyl, alkenyl, alkoxyalkyl, haloalkyl in which the halogen is of atomic number 9-35, hydroxyalkyl, alkoxyalkyl, carbocycloxyalkylenyl, carbacyl, carboxyalkylenyl and alkoxyalkylenyl of up to 18 carbons; aryl and aryloxyalkyl of up to 14 carbons; aralkyl of up to 12 carbons; and cycloalkyl of up to 7 carbons; and R''' is alkylene of 2-6 carbons;

(c) the mole ratio of polyfluoroketone to epoxide being in the range 0.01:1 to 1:1.

3,316,217

POLYACETALS AND A PROCESS OF PREPARING THEM

Klaus Weissmehl and Klaus Küllmar, Frankfurt am Main, Manfred Reiher, Hofheim, Taunus, and Edgar Fischer, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Dec. 21, 1959, Ser. No. 860,739

Claims priority, application Germany, Dec. 23, 1958, F 27,341; Jan. 27, 1959, F 27,580

10 Claims. (Cl. 260-67)

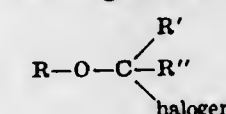
1. A process for the manufacture of linear polymers of trioxane of high molecular weight which comprises the step of polymerizing trioxane by mass polymerization at a temperature within the range of about 0° C. to about 150° C. in admixture with a cationic-active catalyst selected from the group consisting of

(1) 0.0001 to 0.1 mol percent, calculated upon the trioxane, of an oxonium salt complex of boron, anti-

mony, iron, tin and phosphorus chlorides and fluorides;

(2) 0.0001 to 0.1 mol percent, calculated upon the trioxane, of an aryldiazonium salt complex of boron, antimony, iron, tin and phosphorus chlorides and fluorides;

(3) 0.01 to 1 percent, calculated upon the weight of trioxane, of an organic metal compound of a metal selected from the group consisting of B, Al and Sn, and 0.01 to 5 percent, calculated upon the weight of trioxane, of an α-halogen ether of the formula



wherein R represents a member selected from the group consisting of saturated alkyl and cycloalkyl groups, and R' and R'' represent members of the group consisting of hydrogen, saturated alkyl and cycloalkyl groups.

3,316,218

OXYMETHYLENE COPOLYMERIZATION PROCESS

Kenneth Vincent Martin, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 15, 1963, Ser. No. 295,212

3 Claims. (Cl. 260-67)

1. A process for copolymerizing an oxymethylene producing monomer and another vaporizable monomer having a boiling point of less than 300° C. which is chemically different from said oxymethylene producing monomer, which process comprises vaporizing each of said monomers, mixing the vapors thus obtained while maintaining the vapors above about 125° C., the maximum temperature at which said vapors will copolymerize, contacting said vapors with a copolymerization catalyst, and thereafter copolymerizing the mixed monomers at a reduced temperature.

3,316,219

PROCESS FOR THE PRODUCTION OF HIGH MOLECULAR WEIGHT POLYOXYMETHYLENES

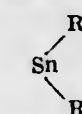
Kuno Wagner and Ernst-Ulrich Köcher, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Sept. 23, 1963, Ser. No. 310,896

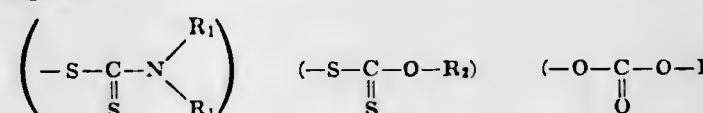
Claims priority, application Germany, Oct. 13, 1962, F 38,025

3 Claims. (Cl. 260-67)

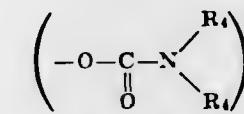
1. A process for producing high molecular weight polyoxymethylenes which comprises polymerizing gaseous formaldehyde containing 0.5 to 3% of water, up to 0.3% of methanol, and 0.1 to 0.3% of formic acid in the presence of 0.000015 to 0.01 mol per mol of formaldehyde of a compound of divalent tin of the formula



wherein R is a radical selected from the group consisting of



and



R_1 representing alkyl having from 1 up to 18 carbon atoms or phenyl, R_2 representing methoxyethyl or dodecyl,

R_3 representing methoxyethyl and R_4 being selected from the group consisting of hydrogen and butyl, at least one R_4 being butyl, said polymerizing being effected at temperatures of about -20 to $+120^\circ\text{C}$., and recovering from the polymerization medium the resultant high molecular weight polyoxymethylene.

3,316,220

CURING SYSTEM FOR POLYURETHANES COMPRISING 1,4-BUTANEDIOL DIGLYCIDYL ETHER AND 4,4'-METHYLENEBIS-(2-CHLOROANILINE)
Thomas Ramos, New York, N.Y., assignor to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Oct. 23, 1962, Ser. No. 232,626
3 Claims. (Cl. 260—77.5)

1. A cured polyurethane formed by admixing:
 - (1) 100 parts of an isocyanate terminated polyurethane prepolymer, with
 - (2) about 20 to 84 parts of a mixture consisting essentially of:
 - (a) 1.7 parts of 1,4-butanediol diglycidyl ether, and
 - (b) about 0.75 to 2.6 parts of 4,4'-methylenebis-(2-chloroaniline).

3,316,221

AROMATIC ESTER COCATALYSTS FOR LACTAM POLYMERIZATION
Thomas J. Hyde, Woodbury, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 1, 1963, Ser. No. 292,071
13 Claims. (Cl. 260—78)

1. In the process for the anhydrous polymerization of a lactam to polyamides in the presence of lactam-base salts at a temperature between the melting point of said lactam and the melting point of said polyamide, the improvement which comprises carrying out said polymerization in the presence of from about 0.1 to 5 weight percent of an aromatic ester cocatalyst free of non-benzenoid unsaturation and having an exocyclic carboxylate group bonded through the ether oxygen therein directly to carbocyclic aromatic carbon, the carbonyl carbon in said carboxylate group bonded to any radical in the remainder of the ester being bonded to one of the group consisting of carbon and tertiary nitrogen the other two substituents on said tertiary nitrogen being aliphatically saturated, any acyclic chain separating said carboxylate group from another such carboxylate group bearing at least four carbon atoms in said chain.

3,316,222

COPOLYMERS OF ETHYLENE AND VINYL ETHERS OF POLYOLS
Giffin D. Jones and Robert L. Zimmerman, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Sept. 15, 1958, Ser. No. 760,837
21 Claims. (Cl. 260—80.5)

1. Copolymer consisting, in polymerized form, of:
 - (1) between about 50 and about 99 percent by weight, based on the weight of the copolymer, of ethylene and
 - (2) between about 50 and about 1 percent by weight, based on the weight of the copolymer, of a polyol vinyl ether selected from the group consisting of (a) a monovinyl ether of a polyalkylene polyol containing from 4 to about 10 carbon atoms and (b) a polyvinyl ether containing from 2 to 3 vinyl oxy substituents on an aliphatic polyol of from 2 to about 10 carbon atoms.
5. Copolymer consisting, in polymerized form, of:
 - (1) between about 50 and about 99 percent by weight, based on the weight of the copolymer of ethylene; and

(2) between about 50 and about 1 percent by weight, based on the weight of the copolymer, of a mixture of (a) from about 95 to about 10 mole percent, based on the constitution of the mixture, of a polyol vinyl ether selected from the group consisting of a monovinyl ether of a polyalkylene polyol containing from 4 to about 10 carbon atoms, and a polyvinyl ether containing from 2 to 3 vinyl oxy substituents on an aliphatic polyol of from 2 to about 10 carbon atoms and (b) from about 5 to about 90 mole percent, based on the constitution of the mixture, of a supplemental comonomer selected from the group consisting of monovinyl ethers of monocarboxylic aliphatic acids, monovinyl ethers of monohydric aliphatic alcohols, monovinyl esters of monocarboxylic aliphatic acids, monovinyl esters of monohydric aliphatic alcohols and mixtures thereof, said acids and said alcohols having from 1 to about 8 carbon atoms.

3,316,223

NOVEL ANIONIC POLYMERS OF CERTAIN INSOLUBLE CROSSLINKED POLYMERS OF A pKa VALUE OF AT LEAST 16 AND ALKALI AND ALKALINE EARTH METALS
Massimo Baer, Longmeadow, and Michael J. Vignale, Lunenburg, Mass., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Original application Oct. 20, 1959, Ser. No. 847,472, now Patent No. 3,079,428, dated Feb. 26, 1963. Divided and this application Aug. 8, 1962, Ser. No. 215,519

8 Claims. (Cl. 260—80.5)

1. An adduct of (a) a metal of the group consisting of alkali metals and alkaline earth metals and (b) an insoluble, cross-linked polymer containing a plurality of units of a monomer of the group consisting of vinyl indene, vinyl fluorene, vinyl toluene, vinyl isopropyl benzene, vinyl benzyl alcohol, p-acetylstyrene, vinyl pyridine, ethylenimine, p-diallyl benzene, diallyl melamine, and N,N-diallylacrylamide, said polymer having a pKa value of at least 16 and at least about 10% by weight of units capable of reacting with alkali metal or alkaline earth metal to form an anion.

5. The adduct of claim 1 wherein the insoluble, cross-linked polymer is a vinyl fluorene-styrene-divinyl benzene terpolymer.

8. The adduct of claim 1 wherein the insoluble, cross-linked polymer is a styrene-vinyl indene-divinyl benzene terpolymer.

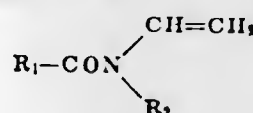
3,316,224

PROCESS FOR PREPARING POLYMERS FROM OPEN-CHAIN N-VINYL AMIDES IN AN AQUEOUS MEDIUM WITH A CATALYST COMPRISING HYDROGEN PEROXIDE AND A NITROGEN COMPOUND
Herbert Bestian and Dieter Ulmschneider, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed July 10, 1962, Ser. No. 208,927
Claims priority, application Germany, July 13, 1961, F 34,427

7 Claims. (Cl. 260—85.5)

1. Process for the production of polymers of N-vinylamides of the formula



wherein R_1 and R_2 each represent a member selected from the group consisting of monovalent radicals of saturated aliphatic hydrocarbons containing 1 to 5 carbon atoms and a hydrogen radical, which comprises the step of polymerizing at least one of said N-vinylamides at a tem-

perature within the range of 0°C . to 100°C . in the presence of a catalyst system comprising 0.0001 to 10% by weight, calculated on the monomer, of H_2O_2 and 0.0001 to 10% by weight, calculated on the monomer, of at least one member selected from the group consisting of an inorganic nitrogen-containing compound giving a basic reaction and an organic nitrogen-containing compound giving a basic reaction.

3,316,225

1-DIALLYLAMINO-2,3-EPOXYPROPANE AND ITS COPOLYMERS WITH STYRENE
Francis W. Michelotti, Brooklyn, N.Y., assignor to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed Sept. 15, 1961, Ser. No. 139,331
2 Claims. (Cl. 260—88.1)

1. A copolymer of 1-diallylamino-2,3-epoxypropane with styrene.

3,316,226

OLEFINE COPOLYMERS
Keith Jasper Clark, Welwyn Garden City, Rex Percival Palmer, Knebworth, and Annette la Touche Turner-Jones, Welwyn Garden City, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Jan. 13, 1964, Ser. No. 337,143
Claims priority, application Great Britain, Jan. 17, 1963, 2,156/63

17 Claims. (Cl. 260—88.2)

1. A crystalline copolymer of 3-methyl-butene-1 containing between 20% and about 90% by weight of n-butene-1 monomer units, having a predominant crystalline form or forms substantially stable at room temperature and closely related to that of Type II polybutene-1.

10. A process for preparing a copolymer of 3-methyl-butene-1 and n-butene-1 as claimed in claim 1 wherein the two monomers are treated with a polymerisation catalyst under conditions such that the rate of polymerisation of each monomer is substantially constant throughout polymerisation.

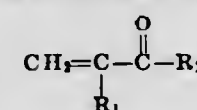
12. A process as claimed in claim 10 in which the polymerisation catalyst used comprises an organo-aluminum activator and titanium trichloride obtained by reducing titanium tetrachloride by adding aluminium dialkyl chloride gradually thereto at a temperature of between -20 and $+20^\circ\text{C}$.

3,316,227

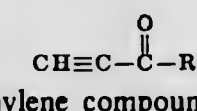
PREPARATION OF 1,1-DISUBSTITUTED DIUNSATURATED COMPOUNDS
Arthur H. Gerber, Erie, Pa., assignor to Lord Corporation, a corporation of Pennsylvania

No Drawing. Filed Oct. 18, 1963, Ser. No. 317,135
20 Claims. (Cl. 260—88.7)

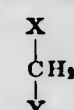
10. The method of making 1,1-disubstituted diunsaturated compounds and homopolymers thereof which comprises reacting (1) an α,β -unsaturated carbonyl compound having a formula selected from the group consisting of



and



(2) an active methylene compound having the formula



and (3) as catalyst, from about 0.01 mol to about 1 mol per mol of active methylene compound of at least one metal salt having a cation selected from the group con-

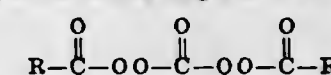
sisting of zinc, copper, manganese, chromium, cobalt, nickel, calcium, magnesium and lithium and an anion selected from the group consisting of halogens having an atomic weight of at least 35, nitrate and carboxylates having from 1 to 18 carbon atoms; where R_1 is selected from the group consisting of hydrogen, alkyl groups containing from 1 to 5 carbon atoms, phenyl and halogen; where R_2 is selected from the group consisting of hydrogen and methyl, and where X and Y are electron-withdrawing groups, X being selected from the group consisting of cyano, carbethoxy, ethyl sulfone, phenyl sulfone, formyl, acetyl, benzoyl, diethyl, phosphonyl, amide and phenyl and Y being selected from the group consisting of cyano, carbethoxy, ethyl sulfone, phenyl sulfone, formyl, acetyl, benzoyl, diethyl phosphonyl and amide, provided that when X is phenyl the catalyst selected is a carboxylate and R_1 and R_2 are each hydrogen.

3,316,228

DIPEROXYCARBONIC ACID ANHYDRIDES AND POLYMERIZATION PROCESSES EMPLOYING SAME
James E. Guillet and Edmund B. Towne, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

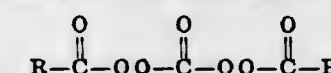
No Drawing. Filed Dec. 14, 1962, Ser. No. 244,593
16 Claims. (Cl. 260—89.1)

1. Organic peroxides having the formula:



where each R is a member selected from the group consisting of aliphatic, cycloaliphatic, and aromatic radicals of 4 to 20 carbon atoms.

9. The process of polymerizing an unsaturated polymerizable compound containing a $\text{CH}_2=\text{C}<$ group which comprises polymerizing said compound at a temperature in the range of about 0°C . to about 250°C . in the presence of an organic peroxide having the formula:



where each R is a member selected from the group consisting of aliphatic, cycloaliphatic, and aromatic radicals of 4 to 20 carbon atoms.

3,316,229

CRYSTALLINE POLYMETHYL METHACRYLATE
Edwin J. Vandenberg, Foulk Woods, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 12, 1966, Ser. No. 571,985
12 Claims. (Cl. 260—89.5)

1. The process of preparing polymethyl methacrylate which comprises contacting methyl methacrylate with the catalyst consisting of that formed by mixing a compound selected from the group consisting of the oxides, inorganic salts, and organic salts of a metal selected from the group consisting of the metals of Groups IV-B, V-B, VI-B, VII-B and VIII of the Periodic Table with an alkyl compound of a metal selected from the group consisting of alkali metals, alkaline earth metals, zinc, and aluminum.

3,316,230

METHOD FOR INCREASING THE PARTICLE SIZE OF FINELY DIVIDED DUSTY POLYVINYL ALCOHOL
Walton B. Tanner, Grand Island, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 10, 1963, Ser. No. 329,352
6 Claims. (Cl. 260—91.3)

1. The method of increasing the particle size of finely divided dusty polyvinyl alcohol consisting predominately

of particles of a size less than about 100 mesh, said method comprising (A) feeding to a catalyzed and agitated alcoholysis mixture (a) said finely divided polyvinyl alcohol, (b) a polyvinyl ester and (c) a hydrolytic alcohol, and (B) withdrawing from said alcoholysis mixture a slurry of polyvinyl alcohol product in a solvent mixture of said hydrolytic alcohol and the ester of said hydrolytic alcohol with the acid residue of said polyvinyl ester, said alcoholysis mixture consisting essentially of said polyvinyl ester, an alcoholysis catalyst, said hydrolytic alcohol, said ester of said hydrolytic alcohol and polyvinyl alcohol, at least a part of said polyvinyl ester being fed to said alcoholysis mixture in intermittent portions of such size that said alcoholysis mixture thickens as each said portion after addition to said alcoholysis mixture passes through a gel phase, each such intermittent portion of said polyvinyl ester feed being of such size and being fed at such a rate that if such rate of feed were maintained continuously said alcoholysis mixture would set up to a non-moving gelled mass, with the time interval between succeeding intermittent portions of said polyvinyl ester feed being sufficient for said alcoholysis mixture to revert to a non-thickened condition after each said portion passes through the gel phase and before the next succeeding portion passes into the gel phase.

3,316,231

CRACKING OF HIGH MOLECULAR WEIGHT ETHYLENE POLYMERS AND RESULTING PRODUCTS

Peter J. Canterino and Major L. Gallagher, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Dec. 30, 1955, Ser. No. 556,471
3 Claims. (Cl. 260-93.7)

1. A process which comprises thermally decomposing a crystalline polypropylene by heating said polypropylene to a temperature in the range of 600 to 900° F. for a period less than 30 minutes, in an inert atmosphere at a pressure not greater than atmospheric pressure and recovering the product of said thermal decomposition.

3,316,232

POLYPROPYLENE COMPOSITIONS AND A METHOD FOR THEIR PREPARATION

James F. McGann, Jr., Hopkins, Minn., assignor to Atlas Chemical Industries, Inc., a corporation of Delaware
No Drawing. Filed Feb. 24, 1961, Ser. No. 91,313
5 Claims. (Cl. 260-93.7)

4. A method for preparing polypropylene compositions which have a reduced tendency to accumulate electrostatic charges which comprises melting polypropylene, adding with agitation from about 0.001 to about 5% by weight of 1-hydroxyethyl-2-heptadecenyl imidazoline, shaping the melted mixture, and then cooling the shaped polypropylene.

3,316,233

PROCESS AND CATALYST FOR THE POLYMERIZATION OF ETHYLENIC MONOMERS

Darrell C. Feay, Berkeley, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Aug. 8, 1962, Ser. No. 215,539
11 Claims. (Cl. 260-93.7)

11. A method of making highly stereoregular polypropylene by polymerizing essentially propylene at a polymerization temperature in the range from about 120° to about 150° C. in a reaction mixture comprising dry xylene and a polymerization catalyst mixture consisting essentially of α -titanium trichloride and a red compound of the formula



wherein C_5H_5 is the cyclopentadienyl radical, said α -titanium trichloride being present in proportionate amount of from about 0.5 to about 5 millimoles per liter of the xylene and said red compound being present in proportionate amount of from about one to about five moles per mole of the α -titanium trichloride.

3,316,234

POLYMER SEPARATION PROCESS

David P. Keckler, Lakewood, Ohio, and Edward D. Beck, St. Paul, Minn., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Feb. 8, 1963, Ser. No. 257,109
8 Claims. (Cl. 260-93.7)

1. In a process for the manufacture of a normally solid polymer product from a polymerizable olefinic compound which process includes the steps of polymerizing said olefinic compound in a solvent medium, obtaining a polymer product and solvent gel from the polymerization, and separating a normally solid polymer product from said gel, the improvement which consists of increasing the content of said solid polymer product in said gel through concentration by syneresis carried out at ambient pressure through maintaining said gel at a temperature slightly below the melting point of the major proportion of said solid polymer product and below the boiling point of said solvent for a period of time sufficient to effect said concentration.

3,316,235

CATALYST FOR POLYMERIZATION OF ETHYLENE AND METHOD FOR POLYMERIZING ETHYLENE USING THE CATALYST

Yoshio Tazima, Masao Iwamoto, and Sadao Yuguchi, Ohtsu-shi, Shiga-ken, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
No Drawing. Filed July 24, 1963, Ser. No. 297,203
Claims priority, application Japan, July 27, 1962, 37/31,301; Sept. 12, 1962, 37/39,283; Nov. 5, 1962, 37/48,551; Nov. 7, 1962, 37/48,757, 37/48,758; Nov. 20, 1962, 37/50,883, 37/50,886
15 Claims. (Cl. 260-94.9)

5. Process for polymerization of ethylene which comprises intimately contacting ethylene with a catalyst obtained by mixing essentially two compounds of

(a) a bis-arene-chromium compound, represented by the general formula



wherein $[(Y)_2Cr]$ represents a bis-arene-chromium cation containing a hydrocarbon Y selected from the group consisting of benzene, biphenyl, and their derivatives which are ring-substituted by alkyl,

X is an anion of an acid radical selected from the group consisting of chromic acid, bichromic acid, tetrathiocyanodiammonochromic acid and tetrathiocyanodiammonochromic acid radical,

n is an integer of 1 or 2, equalling the number of the electric charge of said anion, and

(b) an organometallic compound of the general formula



wherein M is a metal of Groups I-III of the periodic table,

R is an alkyl group of C_2-C_4 ,

Z is a halogen,

k is a positive integer and

m is zero or a positive integer,

k & m equalling the valency of said metal, the mol ratio of (a) to (b) being 1:2-1:300, at a temperature of 10-180° C., and 0-150 kg./cm.² gauge pressure.

3,316,236

SEPARATION OF AMINE OXIDES BY UREA ADDUCT FORMATION

Charles M. Starks, Ponca City, Okla., and Kenneth E. Harwell, Overland Park, Kans., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
No Drawing. Filed May 23, 1966, Ser. No. 551,875
10 Claims. (Cl. 260-96.5)

1. A method of removing amine oxides from aqueous solution which comprises:

(a) combining said aqueous solution of amine oxide with an aqueous solution of urea, whereby a solid urea-amine oxide adduct is formed, and
(b) recovering said adduct from said solution.

3,316,237

ADDITIVE FOR CUTTING-OILS AND FOR HIGH-PRESSURE OILS

Luigi Imparato and Sergio Del Ross, Milan, Italy, assignors to SNAM S.p.A., Milan, Italy, an Italian company
No Drawing. Filed Jan. 17, 1964, Ser. No. 338,325
Claims priority, application Italy, Jan. 21, 1963, 1,245/63, Patent 681,902
5 Claims. (Cl. 260-139)

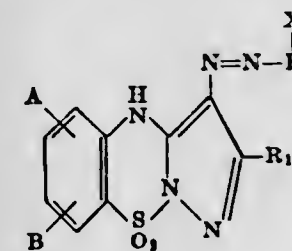
1. An additive for mineral and synthetic lubricating oils, capable of imparting to them antiwelding and antiwearing properties, comprising the product formed by reacting an unsaturated hydrocarbon compound with a sulfur chloride in the presence of an epoxy compound, at temperatures of from 30° C. to 100° C., the quantities of the sulfur chloride and of the epoxy compound employed varying from 5% to 60% by weight and from 10% to 50% by weight, respectively, with relation to the total amount of the reagents.

3,316,238

AZO DYESTUFFS AND THEIR METAL COMPLEX COMPOUNDS

Hans-Gerhard Hanke, Leverkusen, Gerhard Wolfrum, Opladen, Rolf Pütter, Duesseldorf, and Karl-Heinz Menzel, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed May 14, 1963, Ser. No. 280,434
Claims priority, application Germany, June 5, 1962, F 36,988
9 Claims. (Cl. 260-146)

1. An azo dyestuff of the formula



wherein A and B stand for radicals selected from the class consisting of hydrogen, Cl, Br, nitro, acetylmino, methoxy ethoxy, sulfonic acid, sulfonamide and sulfone groups, R₁ represents a member taken from the class consisting of lower alkyl, phenyl, $-CH_2COOH$ and a carbo lower alkoxy group, R is a member selected from the class consisting of sulfophenyl, chloro substituted sulfophenyl, nitro substituted cyanophenyl, sulfonamide substituted phenyl, lower alkyl substituted sulfonamido substituted phenyl and hydroxy lower alkyl substituted sulfonamido substituted phenyl, the alkyl moieties thereof having a total up to 2 carbon atoms, sulfomorpholido substituted phenyl, phenyl, nitrophenyl and nitro chloro

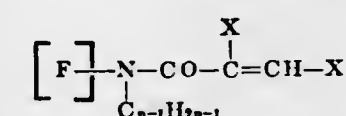
substituted phenyl; and X is a member selected from the class consisting of chloro, $COOH$, OH and OCH_3 , R carrying the azo bridge and X in o-position to one another; and the metal complex compound of said azo dyestuff selected from the class consisting of the copper, chromium, cobalt and nickel complex compound.

3,316,239

WATER-SOLUBLE ORGANIC DYESTUFFS

Henri Riat, Ariesheim, and Karl Seitz, Neuallschwil, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company
No Drawing. Filed Oct. 24, 1963, Ser. No. 318,528
Claims priority, application Switzerland, Mar. 6, 1957, 43,522/57; May 23, 1957, 46,433/57
17 Claims. (Cl. 260-163)

1. A watersoluble organic dyestuff selected from the group consisting of the phthalocyanine, anthraquinone, disazo and monoazo dyestuffs, which contains one to four sulfonic acid groups and which has the formula



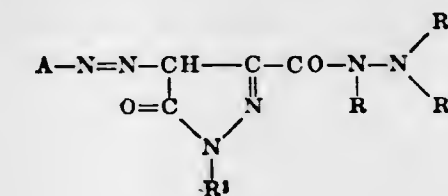
wherein F is the organic dyestuff molecule selected from the group consisting of the phthalocyanine, anthraquinone, disazo and monoazo dyestuffs and is bound to the nitrogen atom through an aromatic nucleus, and wherein n is a whole number from 1 to 3 inclusive, one X represents a hydrogen atom and the other X a member selected from the group consisting of a hydrogen and a chlorine atom.

3,316,240

WATER-INSOLUBLE MONOAZO DYESTUFFS

Alistair Howard Berrie and Raymond Windle, both of Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Sept. 23, 1964, Ser. No. 398,777
Claims priority, application Great Britain, Oct. 8, 1963, 39,625/63
2 Claims. (Cl. 260-163)

1. The water-insoluble azo dyestuffs which are free from carboxylic acid and sulphonic acid groups and which are represented by the formula:



wherein

A represents the radical of a diazo compound selected from the class consisting of diazo compounds of the benzene, naphthalene, thiazole and benzthiazole series;

R and R¹ are each independently selected from the class consisting of hydrogen and lower alkyl;

R² is selected from the class consisting of hydrogen, lower alkyl, phenyl, methoxyphenyl, methylphenyl and chlorophenyl;

and R³ is selected from the class consisting of hydrogen, lower alkyl, phenyl, lower alkylphenyl, lower alkoxyphenyl, chlorophenyl, nitrophenyl and dichlorophenyl.

3,316,241

PROCESS FOR THE RECOVERY OF POLYSACCHARIDE GUM POLYMERS

Hans J. Leder and Guido M. Miescher, Terre Haute, Ind., assignors to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland
No Drawing. Filed Dec. 16, 1965, Ser. No. 514,379
6 Claims. (Cl. 260-209)

1. A process for the recovery of polysaccharide B-1459 from its normally viscous fermentation medium which comprises drying said fermentation medium to form a solid material with a single-phase, liquid mixture consisting essentially of methanol, water and a material selected from the group consisting of acetone and 1,1,1-trichloroethane to form a dispersion of the said polysaccharide B-1459 in the said liquid mixture, and separating the said polysaccharide B-1459 from the said liquid mixture.

3,316,242

GALACTURONIC ACID SALTS USEFUL IN THE TREATMENT OF DIARRHEAL AND DERMATOLOGIC DISEASES

Ernest J. Sasnor, Yonkers, N.Y., assignor to The Purdie Frederick Company, New York, N.Y., a corporation of New York
No Drawing. Filed Feb. 14, 1963, Ser. No. 258,613
7 Claims. (Cl. 260-209.5)

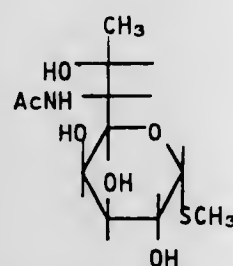
2. The method of preparing N-methylglucammonium polygalacturonate comprising the steps of determining the alkali titration equivalent of polygalacturonic acid, adding a stoichiometric equivalent of N-methylglucammonium ion to the aqueous dispersion of polygalacturonic acid, said N-methylglucammonium ion being dissolved in a solvent selected from the group consisting of water or hydroalcoholic solution, said hydroalcoholic solution consisting of water and containing not more than 10 percent ethanol, stirring the mixture until complete solution is achieved, warming to a temperature of between 60° and 80° C., filtering, cooling the filtrate, pouring the filtrate into a liquid alkanol of from 1 to 6 carbons in chain length, stirring, collecting and drying precipitate powder, redissolving precipitate powder in hot distilled water, adding two volumes of a liquid alkanol having from 1 through 6 carbons in chain length and recovering N-methylglucammonium polygalacturonate therefrom.

3,316,243

PROCESS FOR CONVERTING 1-THIOGLYCOSIDES TO ANALOGS THEREOF

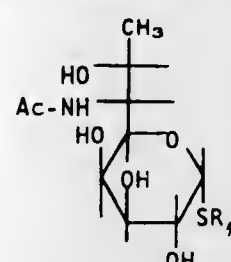
Brian Bannister, Kalamazoo, Robert D. Birkenmeyer, Comstock Township, Kalamazoo County, and Fred Kagan, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Feb. 8, 1965, Ser. No. 431,185
9 Claims. (Cl. 260-210)

3. The process which comprises brominating in aqueous solution a compound of the formula



where Ac is an acyl group non-reactive with bromine, adding a mercaptan of the formula R_4SH where R_4 is a member of the group consisting of alkyl of 2 to not more than 20 carbon atoms, cycloalkyl of not more than 8 carbon atoms, and aralkyl of not more than 12 carbon

atoms and an acid mercaptolysis catalyst and recovering from the solution a compound of the formula



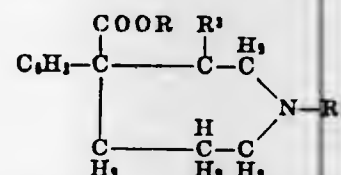
where R_4 and Ac are as given above.

3,316,244

PROCESS FOR THE PREPARATION OF HEXAHYDRO-1,3-DIMETHYL-4-PHENYL-4-CARBOXYLIC ACID, ETHYL ESTER

Stanley C. Bell and Scott J. Childress, both of Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed June 5, 1964, Ser. No. 373,089
2 Claims. (Cl. 260-239)

1. In a process for preparing a compound of the formula:



wherein R, R^1 and R^3 each represent a lower alkyl group which comprises

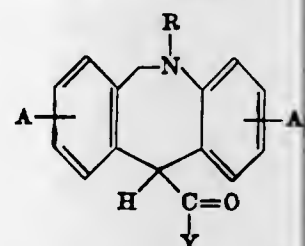
- (1) initially alkylating a solution of phenylacetonitrile to form a 2-aryl-4-dialkylamino butyronitrile
- (2) alkylating the 2-aryl-4-dialkylamino butyronitrile with a reactant selected from the group consisting of a polymethylene sulfonic acid ester and a polymethylene dihalide each having 3 methylene groups;
- (3) cyclizing the product obtained to form a cyclic quaternary ammonium compound
- (4) heating the quaternary salt to remove alkyl halide
- (5) hydrolyzing the resulting tertiary amino nitrile in the presence of alcohol to form the carboxylic acid ester the improvement which comprises employing in the initial alkylation step as a reaction solvent the liquid dimethyl formamide so as to alter the course of the reaction in favor of the ultimate production of the 1,3 dialkyl azacycloheptane over its 1,2 isomer.

3,316,245

MORPHANTHRIDINE CARBOXYLIC ACID AND DERIVATIVES

Alexander E. Drukker, Milwaukee, and Claude I. Judd, Mequon, Wis., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 9, 1965, Ser. No. 438,383
5 Claims. (Cl. 260-239)

1. A compound of the formula

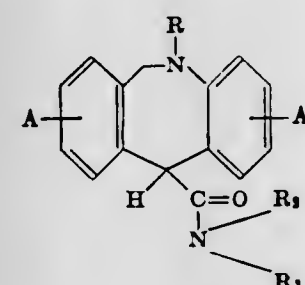


wherein A and A_1 are members selected from the group consisting of hydrogen, a halo group, a lower alkoxy, a lower alkyl, a lower alkyl-thio and trifluoromethyl, R is a member selected from the group consisting of hydrogen, lower alkyl, a phenyl-lower-alkyl and allyl, and Y is selected from —OH and —OCH₂CN.

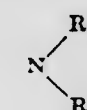
3,316,246 MORPHANTHRIDINE CARBOXYLIC ACID AND DERIVATIVES

Alexander E. Drukker, Milwaukee, and Claude I. Judd, Mequon, Wis., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 8, 1966, Ser. No. 525,869
6 Claims. (Cl. 260-239)

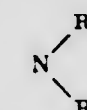
1. A compound of the formula



wherein A and A_1 are members selected from the group consisting of hydrogen, a halo group, a lower alkoxy, a lower alkyl, a lower alkyl-thio and trifluoromethyl; R is a member selected from the group consisting of hydrogen, lower alkyl, phenyl-lower alkyl and allyl, and



is selected from groups in which R_2 and R_3 are selected from hydrogen, a lower alkyl, a lower alkenyl, phenyl, phenyl-lower alkyl, diphenylmethyl, trityl, naphthymethyl, a cycloalkyl of 5 to 7 carbon atoms, a cycloalkyl-lower alkyl in which the cycloalkyl has 5 to 7 carbon atoms and groups in which



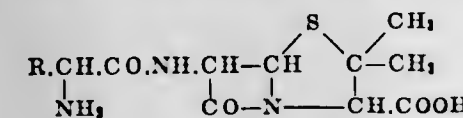
represents a member selected from a group consisting of morpholino, pyrrolidino, piperidino, piperazino, 1,2,3,4-tetrahydroquinolino, 4-lower alkyl piperazino, 4-(phenyl-lower alkyl)-piperazino and 4-(hydroxy-lower alkyl)-piperazino.

3,316,247

PROCESS FOR THE PREPARATION OF PENICILLINS

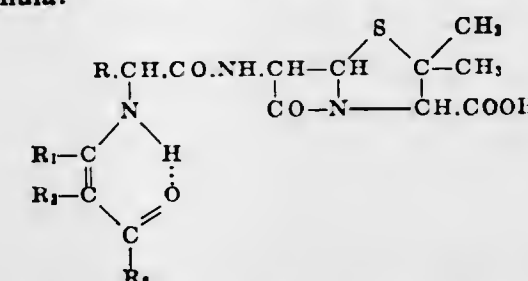
George Robert Fosker, Horsham, Sussex, John Herbert Charles Nayler, Dorking, Surrey, and John Alan Wilcox, Betchworth, Surrey, England, assignors to Beecham Group Limited, Brentford, England, a British company
No Drawing. Filed Feb. 24, 1964, Ser. No. 347,062
Claims priority, application Great Britain, Feb. 28, 1963, 8,176/63, 8,177/63; Dec. 3, 1963, 47,577/63
8 Claims. (Cl. 260-239.1)

1. A process for the preparation of penicillins of the formula:



and non-toxic salts thereof, wherein R is alkyl, phenyl, phenyl substituted with fluorine, chlorine, nitro and hydroxy, or thienylmethyl, which process comprises hydrolyzing at ambient temperature and at a pH of 1 to 5 with an aqueous solution of a mineral or organic acid

a solution of an amine salt of an N-protected penicillin of the formula:



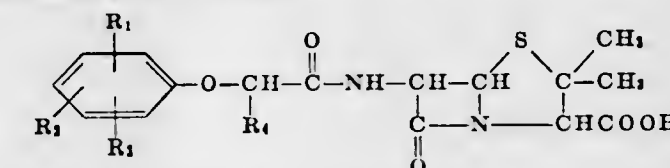
wherein R_1 is lower alkyl, R_2 is lower alkyl, phenyl, or lower alkoxy, and R_3 is hydrogen or lower alkyl, until the N-protected penicillin has disappeared.

3,316,248

SYNTHETIC PENICILLINS

Lee C. Cheney, Fayetteville, N.Y., assignor, by mesne assignments, to Beecham Research Laboratories Ltd., Brentford, Middlesex, England, a corporation of Great Britain and Northern Ireland
No Drawing. Filed May 25, 1959, Ser. No. 815,287
9 Claims. (Cl. 260-239.1)

1. A member selected from the group consisting of an acid having the formula



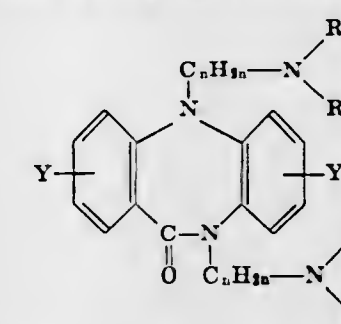
wherein R_1 , R_2 and R_3 are each members selected from the group consisting of hydrogen, nitro, amino, (lower)-alkylamino, di(lower)alkylamino, (lower)alkanoylamino, (lower)alkyl, chloro, bromo, iodo, (lower)alkoxy, hydroxy, sulfamyl, benzyl and trifluoromethyl and R_4 represents a member selected from the group consisting of (lower)alkyl, phenyl and phenyl(lower)alkyl; and its sodium, potassium, calcium, aluminum and ammonium salts and its nontoxic substituted ammonium salts with an amines, procaine, dibenzylamine, N-benzyl-beta-phenethylamine, 1-phenamine, N,N'-dibenzylethylenediamine, dehydroabiethylamine and N,N'-bis-dehydroabiethylethylenediamine.

3,316,249

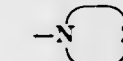
5,10-DISUBSTITUTED-[5H]-DIBENZO-[b,e][1,4]-DIAZEPIN-11(10H)-ONES

Arthur R. Hanze, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Aug. 28, 1962, Ser. No. 220,050
7 Claims. (Cl. 260-239.3)

1. A compound selected from the group consisting of (1) 5,10-di(aminoalkyl)-[5H]-dibenzo-[b,e][1,4]-diazepin-11(10H)-ones having the formula



wherein R_1 and R_2 taken separately are selected from the group consisting of hydrogen and lower-alkyl, and taken together with —N— constitute a saturated heterocyclic amino radical



of from 5 to 7 nuclear atoms, inclusive, selected from the group consisting of pyrrolidino, 2-methylpyrrolidino, 2-ethylpyrrolidino, 2,2-dimethylpyrrolidino, 3,4-dimethylpyrrolidino, 2-isopropylpyrrolidino, 2-sec-butylpyrrolidino, morpholino, 2-ethylmorpholino, 2-ethyl-5-methylmorpholino, 3,3-dimethylmorpholino, thiamorpholino, 3-methylthiamorpholino, 2,3,6-trimethylthiamorpholino, piperidino, 2-methylpiperidino, 3-methylpiperidino, 4-methylpiperidino, 4-propylpiperidino, 2-propylpiperidino, 4-isopropylpiperidino, hexamethyleneimino, 2-methylhexamethyleneimino, 3,6-dimethylhexamethyleneimino, and homomorpholino; $-C_nH_{2n}-$ is alkylene having at least 2 carbon atoms between the valences; n is an integer from 2 to 4, inclusive; and Y is selected from the group consisting of hydrogen, chlorine, fluorine, trifluoromethyl, lower-alkyl, and lower-alkoxy, and (2) acid addition and quaternary ammonium salts thereof.

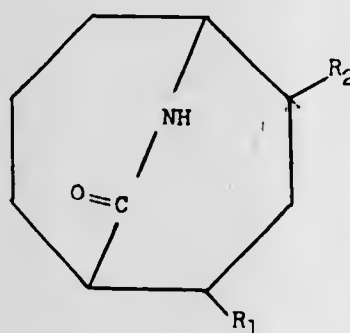
3,316,250

9-AZABICYCLO(3,3,2)DECANES AND 9-AZABICYCLO(3,3,2)DECAN-10-ONES

Janis Plostnieks, Philadelphia, Pa., assignor to McNeil Laboratories, Incorporated, a corporation of Pennsylvania

No Drawing. Filed Sept. 2, 1964, Ser. No. 394,042
17 Claims. (Cl. 260-239.3)

2. A 9-azabicyclo(3,3,2)decan-10-one having the formula



wherein R_1 stands for hydrogen and phenyl; R_2 is a member of the group consisting of pyrrolidinyl, morpholinyl and piperidinyl; and the nontoxic, therapeutically active acid addition salts and loweralkyl quaternary ammonium salts thereof.

3,316,251

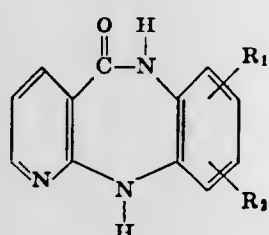
5,6-DIHYDRO-5-OXO-11H-PYRIDO-[2,3-b][1,5]-BENZODIAZEPINE DERIVATIVES AND PROCESS

Günther Schmidt, Biberach an der Riss, Germany, assignor to Boehringer Ingelheim G.m.b.H., Ingelheim am Rhine, Germany, a corporation of Germany

No Drawing. Filed Jan. 22, 1965, Ser. No. 427,503
Claims priority, application Germany, Jan. 28, 1964, T 25,507

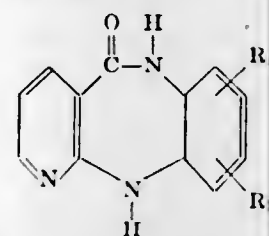
11 Claims. (Cl. 260-239.3)

1. A pyridobenzodiazepine derivative selected from the group consisting of compounds of the formula

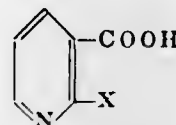


wherein R_1 and R_2 are selected from the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy and trifluoromethyl, and their acid addition salts.

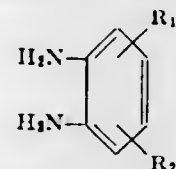
4. A process for the production of a pyridobenzodiazepine derivative selected from the group consisting of compounds of the formula



wherein R_1 and R_2 are selected from the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy and trifluoromethyl, and their acid addition salts which comprises the steps of reacting a 2-halogen-nicotinic acid of the formula



wherein X represents a halogen, with an o-phenylenediamine of the formula



wherein R_1 and R_2 have the above-assigned meanings, at a temperature above 150°C ., and recovering said pyridobenzodiazepine derivative.

3,316,252

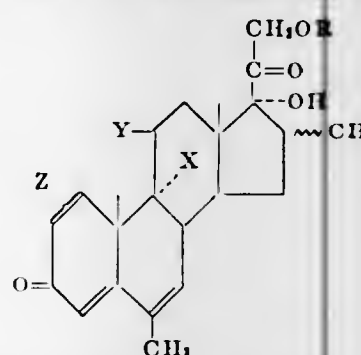
6-METHYL-6-DEHYDRO DERIVATIVES OF CORTICAL HORMONES

Howard J. Ringold, Mexico City, Mexico, assignor to Syntex S.A., Mexico City, Mexico, a corporation of Mexico

No Drawing. Filed July 8, 1959, Ser. No. 825,662
Claims priority, application Mexico, Feb. 28, 1959, 53,821

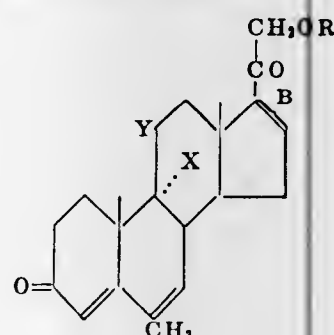
22 Claims. (Cl. 260-239.55)

1. A compound of the following formula:



wherein R is selected from the group consisting of hydrogen and lower alkanoyl; Y is selected from the group consisting of β -hydroxy and keto; X is selected from the group consisting of hydrogen, fluorine and chlorine and Z is selected from the group consisting of a double bond between C-1 and C-2 and a saturated linkage between C-1 and C-2.

6. A compound of the following formula:



wherein X is selected from the group consisting of hydrogen, fluorine and chlorine; Y is selected from the group consisting of $=O$ and



B is selected from the group consisting of $16\alpha,17\alpha$ -dihydroxy, 16α -acyloxy- 17α -hydroxy and a cyclic ketal and acetal at C- $16\alpha,17\alpha$. R is selected from the group consisting of hydrogen and an acyl group; such acyl group may be a hydrocarbon carboxylic acid acyl group of up to 12 carbon atoms and it may be derived from sulfonic acids, phosphoric acid, sulfuric acid and from hydrogen halides.

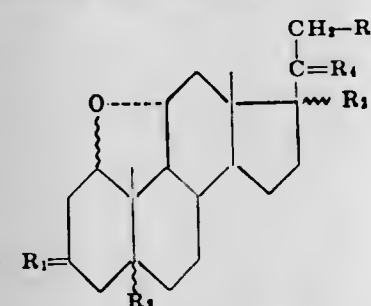
3,316,253

OXIDO-STEROIDS AND PROCESS FOR THEIR MANUFACTURE

Albert Wettstein, Riehen, Georg Anner and Jaroslav Kalvoda, Basel, and Oskar Jeger, Zurich, Switzerland, assignors to Ciba Corporation, a corporation of Delaware
No Drawing. Filed Feb. 28, 1961, Ser. No. 92,162
Claims priority, application Switzerland, Mar. 2, 1960, 2,361/60; Sept. 23, 1960, 10,776/60; Jan. 5, 1961, 103/61

18 Claims. (Cl. 260-239.55)

1. A compound of the formula



in which R_1 is a member selected from the group consisting of oxo, lower alkylenedioxy, hydrogen and hydroxy and hydrogen and acyloxy, R_2 is a member selected from the group consisting of an α -positioned hydrogen and a β -positioned hydrogen, each of R_3 and R_4 is a member selected from the group consisting of hydroxy and acyloxy and R_5 is a member selected from the group consisting of oxo and lower alkylenedioxy, said acyloxy radicals being derived from acids selected from the group consisting of lower aliphatic, monocyclic cycloaliphatic, monocyclic carbocyclic aryl-lower aliphatic, monocyclic carbocyclic aromatic, monocyclic heterocyclic aromatic mono- and dicarboxylic acids, lower alkane and monocyclic carbocyclic aromatic sulfonic acids.

3,316,254

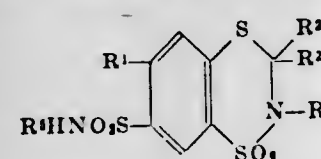
SULFAMOYL-2,1,4-BENZOAZADITHIAN-1,1-DIOXIDES

Frederick C. Novello, Berwyn, and James H. Jones, Blue Bell, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 14, 1964, Ser. No. 396,375
19 Claims. (Cl. 260-243)

1. The process wherein a 2,4-disulfamoylmercaptobenzene is caused to react with a compound selected from the group consisting of an aldehyde, acetal, ketone and ketal to form a 7-sulfamoyl-2,1,4-benzoazadithian-1,1-dioxide.

7. A benzoazadithian selected from the group consisting of a compound having the structural formula



and physiologically acceptable salts thereof wherein:

R^1 is selected from the group consisting of hydrogen, halogen, trihalomethyl, lower alkyl, lower alkoxy, nitro and amino;

R^2 and R^3 separately are selected from the group consisting of hydrogen, lower aliphatic, mononuclear-aryl and mononuclear-aryl-lower-aliphatic, and taken together with the nuclear carbon to which they are attached represents a spiro-aliphatic group; and

R^4 and R^5 separately are selected from the group consisting of hydrogen and lower-alkyl.

3,316,255

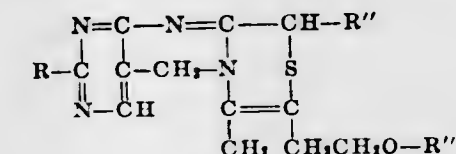
PYRIMIDOPYRIMIDOTHIAZINE COMPOUNDS AND PRODUCTION THEREOF

Akira Takamizawa, Ibaraki-shi, and Yoshiro Sato, Takatsuki-shi, Japan, assignors to Shionogi & Co., Ltd., Osaka, Japan

No Drawing. Filed Feb. 23, 1965, Ser. No. 434,647
Claims priority, application Japan, Feb. 24, 1964, 39/9,962; June 8, 1964, 39/32,490; Sept. 12, 1964, 39/52,312, 39/52,315

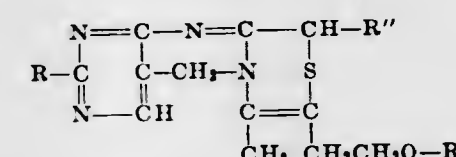
4 Claims. (Cl. 260-243)

1. A pyrimidopyrimidothiazine compound of the formula:

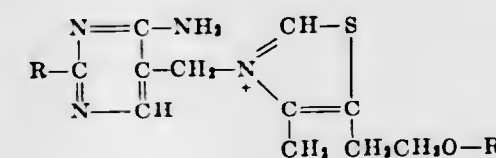


wherein R is lower alkyl, R'' is a member selected from the group consisting of phenyl, lower alkylphenyl, lower alkoxyphenyl and halogenophenyl, and R''' is a member selected from the group consisting of hydrogen, benzoyl, lower alkanoyl and lower alkylbenzoyl.

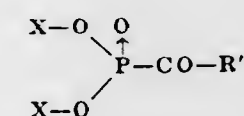
4. A process for preparing a pyrimidopyrimidothiazine compound of the formula:



wherein R is lower alkyl, R'' is a member selected from the group consisting of phenyl, lower alkylphenyl, lower alkoxyphenyl and halogenophenyl, and R''' is a member selected from the group consisting of hydrogen, benzoyl, lower alkanoyl and lower alkylbenzoyl, which comprises treating a thiazolium compound of the formula:



wherein R' is a member selected from the group consisting of hydrogen, benzoyl, lower alkanoyl and lower alkylbenzoyl, and R has the same significance as designated above with a reagent of the formula:



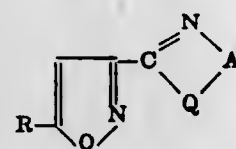
wherein X is a member selected from the group consisting of lower alkyl, aryl and ar(lower)alkyl and R'' has the same significance as designated above.

3,316,256

CERTAIN AZOLINYL AND AZINYL ISOXAZOLES
Hideo Kano, Kyoto-shi, and Haruo Nishimura, Ashiya-shi, Japan, assignors to Shinonogi & Co., Ltd., Osaka, Japan

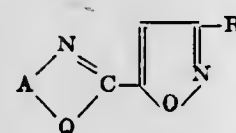
No Drawing. Filed Sept. 23, 1965, Ser. No. 489,727
Claims priority, application Japan, Dec. 25, 1964, 39/73,361, 39/73,364; Feb. 16, 1965, 40/8,782
16 Claims. (Cl. 260—244)

1. A member selected from the group consisting of compounds of the formula



and pharmaceutically acceptable non-toxic salts thereof, wherein R is a member selected from the group consisting of lower alkyl and phenyl, Q is a member selected from the group consisting of oxygen and sulfur and A is a member selected from the group consisting of 1,2- and 1,3-alkylene having 2 to 10 carbon atoms.

2. A member selected from the group consisting of compounds of the formula



and pharmaceutically acceptable non-toxic salts thereof, wherein R is a member selected from the group consisting of lower alkyl and phenyl, Q is a member selected from the group consisting of oxygen and sulfur and A is a member selected from the group consisting of 1,2- and 1,3-alkylene having 2 to 10 carbon atoms.

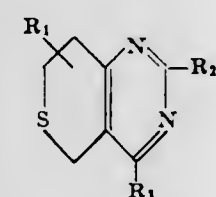
3,316,257

NOVEL 5H-DIHYDROTHIOPYRANO[4,3-d]PYRIMIDINES

Gerhard Ohnacker, Biberach an der Riss, Germany, assignor to Boehringer Ingelheim G.m.b.H., Ingelheim am Rhine, Germany, a corporation of Germany
No Drawing. Filed July 14, 1964, Ser. No. 382,652
Claims priority, application Germany, July 23, 1963, T 24,350

7 Claims. (Cl. 260—246)

1. A compound selected from the group consisting of 7,8-dihydro-5H-thiopyrano[4,3-d]pyrimidine substitution products of the formula



wherein

R₁ is selected from the group consisting of hydrogen and lower alkyl,

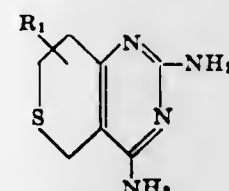
R₂ is selected from the group consisting of hydrogen, lower alkyl, phenyl, benzyl, amino, mono-lower alkyl-amino, di-lower alkyl-amino, morpholino, lower alkyl-morpholino, piperidino and N'-lower alkyl-piperazino, and

R₃ is selected from the group consisting of lower alkoxy, amino, (phenyl-lower alkyl)-amino, mono-lower alkyl-amino, di-lower alkyl-amino, morpholino, lower alkyl-morpholino, pyrrolidino, piperidino and N-lower alkyl-piperazino,

and their non-toxic, pharmacologically acceptable acid addition salts.

2. 2,4-dimorpholino-7,8-dihydro-5H-thiopyrano[4,3-d]pyrimidine.

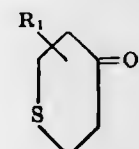
7. The process of preparing a compound of the formula



wherein R₁ is selected from the group consisting of

hydrogen and lower alkyl,

which comprises reacting a tetrahydrothiopyrone of the formula



wherein R₁ has the meanings defined above, with dicyandiamide at a temperature above 100° C., and recovering the reaction product.

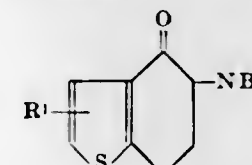
3,316,258

4-OXO-5-MORPHOLINO AND PHTHALIMIDO BENZOTHIOPHENES

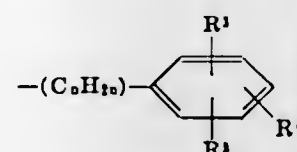
Joseph Sam, Oxford, Miss. 38655

No Drawing. Filed Nov. 16, 1964, Ser. No. 411,565
5 Claims. (Cl. 260—247.1)

1. A compound selected from the group consisting of compounds of the formula

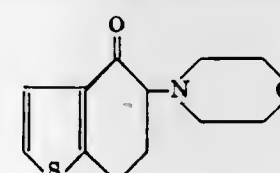


wherein R₁ is a member selected from the group consisting of hydrogen, chloro, bromo, fluoro, iodo, trifluoromethyl, nitro, (lower)alkyl, allyl, and radicals of the formula



wherein n is a whole integer from 0 to 3 inclusive, R³, R⁴ and R⁵ are each a member selected from the group consisting of hydrogen, chloro, bromo, iodo, fluoro, trifluoromethyl, nitro, (lower)alkyl, (lower)alkoxy, (lower)alkylthio, allyl and di(lower)alkylamino, and wherein NB is a member selected from the group consisting of morpholino and phthalimido; and the pharmaceutically acceptable nontoxic acid addition salts thereof.

4. The compound having the formula



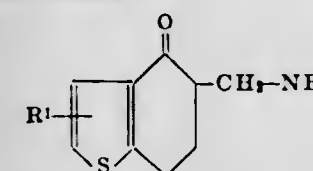
3,316,259

4-OXO-5 TERTIARY AMINO METHYL-4,5,6,7-TETRAHYDRO BENZO(b) THIOPHENES

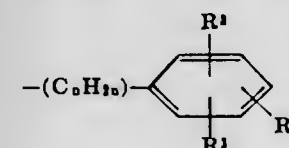
Joseph Sam, Oxford, Miss. 38655

No Drawing. Filed Nov. 16, 1964, Ser. No. 411,584
7 Claims. (Cl. 260—247.1)

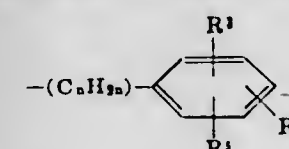
1. A compound selected from the group consisting of compounds of the formula



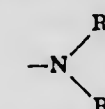
wherein R¹ is a member selected from the group consisting of hydrogen, chloro, bromo, fluoro, iodo, trifluoromethyl, nitro, (lower)alkyl, allyl, and radicals of the formula



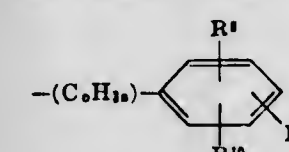
wherein n is a whole integer from 0 to 3 inclusive, R³, R⁴ and R⁵ are each a member selected from the group consisting of hydrogen, chloro, bromo, iodo, fluoro, trifluoromethyl, nitro (lower)alkyl, (lower)alkoxy, (lower)alkylthio, allyl and di(lower)alkylamino, and wherein NB is an amino radical having the formula —NHR² wherein R² is a member selected from the group consisting of hydrogen, (lower)alkyl, cycloalkyl having from 5 to 7 carbon atoms inclusive, and radicals of the formula



wherein n, R³, R⁴ and R⁵ are as defined above, or an amino radical selected from the group consisting of morpholino, (lower)alkylmorpholino, di(lower)alkylmorpholino, piperidino, (lower)alkylpiperidino, di(lower)alkylpiperidino, pyrrolidino, (lower)alkylpyrrolidino, di(lower)alkylpyrrolidino, N-(lower)alkylpiperazino, N-(lower)alkyl-di(lower)alkylpiperazino, and radicals of the formula

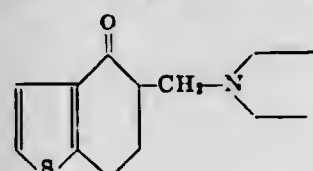


wherein R⁶ and R⁷ are selected from the group consisting of (lower)alkyl, cycloalkyl having from 5 to 7 carbon atoms inclusive and radicals of the formula



wherein n is a whole integer from 0 to 3 inclusive, and R⁸, R⁹ and R¹⁰ each represent a member selected from the group consisting of hydrogen, (lower)alkyl, (lower)alkoxy, allyl, chloro, bromo, fluoro, iodo, nitro, trifluoromethyl, di(lower)alkylamino and (lower)alkylthio; and the pharmaceutically acceptable nontoxic acid addition salts thereof.

5. The compound having the formula



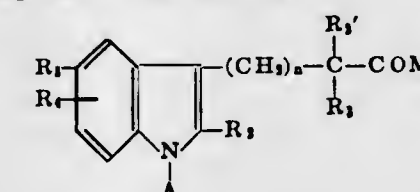
3,316,260

DERIVATIVES OF ALPHA AMINO-INDOLE-3-ACETIC AND PROPIONIC ACIDS

Tsung-Ying Shen, Westfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Oct. 24, 1965, Ser. No. 505,036

14 Claims. (Cl. 260—247.2)

1. A compound of the formula



in which n is an integer less than 2;

R₂ is selected from the group consisting of hydrogen, alkenyl, alkyl, cycloalkyl, phenyl and benzyl;

R₃ is selected from the group consisting of amino, lower monoalkylamino, lower dialkylamino, benzylamino, N-lower alkyl benzylamino, cyclohexylamino, pyrrolidino, piperidino, tetrahydropyridino, morpholino, piperazino, acetyl-piperazino, N-methylpiperazino, N-(β-hydroxyethyl)piperazino, β-diloweralkylamino ethylamino, N-diethanolamino and β-hydroxyethyl-amino;

R₄ is selected from the group consisting of hydrogen, lower alkyl and lower alkenyl;

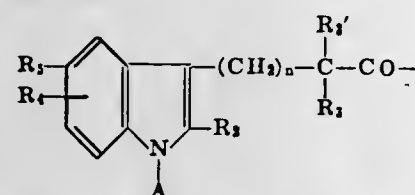
R₅ is selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, fluoro and trifluoromethyl;

R₆ is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower alkoxy, nitro, amino, lower alkylamino, di(lower)alkylamino, lower alkanoylamino, lower alkanoyl, bis-(hydroxy lower alkyl)amino, pyrrolidino, N-methylpiperazino, morpholino, cyano, amino lower alkyl, trifluoromethyl, halogen, di(lower)alkylsulfamyl, benzylthio, lower alkylbenzylthio, lower alkoxybenzylthio, halogenobenzylthio, benzyloxy, lower alkylbenzylthio, lower alkoxybenzyloxy, halogenobenzoyloxy, lower alkenyl, lower alkenyloxy, hexamethyleneimino, cyclopropyl, cyclopropyl(lower alkoxy) and cyclobutyl(lower alkoxy);

A is selected from the group consisting of benzoyl, naphthoyl, biphenoyl and HetC=O wherein Het is selected from the group consisting of furyl, isonicotinyl, thienyl, pyrrol, thiazolyl, thiadiazolyl, pyrazinyl, pyridinyl, quinolyl, isoquinolyl, pyrazolyl, imidazolyl, oxazolyl, pyrimidinyl, benzisoxazolyl, benzimidazolyl, benzofuranyl, benzothiazolyl, benzotriazolyl, benzoxazolyl, benzothienyl, indazolyl, isindazolyl, and substituted benzoyl, naphthoyl, biphenoyl and HetC=O wherein said substituent is selected from the group consisting of lower alkoxy, trifluoromethylacetyl, di(lower)alkyl sulfamyl, difluoroacetyl, monofluoroacetyl, carb-lower alkoxy, formyl, trifluoromethylthio, lower alkyl sulfinyl, lower alkyl sulfonyl benzylthio, lower alkyl benzylthio, lower alkoxy benzylthio, halogenobenzylthio, mercapto, di(lower)alkylamino, acetamino, halogen, methylthio, nitro, acetyl, di(lower)alkylcarboxamido, phenoxy, lower alkyl phenoxy, lower alkoxy phenoxy, halogenophenoxy, cyano and lower alkyl;

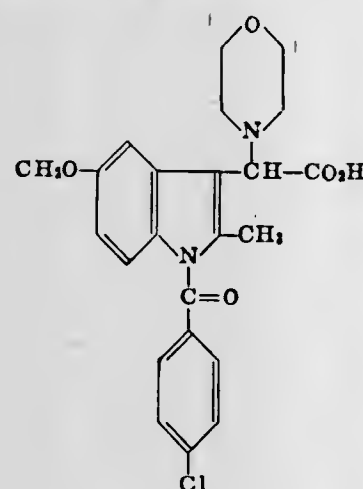
M is selected from the group consisting of hydroxyl, amino, methylamino, ethylamino, propylamino, butylamino, dimethylamino, diethylamino, N-methyl-N-ethylamino, N-methyl-N-butylamino, dibutylamino, glucosamino, glycosylamino, allylamino, N-phenethylamino, N-ethyl-N-phenethylamino, p-chloroanilino, β(1-ethyl-piperidyl-2)ethylamino, tetrahydrofurfurylamino, 1,2,5,6-tetrahydropyridino, morpholino, N-methyl piperazino, piperazino, N-phenylpiperazino, piperidino, benzylamino, anilino, p-ethoxyanilino,

cyclohexylamino, pyrrolidino, N-hydroxyethylpiperazino, N,N-dimethylcarbamylmethylamino, N,N-diethylaminoethylamino, benzoyloxy, lower alkoxy, p-methoxyanilino, (1-methylpyrrolidyl-2)methylamino, N-carbobenzoyloxymethylamino, ethoxyethoxy, phenoxy, diphenylmethoxy, triphenylmethoxy, cyclopropyloxy, β -diethylaminoethoxy, β -dimethylaminoethoxy, β -acetaminoethoxy, phenethoxy, allyloxy, isopropoxy, cyclopropylmethoxy, tetrahydrofurfuryloxy, cyclohexyloxy, cyclopentyloxy, cyclopropylethoxy, p-acetaminophenoxy, o-carboxyphenoxy, polyhydroxy lower alkyl, polyhydroxy cycloalkyl and OZ where Z is a cation, and OY where Y represents lower alkyl, and the structure:



wherein n , A, R_2 , R_3 , R_4 and R_5 are as defined above.

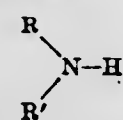
6. A compound of the formula:



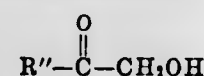
3,316,261

PROCESS FOR MAKING A 2-AMINOKETONE
George P. Speranza and Stanley B. Cavitt, Austin, Tex., assignors to Jefferson Chemical Company, Inc., Houston, Tex., a corporation of Delaware
No Drawing. Filed Oct. 28, 1963, Ser. No. 319,563
7 Claims. (Cl. 260-247.7)

1. A process for preparing a 2-aminoketone which comprises reacting at a temperature of 50° to 250° C. a secondary amine of the formula:



with a keto alcohol of the formula:



and recovering the 2-aminoketone; wherein R has 1 to 18 carbon atoms and is selected from a group consisting of alkyl and cycloalkyl groups, R' has 1 to 18 carbon atoms and is selected from the group consisting of alkyl, cycloalkyl, aryl, aralkyl, and alkylphenyl groups, R'' has 1 to 18 carbon atoms and is selected from a group consisting of alkyl, cycloalkyl, phenyl, alkylphenyl and phenalkyl groups, and R and R' taken together have 3 to 18 carbon atoms and is selected from a class consisting of carbocyclic and heterocyclic cyclizing groups.

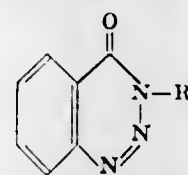
7. A method for preparing diisobutylaminoacetone which comprises the steps of reacting diisobutylamine with hydroxyacetone in a solvent solution at a temperature within the range of 50° to 250° C. to provide thereby said diisobutylaminoacetone and recovering said diisobutylaminoacetone.

3,316,262

NOVEL 1,2,3-BENZOTRIAZIN-4(3H)-ONES
Klaus Hasspacher and Gerhard Ohnacker, Biberach an der Riss, Germany, assignors to Boehringer Ingelheim G.m.b.H., Ingelheim am Rhine, Germany, a corporation of Germany
No Drawing. Filed Aug. 4, 1964, Ser. No. 387,488
Claims priority, application Germany, Aug. 12, 1963, T 24,474

9 Claims. (Cl. 260-248)

1. A compound of the formula

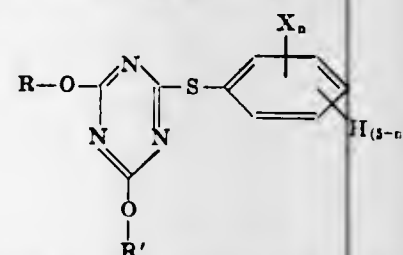


wherein R is selected from the group consisting of alkyl of 3 to 6 carbon atoms, phenyl-lower alkyl, halo-lower alkyl of 2 to 4 carbon atoms and lower alkoxy-lower alkyl.

3,316,263

2-(SUBSTITUTED PHENYLTHIO)-4,6-DIALKOXY-1,3,5-TRIAZINES
Frank Ross, Villa Park, and Sidney B. Richter, Chicago, Ill., assignors to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Nov. 2, 1964, Ser. No. 408,383
12 Claims. (Cl. 260-248)

1. A compound of the formula:

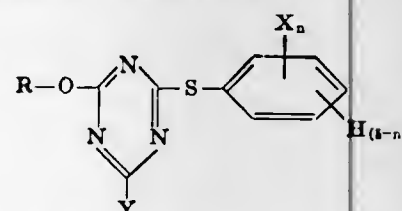


wherein R and R' are independently selected from the group consisting of alkyl radicals of 1 to 4 carbon atoms; n is a number from 1 to 5; and each X is independently selected from the group consisting of chlorine, bromine, nitro, amino, and alkyl, alkoxy, alkylthio and alkylamido radical of 1 to 4 carbon atoms, provided that at least one X is selected from the group consisting of chlorine, bromine, nitro, amino, and alkoxy, alkylthio and alkylamido radicals of 1 to 4 carbon atoms, and provided that when n is a minimum of 3, a maximum of two X's are selected from the group consisting of nitro, amino and alkyl, alkoxy, alkylthio and alkylamido radicals of 1 to 4 carbon atoms.

3,316,264

2-PHENYLTHIO-4-ALKOXY-6-HALO-S-TRIAZINES
Frank Ross, Villa Park, and Sidney B. Richter, Chicago, Ill., assignors to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Dec. 2, 1964, Ser. No. 415,463
4 Claims. (Cl. 260-248)

1. A compound of the formula



wherein R is an alkyl radical of 1 to 4 carbon atoms; Y is selected from the group consisting of chlorine and bromine; n is a number from 1 to 5; and each X is independently selected from the group consisting of chlorine, bromine, nitro, amino, and alkyl, alkoxy, alkylthio, and alkylamido radicals of 1 to 4 carbon atoms, provided that at least one X is selected from the group consisting of

alkoxy, alkylthio and alkylamido radicals of 1-4 carbon atoms, and provided that when n is a minimum of 3, a maximum of two X's are selected from the group consisting of nitro, amino and alkyl, alkoxy, alkylthio and alkylamido radicals of 1 to 4 carbon atoms.

3,316,265

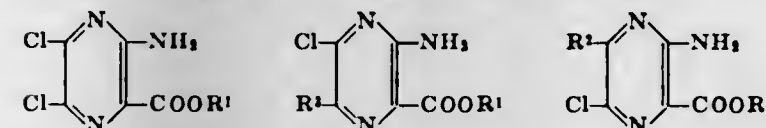
PREPARATION OF MELAMINE
Ralph E. Ringelman, Beaumont, and Thomas W. Higgins, Piscataway, N.J., assignors to Mobil Oil Corporation, a corporation of New York
Filed Feb. 2, 1965, Ser. No. 429,739
17 Claims. (Cl. 260-249.7)

1. A low-temperature, substantially atmospheric pressure process for the production of melamine, which comprises contacting carbonyl sulfide and ammonia, in an ammonia:carbonyl sulfide mole ratio of at least 1:1, with a high surface area catalyst at a temperature of about 80-150° C., heating said catalyst and conversion products to a temperature of about 250-400° C., passing ammonia over said catalyst and conversion products at a temperature of about 250-400° C., and recovering melamine from the off-gas stream of ammonia, said process being conducted at a pressure between about 0.1 and about 10 atmospheres.

3,316,266

3-AMINOPYRAZINOIC ACID DERIVATIVES AND PROCESS FOR THEIR PREPARATION
Roger J. Tull, Metuchen, and Jan ten Broeke, Watchung, N.J., and Edward J. Cragoe, Jr., Lansdale, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Mar. 31, 1964, Ser. No. 356,039
10 Claims. (Cl. 260-250)

1. A compound selected from the group of compounds having the following structural formulas:



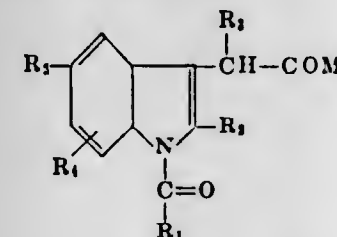
wherein R^1 is selected from the group consisting of hydrogen and a lower alkyl group, and R^2 is selected from the group consisting of lower alkyl, cycloalkyl having from 5 to 8 carbon atoms and phenyl.

3,316,267

INDOLYL ACIDS
Tsung-Ying Shen, Westfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Continuation of application Ser. No. 323,863, Nov. 4, 1963. This application Feb. 15, 1966, Ser. No. 528,020

3 Claims. (Cl. 260-250)

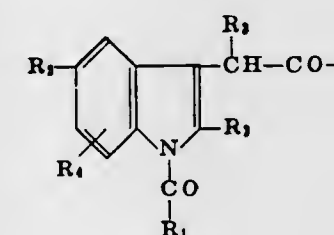
1. A compound of the formula:



in which

R_1 is selected from the group consisting of pyrimidinyl, pyridazinyl, pyrazinyl and substituted pyrimidinyl wherein said substituent is selected from the group consisting of halo, lower alkyl, phenyl, lower alkylthio, lower alkoxy, trifluoromethyl, lower alkyl sulfonyl, benzylthio, phenoxy, nitro, morpholino lower alkyl and substituted pyrazinyl wherein said substituent is selected from the group consisting of lower alkanoyl amino, halo, lower alkyl, carbonyl, benzamido and substituted

pyridazinyl wherein said substituent is selected from the group consisting of halo and lower alkoxy phenyl; R_2 is selected from the group consisting of hydrogen, lower alkenyl and lower alkyl; R_3 is selected from the group consisting of hydrogen, and lower alkyl; R_4 is selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, fluorine and trifluoromethyl and is on a position selected from the group consisting of the 4 to 7 positions; R_5 is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower alkoxy, nitro, amino, di(lower alkyl)amino, lower alkanoylamino, bis-(hydroxy lower alkyl)amino, 1-pyrrolidino, 4-methyl-1-piperazinyl, 4-morpholinyl, cyano, amino lower alkyl, di(lower alkyl)amino lower alkyl, trifluoromethyl, halogen, di(lower alkyl) sulfamyl, benzylthio, benzyloxy, lower alkylbenzyloxy, lower alkoxybenzyloxy, halogenobenzyloxy, lower alkenyl, lower alkenyloxy, 1-azacyclopentyl, cyclopropylmethyloxy and butylmethyloxy; and M is selected from the group consisting of OH, NH_2 , benzyloxy, lower alkoxy, OZ where Z is selected from the group consisting of alkali metals, aluminum, magnesium and iron, and OY where Y represents the structure



3,316,268

PYRIMETHAMINE SALTS WITH BROMINATED NAPHTHOIC ACIDS
Edward F. Elsinger and Donald F. Worth, Ann Arbor, Mich., assignors to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan
No Drawing. Original application Apr. 20, 1962, Ser. No. 188,984, now Patent No. 3,161,641, dated Dec. 15, 1964. Divided and this application Apr. 24, 1964, Ser. No. 362,501

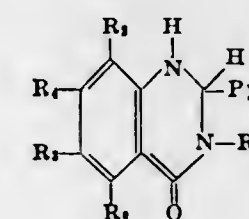
The portion of the term of the patent subsequent to Feb. 22, 1983, has been disclaimed
4 Claims. (Cl. 260-256.4)

1. A salt of 2,4-diamino-5-(p-chlorophenyl)-6-ethylpyrimidine with one-half formula weight of 6,6'-dibromo-2,2'-dihydroxy-(1,1'-binaphthalene)-3,3'-dicarboxylic acid.

3,316,269

2-PYRIDYL-2,3-DIHYDRO-4(1H)-QUINAZO-LINONES AND DERIVATIVES THEREOF
Edgar S. Schipper, Clifton, N.J., assignor to Shulton, Inc., Clifton, N.J., a corporation of New Jersey
No Drawing. Filed Oct. 16, 1964, Ser. No. 404,490
17 Claims. (Cl. 260-256.4)

1. A compound selected from the class consisting of 2-pyridyl-2,3-dihydro-4(1H)-quinazolinones and non-toxic acid addition salts thereof, said 2-pyridyl-2,3-dihydro-4(1H)-quinazolinones having the formula:



in which Py is selected from the class consisting of 2-pyridyl and 4-pyridyl; R₁ is a member selected from the class consisting of hydrogen, lower alkyl, cyclopropyl, allyl, propargyl, homoveratryl, phenyl and substituted phenyl in which the substituents are selected from the class consisting of lower alkyl, trifluoromethyl, lower alkoxy and halogen; and R₂, R₃, R₄ and R₅ are selected from the class consisting of lower alkoxy, hydrogen and halogen.

3,316,270

REDDISH-BLUE BROMINE CONTAINING INDANTHRONE COMPOSITION AND PROCESS THEREFOR

Chi K. Dien, Buffalo, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed July 28, 1964, Ser. No. 385,765
4 Claims. (Cl. 260-265)

1. A process for producing a bromine containing indanthrone composition in the form of reddish-blue pigment which comprises the steps of:

- (a) contacting an indanthrone suspension with about 1 to 1.3 mols of bromine per mol of indanthrone at a temperature less than about 75° C. to form an indanthrone-bromine adduct,
- (b) treating the adduct of step (a) with about 35 to 60 mols of a lower alcohol per mol of said adduct,
- (c) washing the resultant product with water at a temperature of about 25° C.-75° C.,
- (d) drying the washed product at a temperature below 100° C.,
- (e) dissolving the washed product in concentrated sulfuric acid at about ambient temperature and with rigorous agitation,
- (f) drowning the resulting sulfuric acid solution in an aqueous solution containing a reducing agent selected from the group consisting of ferrous salt of a non-oxidizing acid and an alkali metal sulfite,
- (g) recovering the resulting indanthrone pigment from the remaining solution,
- (h) refluxing the resulting indanthrone pigment in an aqueous alkali solution of a reducing sugar, and
- (i) recovering the resulting indanthrone pigment from the resulting solution.

4. An indanthrone composition in the form of a reddish-blue pigment wherein said composition contains about 1.4% to 3.5% bromine and wherein said composition is produced according to the method of claim 1.

3,316,271

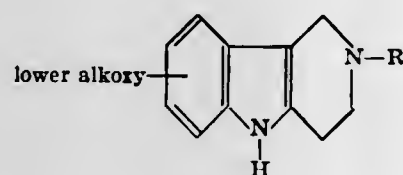
2-METHYL-7-ALKOXY-1,2,3,4-TETRAHYDRO-5H-PYRID[4,3-b]INDOLES AND A METHOD FOR THEIR PREPARATION

Aaron Cohen and Christopher John Cattanach, Welwyn Garden City, England, assignors to Hoffman-La Roche Inc., Nutley, N.J., a corporation of New York

No Drawing. Filed Oct. 9, 1963, Ser. No. 314,868
Claims priority, application Great Britain, Oct. 16, 1962, 39,034/62

2 Claims. (Cl. 260-296)

1. A compound selected from the group consisting of an indole derivative of the formula



wherein R is lower alkyl and an acid addition salt thereof with a pharmaceutically acceptable acid.

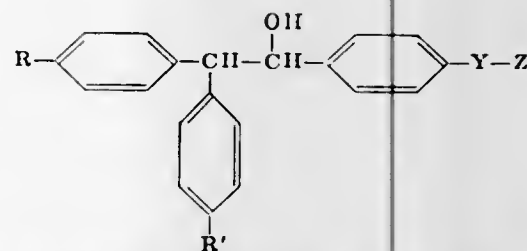
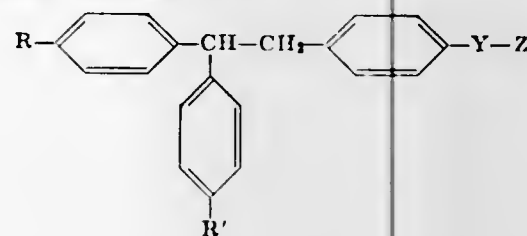
3,316,272 HETEROCYCLIC DERIVATIVES OF TRIPHENYLETHYLENES, TRIPHENYLETHANES AND TRIPHENYLETHANOLS

Edward McCreery Roberts, George Philip Claxton, and Frances Gertrude Fallon, Cincinnati, Ohio, assignors to Richardson-Merrell Inc., New York, N.Y., a corporation of Delaware

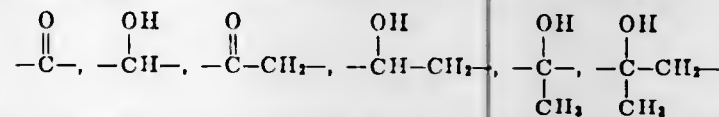
No Drawing. Original application June 27, 1962, Ser. No. 205,551. Divided and this application June 6, 1966, Ser. No. 570,102

5 Claims. (Cl. 260-294.7)

1. Compounds of the group consisting of those having the general formulas:



in which R and R' are members of the group consisting of hydrogen, chlorine and methoxy; Y is an oxygenated carbon fragment chosen from the group consisting of:



in which the carbon bearing the oxygen is always attached to the phenyl ring; Z is a member of the group consisting of pyridyl, partially saturated pyridyl radicals and completely saturated pyridyl radicals, attached to Y through a ring-carbon atom, the nitrogen atom of said partially saturated and completely saturated pyridyl ring bearing a member of the group consisting of hydrogen and lower alkyl radicals.

3. 1,1-diphenyl-2-[p-[1-hydroxy-2-(2-piperidyl)ethyl]phenyl]ethane.

3,316,273

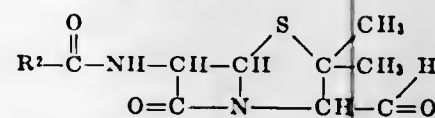
PENICILLIN ALDEHYDES

William J. Gottstein and Lee C. Cheney, Fayetteville, N.Y., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 20, 1964, Ser. No. 353,577

13 Claims. (Cl. 260-306.7)

1. A compound of the formula



in which R₂ represents the side chain of a penicillin.

3,316,274

PROCESS FOR PREPARATION OF 2-ACETONYLBENZOXAZOLES AND NAPHTHOXAZOLES

Emil B. Rauch, Port Dickinson, and John A. Welsh, Binghamton, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 18, 1965, Ser. No. 426,425

9 Claims. (Cl. 260-307)

1. The process of preparing a 2-acetonyloxazole which comprises reacting an alkyl ester of an aliphatic carboxylic acid with a 2-methyloxazole selected from the

group consisting of 2-methylbenzoxazoles and 2-methylnaphthoxazoles in the N,N-dimethylamide of a lower fatty acid in the presence of a catalytic amount of an alkali metal hydride catalyst.

3,316,275

CHRYSANTHEMUM CARBOXYLIC ACID ESTERS

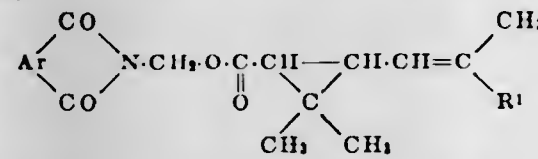
Takeaki Kato and Kenzo Ueda, Nishinomiya-shi, Sadao Horie, Suita-shi, Toshio Mizutani, Amagasaki-shi, Keimei Fujimoto, Minoo-shi, and Yositosi Okuno, Nishinomiya-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Dec. 1, 1964, Ser. No. 415,175

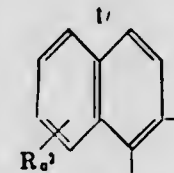
Claims priority, application Japan, Dec. 3, 1963, 38/65,180; Dec. 4, 1963, 38/65,467; Dec. 5, 1963, 38/65,622; Dec. 10, 1963, 38/66,803, 38/66,804; Dec. 17, 1963, 38/68,215; Dec. 19, 1963, 38/68,673

8 Claims. (Cl. 260-326)

1. A chrysanthemum carboxylic acid ester having the formula,



wherein Ar is a member selected from the group consisting of (1) 3,4-dihydro-1,2-naphthylene of the formula,



wherein R₂ is a member selected from the group consisting of methyl and methoxy, and n is an integer of 0 to 2, and (2) 1,2-naphthylene of the formula,



and R₁ is a member selected from the group consisting of methyl and methoxy carbonyl.

3,316,276

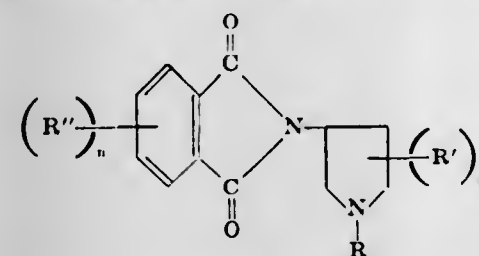
N-(3-PYRROLIDINYL)-PHTHALIMIDE

Grover C. Helsley, Richmond, Va., assignor to A. H. Robins Company, Inc., Richmond, Va., a corporation of Virginia

No Drawing. Filed Oct. 6, 1965, Ser. No. 494,304

13 Claims. (Cl. 260-326)

1. A compound selected from the group consisting of N-substituted phthalimides having the structural formula:



wherein R is a member selected from the group consisting of hydrogen, lower alkyl, aryl, aralkyl and alicyclyl,

wherein R' is lower alkyl; wherein R'' is a member selected from the group consisting of halogen having an atomic weight less than 80, trifluoromethyl, lower alkyl and lower alkoxy;

wherein m is 0-2 and n is 0-4, wherein aryl has a maximum of 12 carbon atoms and a phenyl ring with substituents selected from the group consisting of hydrogen, trifluoromethyl, halogen having an atomic weight less than 80, wherein aralkyl has a phenyl-lower alkyl radical and a maximum of nine carbon atoms, wherein alicyclyl has a saturated ring having from four to seven carbon atoms and a maximum of nine carbon atoms and acid addition and quaternary ammonium salts thereof.

3,316,277

POLYEPOXIDES

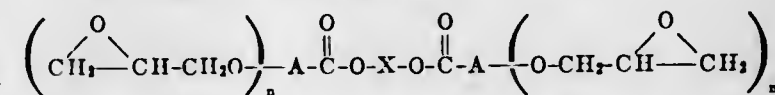
Günter Frank and Rolf Kubens, Leverkusen, Robert Schmitz-Josten, Cologne-Stammheim, Richard Wegler, Leverkusen, and Heinz-Adolf Dortmann, Bergisch-Gladbach, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Jan. 30, 1963, Ser. No. 255,099

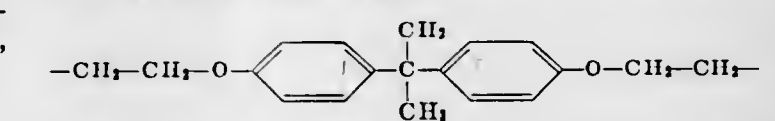
Claims priority, application Germany, Feb. 3, 1962, F 35,921

7 Claims. (Cl. 260-348)

1. A compound of the formula



wherein X is a member selected from the group consisting of bivalent saturated aliphatic hydrocarbon having 2 to 18 carbon atoms, bivalent recurring alkylene groups connected by oxygen, there being from 2 to 8 said alkylene groups each having 2 to 4 carbon atoms, bivalent olefinically unsaturated aliphatic hydrocarbon having 4 to 18 carbon atoms, xylene and



n is an integer from 1 to 2 and A is a polyvalent aromatic hydrocarbon having 1 to 2 aromatic six-membered carbocyclic rings, the valency of A being n+1.

3,316,278

4-NITRAZA-1,2-EPOXYALKANES

Gustave B. Linden, Short Hills, N.J., and Ralph E. Meyer and Clinton R. Vanneman, Sacramento, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

No Drawing. Filed June 2, 1964, Ser. No. 372,122

2 Claims. (Cl. 260-348)

1. The compound 4-nitrazo-1,2-epoxypentane.

3,316,279

PREPARATION OF OLEFIN OXIDES

Donald M. Fenton, Anaheim, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Aug. 3, 1964, Ser. No. 387,178

18 Claims. (Cl. 260-348.5)

1. The oxidation of hydrocarbon olefins to olefin oxides which comprises contacting hydrocarbon olefins having 2 to about 30 carbon atoms with a rhenium compound selected from the group consisting of rhenium oxide, alkali metal, alkaline earth metal and ammonium perrhenates and mixtures thereof in a liquid reaction medium inert to the oxidation and containing 0.05 to about 15 weight percent of a reaction modifier selected from the group consisting of alkyl, aryl and cycloalkyl cyanides, pyridines, and quinolines having from 2 to about 14 carbon atoms, at a temperature of -50° to 300° C. and at a pressure from 1 to about 250 atmospheres, sufficient to maintain said medium as a liquid.

3,316,292

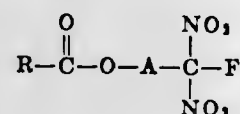
FLUORODINITROALKYL ESTERS OF MONOCARBOXYLIC ACIDS AND THEIR PREPARATION

Otto S. Schaeffer, Arcadia, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

No Drawing. Filed July 27, 1962, Ser. No. 214,447

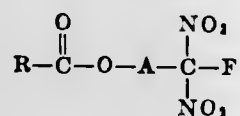
18 Claims. (Cl. 260—486)

1. As a composition of matter, esters having the formula

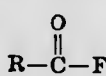


wherein A is a lower alkylene radical, and R is selected from the group consisting of lower alkyl and lower alkenyl radicals.

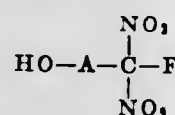
11. The method of preparing compounds of the formula



which comprises reacting a compound of the formula



with an alkanol of the formula



wherein in the above formulae A is a lower alkylene radical, R is selected from the group consisting of alkyl and lower alkenyl radicals, and X is selected from the group consisting of halogen and hydroxy.

3,316,293

ORGANIC PHOSPHORUS COMPOUNDS

Russell L. K. Carr, Grand Island, N.Y., and Charles F. Baranaukas, Memphis, Tenn., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed July 26, 1965, Ser. No. 475,012

20 Claims. (Cl. 260—500)

1. A process for preparing quaternary phosphonium halides, which comprises heating at reflux temperatures a mixture of yellow phosphorus and an organic halide selected from the group consisting of benzyl halides, alkyl-substituted benzyl halides, o-chlorobenzyl chloride, p-chlorobenzyl chloride, alkynyl-substituted benzyl halides, alicyclic-substituted benzyl halides o-chlorobenzyl chloride, p-chlorobenzyl chloride, p-iodobenzyl chloride, 3,4-dichlorobenzyl chloride and 1,4-bis-chloromethylbenzene, and mixtures thereof, wherein the halogen is selected from the group consisting of fluorine, chlorine, and bromine, in the presence of between about 0.2 and about 125 percent, by weight of yellow phosphorus, of a catalyst selected from the group consisting of copper, palladium, cobalt, nickel, silver, rhodium, the chlorides, bromides, fluorides, sulfates, phosphates, phosphides of these metals and mixtures thereof, in an inert atmosphere, separating the resulting solid phase reaction product, treating said reaction product with a solvent for quaternary phosphonium halide, and recovering the desired quaternary phosphonium halide.

7. A process for preparing tertiary phosphine oxides, which comprises heating at reflux temperatures a mixture of yellow phosphorus and an organic halide selected from the group consisting of benzyl halides, alkyl-substituted benzyl halides, alkenyl-substituted benzyl halides, alkynyl-substituted benzyl halides, alicyclic-substituted benzyl halides, o-chlorobenzyl chloride, p-chlorobenzyl chloride, p-iodobenzyl chloride, 3,4-dichlorobenzyl chloride and 1,4-bis-chloromethyl benzene, and mixtures thereof, wherein the halogen is selected from the group consisting of fluorine, chlorine, and bromine, in the presence of between about 0.2 and about 125 percent, by weight of yellow phosphorus, of a catalyst selected from the group consisting of copper, palladium, cobalt, nickel, silver, rhodium, the chlorides, bromides, fluorides, sulfates, phosphates, phosphides of these metals and mixtures thereof in the inert atmosphere, separating the resulting solid phase reaction product, treating said reaction product with a base, whereby the desired phosphine oxide is formed, and thereafter recovering said phosphine oxide.

13. A process for preparing organic phosphinic acids which comprises heating at reflux temperatures a mixture of yellow phosphorus and an organic halide selected from the group consisting of benzyl halides, alkyl-substituted benzyl halides, alkenyl-substituted benzyl halides, alkynyl-substituted benzyl halides, alicyclic-substituted benzyl halides, and mixtures thereof, wherein the halogen is selected from the group consisting of fluorine, chlorine and bromine, in the presence of between about 0.2 and about 125, by weight of yellow phosphorus, of a catalyst selected from the group consisting of copper, palladium, cobalt, nickel, silver, rhodium, the chlorides, bromides, fluorides, sulfates, phosphates, phosphides of these metals and mixtures thereof, in an inert atmosphere, separating the resultant solid phase reaction product, treating said reaction product with a base, separating the resultant basic liquid residue, treating said basic liquid residue with a strong aqueous acid solution, and thereafter recovering the desired solid organic phosphinic acid from the resulting acid slurry.

20. The process for preparing dibenzyl phosphinic acid which comprises heating at reflux temperatures a mixture of yellow phosphorus and benzyl chloride, in the presence of between about 0.2 and about 125 percent, by weight of yellow phosphorus, of cuprous chloride, in an inert atmosphere, admixing the resulting reaction product with an aqueous alkaline solution, separating the resulting liquid phase, acidifying said liquid phase with a strong aqueous acid solution, and thereafter recovering dibenzyl phosphinic acid.

3,316,294

DETERGENT ALKYLATE AND THE SULFONATE DERIVATIVE

George C. Feighner, Ponca City, Okla., and Brij L. Kapur, Paterson, N.J., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 129,252, Aug. 4, 1961. This application June 24, 1965, Ser. No. 466,847

3 Claims. (Cl. 260—505)

1. A detergent alkylate obtained by the aluminum chloride catalyzed alkylation of an aryl compound selected from the group consisting of benzene, a lower alkyl substituted benzene and mixtures thereof with a chlorination product prepared by partially chlorinating a petroleum derived hydrocarbon fraction consisting essentially of C₁₀ to C₁₈ straight chain paraffins to the extent whereby from about 10 to 35 mole percent of the paraffins are chlorinated, said fraction further characterized as comprising a predominant amount of component paraffins of 11 to 15 carbon atoms.

3,316,295

PREPARATION OF 2,3'-DICHLORO-4-BIPHENYL-CARBOXYLIC ACID

William H. Starnes, Jr., Baytown, Tex., assignor, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

No Drawing. Filed Oct. 1, 1962, Ser. No. 227,597

5 Claims. (Cl. 260—515)

1. A method of preparing 2,3'-dichloro-4-biphenyl-carboxylic acid which comprises contacting p-toluic acid and o-dichlorobenzene in a reaction zone at a temperature within the range from about 120° C. to about 180° C., in the liquid phase, in the presence of molecular oxygen and from about 0.5 to 4 mols of di-t-butylperoxide per mol of p-toluic acid to form a product containing 2,3'-dichloro-4-biphenylcarboxylic acid.

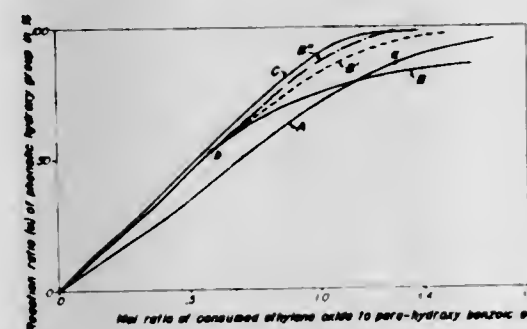
3,316,296

METHOD FOR THE MANUFACTURE OF PARA-(β-HYDROXYETHOXY) BENZOIC ACID

Kelsuke Mihara, Saeki, Oita, Japan, assignor to Polyester Development Co., Ltd., Tokyo, Japan

Filed June 10, 1963, Ser. No. 286,805

3 Claims. (Cl. 260—521)



1. A process for producing para-(β-hydroxyethoxy) benzoic acid which comprises mixing para-hydroxy benzoic acid with ethylene oxide, the mole ratio of para-hydroxy benzoic acid to ethylene oxide being about 1:1.1–1.4, in an aqueous alkaline solution, the mole ratio of para-hydroxy benzoic acid to water being about 1:8–50, and, maintaining the pH of the solution between 10.0 and 11.0 by adding thereto a member selected from the group consisting of hydrochloric acid, sulphuric acid, carbon dioxide, sulphur dioxide, para-hydroxy benzoic acid, para-(β-hydroxyethoxy) benzoic acid and a mixture thereof, and simultaneously heating the solution to a temperature between 60° and 100° C., and then precipitating the thus-formed para-(β-hydroxyethoxy) benzoic acid from the solution.

3,316,297

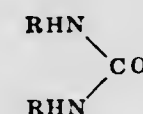
PREPARATION OF UREAS BY MANGANESE-CATALYZED CARBONYLATION OF AMINES

Fausto Calderazzo, Geneva, Switzerland, assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Dec. 20, 1965, Ser. No. 515,239

10 Claims. (Cl. 260—553)

1. A process of producing symmetrical di-substituted ureas having the formula



in which R is a hydrocarbon radical free from double bonds which comprises heating the corresponding primary

amine selected from the group consisting of alkyl and alicyclic amines with carbon monoxide under pressure at temperatures in excess of 120° C., with a catalytic amount of a compound selected from the group consisting of manganese decacarbonyl and alkylmanganese pentacarbonyl and recovering the di-substituted urea from the reaction mixture.

3,316,298

COLOR IMPROVEMENT TREATMENT OF DIALKYLAMIDES

William K. Wilkinson, Waynesboro, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 11, 1963, Ser. No. 329,869

6 Claims. (Cl. 260—561)

1. A process for treating a lower dialkylamide of a lower fatty acid to remove color-producing impurities which comprises adding from about 0.1% to about 5% by weight of hydrogen peroxide to said dialkylamide, distilling the hydrogen peroxide-containing mixture at a temperature below the boiling point of said dialkylamide, and thereafter collecting the dialkylamide.

3,316,299

BIS(2-AMINOETHYL)SULFONES

Leo A. Paquette, Portage Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Aug. 27, 1963, Ser. No. 304,979

5 Claims. (Cl. 260—583)

1. A compound selected from the group consisting of the free base form and acid addition salts of a compound of the formula:



wherein RRN— is di-lower-alkylamino or the heterocyclic moieties, aziridinyl, azetidyl, pyrrolidinyl, piperidino, hexahydroazepinyl, heptamethylenimino, octamethylenimino, morpholino, or thiomorpholino, each of said heterocyclic moieties having attached as substituents on carbon atoms thereof zero to 3 lower alkyls, inclusive.

3,316,300

PROCESS FOR THE PRODUCTION OF ALIPHATIC DIAMINES

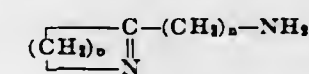
Günter Nawrath, Dormagen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Oct. 1, 1963, Ser. No. 312,861

Claims priority, application Germany, Oct. 18, 1962, F 38,073

7 Claims. (Cl. 260—583)

1. A process for producing aliphatic diamines, comprising heating a Schiff's base of the formula



wherein n is an integer of 3–7, with a reactive amount of a hydrogenating reagent selected from the group consisting of hydrazine and semi-carbazide and a catalytic amount of a strong base selected from the group consisting of alkali metal hydroxide, alkaline earth metal hydroxide, alkali metal oxide, alkaline earth metal oxide, alkali metal alcoholate and alkaline earth metal alcoholate, maintaining a temperature of about 100°–350° C. until the evolution of nitrogen ceases, and recovering the resultant diamine product.

3,316,301

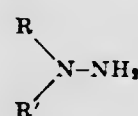
METHOD OF PREPARING UNSYMMETRICAL DI-ALKYL HYDRAZINIUM PERCHLORATES AND FLUOROBORATES

Manfred Stammer, Carmichael, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

No Drawing. Original application July 30, 1962, Ser. No. 214,448, now Patent No. 3,259,657, dated July 5, 1966. Divided and this application Oct. 18, 1965, Ser. No. 509,667

4 Claims. (Cl. 260—583)

1. Process comprising reacting an unsymmetrical di-alkyl hydrazine compound having the formula



wherein R and R' are lower alkyl groups containing up to about six carbon atoms, with a compound having the formula MX_n , wherein M is a cation selected from the group consisting of ammonium, alkali metal and alkaline earth metal cations, X is an anion selected from the group consisting of fluoroborate and perchlorate, and n is an integer selected from the group consisting of one and two with n corresponding with the valence of M, said reaction being carried out in the presence of water.

3,316,302

PREPARATION OF CYCLOHEXANOL AND CYCLOHEXANONE

Johannes W. M. Steeman and Johan P. H. Von Den Hoff, Geleen, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands

No Drawing. Filed Jan. 24, 1964, Ser. No. 339,908. Claims priority, application Netherlands, Jan. 28, 1963, 288,272

3 Claims. (Cl. 260—586)

1. In a process for recovering cyclohexanol and cyclohexanone prepared by oxidizing cyclohexane in the liquid phase with a gas containing molecular oxygen, removing acidic by-products by treating the oxidation product with an aqueous alkaline solution, removing substantially all of the nonconverted cyclohexane from the oxidation product by distillation, subsequently saponifying substantially all of the esters present in the oxidation product at atmospheric pressure with an aqueous alkaline solution, and finally recovering cyclohexanol and cyclohexanone from the reaction mixture, the improvement which comprises adding cyclohexane, in an amount corresponding to 15–40% by weight of the oil phase to be separated off, to the reaction mixture after the saponification whereby an oil phase and a water phase are formed, separating the water phase from the oil phase and thereafter recovering the cyclohexanol and cyclohexanone from the oil phase.

3,316,303

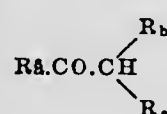
SYNTHESIS OF HIGHER KETONES

Joseph Kern Mertzweiler, Baton Rouge, La., and Rhea N. Watts, deceased, late of St. Francisville, La., by Beulah Smith Watts, legal representative, St. Francisville, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed June 12, 1961, Ser. No. 116,618

8 Claims. (Cl. 260—593)

1. A process for making a higher ketone from a lower ketone corresponding to the formula



wherein R_a , R_b and R_c are radicals which together contain from 1 to 12 carbon atoms, R_a being a radical selected from the group consisting of alkyl and cycloalkyl radicals of 1 to 12 carbon atoms, and R_b and R_c being independently selected from the group consisting of hydrogen atoms, alkyl radicals and cycloalkyl radicals having from 1 to 8 carbon atoms, which process comprises heating said lower ketone in the liquid phase in an enclosed zone in the simultaneous presence of (a) an oil-soluble condensation catalyst containing a metal selected from the group consisting of zinc, calcium, barium, lead, manganese and cobalt, and (b) a hydrogenation catalyst selected from the group consisting of sulfides of molybdenum, nickel and tungsten and a cobalt carbonylation catalyst, under effective hydrogenation conditions including a reaction temperature between about 200° and 450° F. and a hydrogen partial pressure between about 200 and 2000 p.s.i.a., recovering the resulting liquid reaction mixture, and separating from said mixture a higher ketone containing as many carbon atoms per molecule as two molecules of said lower ketone.

3,316,304

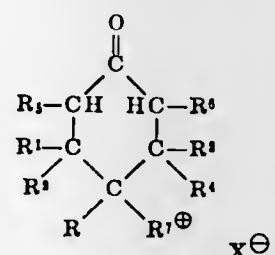
1-ALKYL-4-OXOPHOSPHORINANIUM HALIDES

Richard Parke Welcher, Old Greenwich, Conn., assignor to American Cyanamid Company, Stamford, Conn., a Corporation of Maine

No Drawing. Original application Dec. 22, 1961, Ser. No. 161,438, now Patent No. 3,225,103, dated Dec. 21, 1965. Divided and this application Aug. 9, 1965, Ser. No. 485,970

2 Claims. (Cl. 200—593)

1. A 1-alkyl-4-oxophosphorinanium halide of the formula



wherein R is a member selected from the group consisting of substituted and unsubstituted, branched and straight chain alkyl having from 1 to 18 carbon atoms, cyclohexyl, phenyl, and substituted phenyl; said substituents for alkyl being selected from the group consisting of lower alkoxy, phenyl and cyano, and said substituents for phenyl being selected from the group consisting of halogen and lower alkyl; R^1 , R^2 , R^3 and R^4 each represent a member selected from the group consisting of hydrogen, lower alkyl, phenyl, chloro-substituted phenyl, lower alkyl-substituted phenyl, cyclohexyl and lower alkoxy-alkyl; and R^5 and R^6 each represent a member selected from the group consisting of hydrogen, lower alkyl and phenyl; X is a member selected from the group consisting of Br, Cl and I; and R^7 represents alkyl having from 1 to 12 carbon atoms.

3,316,305

ETHER KETONES

Arno Cahn, Pearl River, N.Y., and Allan H. Gilbert, West Englewood, N.J., assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine

No Drawing. Filed July 26, 1962, Ser. No. 212,706

8 Claims. (Cl. 260—594)

1. A compound which has the generic formula:



3,316,309

PROCESS FOR THE PRODUCTION OF FREE FLOWING PARA-FORMALDEHYDE

Hans-Joachim Mann, Mainz (Rhine), Walter Pohl, Gotzenhain über Langen, and Klaus Simon, Buchschlag über Sprendlingen, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

Filed Nov. 12, 1964, Ser. No. 410,423

Claims priority, application Germany, Nov. 14, 1963, D 42,931

3 Claims. (Cl. 260—615.5)

wherein R is an alkyl group having at least 4 carbon atoms; R^1 , R^2 , R^3 , R^4 , R^5 , and R^6 are each radicals selected from the group consisting of hydrogen and alkyl groups having from 1 to about 3 carbon atoms with not more than two of the total R^1 – R^6 radicals being alkyl; R^7 is an alkyl group having from 1 to about four carbon atoms; m, n and p are integers whose sum is greater than 2; the total number of carbon atoms in the molecule being no more than about 20.

3,316,306

MONOALKYLPENTABORANE-9 AND THE PREPARATION THEREOF

Stanley J. Chiras, Niagara Falls, N.Y., and Eugene J. Mezey, Cleveland, Ohio, assignors, by mesne assignments, to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Apr. 15, 1955, Ser. No. 501,742

11 Claims. (Cl. 260—606.5)

1. A method for the preparation of a liquid reaction product of pentaborane-9 and a monoalkene hydrocarbon having not more than five carbon atoms which comprises reacting the monoalkene hydrocarbon and the pentaborane-9 in a molar ratio within the range from about 0.5:1 to 10:1 at a temperature within the range from about 0° C. to 200° C.

9. The compounds of the class B_5H_9-R wherein R is an alkyl group containing from two to five carbon atoms.

3,316,307

PREPARATION OF SOLID ORGANOBORON FUELS

Perry R. Kippur, Hamden, Conn., assignor, by mesne assignments, to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Jan. 3, 1957, Ser. No. 632,397

3 Claims. (Cl. 260—606.5)

1. A method for the preparation of a solid reaction product of diborane and acetylene which comprises reacting diborane and acetylene at a temperature within the range from 10° C. to 100° C. while the diborane is dissolved in tetrahydrofuran.

3,316,308

POLYMERIC ADDUCTS OF DIVINYL SULFONE WITH WATER AND PREPARATION THEREOF

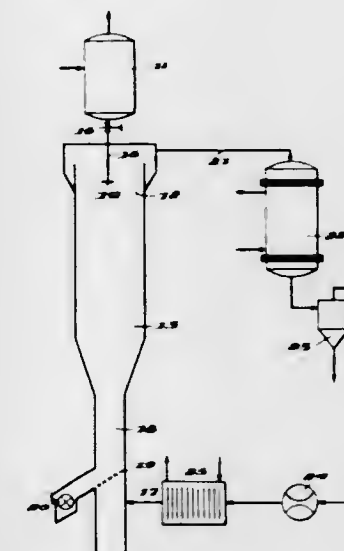
Clark M. Welch, New Orleans, La., assignor to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application June 21, 1962, Ser. No. 204,300, now Patent No. 3,281,204, dated Oct. 25, 1966. Divided and this application Apr. 16, 1964, Ser. No. 366,678

6 Claims. (Cl. 260—607)

1. A water-insoluble polymeric addition product of divinyl sulfone and water wherein the divinyl sulfone and the water are combined in a mole ratio of 1:1, said product being a dry, colorless, odorless gum entirely free from uncombined divinyl sulfone and characterized in that it has a sulfur content of about 23.3%.

3. A process for preparing the water-insoluble polymeric addition product of claim 1 consisting essentially of reacting divinyl sulfone with an excess of water at a temperature of from 40 to 80° C. in the presence of from 0.2 to 5.0% by weight of an alkaline catalyst selected from the group consisting of alkali metal hydroxides, alkali metal carbonates, alkaline earth metal hydroxides, quaternary ammonium hydroxides and quaternary ammonium carbonates, thereby producing said water-insoluble polymeric addition product, and water-extracting said product to free it from uncombined divinyl sulfone.



1. A process for the production of a free flowing para-formaldehyde product which comprises spraying a liquid aqueous formaldehyde concentrate containing 80 to 90% by weight of formaldehyde heated to a temperature between about 105 and 110° C. in the form of droplets into the upper portion of an elongated upright chamber, maintaining a fluidized bed of solid particles of the para-formaldehyde product produced in the lower portion of such chamber, supplying drying air at a temperature between 40 and 60° C. and passing it upwardly therethrough, maintaining an upward velocity of the drying air in the lower portion of the chamber sufficient to form the fluidized bed of the solid particles of the para-formaldehyde product therein and maintaining an upward velocity of the drying air in the upper portion of the chamber which is insufficient to support the droplets of the formaldehyde concentrate being sprayed in, permitting the droplets to solidify as they drop through the rising drying air before they reach the fluidized bed maintaining such solidified droplets within the fluidized bed for a period of about 5 to 15 minutes and then withdrawing the solidified particles from the fluidized bed in a free flowing form.

3,316,310

PURIFICATION OF NAPHTHOL

François Pierrot, 26 Rue Roussy, Lyon, France, and François Contat, 24 Ave. du Dr. Terver, Ecully, France

No Drawing. Filed Oct. 28, 1963, Ser. No. 319,498

Claims priority, application France, Oct. 26, 1962, 913,559

8 Claims. (Cl. 260—621)

1. Method for extracting naphthol from mixtures of the same with one or more materials selected from the group consisting of naphthalene, partially hydrogenated naphthalenes, and hydroxy and keto substituted partially hydrogenated naphthalenes, which consists in: treating the mixture with a liquid saturated hydrocarbon, having 5 to 12 carbon atoms in its molecule, in an amount sufficient for dissolving the components of the mixture other than naphthol; allowing the naphthol to crystallize; and separating the crystallized naphthol from its mother liquor.

3,316,311

PROCESS FOR PREPARING POLY-NITROHYDROCARBONS FROM NITROHYDROCARBONS AND TETRANITROMETHANE IN ALKALINE SOLUTION

Charles W. Plummer, Norwell, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
No Drawing. Filed Mar. 4, 1957, Ser. No. 643,894
14 Claims. (Cl. 260-644)

1. The method of preparing saturated hydrocarbons having terminal polynitro groups comprising reacting a saturated hydrocarbon having at least one nitro group substituted in one terminal methyl group with tetranitromethane in an alkaline solution.

3,316,312

PERFLUORINATED DIALKYL CYCLOBUTANES

Donald Irwin McCane, Claymont, and Ivan Maxwell Robinson, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Apr. 10, 1959, Ser. No. 805,370
6 Claims. (Cl. 260-648)

1. A perfluorinated dialkyl cyclobutane in which the perfluoroalkyl groups are on different carbon atoms and wherein the alkyl group has from one to five carbon atoms.

3,316,313

PREPARATION OF BICYCLOALKYL AND CYCLOALKYLCYCLOALKENE HYDROCARBONS

George R. Lester, Mount Prospect, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Feb. 23, 1965, Ser. No. 434,650
9 Claims. (Cl. 260-666)

1. A process which comprises passing a halocyclohexane in contact with a basic metal oxide selected from the group consisting of magnesium oxide, calcium oxide and zinc oxide at a liquid hourly space velocity of from about 10 to about 100 and at a temperature of from about 50° C. to about 150° C., and recovering the bicyclohexyl and cyclohexylcyclohexene reaction products.

3,316,314

PREPARATION OF 1,5,9-CYCLODODECATRIENE

Cornelis E. P. V. van den Berg, Geleen, Netherlands, assignor to Stamicarbon N. V., Heerlen, Netherlands
No Drawing. Filed Feb. 10, 1966, Ser. No. 526,347
Claims priority, application Netherlands, Feb. 10, 1965, 6,501,602
9 Claims. (Cl. 260-666)

1. In a process for the preparation of 1,5,9-cyclododecatene by the trimerization of butadiene in a solvent in the presence of a catalyst combination comprising titanium tetrachloride, aluminum trichloride, and an alkyl aluminum compound, the improvement consisting essentially in the addition of at least 0.1 mole of ferric chloride per mole of alkyl aluminum compound to the catalyst composition.

3,316,315

CATALYTIC ALKYLATION OF ALKYL-SUBSTITUTED AROMATICS WITH MONOOLEFINS

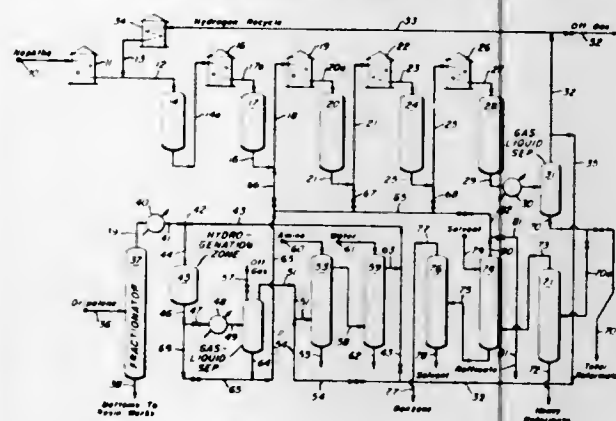
William A. Jones, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Jan. 2, 1964, Ser. No. 335,412
4 Claims. (Cl. 260-668)

1. A process which comprises contacting an alkyl-substituted aromatic with a monoolefin and with a catalyst consisting essentially of (1) a major amount by weight of an alkali metal selected from the group consisting of potassium and sodium and (2) a minor amount by weight of graphite, and recovering the resulting alkylated product.

3,316,316

BENZENE-NAPHTHA REFORMING PROCESS

Walker F. Johnston, Jr., Flossmoor, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
Filed May 14, 1964, Ser. No. 367,334
9 Claims. (Cl. 260-668)



1. A method of producing high quality benzene from dipolene which comprises hydrogenating dipolene, thereafter charging hydrogenated dipolene to a naphtha reforming process comprising dehydrogenation, isomerization, dehydrocyclization and cracking reactions subsequent the dehydrogenation reaction, withdrawing reformate, and recovering high quality benzene therefrom.

3,316,317

ALKYLATION PROCESS

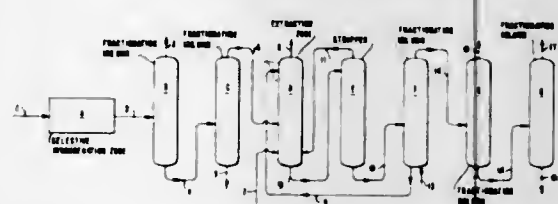
Hans A. Benesi, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed June 24, 1964, Ser. No. 377,484
14 Claims. (Cl. 260-671)

1. A process of the alkylation of an aromatic hydrocarbon with an olefin which comprises contacting said aromatic and said olefin at an elevated temperature with a catalyst comprising silver incorporated with an active acid-acting refractory oxide.

3,316,318

PROCESS FOR RECOVERY OF AROMATICS FROM CRACKED GASOLINE FRACTIONS

Heinz Voetter and Werner Ridderikhoff, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Mar. 9, 1962, Ser. No. 178,615
Claims priority, application Netherlands, Mar. 22, 1961, 262,671
6 Claims. (Cl. 260-674)



1. A process for the recovery of an aromatic hydrocarbon having from 6 through 8 carbon atoms per molecule from a cracked gasoline containing said aromatic hydrocarbon, alkenes and alkadienes which comprises passing said gasoline together with hydrogen over a selective hydrogenation catalyst under selective hydrogenation conditions to hydrogenate at least 95% of the alkadienes while converting less than 25% of the alkenes to alkanes, fractionating the hydrogenated gasoline to obtain a light fraction having a final boiling point not more than 160° C., said fractionation being carried out under reduced pressure and with a bottom temperature below 100° C., and extracting said aromatic hydrocarbon from the light fraction by means of a solvent selective for aromatics.

3,316,319

POLYOLEFINIC SELECTIVE HYDROGENATION

Robert K. Armstrong, Glassboro, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed June 4, 1964, Ser. No. 372,720
10 Claims. (Cl. 260-666)

1. In the process for the selective hydrogenation of non-conjugated cyclic polyolefins, having 8-16 carbon atoms, by reaction with molecular hydrogen in the presence of a catalyst, the improvement which comprises carrying out said reaction at a temperature of 25 to 150° C. and a pressure up to 100 atmospheres in contact with a divalent palladium catalyst and water.

3,316,320

HYDROCARBON DEHYDROGENATION IN THE PRESENCE OF CHLORINE AND OXYGEN

Laimonis Bajars, Princeton, N.J., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed June 11, 1965, Ser. No. 463,377
13 Claims. (Cl. 260-680)

1. The method for dehydrogenating aliphatic hydrocarbons of 4 to 6 carbon atoms which comprises heating in the vapor phase at a temperature of from about 450° C. to 850° C. an aliphatic hydrocarbon of 4 to 6 carbon atoms with oxygen in a molar ratio of at least one-fourth mol of oxygen per mol of said hydrocarbon and chlorine in a molar ratio of from 0.001 mol to 0.5 mol of chlorine per mol of said aliphatic hydrocarbon, the partial pressure of said aliphatic hydrocarbon being equivalent to less than about one-fifth atmosphere at a total pressure of one atmosphere, with a material selected from the group consisting of metals, salts, oxides and hydroxides of metal elements of Periodic Table Group IIIB and mixtures thereof in a catalytic amount, the ratio of the gram mols of the said oxygen to the gram atoms of said chlorine being at least 1.50.

3,316,321

METHOD OF MANUFACTURING ALPHA-OLEFINS BY OLIGOMERIZATION

Helmut Hoegl and Goetz Rotta, Geneva, Switzerland, assignors to Compagnie Francaise de Raffinage, Paris, France
No Drawing. Filed Jan. 21, 1964, Ser. No. 340,123
Claims priority, application Switzerland, Jan. 22, 1963, 720/63
8 Claims. (Cl. 260-683.15)

1. In a method for the catalytic production of alpha-olefins by the oligomerization of olefins in an inert atmosphere, the steps which comprise introducing into said atmosphere a catalyst consisting of an aluminum alkyl compound and at least one macro-molecular substance which is a primary, secondary or tertiary aliphatic alcohol polymer, and thereafter introducing into said inert atmosphere containing said catalyst the said olefin for the oligomerization thereof.

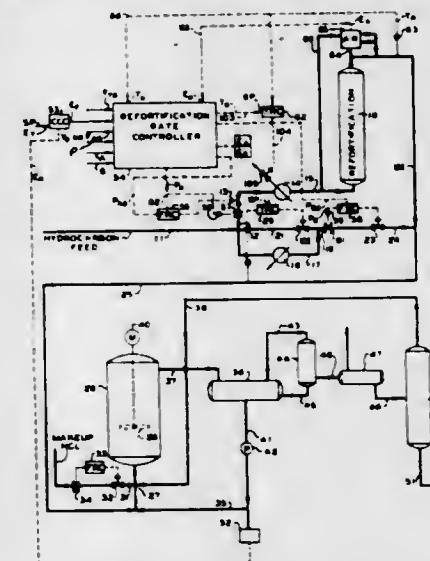
3,316,322

CONTROL OF CATALYST CONCENTRATION

Gerald L. Glahn, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Sept. 28, 1962, Ser. No. 226,831
7 Claims. (Cl. 260-683.65)

1. In a hydrocarbon conversion process wherein a reactive, liquid hydrocarbon is admixed with a conversion catalyst and the resulting mixture is introduced into a conversion reaction zone, said conversion catalyst being a solid which is partially soluble in said reactive, liquid hydrocarbon, the reaction effluent is withdrawn from said reaction zone, the catalyst contained in the thus withdrawn reaction effluent is recovered and returned to said reaction zone in a catalyst complex recycle stream; the

improvement comprising dividing said reactive, liquid hydrocarbon into a first stream and a second stream; passing said second stream through a first heat exchanging zone into a reformation zone containing said conversion catalyst; withdrawing from said reformation zone a third stream comprising said second stream containing a portion of said conversion catalyst dissolved therein; passing said first stream through a second heat exchanging zone and therein cooling said first stream; combining said third stream and the thus cooled first stream to form a fourth stream; passing said fourth stream into said reaction zone as the source of said mixture, controlling the rate of flow of said second stream substantially constant; sensing the temperature of said third stream as it leaves said reformation zone and producing a first signal rep-



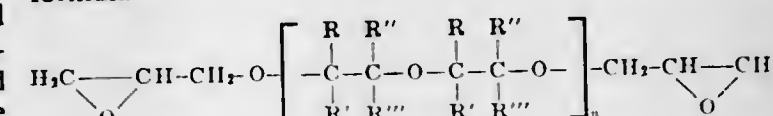
resentative of the thus sensed temperature; determining the concentration of catalyst in said third stream and establishing a second signal representative of the thus determined concentration; producing a third signal representative of the desired concentration of catalyst in said third stream; producing responsive to said second and third signals a fourth signal representative of the change in temperature of said third stream required to achieve the desired concentration of catalyst in said third stream; producing responsive to said first and fourth signals a fifth signal representative of the sum of said first and fourth signals; and manipulating the rate of transfer of heat to said second stream in said first heat exchanging zone responsive to said fifth signal to maintain the actual concentration of catalyst in said third stream substantially equal to said desired concentration.

3,316,323

ELASTIC MOLDED PIECES AND COATINGS FROM EPOXY RESINS

Hans Wille, Herongen, and Karl Jellinek, Duisburg-Melderich, Germany, assignors to Rutgerswerke und Teerverwertung Aktiengesellschaft, Frankfurt am Main, Germany
No Drawing. Filed Dec. 8, 1964, Ser. No. 416,924
Claims priority, application Germany, Dec. 13, 1963, G 39,381
4 Claims. (Cl. 260-830)

1. A process for preparing from epoxy resins elastic molded bodies and coatings, having low humidity absorption characteristics, comprising mixing an epoxy resin selected from the group consisting of diglycidylethers of polyhydric phenols and epoxylated novolak resins, with an aliphatic polyetheralcohol diglycidylether consisting of a polyethyleneglycoldiglycidylether corresponding to the formula



in which R, R', R'' and R''' are selected from the group consisting of H, alkyl, alkenyl, aralkyl and aryl radicals and n stands for an integer, and in which the α as well as the α' position to each ether oxygen atom within the polyethylene glycol chain is in each case occupied with at least one other substituent than H, selected from the group consisting of alkyl, alkenyl, aralkyl and aryl, and with a hardening agent for epoxy resins and the mixture is subjected to hardening.

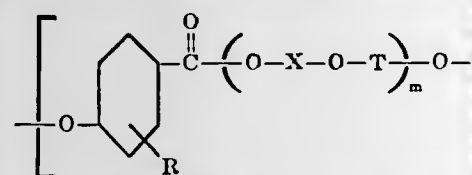
3,316,324

THERMOSETTING COMPOSITIONS CONTAINING A LIQUID RUBBER SELECTED FROM POLYSULFIDE, POLYMERCAPTAN, AND CHLORINATED POLYETHYLENE, TOGETHER WITH AN EPOXIDE AND CURING AGENT

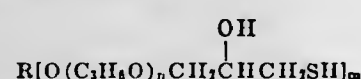
Peter Mendoyanis, Fort Lee, N.J., assignor to Sika Chemical Corporation, Passaic, N.J., a corporation of New Jersey

No Drawing. Filed July 11, 1966, Ser. No. 564,006
8 Claims. (Cl. 260-830)

1. The method for producing thermosetting plastic compositions which comprises simultaneously, independ-



ently curing a glycidyl polyether resin and a liquid rubber in intimate mixture by mixing together at ambient temperature the glycidyl polyether resin, premixed with a curing agent for the rubber, and the liquid rubber premixed with a curing agent selected from the group consisting of aliphatic amines, aromatic amines, and polyamides for the resin, the liquid rubber constituent being selected from the group consisting of (a) polysulfide rubber produced by reacting bis (2-chloroethyl) formal with sodium bisulfide in the presence of a small amount of trichloropropane, (b) polymercaptan resin having the following chemical structure



wherein n is an integer from 20 to 25, m is an integer from 2 to 3 and R is an aliphatic hydrocarbon radical, and (c) a chlorinated polyethylene containing chlorosulfonic groups having a chlorine content within the range of 25% to about 35% in which the rubber molecule contains a group capable of reacting with the epoxide group of the resin constituent.

3,316,325

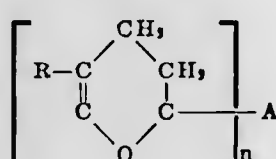
THERMOHARDENING RESIN COMPOSITIONS COMPRISING DIHYDROPYRAN DERIVATIVES AND AMINE ALDEHYDE CONDENSATES

John Leslie Hugh Allan, Manchester, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Nov. 30, 1964, Ser. No. 414,881
Claims priority, application Great Britain, Dec. 3, 1963, 47,677/63

7 Claims. (Cl. 260-856)

1. Thermohardening compositions comprising (1) a dihydropyran derivative of the general formula



wherein n is an integer of 2 or 3, A is a linking group having a valency equal to n and R is selected from the group consisting of hydrogen and methyl, and (2) an amine-formaldehyde condensate selected from the group consisting of melamine-formaldehyde condensates and etherified derivatives thereof etherified with lower aliphatic alcohols containing from 1 to 4 carbon atoms, the amine-formaldehyde condensate being present at least in part in the form of a salt with a strong acid.

3,316,326

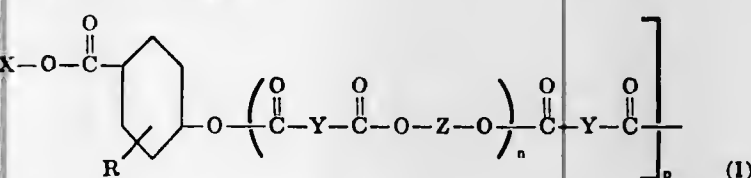
BLOCK POLYESTERS OF POLYALKYLENE TEREPHTHALATE AND POLYPHENYL ESTERS

Richard Keith Quisenberry, Kinston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

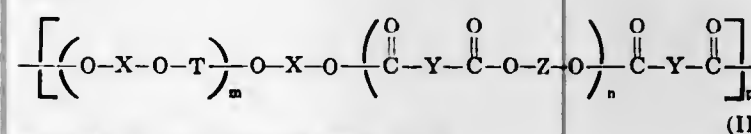
No Drawing. Filed Feb. 2, 1965, Ser. No. 429,890

9 Claims. (Cl. 260-860)

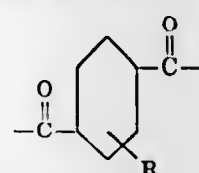
1. A block copolyester having a structure from the class consisting of



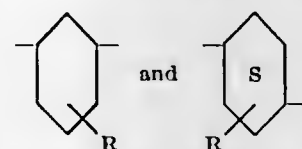
and



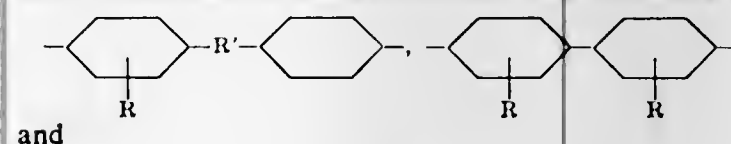
wherein X is lower alkylene, T is



wherein the hexagon represents the benzene nucleus and R is a member of the class consisting of hydrogen of the said benzene nucleus and a substituent for no more than two hydrogen atoms of the said nucleus, said substituent being from the class consisting of lower alkyl, halogen, nitro, cyano and alkoxy, m is a large number to provide a polyester group having a molecular weight of between about 900 and 3000, Y represents a member of the class consisting of



and Z represents a member of the class consisting of



and



wherein R' is a member of the class consisting of lower alkylene,



and —O—, n being a large number to provide a polyester group having a molecular weight of between about 4000

and 10,000, p being a number from about 1 to about 10 inclusive.

3,316,327

VINYL CHLORIDE POLYMERS CONTAINING ELASTOMER AND GRAFT COPOLYMER AS COMPATIBILIZER

Massimo Baer, Longmeadow, and Ernest H. Hankey, Springfield, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed June 6, 1966, Ser. No. 555,272
9 Claims. (Cl. 260-876)

1. A composition of matter comprising an intimate fusion blend of 10-98 parts by weight of a rigid vinyl chloride polymer, said vinyl chloride polymer comprising at least 80% by weight vinyl chloride and correspondingly, 90-2 parts by weight of a nonpolar hydrocarbon elastomer selected from the group consisting of homopolymers of alpha-monoolefines; interpolymers of at least two alpha-monoolefines; interpolymers of at least 85% by weight of an alpha-monoolefine and up to 15% by weight of an interpolymerizable vinylidene monomer; homopolymers of acyclic conjugated 1,3-dienes, and interpolymers of at least 50% by weight of an acyclic conjugated 1,3-diene, up to 50% by weight of a hydrocarbon monomer selected from the group consisting of styrene, alpha-methyl styrene and ring-alkyl substituted styrenes, and up to 10% by weight of a vinylidene monomer having a polar substituent, said nonpolar hydrocarbon elastomer normally being incompatible with said rigid vinyl chloride polymer; said composition also containing a minor quantity of graft copolymer that is sufficient to enhance the compatibility of the rigid vinyl chloride polymer and the nonpolar hydrocarbon elastomer, said graft copolymer being prepared by polymerizing 10-200 parts by weight of a monomer mixture of a monovinylidene aromatic hydrocarbon and an alkyl ester of an acid selected from the group consisting of acrylic acid, methacrylic acid and mixtures of the same, said alkyl groups containing from 1 to 4 carbon atoms, in the presence of 100 parts by weight of a rubbery diene polymer having a second order transition temperature below about 0° C.

3,316,328

STEREOREGULAR POLYOLEFIN COMPOSITIONS

Jack J. Press, Teaneck, N.J., assignor to Iowa Manufacturing Company, Cedar Rapids, Iowa
No Drawing. Filed Nov. 30, 1964, Ser. No. 414,919
6 Claims. (Cl. 260-895)

1. A polymeric composition having improved affinity for dyes comprising

a matrix of stereoregular polyolefin taken from the group consisting of polypropylene, polymethylpentene, and polymethylbutene;

said matrix having dispersed therein between 2% and 20% of a copolymer selected from the group consisting of:

- 80% N-vinyl pyrrolidone/20% dimethylaminoethyl methacrylate,
- 80% N-vinyl pyrrolidone/20% methyl ethyleneimine,
- 70% N-isoprenyl pyrrolidone/30% dimethylaminoethyl acrylamide,
- 90% N-acrylyl pyrrolidone/10% N-vinyl pyrrole,
- 70% N-vinyl morpholine/30% N-vinyl carbazole,
- 70% N-vinyl morpholinone/30% N-butyl vinyl quinoline,
- 80% N-vinyl caprolactam/20% N-vinyl succinimide,
- 95% N-vinyl oxazolidinone/5% laurylaminoethyl methacrylate,

- 70% N-vinyl methylpyrrolidone/30% butylaminoethyl methacrylate, and
- 90% N-vinyl pyrrolidone/10% 2-vinyl pyridine, all said percentages being by weight.

3,316,329

FLAMEPROOF COMPOSITIONS CONTAINING COPOLYMERS OF ETHYLENE AND TRIBROMOALLYL ESTERS

George E. Waples, Jr., Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Mar. 24, 1965, Ser. No. 442,469
11 Claims. (Cl. 260-897)

1. A moldable, thermoplastic copolymer comprised of the reaction product of ethylene and the 2,3,3-tribromoallyl ester of an acid selected from the group consisting of α,β -ethylenically unsaturated mono- and polycarboxylic acids having from 3 to 8 carbon atoms per molecule.

7. A blend composition comprising from about 50 to about 95 percent by weight of the reaction product of ethylene and the 2,3,3-tribromoallyl ester of an acid selected from the group consisting of α,β -ethylenically unsaturated mono- and polycarboxylic acids having from 3 to 8 carbon atoms per molecule, and about 5 to about 50 percent by weight of polyethylene.

3,316,330

FLUORINATED PHOSPHONITRILES

George M. Nichols, Homewood, Ill., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Apr. 3, 1964, Ser. No. 357,313
8 Claims. (Cl. 260-927)

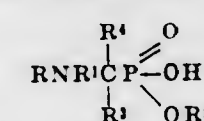
1. Polymeric phosphonitriles selected from the group consisting of (a) phosphonitrilic compositions of the formula $P_mN_mR_nR'_{2m-n}$, wherein R is meta-trifluoromethoxyphenoxy, R' is phenoxy, m is an integer from 3 to 7 and n is an integer from 1 to 14, (b) compositions of the formula $P_mN_mR_{2m}$ wherein R and m are as defined above together with compositions of the formula $P_mN_mR_nR'_{2m-n}$, wherein R, R' and m are defined above and n is a cardinal number from 0 to 13, and (c) phosphonitrilic compositions of the formula $P_mN_mR_xR'_yR''_z$, wherein R is meta-trifluoromethoxyphenoxy, R' is phenoxy, R'' is meta-trifluoromethylphenoxy, and m is an integer from 3 to 7, the sum of x , y , and z is $2m$, x equals at least 1, and y and z are cardinal numbers from 0 to 14.

3,316,331

O-ALKYL, O-PHENYL OR O-CRESYL AMINO-METHANE PHOSPHONIC ACIDS

Homer J. Sims, Horsham, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed June 18, 1963, Ser. No. 288,601
8 Claims. (Cl. 260-944)

1. The compound having the formula



in which R represents a t-alkyl group of 8 to 24 carbon atoms,

R¹ is a member selected from the class consisting of hydrogen, alkyl of 1 to 18 carbon atoms, alkenyl of 8 to 18 carbon atoms, benzyl and alkyl-substituted benzyl in which the alkyl portion has a total of up to 18 carbon atoms,

R² is a member selected from the class consisting of alkyl of 1 to 4 carbon atoms, phenyl and cresyl,

R³ is a member selected from the class consisting of hydrogen and alkyl of 1 to 7 carbon atoms, and

R⁴ is a member selected from the class consisting of hydrogen and alkyl of 1 to 4 carbon atoms.

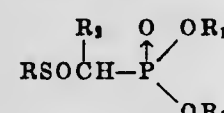
3,316,332

SULFOXY ALKYL PHOSPHONO COMPOUNDS

George M. Calhoun, Cleveland, Ohio, and Hyman Diamond, Sacramento, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Original application Dec. 23, 1960, Ser. No. 77,830, now Patent No. 3,112,269, dated Nov. 26, 1963. Divided and this application Sept. 30, 1963, Ser. No. 312,329

10 Claims. (Cl. 260—948)

1. A compound having the formula:



wherein R is a C₂₋₁₈ alkyl radical, the R₁'s are selected from the group consisting of hydrogen, C₁₋₄ alkyl and alkylamine radicals and R₂ is selected from the group consisting of hydrogen and a C₁₋₄ alkyl radical.

3,316,333

PROCESS FOR THE PREPARATION OF PHOSPHONITES AND PHOSPHINITES

Ingenuin Hechenbleikner, Cincinnati, and Kenneth R. Molt, Kenwood, Ohio, assignors to Carlisle Chemical Works, Inc., Reading, Ohio, a corporation of Ohio
No Drawing. Filed July 13, 1965, Ser. No. 471,710

6 Claims. (Cl. 260—968)

1. A process of preparing a compound having the formula R_mP(OR)_{3-m} where R is selected from the group consisting of alkyl, phenyl, lower alkyl phenyl, naphthyl, benzyl, bromophenyl, monochlorophenyl and dichlorophenyl, R' is selected from the group consisting of alkyl and benzyl and m is an integer selected from the group consisting of 1 and 2 comprising reacting one mole of a phosphite having the formula (RO)₃P with up to 2.5 moles of a compound having the formula R'Na.

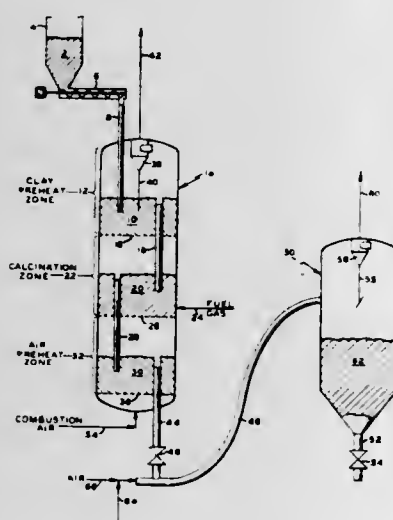
3,316,334

CLAY CALCINING PROCESS

Nicholas Walen, Jr., Brooklyn, and Warren C. Schreiner, East Norwich, N.Y., assignors to Pullman Incorporated, a corporation of Delaware

Filed Feb. 26, 1962, Ser. No. 175,546

2 Claims. (Cl. 263—53)



1. In a method for calcining clay type material in which particles of such material are treated by means

of fluidizing combustion supporting gas at a suitable calcining temperature in a calcination zone, and calcined particles are employed to preheat said combustion supporting gas by contact therewith in a fluid bed of such particles which are thereby cooled to an elevated temperature below the calcination temperature in a particle cooling zone, the improvement which comprises: withdrawing partially cooled calcined material at about the temperature of said particle cooling zone as a hydrostatic pressure developing column of calcined material, discharging the column of calcined material into a confined, elongated transfer zone, contacting said material immediately upon discharge with liquid water thereby vaporizing said water to form a suspension of steam and calcined particles at a reduced temperature, and employing the expansion energy of the vaporizing water to flow said suspension through said transfer zone to a solids-gas separating zone without supplying further energy thereto.

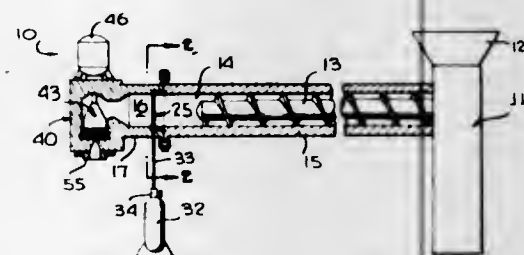
3,316,335

METHOD AND APPARATUS FOR CONTINUOUSLY EXTRUDING AND FOAMING PLASTICS

Henry J. Snella and Howard M. Turner, Oak Forest, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Dec. 24, 1963, Ser. No. 333,155

9 Claims. (Cl. 264—50)



1. A method of manufacturing thermoplastic products comprising the steps of extruding flowable thermoplastic material through apertures of a foraminous plate having numerous minute capillaries, introducing a gaseous medium into the capillaries of the foraminous plate, introducing the gaseous material from the capillaries uniformly into and throughout the thermoplastic material during the extrusion thereof, agitating the thermoplastic material to dissolve the gaseous medium into the thermoplastic material, and thereafter expanding the thermoplastic material to a desired conformation.

3,316,336

PROCESS FOR PREPARING COMPOSITE FILAMENTARY ARTICLES

Cornelius P. Smith, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 5, 1963, Ser. No. 328,178

5 Claims. (Cl. 264—171)

1. A process for preparing coated filamentary articles comprising (A) the wet solvent spinning of a spinning dope consisting essentially of a water-coagulable solution of (1) a first water-insoluble fiber forming polymeric material and (2) a liquid organic solvent for said fiber-forming polymeric material into a bath of an aqueous latex of a second synthetic resinous fiber-forming material, said latex being coagulable by and said second synthetic resinous fiber-forming material being insoluble in said liquid organic solvent to form a coaxial filamentary coagulum

having said first fiber-forming polymeric material as the core and said second synthetic resinous fiber-forming material as the sheath; (B) continuously withdrawing said filamentary coagulum from the point at which it is formed at the same rate at which it is formed; (C) washing said filamentary coagulum; (D) drying said filamentary coagulum under conditions that any of said liquid solvent is caused to diffuse through said sheath; and (E) fusing said filamentary coagulum into the coated filamentary article.

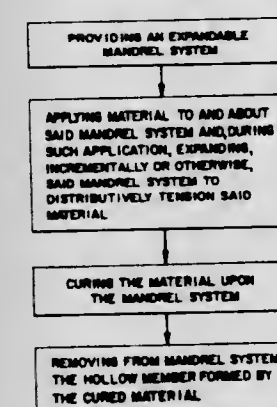
3,316,337

PROCESS FOR FABRICATING FILAMENT WOUND HOLLOW MEMBERS

Charles J. North, Brigham City, Utah
(1552 Beavercreek Lane, Kettering, Ohio 45429)

Filed June 28, 1963, Ser. No. 291,274

3 Claims. (Cl. 264—231)



1. A process for fabricating a filament-wound hollow member comprising the steps of providing an expandable mandrel system; applying a layer of material to constitute said hollow member and comprising filament reinforcement means wound about said mandrel system and a thermosetting resin binder in intimate contact with said filament reinforcement means and permeating said material, onto said mandrel system; expanding said mandrel system to apply pressure to the interior surface of said hollow member and thereby distributively tensioning said filament reinforcing means; curing said material upon said mandrel system; and removing the hollow member formed by said material from said mandrel system after sufficient curing has taken place, and wherein the step of expanding said mandrel system is at least in part performed concurrently with the said step of applying the layer of material and, therein, during the winding of said filament reinforcement means upon said mandrel system.

3,316,338

METHOD FOR MANUFACTURING A SCREW LOCKING DEVICE

Helmut Rieke, Hauptstrasse 1715, Senne, Germany

Filed May 27, 1963, Ser. No. 283,624

Claims priority, application Germany May 25, 1962, R 32,791

3 Claims. (Cl. 264—267)

1. A method of forming a securing element on a member having an axis, a thread about said axis, and a face radially extending about said axis, which comprises:

- immersing said member in a body of fine particles of fusible plastic;
- withdrawing said member from said body while maintaining said axis in an upright position and

directing said face upwardly, whereby particles of said plastic are carried on said face from said body;



- heating said particles on said face until they are fused into a unitary body; and
- bonding said unitary body to said face.

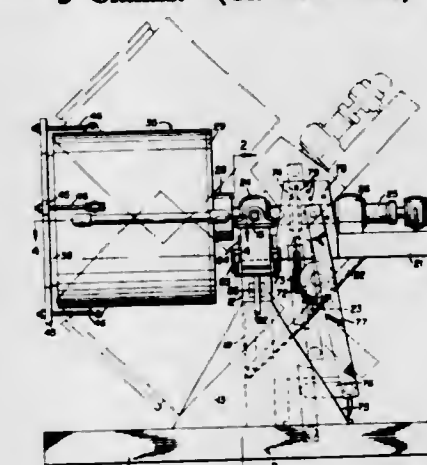
3,316,339

METHOD AND APPARATUS FOR MOLDING HOLLOW ARTICLES FROM RESINS

Joseph C. Breneman, Wooster, Ohio, assignor to Rubbermaid Incorporated, Wooster, Ohio, a corporation of Ohio

Filed June 1, 1965, Ser. No. 467,164

3 Claims. (Cl. 264—310)



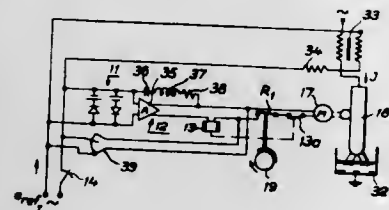
1. Apparatus for molding hollow articles from heat moldable powdered resins, including a mold having a jacket, means for continuously rotating the mold at a selected speed about a first axis, independent means for simultaneously rocking the mold at a selected speed in opposite directions from an intermediate position about an axis transverse said first axis, means for varying the extent of the rocking motion in either direction from the intermediate position, means for continuously circulating a heating medium through said mold jacket during a molding cycle while the mold is rotated and rocked and for then circulating a cooling medium through said jacket before opening the mold, and timing mechanism for controlling the operations of rotating the mold, rocking the mold, and circulating the heating and cooling media during the molding cycle.

3. The method of molding hollow articles from heat moldable resins which comprises placing in a jacketed mold a measured amount of powdered resin, continuously rotating the mold at a selected speed about a first axis and simultaneously independently rocking the mold at a selected speed in opposite directions from an intermediate position about a transverse axis to distribute the resin over the mold surfaces, varying the extent of the rocking motion in either direction from the intermediate position for making articles of various shapes, circulating a heat exchange medium through the mold jacket while the mold is rotating and rocking to build up a layer of said resin on the mold surfaces, and correlating the operation of rotating the mold, rocking the mold, and circulating the heating and cooling media during the molding cycle.

ELECTRICAL

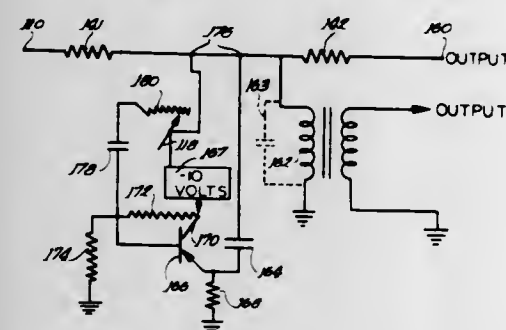
3,316,340 REGULATING DEVICE FOR ELECTRODE FURNACES

Erik Helsing and Nils-Erik Strom, Vasteras, Sweden, assignors to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed Oct. 21, 1965, Ser. No. 499,945
Claims priority, application Sweden, Mar. 2, 1962, 2,310/62, 2,312/62
5 Claims. (Cl. 13-13)



1. Automatic control system for an arc furnace, comprising an adjusting motor for at least one of the electrodes of said furnace, a driving circuit for said motor, means for measuring a variable magnitude of said furnace, reference means, said driving circuit comprising an integrating amplifier, first connecting means operatively connecting the measuring means and the reference means to the amplifier, second connecting means connecting said amplifier to said motor to control said motor in response to a difference between the outputs of said measuring means and said reference means to control said motor, and means for cyclically opening and closing said driving circuit.

3,316,341
ELECTRICAL MUSICAL INSTRUMENTS
Richard H. Peterson, Oak Lawn, Ill., assignor to Columbia Records Distribution Corp., a corporation of New York
Filed Nov. 29, 1963, Ser. No. 326,869
5 Claims. (Cl. 84-1.24)

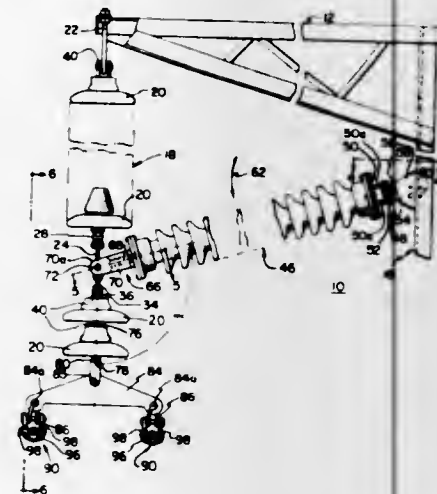


1. In an electrical musical instrument, in combination: a signal source; a signal circuit connected to said source to receive the signal therefrom; means for altering said signal circuit to alter the timbre of the signal delivered from said signal circuit; automatic trigger control means for rendering said altering means operative through varying degrees in a predetermined time cycle; and player-controlled means for activating said source and said trigger means.

3,316,342
POWER TRANSMISSION LINE INCLUDING FLEXIBLE AND RIGID INSULATOR ELEMENTS
Thomas N. Cofer, 1911 S. 4th St., Springfield, Ill. 62703
Filed Feb. 5, 1964, Ser. No. 342,663
7 Claims. (Cl. 174-45)

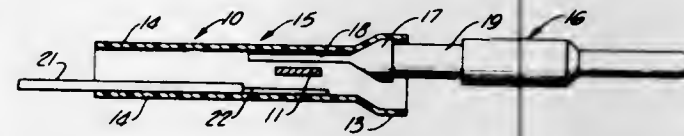
1. Apparatus for supporting an electrical transmission conductor from a superstructure of the type including a

crossarm, said apparatus comprising: a flexible string of suspension type insulators, one end of said string secured to said crossarm and the other end thereof depending downwardly, a linking member in said string separating at least the lowermost one of said insulators from the re-



mainder of said insulators in said string, a rigid strut insulator having one end secured to said superstructure and the other end secured to said linking member above one of said insulators, and conductor supporting means secured to the lower end of said insulator string.

3,316,343
HEAT SHRINKABLE CONNECTOR WITH PRE-PLACED SOLDER THEREIN
Hugh Paul Sherlock, Menlo Park, Calif., assignor to Raychem Corporation, Redwood City, Calif., a corporation of California
Filed Jan. 3, 1966, Ser. No. 518,134
5 Claims. (Cl. 174-84)



1. An article of manufacture comprising a connector for joining two members comprising a hollow tubular heat shrinkage member having an interior chamber formed by a wall comprising a material having the property of elastic memory when heated to at least its recovery temperature and a flat fusible solder insert positioned within said chamber with opposing edges of said insert firmly engaging said wall in two different locations dividing a portion of said chamber into two cavities for receiving a portion of one of said two members in one of said two cavities and a portion of the other of said two members in the other of said two cavities.

3,316,344
PREVENTION OF ICING OF ELECTRICAL CONDUCTORS
David Alan Kidd, Billericay, Robert Geoffrey Tee, Pudsey, and James Edward Toms, Leeds, England, assignors to Central Electricity Generating Board, London, England, a British body corporate
Filed Apr. 26, 1965, Ser. No. 450,587
23 Claims. (Cl. 174-106)

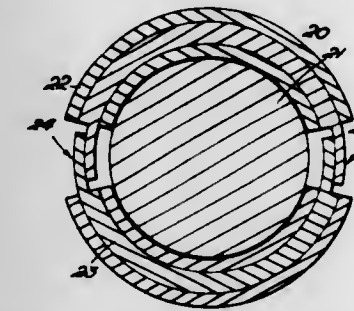
18. An element for preventing ice formation on an electrical conductor comprising a sleeve of magnetic material having a Curie temperature within the range 0° C.

APRIL 25, 1967

ELECTRICAL

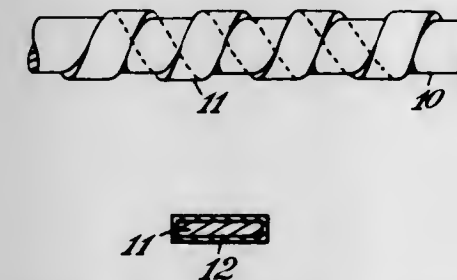
1345

to 20° C. and electrically conductive material around the magnetic material so as to form a shorted secondary turn



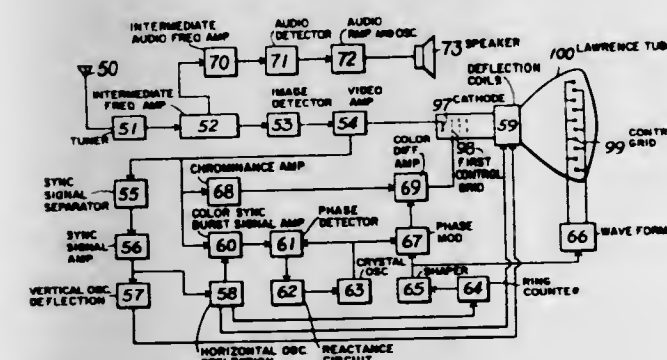
when the element is put on a conductor carrying alternating current.

3,316,345
PREVENTION OF ICING OF ELECTRICAL CONDUCTORS
James Edward Toms, Leeds, and David Alan Kidd, Billericay, England, assignors to Central Electricity Generating Board, London, England, a British corporation
Filed Apr. 26, 1965, Ser. No. 450,586
18 Claims. (Cl. 174-126)



13. An element for preventing ice formation on an electrical conductor comprising a tape of magnetic material having a Curie temperature within the range 0° C. to 20° C. and electrically conductive material around the magnetic material so as to form a shorted secondary turn when the tape is put on a conductor carrying alternating current.

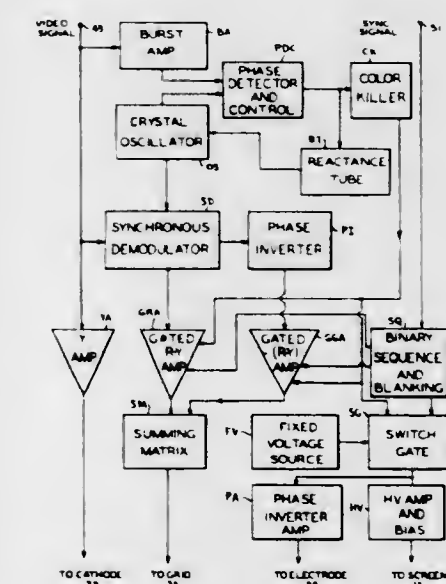
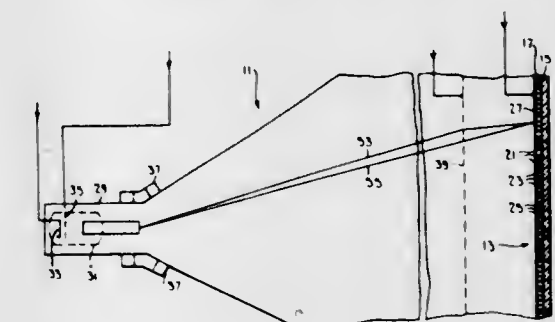
3,316,346
IMAGE REPRODUCING SYSTEM FOR A COLOR TELEVISION RECEIVER
Yasumasa Sugihara, 945 Yukigaya, Ota-ku, Tokyo, Japan, and Akira Horaguchi, 2-757 Kosugi Jinya-cho, Kawasaki-shi, Japan
Filed Feb. 18, 1965, Ser. No. 433,582
Claims priority, application Japan, May 5, 1964, 39/25,223
7 Claims. (Cl. 178-5.4)



1. An image reproducing system for a color television receiver including a cathode-ray tube of the type having a single electron gun known as Lawrence tube or a similarly operative post-acceleration color tube having a color control grid structure, which comprises means for deriving from a radio-frequency signal a composite video signal comprising a chrominance component, a luminance

component, a color burst signal and a synchronizing signal, means for applying the luminance signal to the cathode of the cathode-ray tube and deriving the synchronizing signal from said composite video signal thereby developing a raster on the image screen of the cathode-ray tube, a color synchronizing circuit for deriving the color burst signal from the composite video signal and providing therefrom a reference signal for demodulation of a color-difference signal, said reference signal having the same frequency as a color subcarrier and a predetermined phase with respect to the burst signal, a voltage generator responsive to the synchronizing signal for generating a voltage having a frequency of one-third of a horizontal scanning frequency and having a three-stepped waveform said three-stepped waveform being supplied to the color control grid in the cathode-ray tube, a phase modulation circuit responsive to said three-stepped waveform voltage for phase-modulating said reference signal, means for deriving the chrominance signal component from the composite video signal and means for deriving the color-difference signal by demodulating the chrominance signal with the output of the phase modulation circuit, said color-difference signal being applied to the first grid of the cathode-ray tube.

3,316,347
PENETRATION DISPLAY SYSTEM INCLUDING SHIFT OF COLOR BALANCE BETWEEN MONOCHROME AND COLOR RECEPTION
Morton E. Jones, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed June 15, 1965, Ser. No. 464,077
6 Claims. (Cl. 178-5.4)



1. An image display system for producing a multi-color image in response to a plurality of color signals and for producing a black and white image in response to a black and white signal, said system comprising: a viewing screen including a first phosphor which when energized emits light of relatively long wavelengths,

a second phosphor which when energized emits light of a color substantially complementary to that emitted by said first phosphor, said two phosphors when simultaneously energized emitting substantially warm achromatic light, and a third phosphor which when energized emits light of relatively short wavelengths, said three phosphors when simultaneously energized emitting substantially cool achromatic light;

electron beam gun means for energizing said phosphors; and

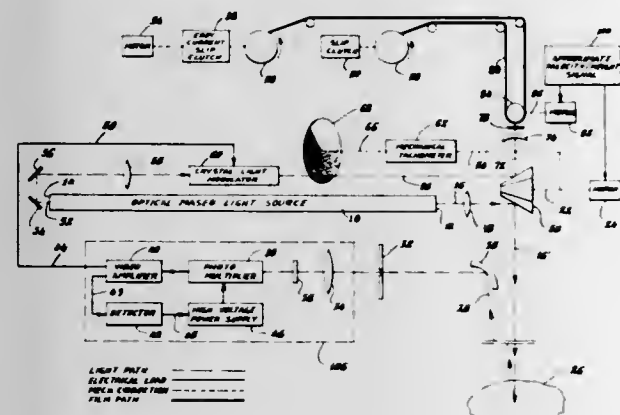
circuit means for controlling said gun means, said circuit means including

means for energizing said first phosphor in response to a first color signal,
means for energizing said first and second phosphors in response to a second color signal, and
means for energizing said first, second and third phosphors in response only to a black and white signal present in the absence of color signals whereby color images are displayed using said first and second phosphors and black and white images are displayed using all three phosphors energized simultaneously.

3,316,348

SCANNING SYSTEM FOR RECORDING PICTORIAL DATA

Robert E. Hufnagel, Ridgefield, and Roderic M. Scott, Stamford, Conn., assignors to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed May 1, 1963, Ser. No. 277,290
9 Claims. (Cl. 178-6.7)



1. A camera system for photographing an extended dark object comprising:

means for producing a bright narrow beam of radiant energy;

first deviating means for causing said radiant energy beam to scan the object;

means for receiving reflected radiant energy from said object and detecting its intensity;

means for producing a photographically actinic beam; and

said means for producing a narrow energy beam and said means for producing a photographically actinic beam comprise at least one common major element;

modulating means for causing the intensity of said actinic beam to vary substantially in proportion to the intensity of said received reflected radiant energy;

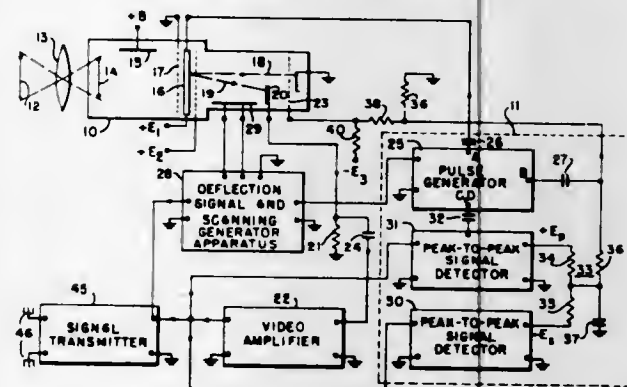
and second deviating means for causing said actinic beam to scan a photographic film in a pattern similar to that caused by said first deviating means;

said first and said second deviating means comprising at least one common major component so as to cause inherently synchronous operation;

whereby an accurate photographic representation of said object is obtained.

3,316,349 IMAGE ORTHICON BEAM CONTROL SYSTEM FOR AUTOMATICALLY OPTIMIZING SIGNAL-TO-NOISE RATIO OF THE VIDEO OUTPUT

Bernard D. Loughlin, Huntington, N.Y., assignor to Hazeltine Research, Inc., a corporation of Illinois
Filed July 5, 1963, Ser. No. 293,121
6 Claims. (Cl. 178-7.2)



1. Control apparatus for an image signal generating system including an image orthicon having a scanning electron beam, a control electrode for controlling the magnitude of said scanning electron beam, and an image signal modulated return electron beam, comprising:

means for producing a reference modulation level in said return electron beam;

means responsive to said return beam for developing an output signal jointly representative of said reference modulation level and said image signal modulation;

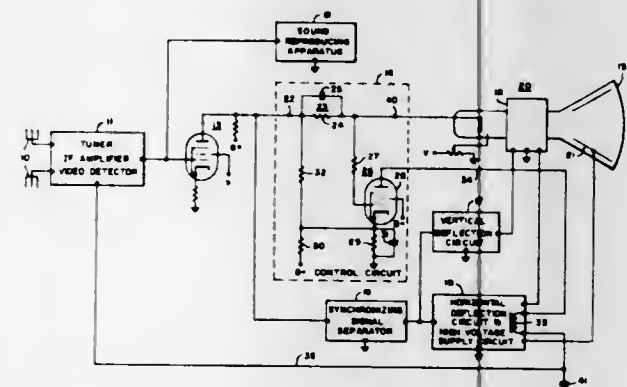
means responsive to said output signal for deriving a control signal representative of the relative magnitudes of said reference modulation level and the peak image signal modulation level;

and means for coupling said control signal to the control electrode of said image orthicon for regulating the magnitude of said scanning electron beam to maintain a predetermined relationship between said reference modulation level and said peak image signal modulation level, thereby optimizing the signal-to-noise performance characteristic of said system.

3,316,350

BLACK LEVEL CONTROL CIRCUIT FOR A TELEVISION RECEIVER UTILIZING A SYNC PEAK KEYED AGC CIRCUIT

Stephen P. Ronzheimer, Elmhurst, Ill., assignor to Hazeltine Research, Inc., a corporation of Illinois
Filed Sept. 18, 1963, Ser. No. 309,774
7 Claims. (Cl. 178-7.5)



1. A black level control circuit for a television receiver which utilizes a cathode-ray tube for purposes of image reproduction, comprising:

means for supplying a video signal having alternating-current components and a direct-current component representative of average scene brightness which may

vary from scene to scene, and having a synchronizing pulse level and a black level intended to correspond to black in the reproduced image, said supply means including control means for varying the magnitude of said supplied video signal;

means for translating said supplied video signal to an input of said cathode-ray tube and to an input of a keyed automatic-gain-control circuit, wherein said translation causes the synchronizing pulse level of said translated video signal to vary at the input of said automatic-gain-control circuit with changes in average scene brightness;

a keyed automatic-gain-control circuit responsive to the synchronizing pulse level of the video signal translated thereto for developing an output signal representative of the difference between said synchronizing pulse level and a reference potential;

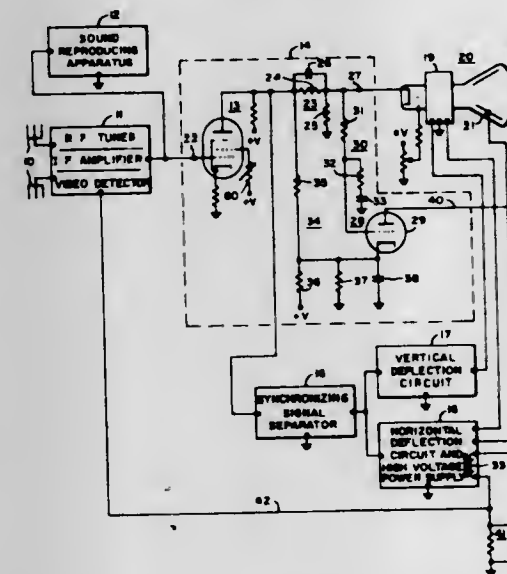
means coupled between said supply means and said automatic-gain-control circuit for varying said reference potential in accordance with changes in the average scene brightness of said supplied video signal;

and means for coupling said automatic-gain-control output signal to said control means for varying the magnitude of said supplied video signal to stabilize said synchronizing pulse level at the input of said automatic-gain-control circuit, thereby stabilizing black level at the input of said cathode-ray tube and limiting the amount of beam current flowing in the cathode-ray tube on scenes of high average brightness.

3,316,351

BLACK LEVEL CONTROL CIRCUIT FOR A TELEVISION RECEIVER

Bernard D. Loughlin, Centerport, N.Y., assignor to Hazeltine Research, Inc., a corporation of Illinois
Filed Oct. 24, 1963, Ser. No. 318,608
6 Claims. (Cl. 178-7.5)



1. A picture control circuit for a television receiver which utilizes a cathode-ray tube for purposes of image reproduction, comprising:

means for supplying a video signal having A.C. components and a D.C. component representative of average scene brightness which may vary from scene to scene, and having a synchronizing pulse level, a blanking level and a level intended to correspond to black in the reproduced image, said supply means including control means for varying the magnitude of said supplied video signal;

means, including a video signal amplifier, for translating said supplied video signal to the cathode of said cathode-ray tube with an A.C. gain of K_{ac} and a

D.C. gain of K_{dep} , to a first input of an automatic-gain-control circuit with an A.C. gain of K_{ac} and a D.C. gain of K_{dep} , and to a second input of said automatic-gain-control circuit with a D.C. gain of K_{dep} , and for coupling a fraction k of the D.C. voltage changes occurring at the cathode of said cathode-ray tube to the first input of said automatic-gain-control circuit;

a keyed automatic-gain-control circuit having first and second inputs coupled to said translating means and responsive to a selected one of the levels in said video signal translated to said first input, for developing an output signal representative of the difference between said selected level and a reference potential, and wherein said reference potential is varied in accordance with changes in the average scene brightness of said supplied video signal by the video signal D.C. component translated to said second input;

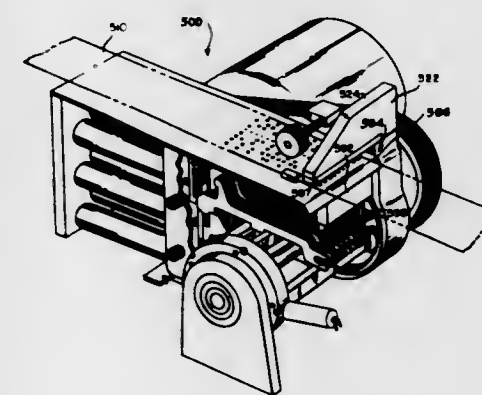
and means for coupling said automatic-gain-control output signal to said control means for varying the magnitude of said supplied video signal to stabilize said selected video signal level at the first input of said automatic-gain-control circuit, thereby stabilizing black level at the cathode of said cathode-ray tube, and limiting the amount of beam current flowing in the cathode-ray tube on scenes of high average brightness independent of any nonlinear characteristic and unequal A.C./D.C. translation characteristic of said cathode-ray tube and video amplifier.

3,316,352

CHAD DISPOSAL MEANS

Clayton H. Clark, Mundelein, Ill., and Carl P. Anderson, Homer, N.Y., assignors to SCM Corporation, New York, N.Y., a corporation of New York
Application May 14, 1964, Ser. No. 367,410, now Patent No. 3,274,338, which is a division of application Ser. No. 157,540, Dec. 6, 1961, now Patent No. 3,205,305. Divided and this application Apr. 28, 1966, Ser. No. 545,940

5 Claims. (Cl. 178-17)



1. In combination: a recording device having recording mechanism comprising a plurality of code punch and die sets, and means to collect and direct chad from said punch and die sets away from said recording mechanism comprising a die exit hood, at least the interior surface of which is a dry lubricant.

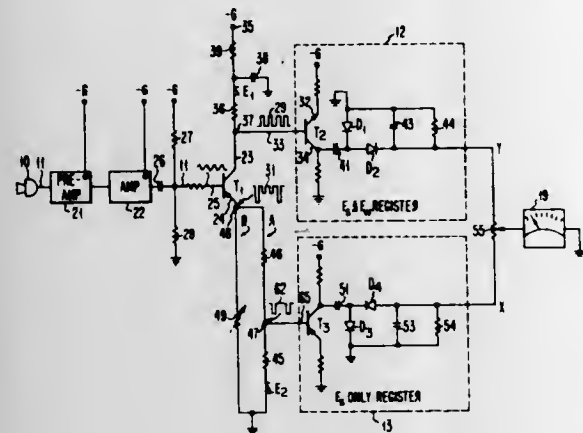
3,316,353

LISP METER

William C. Dersch, Los Gatos, Calif., assignor to Voice Systems, Inc., a corporation of California
Filed Aug. 5, 1963, Ser. No. 299,761
16 Claims. (Cl. 179-1)

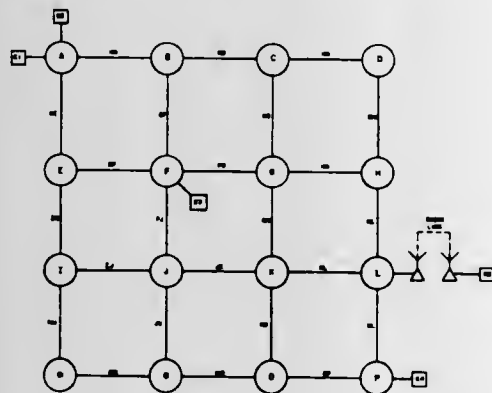
1. In a speech wave analyzing and measuring device having means for transducing sibilant sounds into an

electrical signal, apparatus comprising first register means serving to measure the zero power axis crossings of said signal, second register means serving to measure only the zero power axis crossings of said signal for waves thereof exceeding a predetermined amplitude, bias supply means for each of said register means serving to pro-



vide each said register means with a dynamic operating bias of a predetermined level, and switching means responsive to said signal and connected to limit the application of said operating bias to periods corresponding to the presence of said signal thereby restricting the bias supply power drain associated with said operating bias to such periods.

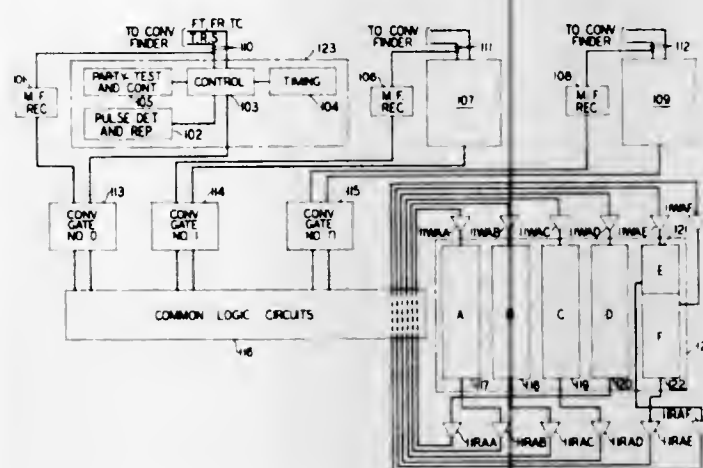
3,316,354
FULL ALTERNATE ROUTE AUTOMATIC COMMUNICATION SYSTEM
Carl Gunnar Svala, Gallon, Ohio, assignor to North Electric Company, Gallon, Ohio, a corporation of Ohio
Filed Oct. 4, 1963, Ser. No. 314,027
16 Claims. (Cl. 179-18)



1. In an automatic telephone system including saturation signalling equipment, a plurality of offices, each office including control means responsive to receipt of a call to a non-local called address to forward the call over a channel in each route having an idle channel outgoing from said office, and means in said control means in each office including memory means for marking each call in progress in the office, signal processor means including means for checking each call as received against said calls registered in said memory means, trunk signalling means for transmitting a release signal back over the incoming route used for the call to a desired address responsive to the detection of a call for the same address in said memory means, and means in each office responsive to receipt of a release signal over an outgoing route to erase the markings for such route in the call-in-progress memory in its office.

3,316,355
CIRCULATING STORE FOR SIGNAL CONVERTERS
Edward E. Hanna, Brooklyn, N.Y., and Terrell N. Lowry, Columbus, Ohio, assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 11, 1963, Ser. No. 315,495
15 Claims. (Cl. 179-18)



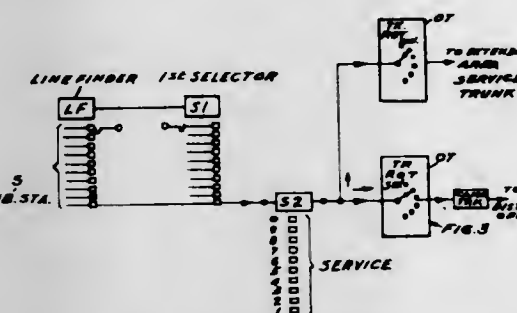
1. In a communication switching system in combination, a signal converter comprising a multielement code signal receiver, a circulating store having a plurality of multiposition channels, means connected between said receiver and said store for inserting representations of a received multielement code concurrently in said plurality of channels, means for advancing concurrently the position of each of the inserted representations, means for transmitting signals from said signal converter representing said received codes, and control means comprising means for advancing the position of the representations stored in all of said channels in sequence, means for modifying said stored representations in response to said sequentially advancing representations and means operative upon receipt of said stored representations for controlling said signal transmission means.

3. In combination in a circulating store, a plurality of storage channels, means for circulating a plurality of bits in said channels in parallel, means for inserting a plurality of bits representing a word in said channels, means for moving the bits one bit position in each channel on successive cycles of said circulating store to circulate the bits of said words in sequence through said store, means for reading out the bits from said storage channels in succession, and control means responsive to receipt of the bits read out successively from said storage channels for modifying said stored words and for recording a plurality of circulating store control bits in said channels.

3,316,356
SELECTOR CIRCUIT
Lloyd R. Wannan, Toronto, Ontario, Canada, assignor to The Bell Telephone Company of Canada, Montreal, Quebec, Canada
Continuation of application Ser. No. 288,245, June 17, 1963. This application May 13, 1966, Ser. No. 562,021
9 Claims. (Cl. 179-18)

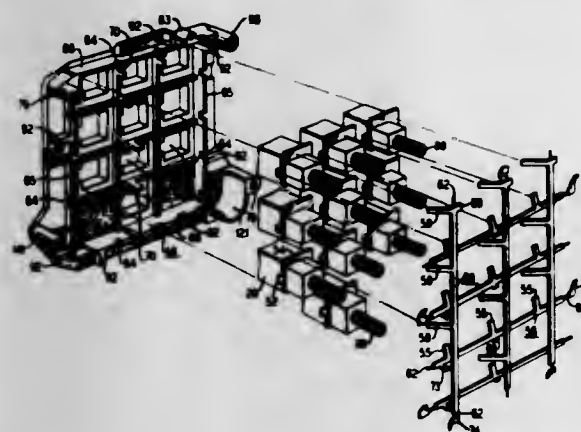
1. A selector circuit for a step-by-step telephone switching system adapted to differentiate between the requirements of a calling station for an outgoing trunk connection or a service code trunk connection comprising:
(a) means responsive to seizure of the selector circuit for testing for an idle outgoing trunk circuit and for seizing an outgoing trunk circuit if one is idle;
(b) means responsive to dialing of a first digit for an outgoing trunk when an idle trunk has been seized to repeat the digit dialed to the outgoing trunk circuit;

(c) a first relay means also responsive to the dialing of the first digit for an outgoing trunk to connect the calling station directly to said outgoing trunk after the last pulse of this digit has been received; and



(d) a second relay means responsive to dialing of a first digit for a service code trunk circuit to release the outgoing trunk if seized and connect the calling station to the service code trunk.

3,316,357
CODE TRANSMITTER
James H. Ham, Jr., Indianapolis, James F. Ritchey, Carmel, and Warren R. Tolman, Indianapolis, Ind.; said Tolman assignor to Western Electric Company, Inc., New York, N.Y., a corporation of New York, and said Ham and said Ritchey assignors to Bell Telephone Laboratories, Inc., New York, N.Y., a corporation of New York
Original application July 1, 1963, Ser. No. 291,770, now Patent No. 3,274,345, dated Sept. 20, 1966. Divided and this application May 24, 1966, Ser. No. 552,457
2 Claims. (Cl. 179-90)

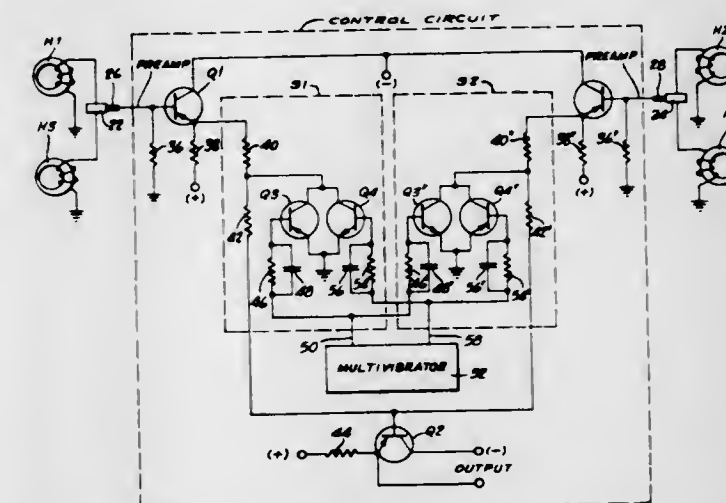


2. In combination:
a cover member having a plurality of holes therein arranged in an array of longitudinal columns and transverse rows, a plurality of guide collars extending from the topside of the cover member and respectively encompassing the holes to increase the height of the walls defining the holes, the walls defining the holes tapering inwardly toward the upper ends thereof;
an individual pushbutton situated in each of the holes in the cover member, each pushbutton being movable in a path of travel between an extended position and a depressed position and being biased toward its extended position;
two sets of rotatable shafts journaled in the cover member, one set extending generally perpendicular to the other set, an individual shaft of one set extending along one side of each column of the pushbuttons and an individual shaft of the other set extending along one side of each row of the pushbuttons, each shaft having a plurality of laterally projecting levers, individual levers on each shaft respectively extending into the path of travel of the individual pushbuttons alongside of which the shaft extends;

a first plurality of pairs of contacts, each pair of contacts being associated with an individual shaft, one contact of each pair being biased against one of the levers of its associated shaft, each pair of contacts being positioned just within the periphery of the cover member;
a displaceable member having a plurality of spaced cam surfaces, each cam surface being associated with an individual shaft of one of the sets of shafts and being in juxtaposition with one of the levers of its associated shaft, the displaceable member further having a contact actuating comb portion the comb portion having a plurality of differentially spaced teeth; and
a second plurality of pairs of contacts having individual contacts thereof respectively extending into engagement with individual teeth of the comb portion of the displaceable member and being sequentially operated by the displacement thereof.

3,316,358
SWITCHING CIRCUIT FOR ROTARY MAGNETIC HEADS

Barrett E. Gulsinger, Redwood City, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed May 17, 1963, Ser. No. 281,146
12 Claims. (Cl. 179-100.2)

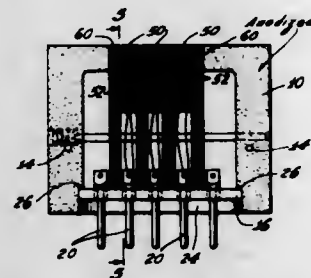


5. In combination with a plurality of magnetic heads fixedly supported on the periphery of a scanning drum adjacent to a magnetic tape, and an output circuit; switching apparatus for successively coupling each of said heads to said output circuit comprising: a like plurality of input circuits, each of said heads connected to an input circuit; a plurality of switches, each of which is uniquely connected to a different one of said input circuits; each of said switches comprising first and second impedance means serially connected between one of said input circuits and said output circuit; and means for selectively clamping the junction between said first and second impedance means whereby signals derived from said input circuits are prevented from appearing at said output circuit.

3,316,359
TRANSDUCER HEAD UTILIZING ELECTRO-MAGNETIC SHIELDING FOR CROSS-TALK ELIMINATION
Eugene I. Sakasagawa, Los Angeles, Calif., assignor to Winston Research Corporation, Los Angeles, Calif., a corporation of California
Filed May 20, 1963, Ser. No. 281,637
5 Claims. (Cl. 179-100.2)

1. A transducer head including: a casing; a plurality of magnetic core structures mounted in said casing and spaced from one another; a corresponding plurality of

energizing coils mounted in magnetically coupled relationship with respective ones of said core structures; metallic terminal supporting means including first and second terminal strips spaced from one another mounted in said casing; a plurality of electrically conductive terminal pins extending through said terminal supporting means and connected to respective ones of said coils; insulating means



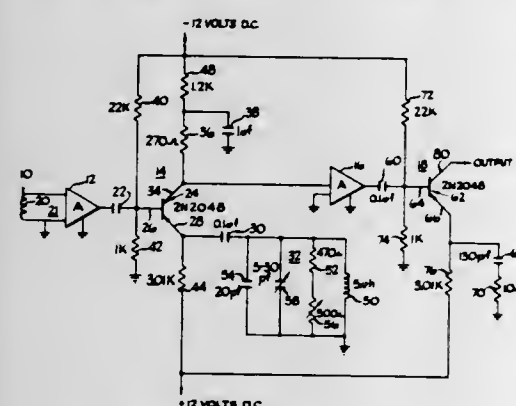
for mounting said terminal pins on said terminal supporting means in mutually insulated relationship; a plurality of shields extending across said casing between adjacent ones of said core structures and into engagement and electrical contact with said terminal supporting means; and soldering means disposed in the space between said strips for attaching said shields to said strips in electrical contact therewith.

3,316,360

HEAD RESONANCE COMPENSATOR

Charles H. Coleman, Jr., Belmont, Michael O. Felix, San Carlos, and Peter W. Jensen, Fremont, Calif., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed Aug. 30, 1963, Ser. No. 305,740
5 Claims. (Cl. 179-100.2)



1. A circuit for compensating for distortion caused by resonance of a magnetic transducer head circuit, said circuit comprising first means including an input, a resonance network coupled to said input so that a current which is a direct function of a signal applied to said input flows through said resonance network, and an output which provides a signal related to the current flowing through said resonance network, said network including a resistor, capacitor, and an inductor, said network having the same resonant frequency and Q as the transducer head circuit, and a second means having an output signal which increases in amplitude in proportion to the frequency of the input signal thereto, said head circuit being coupled to the input of one of said means and the input of the other of said means being coupled to the output of said one means.

3,316,361

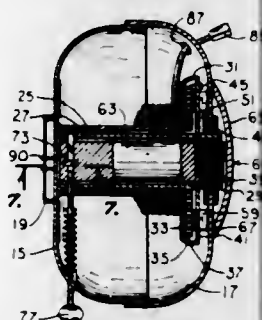
ELECTRICAL CORD DISPENSER

Gerald D. Thompson, Grimes, Iowa 50111

Filed Feb. 13, 1964, Ser. No. 344,584
6 Claims. (Cl. 191-12.4)

1. In an electrical cord dispenser, comprising in combination, an electrical outlet,

a housing being comprised of a stationary back cover secured to said outlet and a front cover with a hole therein rotatably mounted on said back cover, a first elongated hollow cylinder rigidly secured to said back cover and extending forwardly therefrom, an electric cord having one end outside said front covering and the other end extending through said hole and wrapping around said first cylinder, whereupon the rotation of said front cover about said first cylinder causes said cord to wind around said first cylinder, a means for operatively connecting said other end of said cord to said electrical outlet,



a spring means in said housing for yieldably holding said front cover in a position where said cord is fully wound around said first cylinder, a brake means being movable within said housing from a first position in engagement with said front cover for prohibiting its rotational movement to a second position out of engagement with said front cover for allowing its free rotational movement, and a plunger having means for moving said brake means between said first position and said second position and for holding said brake means in said first and said second positions.

3,316,362

HEATED TROLLEY ELECTRIFICATION SYSTEMS

Cecil J. Mayo, Hillsborough, and James A. Corl and Ronald J. Kilburg, San Carlos, Calif., assignors to Insul-8 Corp.

Filed Oct. 14, 1963, Ser. No. 315,761
15 Claims. (Cl. 191-27)

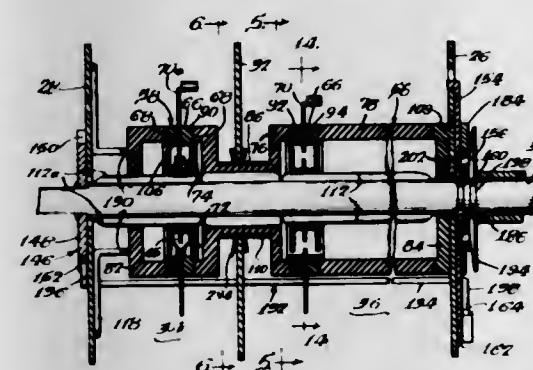


12. A trolley electrification system comprising at least two elongated bus bar assemblies aerially fixedly supported parallel one another, each assembly comprising a plurality of heated bus bar sections having longitudinal cavities therethrough, a longitudinally extending heater wire mounted in the cavities proximate said contact surface for heating said surface and thereby inhibiting the formation and retention of frozen moisture thereon when said bus bar is mounted in a relatively cold, humid atmosphere, and at least a pair of connectors affixed to one end of a given bus bar section and including a hollow connector pin adapted for insertion into the adjacent section of bus bar so that said heater wire extends through it between bus bar sections without break or splice, each of said connector pins in each of said bus bar assemblies extending in the same direction.

3,316,363

MULTIPLE SECTION TUNER WITH IMPROVED STATOR AND ROTOR CONTACT STRUCTURE

Alarico A. Valdetaro and Joe G. Badger, Bloomington, Ind., and Stanley R. Meadows, deceased, late of Bloomington, Ind., by Rosetta Meadows, administratrix, Bloomington, Ind., assignors to Sarkes Tarzian, Inc., Bloomington, Ind., a corporation of Indiana
Original application Oct. 20, 1960, Ser. No. 63,889, now Patent No. 3,234,801, dated Feb. 15, 1966. Divided and this application Feb. 14, 1966, Ser. No. 529,172
8 Claims. (Cl. 200-11)



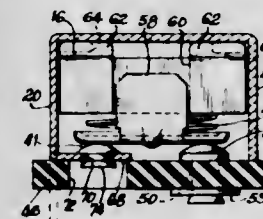
1. In a tuner, the combination of a chassis having a top wall and a pair of end walls extending generally perpendicularly to said top wall, a plurality of switch wafers each including a multi contact stator member and a rotor carrying contact means adapted selectively to engage said stator contacts as said rotor is rotated, said switch wafers being positioned between said end walls with the axes of the rotors thereof in alignment, a plurality of tubular spacer members interposed between said wafers and said end walls of said chassis to space said wafers relative to one another and to support said wafers from said chassis, and resilient means biasing said plurality of wafers and spacers against one of said end walls of said chassis.

3,316,364

ELECTRICAL SWITCH WITH HOUSING HAVING INTERNAL GROUND CONTACT

William N. Schink, Crystal Lake, Ill., assignor to Indak Manufacturing Corp., Northbrook, Ill., a corporation of Illinois

Filed Feb. 21, 1966, Ser. No. 529,051
10 Claims. (Cl. 200-16)



1. In an electrical switch, the combination comprising a casing made of conductive material, a contactor movable in said casing, means for moving said contactor within said casing, said means comprising an insulating carriage supporting said contactor and confined within said casing for movement along a predetermined path therein, an insulating member on said casing opposite said contactor, at least one contact mounted on said insulating member and engageable by said contactor, a conductive member formed integrally with said casing and adjacent the inner side of said insulating member within said casing, and at least one contact on said conductive member and engageable by said contactor for connecting said contactor to ground through said casing.

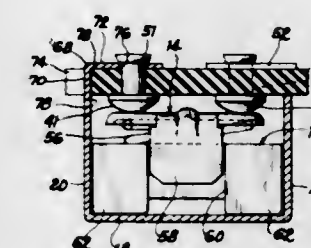
837 O.G.—49

3,316,365

ELECTRICAL SWITCH HAVING CONTACT GROUNDED BY EXTERNAL TAB ON CASING

Jesse M. Cobb, Glenview, Ill., assignor to Indak Manufacturing Corp., Northbrook, Ill., a corporation of Illinois

Filed Feb. 28, 1966, Ser. No. 530,453
10 Claims. (Cl. 200-16)



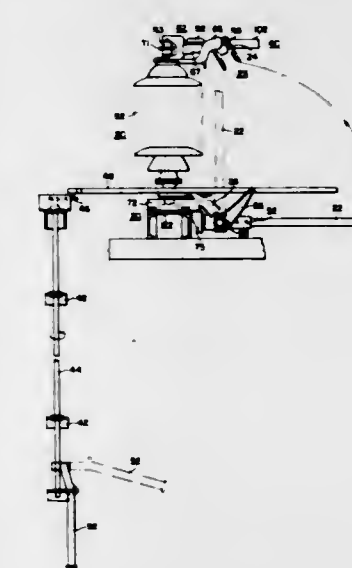
1. In an electrical switch, the combination comprising a metal casing, a carriage movable in said casing, means for moving said carriage within said casing, a contactor mounted on said carriage and movable therewith, an insulating member mounted on said casing opposite said contactor and forming one wall of said casing, at least a first contact mounted on said insulating member and engageable by said contactor, at least one tab formed integrally with said casing and projecting adjacent said insulating member on the side thereof remote from said casing, and at least a second contact mounted on the inner side of said insulating member and having a portion extending through said insulating member and secured to said tab for connecting said contactor to ground through said casing.

3,316,366

OPERATING MECHANISMS FOR ELECTRIC SWITCH STRUCTURES

George Sivy and Victor F. Sabol, Monroeville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 11, 1965, Ser. No. 431,908
5 Claims. (Cl. 200-48)



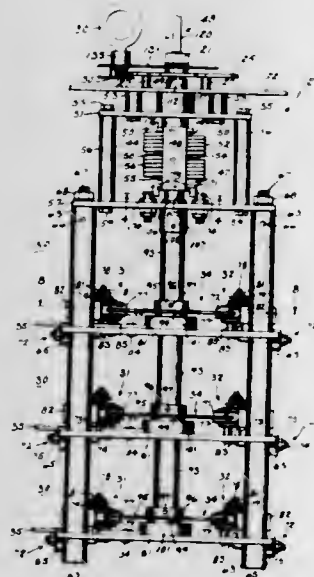
1. A switch comprising a tubular shaft, a frame for rotatably supporting the shaft about a substantially horizontal axis, a switch blade secured to the shaft and rotatable with the shaft in substantially a predetermined

plane between a substantially horizontal position and a substantially vertical position, a contact supported on an insulator and spaced from and above said shaft, said contact being disposed in at least one operating position in substantially said first plane to be engaged by and disengaged from one end of the switch blade, one or more torsion bars disposed inside the shaft, each torsion bar having one end secured to the frame and having the other end secured to the shaft, and means directly coupled to the shaft for rotating the shaft to actuate the switch blade between said positions, said one or more torsion bars being twisted during the movement of the shaft to compensate for at least part of the weight of the switch blade during at least certain portions of the movement of the shaft.

3,316,367

REVERSIBLE SECTIONALIZING SWITCH
Walter Kowalski, South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed Aug. 26, 1965, Ser. No. 482,730
24 Claims. (Cl. 200—48)



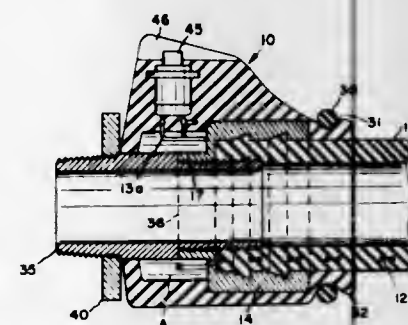
1. In a reversible, multi-position, sectionalizing switch, in combination, support means, a plurality of stop pins mounted in circumferentially spaced apart relation in a circle on said support means, coaxial driving and driven shafts rotatable about an axis through the center of said circle, helical torsion spring means surrounding said axis and having radially extending ends, driving and driven members having portions extending parallel to said axis and spaced from said axis and positioned between said radially extending ends of said torsion spring means and being affixed to driving and driven shafts respectively, a radially reciprocable pawl operatively connected to said driven member and normally occupying a position between a pair of adjacent stop pins and preventing rotation of said driven shaft, an eccentric operatively connected to said driving shaft for rotation therewith and engaging said pawl and being adapted when rotated to radially retract said pawl from said normal position between said pair of adjacent stop pins, rotation of said driving shaft simultaneously loading said torsion spring means and retracting said pawl, while said driven shaft is held against rotation by said pawl engaged between said adjacent stop pins until said driving shaft has rotated said eccentric sufficiently to withdraw said pawl from between said adjacent stop pins and permit said torsion spring means to snap said driven shaft to a succeeding position.

3,316,368
ELECTRICAL PROBE FOR A LIQUID DETECTING DEVICE
Albert Alexandre Henri Veau, 23 Place de Verdun, Pont-Audemer, France
Filed Dec. 22, 1965, Ser. No. 515,695
Claims priority, application France, Dec. 31, 1964, 556; Feb. 5, 1965, 23,553
4 Claims. (Cl. 200—61.04)



1. An electrical probe adapted to control a signaling device for indicating the presence of a liquid environment, said electrical probe comprising in combination: an elongated casing with a transverse liquid tight partition dividing said casing into two chambers, one of said chambers having liquid tight walls while the other chamber has porous walls, said partition being formed with a central resilient elongated pocket directed towards said liquid tight chamber; a rigid control rod having one end portion secured within said pocket, the remaining portion of said rod extending in said porous wall chamber; a strip of spongy material positioned between one side of said remaining portion of said rod and said porous wall; a movable electric contact secured to the outer face of said elongated pocket; a fixed contact secured to the inner face of said liquid tight wall and mounted so as to be capable of coacting with said movable contact upon said remaining portion of said rod being deflected laterally by swelling of said spongy material subjected to the action of a liquid entering said porous wall chamber; and insulated electrical wires leading out from said electric contacts through said liquid tight wall.

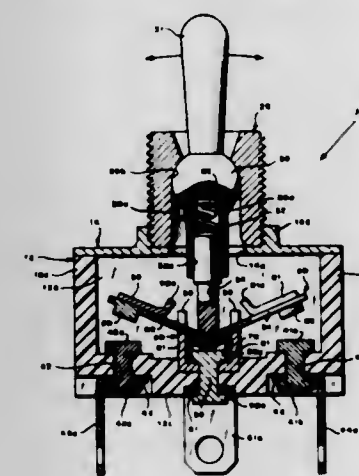
3,316,369
FITTING FOR A HOSE HAVING SWITCH MEANS FOR REMOTELY CONTROLLING VARIOUS DEVICES
Clayton H. Skinner, Buffalo, N.Y., assignor to Hewitt-Robbins Incorporated, Stamford, Conn.
Filed Nov. 18, 1965, Ser. No. 508,476
7 Claims. (Cl. 200—61.58)



1. A hose fitting for connecting a hose having electrical conductors therein with a switch assembly, said hose fitting comprising a housing member consisting of elastomeric material, said housing member having a bore therethrough, a ferrule secured in said housing member at one end thereof, said ferrule being adapted to receive

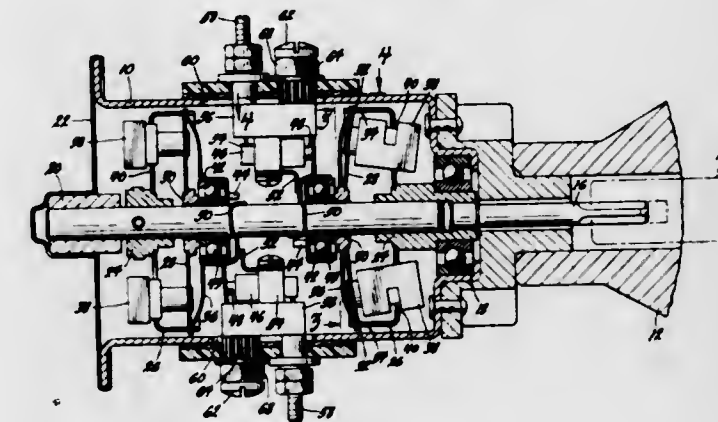
a hose to be connected with said fitting, a switch assembly in said housing member, said switch assembly having switch conductors extending into said bore, a nozzle tailpiece receivable in the bore of said housing member and secured to said ferrule, said tailpiece extending axially from said housing member for receiving a hose nozzle, said tailpiece and said ferrule cooperating with the interior of said housing to form a chamber about said switch conductors for preventing fluid passed through said tailpiece from contacting said switch conductors.

3,316,370
MINIMUM CONTACT BOUNCE ELECTRICAL SWITCH
Peter F. Ardizzi, 178 W. Widener St., Philadelphia, Pa. 19120
Filed Dec. 3, 1964, Ser. No. 415,838
8 Claims. (Cl. 200—67)



1. A switch comprising:
a case made of insulating material,
first and second spaced apart circuit contact elements in the base of said case,
an electrically conductive support yoke positioned in said case intermediate said first and second contact elements,
a pair of spaced apart pivot shoulders on said yoke, conductive support means intermediate said pivot shoulders having inclined surfaces extending inwardly from said shoulders and toward the base forming a support saddle,
an electrically conductive angular lever pivotally mounted on said support saddle and pivot shoulders for providing an enlarged surface contact between said angular lever and said support saddle, said lever positionable at will in any one of three positions relative thereto,
first and second contact arms on said lever each extending in opposite directions from and arrayed at an angle relative to each other,
an actuator element mounted in said case operative to resiliently urge said lever into any of three positions to bring about any selected one of the following electrical conditions: (a) said first contact arm only is in electrical connection with said first contact element while said second contact is spaced apart from said second contact element; (b) said second contact arm only is in electrical connection with said second contact element while said first contact is spaced apart from said first contact element; and (c) said first and second contact arms are both spaced apart from their respective contact elements, and means secured to each of said first and second contact arms intermediate the length thereof for engaging said actuator element in two of said three positions, thereby providing a positive wiping action between said contact elements and said contact arms.

3,316,371
CENTRIFUGALLY OPERATED SWITCH WITH RACK AND PINION MICRO-SWITCH ADJUSTING MEANS
Max V. Nelson, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 30, 1965, Ser. No. 468,463
3 Claims. (Cl. 200—80)

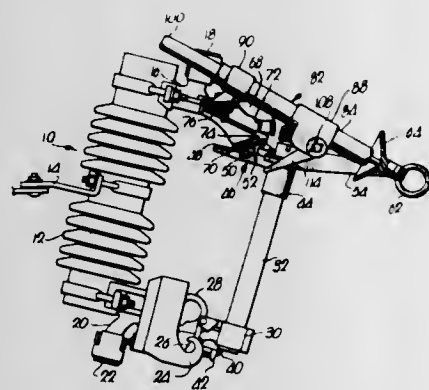


3. A speed sensitive switch comprising: a housing; drive means rotatably driven by a power source whose speed is monitored, said drive means carried by said housing and being rotatable with respect thereto; first means including weights carried by said drive means, said weights being radially deflectable on said first means with respect to said drive means as the drive means rotates; said first means having a first portion axially movable on said drive means in response to radial movement of said weights; a plurality of switch means carried by said housing and adjustably mounted with respect to said first portion of said first means from a point external to said housing; and lever means pivotally supported by said switch means in juxtaposition to said first portion of said first means, said lever means positioned to selectively energize and deenergize said switch means in response to axial movement of said first portion as said drive means rotates in certain predetermined speed ranges, said switch means being slidably disposed in a slot formed in said housing, said slot having a rack formed along a side thereof, and a pinion carried by said switch means and engaging said rack to provide an adjusting means for varying the position of said switch means relative to the first portion of said first means.

3,316,372
CUTOUT SWITCH HAVING LOAD INTERRUPTER
Ronald P. Bridges, Downers Grove, Ill., assignor to A. B. Chance Company, Centralia, Mo., a corporation of Missouri
Filed Dec. 16, 1965, Ser. No. 514,204
2 Claims. (Cl. 200—114)

1. Switch apparatus comprising:
a first switch contact;
a shiftable switch arm provided with electrically conductive means presenting a second switch contact movable with the switch arm between a closed position engaging said first contact and an open position in substantial spaced relationship to said first contact;
a load interrupter having a housing, a first terminal structure electrically coupled with said first contact, and a load-break device including a second terminal structure, a shiftable interrupter element in said housing having a normal disposition establishing electrical continuity between said structures, and an electrically conductive, shiftable operating member electrically coupled with said second structure,

said device being operable to shift said element to a disposition interrupting said continuity in response to actuation of said member, said conductive means being engageable with said member for actuating the latter to operate said device upon movement of said switch arm in a direction to shift said second contact from said closed to said open position, said conductive means being disposed to establish a current path through said member and said structures in shunt relationship to the path through said contacts prior to disengagement of the latter and to effect said operation of the device subsequent to said disengagement, said interrupter being provided with a shiftable component extending from said housing and operably associated with said element for returning the latter to said normal disposition from said continuity interrupting disposition; and an operating arm extending from said switch arm and engageable with said component for shifting the lat-



ter to effect return movement of said element, upon movement of the switch arm in the opposite direction to shift said second contact from said open to said closed position, whereby to re-establish electrical continuity between said structures as said contacts are reclosed, said conductive means being provided with a conductive finger extending transversely to said directions of movement of the switch arm for engaging said member to effect said actuation thereof, said finger being disposed to shift said member as the switch arm is shifted in the first-mentioned direction and then move clear of the member upon continued movement of the switch arm toward the open position of said second contact, and to re-engage said member as the switch arm is shifted in said opposite direction to return to the member to a normal disposition for subsequent engagement by the finger during the next opening of said contacts, said interrupter being provided with means associated with said member for releasably maintaining the latter in said normal disposition thereof.

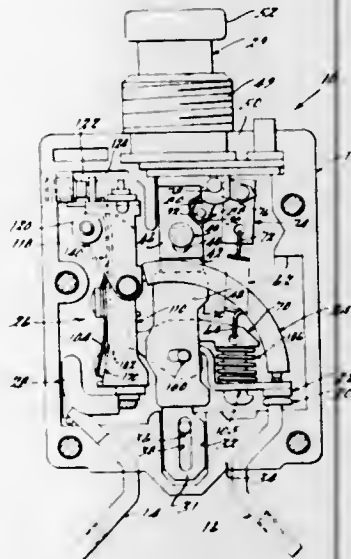
3,316,373

TRIP DEVICE FOR CIRCUIT BREAKER
Thomas W. Butler, Jr., Ann Arbor, Mich., assignor to Mechanical Products, Inc., Jackson, Mich., a corporation of Delaware

Filed Dec. 8, 1965, Ser. No. 512,440
3 Claims. (Cl. 200-116)

1. An electric circuit breaker comprising, a housing, a pair of separable contacts in said housing, a releasable operating mechanism mounted on said housing and operable to effect separation of said contacts, a trip device frame, means adjustably supporting said frame on said housing, a beam pivotally secured to said frame,

a latch on said beam engageable with said operating mechanism, resilient means mounted on said beam for normally biasing said beam for rotation relative to said frame, and,



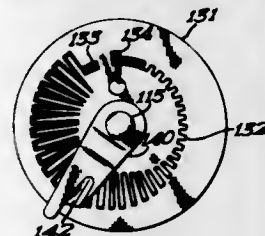
a current responsive wire having a positive temperature coefficient of expansion connected to and extending between said frame and beam, elongation of said wire allowing said beam to rotate relative to said frame under the bias of said resilient means to retract the latching surface on said beam from engagement with the operating mechanism of the circuit breaker.

3,316,374

THERMOSTAT WITH AN IMPROVED HEAT ANTICIPATION MEANS

Clifford L. Nelson, Minneapolis, Minn., assignor to Honeywell Inc., a corporation of Delaware

Filed Mar. 1, 1965, Ser. No. 435,902
2 Claims. (Cl. 200-122)



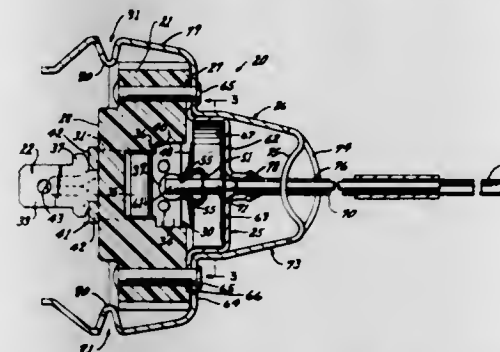
1. A thermostat comprising, temperature responsive means, a base, a resistance heater, a support member mounting said heater having a relatively high thermal conductivity, common support means connected to said base for supporting said responsive means and said support member on said base so said heater is adjacent said responsive means, said support means and said support member providing a heat conduction path between said heater and said responsive means, switch means operably connected to said responsive means, and circuit means adapted to connect said switch means and said heater to a source of power whereby said heater applies heat to said responsive means when said switch operates for anticipation purposes, said heater comprising a first portion and a second portion connected in series, said first portion being a low range resistance portion, an adjustable connection for selecting the amount of said heater to be energized, said first portion having a large physical dimension increasing the surface area per unit length to increase the heat dissipation whereby upon a predetermined high current passing through said first portion, the temperature of said first portion will be limited to a predetermined value by the loss of heat from said support member.

3,316,375

CONTROL DEVICE AND PARTS THEREFOR OR THE LIKE

Hugh J. Tyler, Jeannette, and Denis G. Wolfe, Youngwood, Pa., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Oct. 12, 1964, Ser. No. 403,039
8 Claims. (Cl. 200-140)



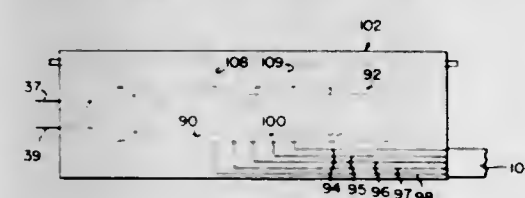
1. In a control device or the like having a housing means, the improvement comprising a pair of terminals carried by said housing means, a fixed electrical contact carried by one of said terminals, a first flexible member having one end secured to the other terminal, a movable electrical contact carried on the other end of said first flexible member, said first flexible member having an opening passing therethrough intermediate said ends thereof, a second flexible member having one of the ends thereof secured to said housing means and having a plurality of fingers projecting through said opening of said first flexible member, a rod-like motion transmitting member slidably received between said fingers to flex said flexible members, and a condition responsive means carried by said housing means and having a movable member controlling movement of said rod-like member whereby said condition responsive means varies the position of said movable contact relative to said fixed contact.

3,316,376

HIGH CAPACITY ELECTROLYTIC COULOMETER AND ELECTRICAL SWITCHING ARRANGEMENT THEREFOR

Lester Corrsin, 138 Highledge Drive, Penfield, N.Y. 14526

Filed Oct. 22, 1965, Ser. No. 502,066
6 Claims. (Cl. 200-152)



5. In a device including a body defining an elongated chamber, mercury in the chamber extending from one end and conforming generally to the cross-sectional dimensions thereof, and means for alternately increasing and decreasing the quantity of mercury in the chamber so that the mercury alternately occupies greater and smaller lengths thereof, the improvement consisting of a contact arrangement for alternately making and breaking an electrical connection between the mercury and a terminal external to the body responsively to the extension and retraction of the mercury in the chamber comprising a passageway extending laterally from the chamber at a selected point along the length thereof, means defining a capillary orifice smaller than the cross-section of said passageway between said passageway and the chamber, and mercury in said passageway, whereby when mercury in the chamber extends to cover said point it comes into contact with the mercury in said passageway

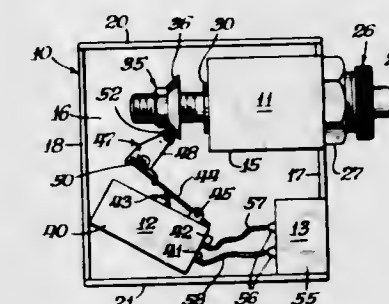
and forms a unitary body therewith, and when it thereafter retracts and withdraws away from said point surface tension restrains the mercury in said passageway from passing through said orifice so that electrical contact between the mercury in said chamber and the mercury in said passageway is broken.

3,316,377

PULSING SWITCH

Raymond G. Olson, Niles, Ill., assignor to Power Control Products, Inc., a corporation of Illinois

Filed June 21, 1965, Ser. No. 465,439
11 Claims. (Cl. 200-160)



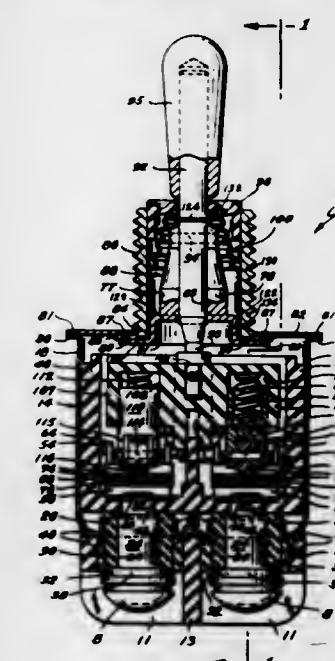
1. An electrical switch comprising, a pair of switch contacts operable to define a pulse, lever means operable to one position to operate said contacts to one position and operating responsive to a release thereof to restore said contacts thereby defining a pulse, a shaft having radially extending collar means thereon, means for carrying said shaft for longitudinal reciprocating movement so that said collar means engages said lever means to operate said lever means to said one position responsive to a longitudinal movement of said shaft, and means carrying said last mentioned means for adjusting the spacing between said shaft and said lever means to vary the length of time said collar means engages said lever means during said longitudinal movement of said shaft.

3,316,378

HERMETIC SEALED SWITCH

Thomas J. Ryan, Rehoboth, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Apr. 26, 1965, Ser. No. 450,695
6 Claims. (Cl. 200-168)

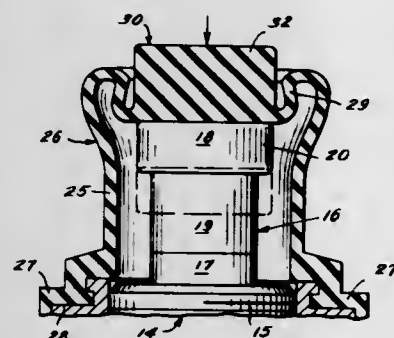


2. Seal means for a pivotal arm comprising, (a) a yoke having a base and pivotably supporting, (b) a pivotal arm,

- (c) a bellows having two ends, one end thereof hermetically attached to said pivotal arm, the other end thereof hermetically attached to said base of said yoke, the pivot of said pivotal arm located within said bellows, and
- (d) means protectively enclosing said bellows.

3,316,379

SEAL FOR PUSH BUTTON ACTUATED DEVICE
David E. Clarke, Attleboro, and David L. Eisnor, Norton, Mass., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed July 29, 1965, Ser. No. 475,675
6 Claims. (Cl. 200-168)



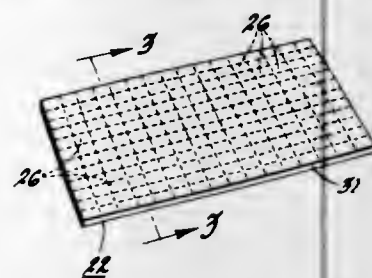
1. In a push button operated switch having a housing, a bushing providing an entrance to the interior of the housing, and a push button positioned in the bushing for reciprocating movement therewith between a depressed position and an extended position, a device for sealing the interior of the housing from fluid, dust and the like comprising, an enclosure mounted at its inner end on the bushing in fluid-tight relationship therewith and enclosing the push button, the enclosure having interior transverse and axial dimensions sufficiently large in comparison to the corresponding exterior dimensions of the push button to permit reciprocal movement of the push button within the enclosure, the walls of the enclosure being relatively thin to permit manual grasp of the push button, the enclosure having a closure formed on its distal end, the closure having a portion weaker than the walls of the remainder of the enclosure, the closure having a thickened knob located centrally about the axis of the enclosure in the exterior of the closure, the exterior knob having a transverse dimension less than the interior transverse dimension of the enclosure whereby an actuating force applied to the closure at the distal end of the enclosure to actuate the push button are centered about an axis running lengthwise along the enclosure to permit, upon application of the actuating force, the walls of the enclosure to bulge in a direction away from the push button and to inhibit the formation of convolutions of the enclosure walls in a direction toward the interior of the push button.

3,316,380

ENERGY DISTRIBUTION DETECTOR FOR MICROWAVE OVEN
Nelson J. Pansing, Clayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 30, 1964, Ser. No. 363,716
5 Claims. (Cl. 219-10.55)

1. Cooking apparatus comprising an oven consisting of a metallic enclosure, means for radiating high frequency electromagnetic waves of a predetermined wave length to the interior of said oven, said oven having an aperture in one wall thereof, and support means in said oven slidably removable through said aperture, said support means including a glass shelf having a plurality of

compartments, each of said compartments enclosing means illuminated in response to radiated electromagnetic



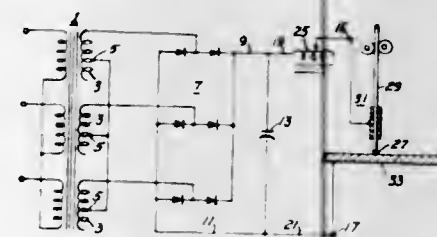
waves whereby to serve as an indicator for the presence or absence of said electromagnetic waves.

3,316,381

POWER SUPPLY AND METHOD FOR METAL SURFACING

William W. Gibson, Alameda, Calif., assignor to Glenn Pacific, a division of Teledyne, Inc., a corporation of Delaware

Filed June 2, 1966, Ser. No. 554,772
10 Claims. (Cl. 219-76)



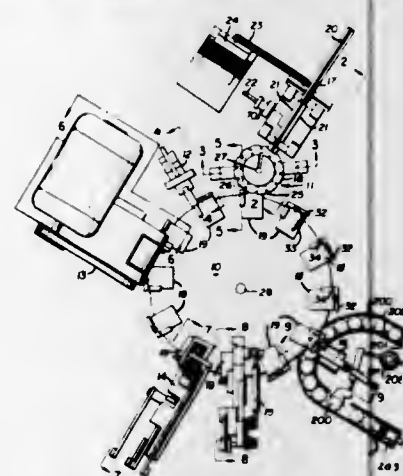
1. A power supply adapted for automatic or semi-automatic surfacing and welding, comprising a source of direct current at voltage suitable for surfacing and welding; capacitor means connected in circuit across said source, and having a value exceeding 80,000 microfarads; a pair of load terminals; means connecting said capacitor means to said load terminals, said connecting means including an adjustable inductor.

3,316,382

ASSEMBLY MACHINE FOR ELECTRONIC COMPONENTS

Wendell David Shumaker, Saegertown, Robert A. Lybarger, Meadville, and Chalmer Clarence Jordan, Saegertown, Pa., assignors to Glass-Tite Industries, Inc., Providence, R.I.

Filed Sept. 30, 1963, Ser. No. 312,602
7 Claims. (Cl. 219-79)



1. In a machine for preparing wire for welding it to short lengths of ribbon on the prepared end of said wire and for forming said ribbon to predetermined shapes comprising a turret,

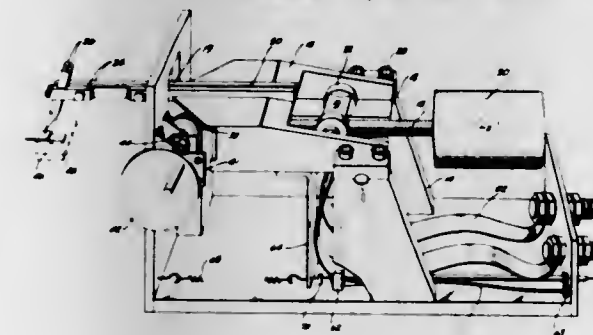
means to rotate said turret, spaced wire holding means on the periphery of said turret, means on said machine to feed lengths of wire to said wire holding means, means to move an end of a ribbon to position on the end of said wire, means on said machine to remove metal from one end of said wire to flatten said end, thereby forming a flattened end, means on said machine to sever the flattened end of said wire and an end of said ribbon from said ribbon, and means to retract said ribbon and without severing when said flattening fails whereby said ribbon end is saved.

3,316,383

VARIABLE FORCE WELD HEAD

William H. Hill, Carlsbad, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed July 20, 1964, Ser. No. 383,828
5 Claims. (Cl. 219-86)

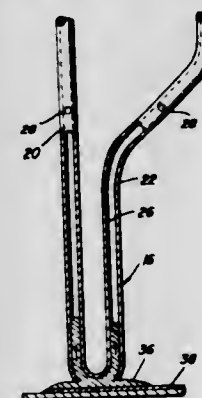


1. A weld head comprising:
a support member;
a first lever arm pivotally supported at one end by said support member and adapted to retain an electrode assembly at the other end;
a second lever arm supported at one end by said support member in juxtaposition to said first member and having a fixed weight secured to the other end;
a movable coupling member engaging said second lever arm and in contact with said first lever arm; and
a motion producing means coaxing with said second lever arm for producing rotation of said second lever arm about its axis to vary the point of contact of said coupling member with said first lever arm.

3,316,384

SOLDERING IRON TIP WITH VENTED SOLDER CAPILLARY PASSAGE MEANS

James M. Daniels, 917 E. Crawford St., P.O. Box 392, Donaldsonville, La. 70345
Filed Nov. 19, 1964, Ser. No. 412,537
8 Claims. (Cl. 219-233)

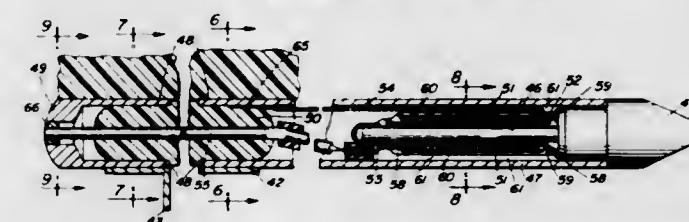


1. A soldering iron tip of the type including an elongated conductor including opposite end portions adapted to

be electrically connected to a source of electrical potential and a pair of adjacent relatively angulated sections joined by means of an integral bight portion, said bight portion and at least the adjacent portions of said sections having a capillary passage formed longitudinally therethrough, said bight portion having an opening formed therein communicated with said passage and through which solder in a fluid state is adapted to pass by capillary action, at least one of said angulated sections including means venting the portion of said passage formed therein to the ambient atmosphere.

3,316,385

ELECTRICALLY HEATED SOLDERING DEVICE
Nicholas Anton, Park Ridge, Ill., assignor to Wen Products, Inc., Chicago, Ill., a corporation of Illinois
Filed Apr. 10, 1964, Ser. No. 358,760
11 Claims. (Cl. 219-236)



1. An electrically heated soldering device comprising, in combination,
(1) electric current supply means, including means for connecting said electric current supply means to an electrical current source,
(2) electrical lead means for connecting said electrical current supply means to a heating tip assembly and
(3) a heating tip assembly, including
(a) a principal supporting member including a front end portion, a rear end portion, and an intermediate portion,
(b) a soldering tip of a highly thermally conductive material fitted in said forward end of said supporting member,
(c) a heating unit composed of nickel-clad copper conductor material disposed in intimate heat exchange relation with said tip,
(d) two electrical conductor means for supplying current to said heating unit from the rear end portion of said supporting member; and
(e) terminal means as said rear end portion of said supporting member and connected to said conductors, for connection with said electrical lead means to supply a heating current to said heating unit, said principal supporting member providing substantial heat insulation between said front end portion of said supporting member and said rear end portion thereof, said heating unit being of much smaller cross-sectional area than said conductor means, and said heating tip being of a much greater mass and heat storage capacity than said heating unit.

3,316,386

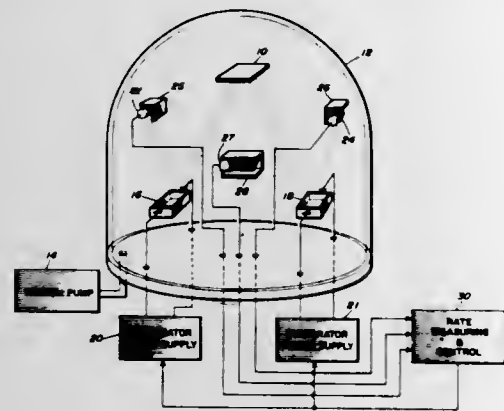
MULTIPLE EVAPORATION RATE MONITOR AND CONTROL

Theodore H. Yaffe, Baltimore, William C. Vergara, Towson, and Harold M. Greenhouse, Timonium, Md., assignors to The Bendix Corporation, a corporation of Delaware

Filed May 20, 1964, Ser. No. 368,975
4 Claims. (Cl. 219-272)

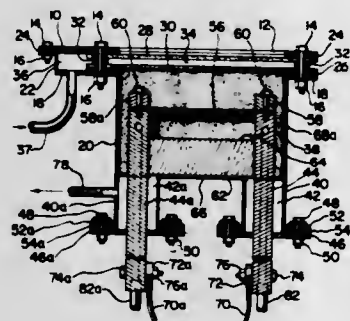
1. Apparatus for simultaneously evaporating in controlled proportions a plurality of materials, comprising a vessel with facilities for maintaining said vessel in a near vacuum condition,

a plurality of containers within said vessel, each holding one of the materials to be evaporated, individually controllable heating means for each of said containers,
 a first ion gauge exposed to the background gases in said vessel and shielded from direct exposure to each of said containers,
 a plurality of additional ion gauges each of which is exposed to direct view of one of said containers while being shielded from view of the remaining containers,



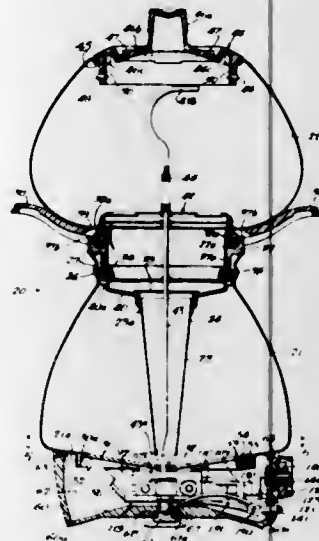
means combining the output of said first ion gauge with the output of one of said additional ion gauges for providing a control signal to one of said heating means, and
 a plurality of means providing individual control signals to the heating means for the remainder of said containers wherein the individual control signal to the heating means for a particular container is derived from a combination of the output of the ion gauge directly viewing that container with a portion of the output of the ion gauge having its output combined with said first ion gauge.

3,316,387
ELECTRIC LAMP HAVING DIRECTLY HEATED SHEET RADIATOR
 Cecil R. Waldron, Long Beach, Calif., assignor to North American Aviation, Inc.
 Filed Nov. 26, 1963, Ser. No. 325,977
 6 Claims. (Cl. 219-354)



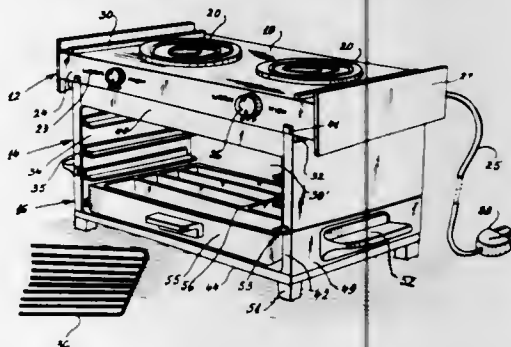
1. A heat lamp comprising:
 a reflective assembly having a first pair of mutually spaced heat reflective side walls, a second pair of side walls an end wall,
 a sheet heater element extending across and substantially covering the space between said first pair of heat reflective side walls and spaced from said end wall,
 said second pair of side walls comprising first and second terminals in contact with said filament,
 a casing for holding the wall portions in assembled relation, said casing including a pair of hollow leg portions extending rearwardly therefrom, said terminals extending along said hollow leg portions.

3,316,388
AUTOMATICALLY CONTROLLED IMMERSIBLE ELECTRIC COFFEE MAKER
 Chester Wickenburg, Elgin, and Moses B. Lorenzana, Glen Ellyn, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
 Original application June 14, 1961, Ser. No. 117,079, now Patent No. 3,224,360, dated Dec. 21, 1965. Divided and this application May 18, 1964, Ser. No. 368,159
 7 Claims. (Cl. 219-442)



1. An automatically controlled electric coffee maker completely immersible in liquid for cleaning purposes comprising, a water heating vessel, an electric heating element secured in intimate heat exchange relationship with the bottom of said vessel, temperature responsive control means including an electric circuit connected to control said heating element, wall means defining a sealed housing secured to said vessel and enclosing said heating element and temperature responsive control means, means defining an opening in said wall means, a manual operating means for said temperature responsive control means including a pivotal member extending through said opening and movable from a first position to a second position and operatively associated with at least a part of said control means, and a resilient plug secured in said opening and bonded to said pivotal member for sealing said opening surrounding said pivotal member, said plug urging said pivotal member to said first position.

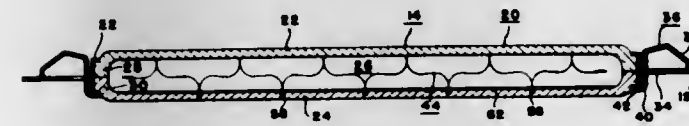
3,316,389
COMBINATION ELECTRIC BROILER AND ELECTRIC STOVE
 Albert A. Markowitz, 1632 Meridian Ave., Miami Beach, Fla. 33139
 Filed June 8, 1964, Ser. No. 373,475
 6 Claims. (Cl. 219-454)



1. A combination cooking appliance, comprising a cooking unit having a horizontal flat top, a flat horizontal bottom spaced from the top, vertical front and rear walls, and side walls joined to the top, bottom, front and rear walls, said side walls having free ends extending above and below said top and bottom to serve as legs

for the unit, electric burner elements mounted on the flat top, and switches operable by knobs on the front wall, said switches being connected in circuit with said burner elements; a stand in the form of a rectangular U-shaped structure having an open top, bottom and front, said structure having side and rear walls joined together to support detachably said cooking unit, flanges on the side walls of the stand to prevent the cooking unit from sliding forwardly off the stand, and projections on the top and bottom of the cooking unit to engage side walls of the stand to prevent the unit from sliding laterally on the stand; and a box-like base with closed horizontal bottom, vertical sides and vertical rear wall joined to the bottom of the base, said base having an open top and front, whereby said stand can be detachably mounted on the base to define with the base and the cooking unit a large broiler compartment, the cooking unit being invertible over the stand so that the burner elements face downwardly into said compartment.

3,316,390
ELECTRIC HOT PLATE
 Richard S. Gaugler and Donald C. Siegle, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
 Filed Apr. 21, 1965, Ser. No. 449,812
 14 Claims. (Cl. 219-464)

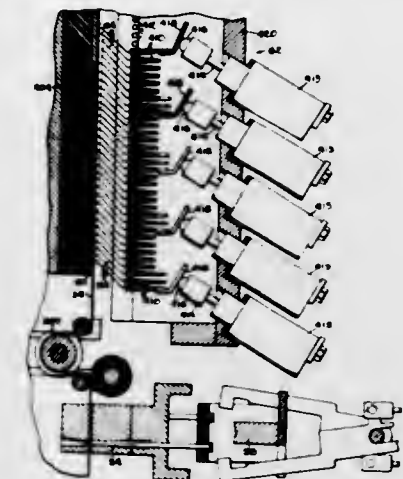


3. An infrared surface heating unit comprising a low-profile envelope including an upper support plate of infrared transmissive material and a low bearing plate of low thermal mass spaced below said upper support plate, a self-supporting electrical resistance heating element located between said upper and lower bearing plates energizable to produce a substantial radiation in the infrared range, said heating element having a plurality of spaced apart portions thereon arranged in juxtaposition to form reinforced depending legs supported on said lower bearing plate for locating said heating element in spaced relationship to said upper support plate and said lower bearing plate, said heating element further including an undulating portion located between each of said legs for taking up expansion of said element upon energization thereof.

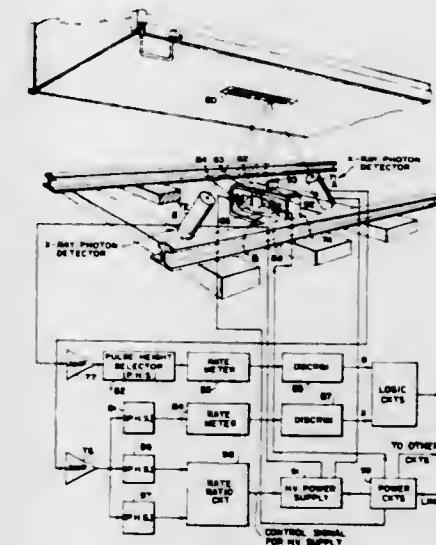
3,316,391
READ-OUT APPARATUS FOR INTERROGATING PERFORATED TAPE
 William F. Galey, Saxonburg, and George W. Misson, Pittsburgh, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
 Original application Nov. 2, 1959, Ser. No. 850,460. Divided and this application May 6, 1965, Ser. No. 468,662
 4 Claims. (Cl. 235-61.11)

4. In a read-out head for interrogating a perforation spotted paper record, the combination comprising, a bank of resilient fingers in aligned ranks and rows and mounted opposite the paper record, a pick-up unit for sensing the positions of perforations in a paper record interposed between said fingers and pick-up unit, means for mounting each rank of fingers for movement between a retracted position wherein the fingers are spaced from paper record contact and an advanced position wherein the fingers are positioned in paper contact, means for moving each rank of fingers between said advanced and retracted positions,

and means including a cascade circuit for controlling said last named means and selecting combinations of ranks of fingers for advance into paper contact to interrogate selected portions of the paper record, said circuit including



3,316,392
CODED AUTOMATIC IDENTIFICATION SYSTEM
 Francis M. Bailey, Roanoke, Va., and John E. Bigelow, Hales Corners, and Gordon E. Walter, Wauwatosa, Wis., assignors to General Electric Company, a corporation of New York
 Filed Nov. 13, 1962, Ser. No. 239,865
 8 Claims. (Cl. 235-61.12)

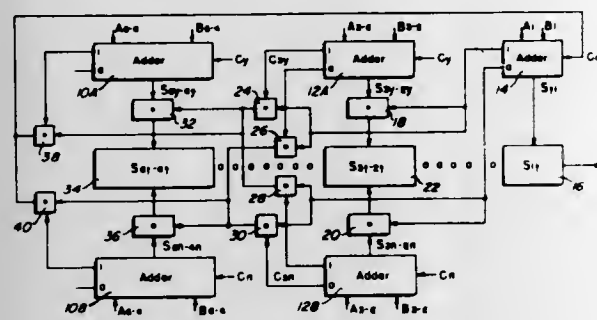


1. A digitally coded identification device comprising first and second channels of digitally coded indicia, each indicia being adapted to emit X-ray photons that are characteristic of an element comprising the particular indicia when the indicia are excited in sequence with electromagnetic radiation of predetermined energy, said first channel comprising indicia varying periodically over at least half said first channel, said second channel comprising indicia which vary relative to said varying indicia of said first channel, similarity between corresponding indicia in each channel indicating a binary information bit and dissimilarity between corresponding indicia in each channel indicating the absence of an information bit, thereby to define a unique coded numerical representation determined by the similarities or dissimilarities between consecutive pairs of indicia in said first and second channels.

3,316,393

CONDITIONAL SUM AND/OR CARRY ADDER
Leonard B. Ruthazer, Norwood, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

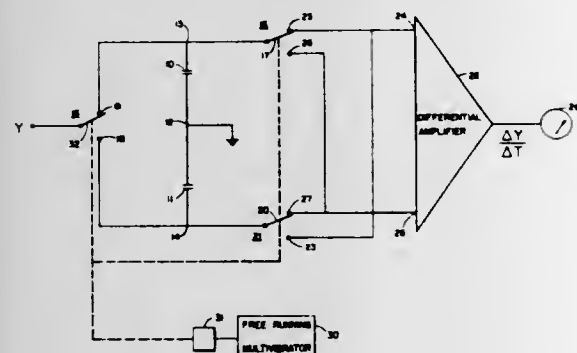
Filed Mar. 25, 1965, Ser. No. 442,707
13 Claims. (Cl. 235-175)



1. A digital computing apparatus comprising a plurality of paired multi-stage logic portions, said plurality of multi-stage logic portions being further characterized in that the number of stages of each pair differs from the number of stages in adjacent pairs, an unpaired logic portion, inputs connected to each of said logic portions for representing respective bit positions of operands to be manipulated therein, means for forcing a carry into the lowermost bit position of one logic portion of each of said paired logic portions, output means connected to each of said paired logic portions for representing conditional values generated therein, and means operatively connected with each of said paired logic portions to effect the selection of one or the other of said conditional values associated therewith.

3,316,394

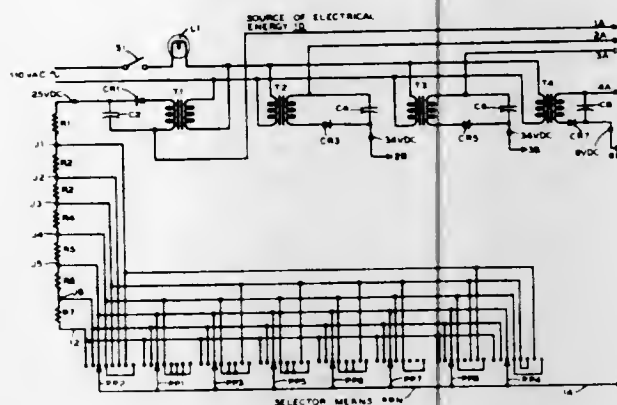
GENERALIZED ANALOG DIFFERENTIATOR
Frederick R. Fluhr, 8716 E. Fort Foote Terrace, Oxon Hill, Md. 20022
Filed Dec. 31, 1963, Ser. No. 334,953
7 Claims. (Cl. 235-183)



1. Apparatus for differentiating a variable signal comprising:
first and second storage devices;
a differential amplifier having first and second inputs and
switching means which alternately connect said variable signal to one and then the other of said first and second storage devices and to one input of said differential amplifier and to connect the other input of said differential amplifier alternately to the first or second storage device not connected to said variable signal.

3,316,395

CREDIT RISK COMPUTER
Michael G. Lavin, Woodside, N.Y., assignor to Computer Credit Corporation, a corporation of New York
Filed May 23, 1963, Ser. No. 282,646
7 Claims. (Cl. 235-185)



1. A calculator comprising:
(a) a first source of electrical energy including first and second terminals;
(b) a first variable resistor means including first and second terminals;
(c) means for connecting the first terminal of said first source to the first terminal of said first variable resistor means;
(d) a second source of electrical energy including first and second terminals;
(e) a second variable resistor means including first and second terminals;
(f) means for connecting the first terminal of said second source to the first terminal of said second variable resistor means;
(g) means for connecting the second terminal of said first source to the second terminal of said second variable resistor means whereby said first variable resistor means, said first source, said second variable resistor means and said second source are connected in a serial array;
(h) a first electrosensitive indicating means having first and second terminals;
(i) means for connecting the first terminal of said first electrosensitive indicating means to the second terminal of said first variable resistor means;
(j) means for connecting the second terminal of said first electrosensitive indicating means to the second terminal of said second source;
(k) a third source of electrical energy including first and second terminals;
(l) a third variable resistor means including first and second terminals;
(m) means for connecting the first terminal of said third source to the first terminal of said third variable resistor means;
(n) means for connecting the second terminal of said third source to the second terminal of said first electrosensitive indicating means; and
(o) means for connecting the second terminal of said third variable resistor means to the first terminal of said first electrosensitive indicating means.

3,316,396

ATTACHABLE SIGNAL LIGHT FOR DRINKING GLASS

David H. Trott and John Bulcroft, Cincinnati, Ohio; said Trott assignor of one-fourth, and said Bulcroft assignor of one-half to E. W. Gilson, Geneva, Switzerland
Filed Nov. 15, 1965, Ser. No. 507,896
6 Claims. (Cl. 240-6.4)

1. A signal light adapted to be mounted on a wall of a drinking glass comprising,

a tubular casing closed at its lower end and open at its upper end, said casing being adapted to receive a dry cell battery,
a clip mounted at its upper end to the upper end of said casing and having a free portion projecting downwardly along the outside of said casing,
a light bulb mounted in the upper end of said casing and in electrical contact with a battery mounted in said casing,
a globe mounted on the upper end of said casing to enclose said light bulb,
said casing having an opening under said clip,
a resilient electrical conductor having a lower end in electrical contact with the lower end of said battery

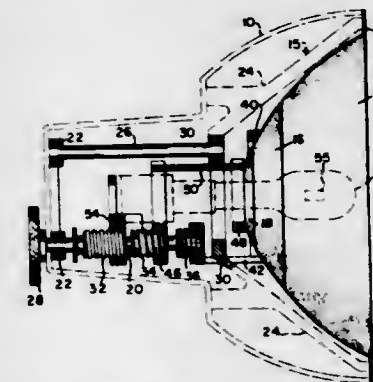
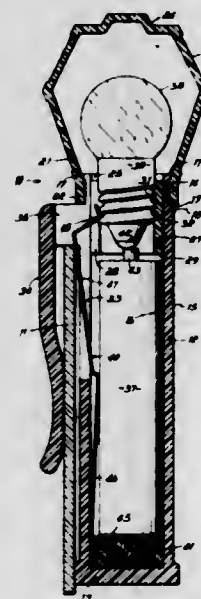
on the vehicle body about a substantially horizontal and transversely arranged axis, devices connected to the headlamps to apply tilting motion to the headlamps, anti-roll bars mounted rotatably on the vehicle body towards the front and the rear of the latter and connected to parts of the vehicle on which the wheels are attached, crank arm devices at central regions of the anti-roll bars, actuating means engagingly associated with the crank arm devices and the devices connected to the headlamps to effect responsive tilting movement of the headlamps proportionately to uneven displacement of the front and rear ends of the vehicle body relative to said plane.

3,316,398

VARIABLE SPOT MECHANISM

David R. Dayton, Beverly, Albert H. Nimblett, Jr., Salem, and Julian J. Wierzbicki, Peabody, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Sept. 29, 1964, Ser. No. 400,270
6 Claims. (Cl. 240-44)



and an upper end movable into electrical contact with said light bulb to complete the circuit between said battery and said light bulb,
the upper end of said conductor normally being disposed out of engagement with said bulb, and
said conductor having a portion intermediate its upper and lower ends projecting through said opening and outside of said casing, said projecting portion providing a surface which is inclined in the direction of said clip and underlies the free portion of said clip, said inclined surface being engageable by the wall of a drinking glass to force it and the upper end of said conductor into engagement with said bulb upon the application of said signal light to a drinking glass.

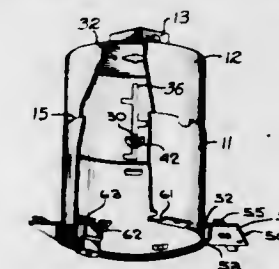
1. A lighting fixture comprising: a substantially parabolic reflector, said reflector being cut substantially perpendicular to the axis of revolution thereof to define a plurality of segments, said segments being movable with respect to one another; a light source normally disposed at the focal point of said reflector; means for displacing said light source axially in said parabolic reflector; means for displacing said movable segments of said reflector with respect to one another, the displacement of said light source and the displacement of said movable segments being effected in a co-operative relationship with respect to one another whereby a substantially uniform beam over a large angular spread range is obtained.

3,316,399

POT-LIGHT FIXTURE

Thomas B. Totten, Agincourt, Ontario, Canada, assignor to C & M Products Limited, Scarborough, Ontario, Canada

Filed Jan. 29, 1962, Ser. No. 169,544
4 Claims. (Cl. 240-78)

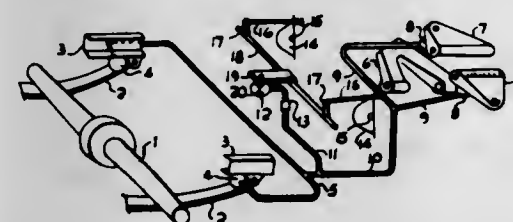


3,316,397

VEHICLE HEADLAMP ADJUSTING MEANS

Gideon Petrus Schoeman Yssel, "Sankas," P.O. Noordbrug, District Potchefstroom, Transvaal, Republic of South Africa

Filed Nov. 10, 1964, Ser. No. 410,140
15 Claims. (Cl. 240-7.1)



1. Automatic adjusting means for the headlamps of a wheeled vehicle having a resiliently suspended body for maintaining a substantially constant angle of light beams emitted by the headlamps relative to a mean plane containing the axes of the vehicle wheels, including, headlamps of which at least the reflectors are tiltably mounted

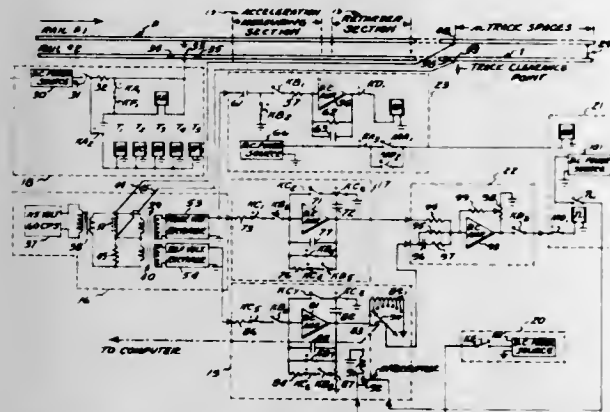
1. A recessed lighting fixture comprising an open-ended shell member having an outwardly extending peripheral flange at one end thereon, a second shell member having a closed top and an open bottom in telescoping slidable engagement with the open-ended shell member, lamp means downwardly projecting from the closed top within the interior of said second shell member, means to mount

the open-ended shell member within a ceiling, face trim means resiliently coupled to said open-ended shell member and masking the lower periphery thereof, and means to lock said shell members together so that the spacing of said lamp means from the flange of the open-ended shell is adjustable whereby the overall depth of the fixture can be varied.

3,316,400

RAILROAD CAR TRACK LOADING SYSTEM
Thomas J. Dosch, Huntington, and William V. Flushing, Stony Brook, N.Y., assignors, by mesne assignments, to Dynamics Corporation of America, New York, N.Y., a corporation of New York

Filed Apr. 10, 1961, Ser. No. 102,046
26 Claims. (Cl. 246—182)

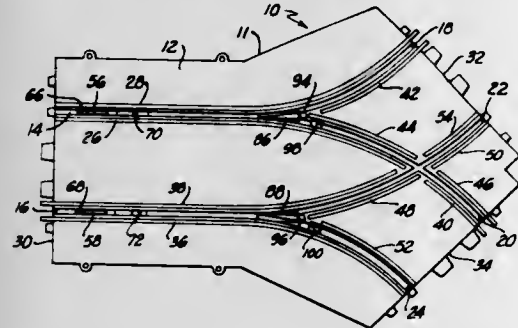


1. A system for determining the distance a vehicle must go from a fixed point along a predetermined path to a variable destination within a vehicle storage section further along said path, comprising in combination a memory device for storing information relating to the length of the unoccupied space within said storage section, means for correcting said information during a predetermined time interval as a vehicle approaches said fixed point, means for detecting motion of any vehicle within said storage section during said predetermined time interval, and means for responding to the detection of said motion for precluding correction of the information stored by said memory device during said predetermined time interval.

3,316,401

ROAD RACE TRACK SWITCH
Al L. Cramer, Garden Grove, Calif., assignor to Eldon Industries, Inc., Hawthorne, Calif., a corporation of California

Filed June 1, 1964, Ser. No. 371,647
5 Claims. (Cl. 246—415)



1. A switch track section for use with model road race cars, said switch track section having a generally planar top surface adapted for the support of a road race car and having guide groove means depressed below said surface adapted for the guidance of a model road race car: said guide groove means comprising an entry guide groove and first and second diverging guide grooves adapted to selectively guide a road race car in first or second directions, said entry guide groove and said diverging guide grooves meeting at a juncture;

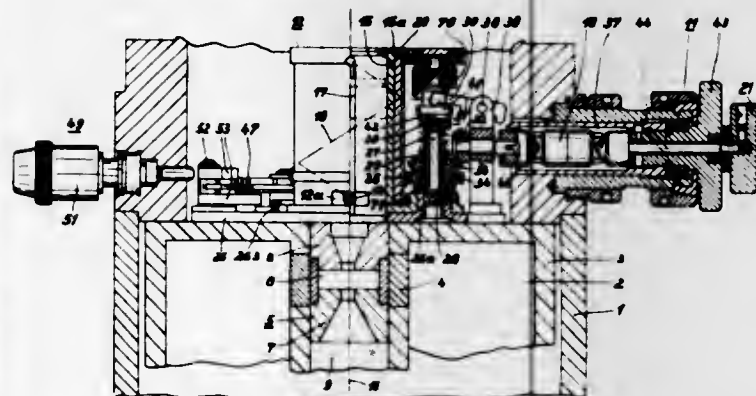
a switch blade movably mounted at said juncture so as to be adapted to selectively guide a road race car from said entry groove to said first diverging groove, and from said entry groove to said second diverging groove;
a dog extending into said entry groove, said dog being adapted to be selectively actuated by a road race car traveling therepast, said dog being connected to said switch blade to move said switch blade; and
a ramp positioned within said entry groove adjacent said dog, said ramp being arranged to selectively act upon a road race car being guided by said entry groove so that it selectively engages said dog.

3,316,402

ARRANGEMENT FOR EXCHANGING POLE PIECE SYSTEMS IN CORPUSCULAR RADIATION APPARATUS

Horst Schmidt, Willi Schomburg, Hans-Joachim Kemplen, and Karl-Heinz Herrmann, all of Berlin, Germany, assignors to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany

Filed Jan. 20, 1964, Ser. No. 338,964
Claims priority, application Germany, Feb. 15, 1963, S 83,762
20 Claims. (Cl. 250—49.5)



1. In an arrangement for use in a corpuscular ray device, in particular an electron microscope, for the insertion of a pole shoe system or parts thereof into the bore of that portion, which produces the magnetic flux, of a magnetic pole shoe lens laterally surrounding an inserted pole shoe system, and the removal of such system or parts thereof from such bore, the combination of control means for imparting a longitudinal motion in the direction of the radiation axis to such a pole piece system or parts thereof, control means for imparting to such pole piece system or parts thereof, when removed from the bore, a rotary angular motion transverse to the radiation axis, and drive means for said control means operative to actuate said first-mentioned control means for respectively effecting insertion of the pole piece system or parts thereof into the bore of said pole piece lens and removal therefrom, and to actuate said second mentioned control means for respectively effecting movement of the pole piece system or parts thereof away from and towards the radiation axis, following removal thereof from the bore of said pole piece lens.

3,316,403

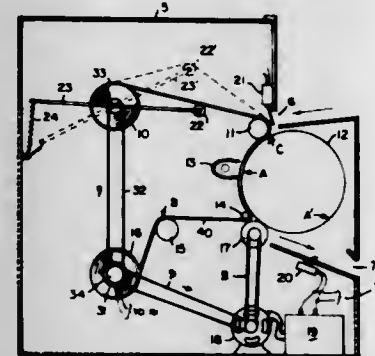
THERMOGRAPHIC COPYING APPARATUS WITH MEANS TO REVERSE THE MOVEMENT OF A CONTINUOUS TRANSFER SHEET

Robert B. Russell, Newton, Mass., and Gerard A. Vitu, Evanston, Ill.; said Vitu assignor, by mesne assignments, to Robert B. Russell, Boston, Mass.

Filed Oct. 26, 1964, Ser. No. 406,319
4 Claims. (Cl. 250—65)

1. In a thermographic copying apparatus having transport means for moving a continuous transfer sheet under tension from a supply roll past a printing station to a take-

up roll, inlet means for placing a copy sheet and an indicia-bearing original adjacent said transfer sheet at said printing station, a light source adapted to direct high intensity light onto said printing station and cause said copy sheet to be imaged by said transfer sheet according to the pattern on said indicia-bearing original and outlet means adapted to remove said copy sheet and said original after said transfer sheet has advanced with said copy sheet



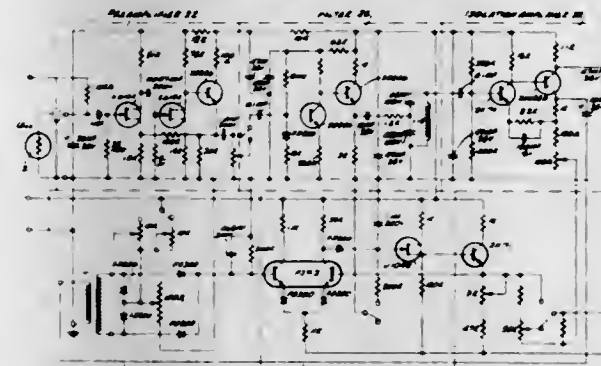
and indicia-bearing original past said printing station, the improvement for decreasing the amount of said transfer sheet consumed per copy comprising reversing means adapted to reverse the movement of said transfer sheet past said printing station during the interval between the removal of said imaged copy sheet and the next printing action, the amount of said reversal being no greater than that required to return said transfer sheet to its original position.

3,316,404

INFRARED DETECTING SYSTEM HAVING A MEMORY CIRCUIT UTILIZING A DIFFERENTIAL AMPLIFIER

Philip M. Cruse, Santa Barbara, Calif., assignor to Santa Barbara Research Center, Goleta, Calif., a corporation of California

Filed June 1, 1964, Ser. No. 371,648
5 Claims. (Cl. 250—83.3)



1. A memory circuit which comprises an infrared detector cell; a preamplifier circuit coupled to said cell for receiving the output of the cell and linearly amplifying, and chopping the output of said cell; a filter circuit coupled to said preamplifier circuit for amplifying and filtering the output of the amplifier circuit at the chopped frequency; an isolation amplifier circuit coupled to said filter circuit for isolating the filter circuit and operably providing sufficient dynamic range; and a peak detector circuit coupled to said isolation amplifier circuit for generating rectified input carrier signals; a transistorized differential amplifier for receiving an input carrier signal voltage, a diode coupled to the differential amplifier for passage through the diode of an amplified input signal voltage, a capacitor coupled to the diode for charging the capacitor to a voltage substantially equal to the input signal voltage, a field effect transistor coupled to the diode and the capacitor so that the capacitor is substantially prevented from discharging back through the diode and through the field effect transistor so that the circuit serves

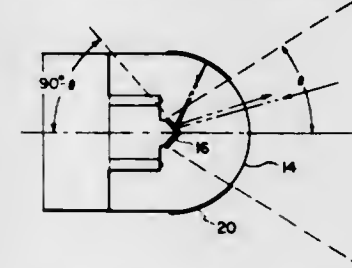
as a voltage memory for the input signal voltage, and a feedback conductor coupled to the field effect transistor and to the differential amplifier to feed an output voltage from the field effect transistor to the differential amplifier so that when the feedback voltage equals the input signal voltage the differential amplifier is balanced and passage of amplified input signal voltage through the diode is cut off so that the voltage memorized by the circuit can be monitored substantially without discharging the charged capacitor.

3,316,405

MEANS OF INCREASING THE EMISSIVITY OF A SOURCE WITH A REFLECTING Emitter ELEMENT

Robert W. Asthelmer, Westport, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware

Filed Sept. 11, 1964, Ser. No. 395,762
6 Claims. (Cl. 250—85)



1. A means of increasing the emissivity of an infrared source comprising

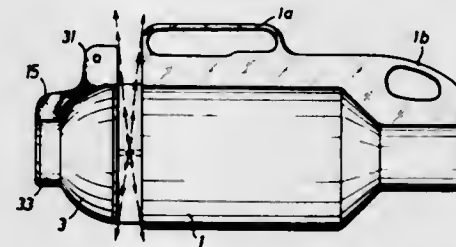
- (a) a lamp source having a reflecting emitter enclosed by a hemispherical lamp envelope,
- (b) said reflecting emitter being located at the center of curvature of said envelope,
- (c) said envelope having a radiation transmitting area surrounded by a specularly reflecting surface on said envelope with the areas of said specularly reflecting surface being large with respect to the area of said emitter.

3,316,406

GAMMA RAY GUN HAVING A TWO-PART SHIELD PROVIDING A DISC-SHAPED EXPOSURE GAP

Kurt Sauerwein, Harffstrasse 148, Dusseldorf, Germany, and Hans Goedecke, Hochdahl, Germany; said Goedecke assignor to said Sauerwein

Filed Oct. 28, 1963, Ser. No. 319,444
Claims priority, application Germany, Oct. 30, 1962, S 82,245
15 Claims. (Cl. 250—106)



1. A gamma ray gun for use in testing workpieces, said gun comprising a protective shield of material which absorbs ionizing radiation and which surrounds a capsule for containing a source of gamma rays, the shield being in two parts separated by a substantial plane of division lying across the end of the casing with one of the parts fixed in the casing and the second part connected to the casing so that it can be moved in the axial direction of the casing away from and towards the first part of the shield between abutments which limit its movement; a cylindrical sleeve which is mounted coaxially in the casing and which is movable in the axial direction against the action of a spring upon the application of fluid under

pressure to a chamber within the casing, the sleeve being surrounded by a thrust piece which it carries with it in both directions of movement and which is connected to the second part of the protective shield so that when the sleeve is moved by the fluid pressure the second part of the shield is moved away from the first part to produce a disc shaped gap; and a push rod which is moved coaxially within the sleeve and within a central bore in the first part of the shield against the action of a second spring when the fluid is supplied to the chamber under a greater pressure than that required to move the sleeve against the first spring, to move a capsule which is detachably mounted at the end of the push rod out of the bore in the first part of the shield and into a position in which the capsule is situated in the gap between the two parts of the protective shield.

3,316,407

AQUEOUS METAL IODIDE SOLUTION FOR USE AS AN X-RAY CONTRAST AGENT

Wataru Ichikawa, Yokohama, Japan, assignor to Asahi Glass Co., Ltd., Tokyo, Japan, a corporation of Japan
No Drawing. Filed Sept. 30, 1963, Ser. No. 312,299
Claims priority, application Japan, Nov. 2, 1962, 37/49,282

12 Claims. (Cl. 250—108)

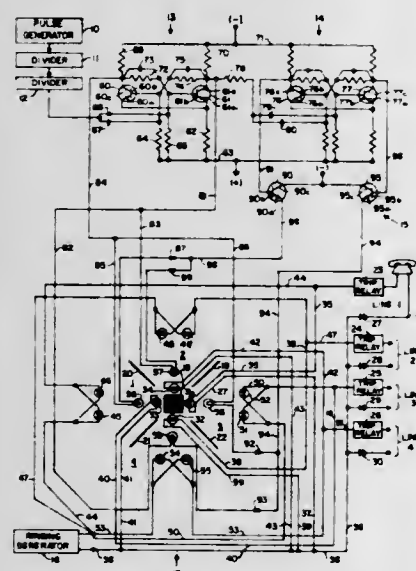
3. In carrying out a non-destructive test by irradiating a material to be tested with penetrating radiation; the steps of masking the material to be tested by a deformable bag-like receptacle containing an aqueous metal iodide solution having masking power for the penetrating radiation approximately similar to that of the material to be tested, the metal iodide being selected from the group consisting of aqueous solutions of:

- (a) zinc iodide,
- (b) cadmium iodide,
- (c) iodides of zinc and alkali metal,
- (d) iodides of zinc and alkaline earth metal,
- (e) iodides of cadmium and alkali metal, and
- (f) iodides of cadmium and alkaline earth metal.

3,316,408

LIGHT ENERGIZED INTERRUPTER CIRCUIT FOR TELEPHONE SYSTEMS

Stephen L. Merkel, Bay Village, Ohio, assignor to Lorain Products Corporation, a corporation of Ohio
Filed Mar. 23, 1964, Ser. No. 353,945
7 Claims. (Cl. 250—208)



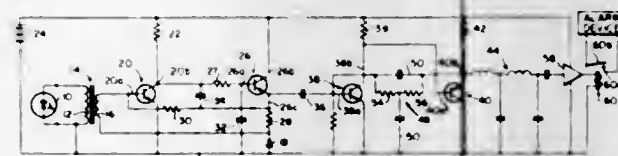
1. In a device for severally and selectively energizing a plurality of loads and auxiliary circuits, a plurality of plate-like baffles arranged radially about an axis and displaced from said axis, each pair of plate-like baffles defining a sector, a central baffle disposed along said axis,

the surface of said central baffle being disposed in spaced relationship with respect to said plate-like baffles, a plurality of selectively, severally energized lamps, at least one of said lamps being located in each of said sectors and substantially equidistant from adjacent plate-like baffles, first light sensitive element means for energizing a plurality of auxiliary circuits, at least one of said first light sensitive elements being located in each sector and at a lesser distance than said sector lamp from said axis whereby any sector lamp which is energized illuminates first light sensitive element means in the sector of the energized lamp and in adjacent sectors, second light sensitive element means for energizing a plurality of loads, at least one of said second light sensitive element means being located in each sector and at a greater distance than said sector lamp from said axis whereby each of said second light sensitive elements can be illuminated only by the sector lamp located in the same sector.

3,316,409

RADIATION SENSITIVE SURVEILLANCE FLAME DETECTOR WITH REDUCED EXTRANEOUS PICKUP

Charles F. Rockwell, Sherborn, Mass., assignor to Fenwall, Incorporated, Ashland, Mass., a corporation of Massachusetts
Filed Apr. 17, 1963, Ser. No. 273,689
7 Claims. (Cl. 250—214)



5. A surveillance flame detector comprising in combination, a silicon solar cell responsive to radiation from the flame to be detected, an alternating voltage amplifier having input terminals and output terminals, a transformer having a primary and a secondary winding, the primary winding of said transformer being connected to said cell and the secondary winding being connected to the input terminals of said amplifier, said amplifier including a first transistor connected as an amplifier having an input terminal and a common terminal connected to said amplifier input terminals and an output terminal, a second transistor connected as an emitter follower having an input terminal, an output terminal and a common terminal, means connecting the output terminal and common terminal of said first transistor to the input terminal and common terminal of said emitter follower, and means connecting the emitter terminal of said emitter follower to the input terminal of said first transistor, to thereby provide negative feedback around said first transistor and reduce its input impedance, an actuating device and means connecting said actuating device to the output terminal and common terminal of said emitter follower, whereby the signal from said cell energizes said device.

3,316,410

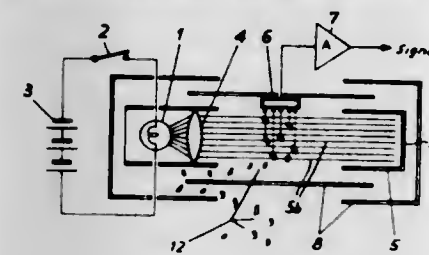
APPARATUS FOR DETECTING THE PRESENCE OF AEROSOLS AND THE LIKE IN AIR

Ernst Meili, Kusnacht, and Thomas Lampart, Mannedorf, Switzerland, assignors to Cerberus A.G., Mannedorf, Switzerland, a corporation of Switzerland
Filed July 12, 1965, Ser. No. 471,317
Claims priority, application Switzerland, July 14, 1964, 9,233/64

12 Claims. (Cl. 250—218)

1. In an apparatus for determining the presence of aerosols in air, the combination of: a light source for emitting a beam of light rays, a light sensitive element ar-

ranged outside of the beam of light rays emitted by said light source for measuring the scattered light produced by

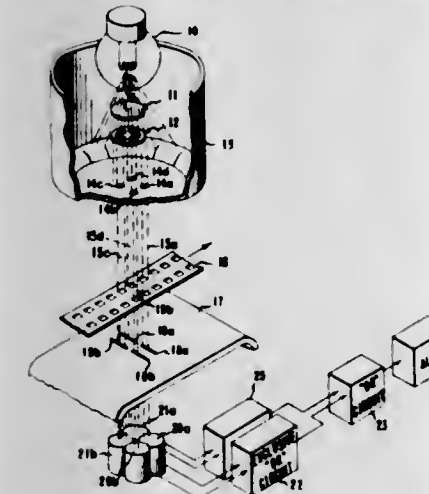


the aerosols, and switch means for intermittently illuminating said light source for short periods of time.

3,316,411

PERFORATION DETECTOR FOR CONTINUOUS WEBS

James Stephens Linderman, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed June 18, 1963, Ser. No. 288,766
4 Claims. (Cl. 250—219)



3. A device for determining the presence and relative longitudinal variation of each one of desired, multiple, uniformly-spaced, aligned perforations along a continuously moving film perforated in two tracks, one track along each edge of said film, and the absence of undesired perforations, which device comprises means for directing a pair of collimated light beams along each perforation track of said film, a pair of narrow parallel slits located beneath each track on the opposite side of said film, a pair of light detectors beneath each pair of slits which receive the light transmitted through said perforations and slits and deliver separate electrical impulses upon detection of said light, the members of said pairs being spaced along said tracks at a multiple of the perforation spacing to provide simultaneous light reception by said light detectors, separate sensing means for each pair of detectors for sensing the non-coincidence and variation between said impulses and delivering an electrical output responsive thereto, and alarm means responsive to said electrical output transmitted from said sensing means.

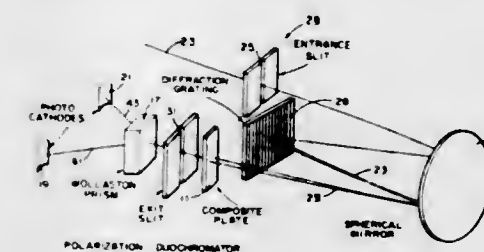
3,316,412

SINGLE FIELD POLARIZING SPECTROPHOTOMETER FOR MEASURING MASS MOTION IN A PLASMA

Joseph G. Hirschberg, Princeton, N.J., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed June 9, 1964, Ser. No. 373,895
1 Claim. (Cl. 250—226)

Apparatus for measuring the wavelength shift in an unpolarized beam of light having a narrow range of wavelengths, comprising monochromator means having a col-

limator, a grating and an exit slit for supplying and transmitting a narrow wavelength portion of said beam through said exit slit, a first refracting prism in front of said exit slit for splitting said portion into equal perpendicularly polarized rays and transmitting said polarized rays simultaneously through said exit slit, a second

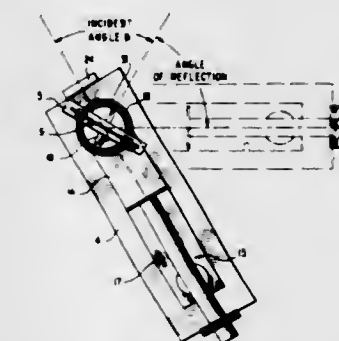


refracting prism for separating said polarized rays and transmitting them, and separate photosensitive means for receiving said separated polarized rays for producing an electrical signal corresponding to the amplitude of said separated polarized rays after determining the wavelength shift in said unpolarized beam independently of intensity fluctuations in said unpolarized beam.

3,316,413

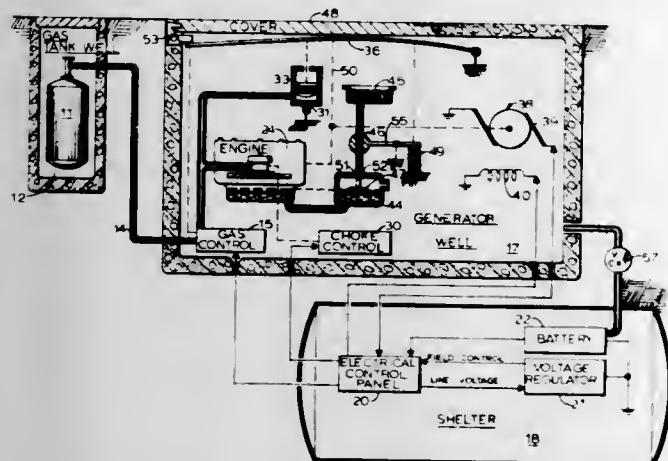
RADIATION SENSITIVE INSTRUMENT FOR DETERMINING THE SOLAR OPTICAL PROPERTIES OF LIGHT TRANSMITTING MATERIALS

John I. Yellott, Phoenix, Ariz., assignor to John Yellott Engineering Associates, Inc., Phoenix, Ariz.
Filed Oct. 10, 1963, Ser. No. 315,269
7 Claims. (Cl. 250—234)



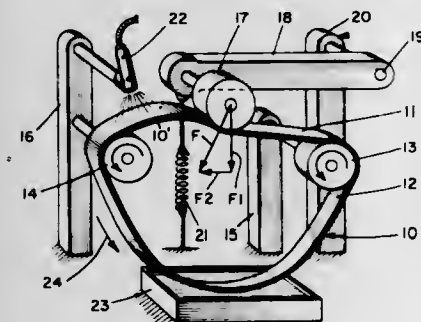
6. An instrument of the character described for measuring the solar optical properties of light-transmitting materials comprising, a manually adjustable sun-following mount having a base, a holder adapted to carry a sample of the material to be measured, a shaft journaled in said base, said holder being connected to one end of said shaft, adjustment means connected to the opposite end of said shaft, whereby upon actuation of said adjustment means the shaft is rotated to thereby turn the holder relative to the base, a bearing secured to the base in concentric relationship with said shaft, an arm positioned above said base, one end of said arm being journaled on said bearing, and pyrheliometer means comprising a device sensitive to solar radiation for measuring the transmittance and reflectance of a sample in the holder secured to the opposite end of said arm, whereby the transmittance of the sample at a selected incident angle can be measured when the arm and associated pyrheliometer are aligned with the base, and the reflectance of the sample can be measured by swinging the arm to the angle of reflectance without disturbing the angular relation between the sample and the incoming solar rays.

3,316,414
ELECTRICAL POWER SYSTEM FOR A CIVIL DEFENSE SHELTER
 John L. Bower, 501 24th St., Santa Monica, Calif. 90402
 Filed Aug. 5, 1963, Ser. No. 299,726
 7 Claims. (Cl. 290-1)



1. In an electrical power system for providing power to a civil defense shelter, a bombproof compartment, said compartment having a cover thereon providing access to the atmosphere, an engine-generator installed in said compartment, a fuel supply for said engine-generator, and control means located in said shelter for controlling said generator, said control means including means for providing a mechanical actuation in response to the pressure of said fuel supply when said engine is energized, said mechanical actuation being utilized to open said cover and to facilitate the starting of said engine.

3,316,415
SOLID MEDIUM THERMAL ENGINES
 John E. Taylor, 10644 Blythe Ave., Los Angeles, Calif. 90064
 Filed July 1, 1965, Ser. No. 470,340
 23 Claims. (Cl. 290-1)

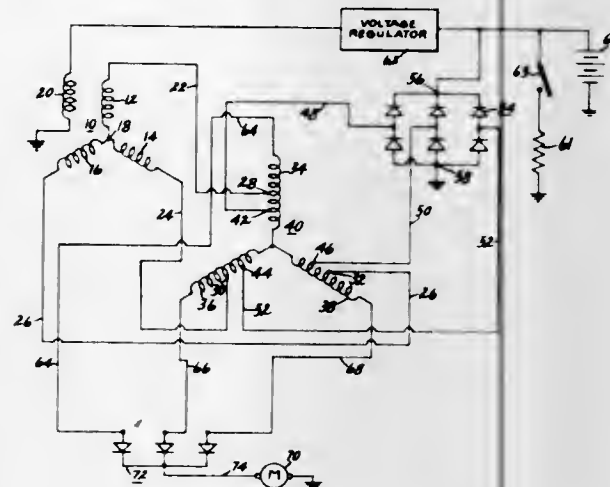


1. A solid medium thermal engine including: an elongated continuous band of bi-metallic material defining a closed loop designed such that a portion distorts in response to a temperature change relative to remaining portions; and mounting means for said material such that a temperature change in said portion of said material results in a distortion of said material in a manner to generate a reaction force on said mounting means and result in relative rotation between said entire closed loop and said mounting means.

3,316,416
VEHICLE ELECTRICAL SYSTEM
 Richard A. Carlson, Pontiac, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
 Filed Oct. 23, 1963, Ser. No. 318,206
 4 Claims. (Cl. 307-17)

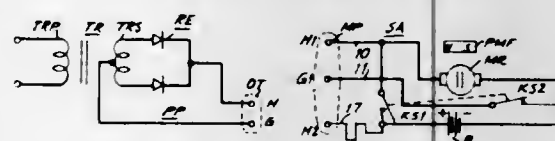
1. An electrical system for a motor vehicle comprising an alternating current generator having a three phase

output winding and a field winding, a three phase autotransformer, means connecting the input terminals of said autotransformer with said three phase output winding of said generator, a three phase low voltage output circuit connected with said autotransformer, a three phase higher voltage output circuit connected with said autotransformer, a three phase full wave bridge rectifier connected



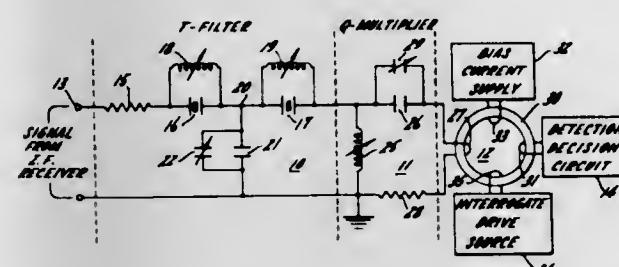
with said three phase low voltage output circuit, a battery connected with the output terminals of said bridge rectifier, a rectifier network connected with said higher voltage output circuit, an electrical load energized by said rectifier network, and means connecting the field winding of said generator with the output terminals of said bridge rectifier including voltage regulating means.

3,316,417
ELECTRICAL POWER AND CONTROL MECHANISM FOR ELECTRICAL APPLIANCES
 Robert James Tolmie, Fairfield, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
 Original application Jan. 29, 1962, Ser. No. 169,685, now Patent No. 3,200,319, dated Aug. 10, 1965. Divided and this application Feb. 18, 1965, Ser. No. 433,708
 12 Claims. (Cl. 307-66)



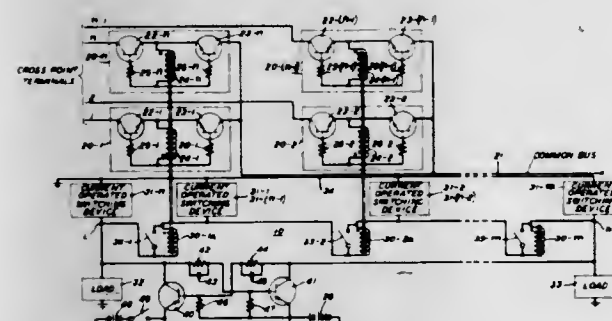
1. Electrical power and control mechanism for an electrical appliance comprising:
 (a) a driving motor;
 (b) a rechargeable battery;
 (c) a power pack having two input terminals and a positive and a negative output terminal, said power pack being adapted, when connected by its input terminals to an alternating source of power, for providing unidirectional power at said output terminals;
 (d) a prong receiving outlet for mounting said output terminals;
 (e) a male plug having prongs disposed such that said plug may be accommodated in two positions by said outlet;
 (f) means for selectively connecting the unidirectional power to said motor through said prongs, when said plug is in a first position, for energizing said motor, said means further selectively connecting the unidirectional power to said battery through said prongs, when said plug is in a second position, for charging of said battery, said means still further selectively connecting said motor to said battery irrespective of the disposition of said plug and outlet, for energization of said motor.

3,316,418
ALL PASSIVE FREQUENCY DETECTION CHANNEL
 Irving I. Kaplan, Baltimore, and Ralph J. Metz, Ellicott City, Md., and Richard H. Tuznik, Winter Park, Fla., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
 Filed May 9, 1963, Ser. No. 279,674
 4 Claims. (Cl. 307-88)



1. An all-passive frequency detection channel for radar receivers comprising:
 a filter adapted to be coupled to receive intermediate frequency carrier signals, said filter having all passive elements therein;
 a storage integrator core for being set to a residual state by frequency signals;
 a Q-multiplier network coupled in parallel to said filter and coupled in parallel to said storage integrator core by an inductive winding, said network including a variable inductance in parallel with said inductive winding coupling on said storage integrator core and with the coupling to said filter, one leg of said parallel coupling including a serially coupled capacitor with a trimmer capacitor in parallel therewith, and the other leg of said parallel coupling including a resistor to conduct intermediate frequency signals to said storage integrator core for setting same to said one residual state, said Q-multiplier network having all passive elements therein and tuned to said intermediate frequency; and
 an interrogation circuit inductively coupled to said storage integrator core to produce sampling pulses of low frequency below said intermediate frequency for read-out and destruction of the residual state of said core whereby said Q-multiplier decouples said filter from said storage integrator core during the application of said sampling pulses.

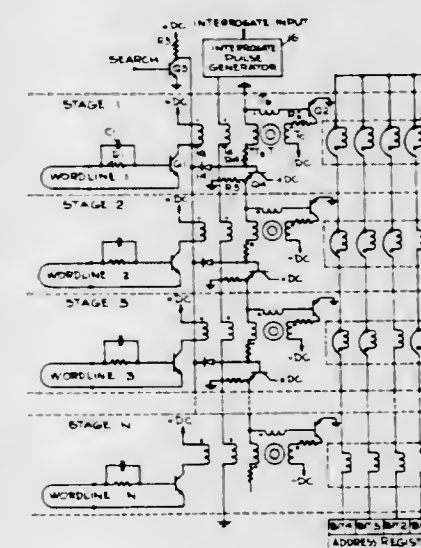
3,316,419
MAGNETIC CORE COMMUTATOR
 Cecil H. Coker, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
 Filed Sept. 26, 1962, Ser. No. 226,379
 6 Claims. (Cl. 307-88)



1. A pulse generator system comprising, in combination, a plurality of sections each including a core of magnetic material, an input winding and a number of output windings in circuit relation with each one of said cores,

said input windings of said sections being connected in cascade, and a number of current responsive switching elements shunting said sections, means for propagating a signal through the cascaded input windings of said sections, means responsive to the arrival of said signal at the last of said sections for initiating a signal for propagation in the reverse direction through the input windings of said sections, a plurality of gate circuits, and means associated with each one of said gate circuits for actuating it independently of all other of said gates, said means including one of the output windings associated with a selected one of said cores.

3,316,420
SELECTION DEVICE
 Ralph J. Koerner, Los Angeles, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
 Filed Aug. 30, 1963, Ser. No. 305,754
 12 Claims. (Cl. 307-88)

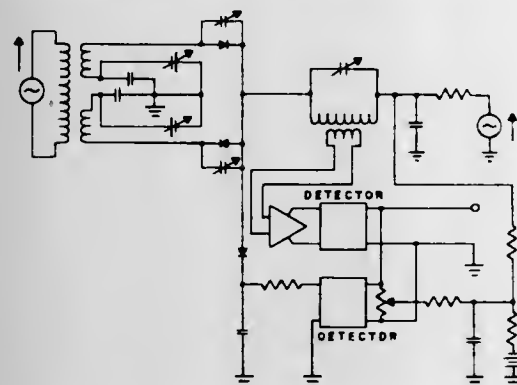


1. For use with a plurality of binary elements, respectively arbitrarily numbered 1, 2, 3, . . . N, each of which is able to independently assume either a first or second state, selection means for selecting the lowest numbered binary element in said first state comprising:
 means for coupling a signal to all of said binary elements tending to switch said binary elements to said second state; and
 means responsive to the initiation of switching to said second state in any one of said binary elements for inhibiting switching to said second state in all higher numbered binary elements.

3,316,421
LOW FREQUENCY REACTANCE AMPLIFIER INCLUDING BOTH UP-CONVERSION AND NEGATIVE RESISTANCE AMPLIFICATION WITH GAIN CONTROL
 James R. Biard, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
 Continuation of application Ser. No. 8,013, Feb. 11, 1960. This application May 21, 1965, Ser. No. 457,776
 13 Claims. (Cl. 307-88.3)

1. In an amplifier, a pair of non-linear capacitance elements connected in a bridge, driving means for driving both of said elements at a constant angular velocity through regions of capacitance non-linearity, the elements being effective to produce fundamental and second harmonic components of time-varying capacitance, an input terminal for receiving signals to be amplified by said amplifier, resonance means tunable to frequencies corresponding to said constant angular velocity plus and

minus the frequencies of input signals applied to said input terminal, means including said resonance means responsive to the interaction of the fundamental component of said time-varying capacitance with said input signal for developing in said resonance means an ampli-



fied replica of said input signal, and means including said resonance means responsive to the interaction of the second harmonic of said time-varying capacitance with said amplified replica of said input signal for further amplifying the replica of said input signal.

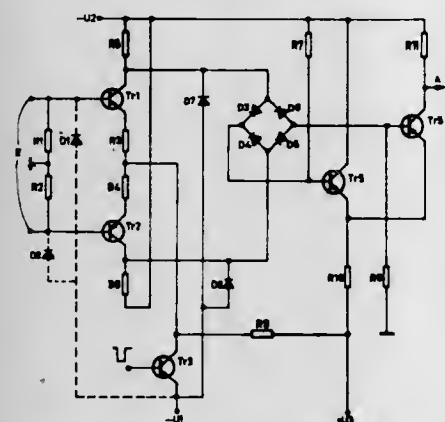
3,316,422

AMPLIFIER FOR READING MATRIX STORER
Hartwig Rogge, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany

Filed Apr. 12, 1961, Ser. No. 102,457

Claims priority, application Germany, Apr. 27, 1960, S 68,246

8 Claims. (Cl. 307-88.5)



1. A two-stage amplifier for reading a matrix storer, comprising a first stage which is constructed as a differential amplifier, line means for conducting to said first stage pulses which are to be amplified, means for causing said first stage to become briefly conductive only for the duration of a pulse which is to be amplified, a second stage for receiving pulses passed by said first stage and for amplifying such pulses, and means forming a bridge circuit comprising rectifiers disposed between said first and said second stage for improving the signal-interference-ratio.

3,316,423

AMPLIFYING APPARATUS PROVIDING TWO OUTPUT STATES

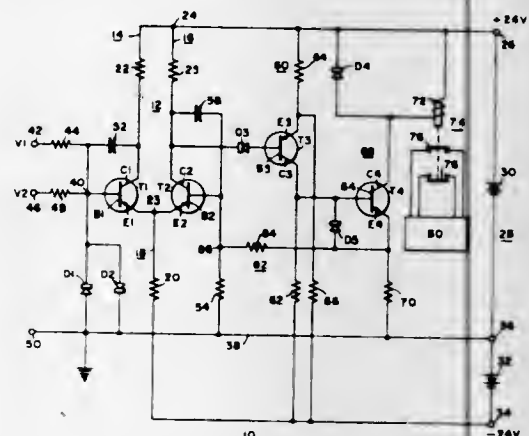
Robert E. Hull, Amherst, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 2, 1964, Ser. No. 379,983

8 Claims. (Cl. 307-88.5)

1. Apparatus for selectively providing either of two output states, said apparatus comprising first, second and third electric valves each having a power path, an input circuit and an output circuit, first and second parallel connected circuits, each including in series the power path of

a different one of said first and second valves, a constant current path connected in series with said parallel arrangement, means including said constant current path for driving said first and second valves in inverse relation in response to input signals having at least certain minimum requirements applied to the control electrode of the first valve, circuit means coupling the output circuit of said second valve to the input circuit of the third valve whereby the third valve is operated in higher and lower conduction modes in response to said second valve being in a par-



ticular one and the other of higher and lower conduction modes, respectively, load means connected in the output circuit of the third valve and operable in first and second modes in response to said third valve being in its higher and lower conduction modes, respectively, and means for accelerating the drive of the third valve to its higher conduction mode and latching said apparatus in the output state wherein said load is operated in its said first mode, the last said means comprising a positive feedback circuit coupled between the output circuit of the third valve and the control electrode of the second valve.

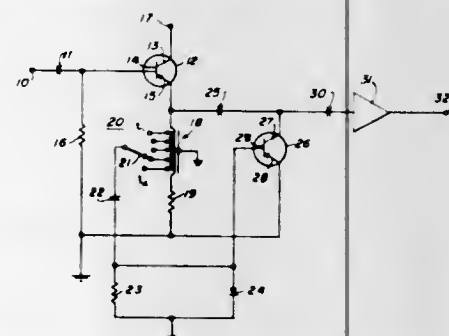
3,316,424

PULSE WIDTH SHAPER

Bernarr H. Humpherys, 719 N. Goldenrod Ave., Escondido, Calif. 92025

Filed July 20, 1964, Ser. No. 384,009

6 Claims. (Cl. 307-88.5)



1. A pulse shaping circuit adapted to receive an input pulse of variable duration and produce a constant width output pulse in response thereto comprising, an input terminal for receiving said input pulse, delay means having an input and at least one output and adapted to produce signals at its output commensurate with signals at its input delayed in time by some fixed period, a transistor having a collector, an emitter and a base, a capacitor connected between said delay means input and said collector, means for supplying signals at said input terminal to said delay means input, differentiating means connected to said delay means output and arranged to produce differentiated output signals commensurate with any signals at said delay means output,

said base of said transistor being connected to receive said differentiated output signals from said differentiating means, said emitter being connected to ground, an output terminal, means for supplying signals at said collector to said output terminal, whereby pulses are produced at said output terminal which have widths substantially equal to said delay period of said delay means in response to receipt of a pulse at said input.

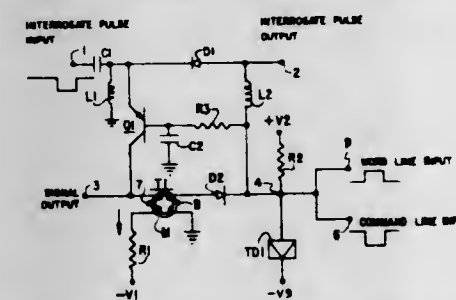
3,316,425

OUTPUT DETECTOR AND SCANNER

Charles W. Lundberg, St. Paul, and Francis J. Belcourt, Shakopee, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed July 24, 1964, Ser. No. 384,865

15 Claims. (Cl. 307-88.5)



1. Signal branching gate structure comprising:

- a first input terminal and first and second output terminals;
- a semiconductor diode with one electrode connected to said first input terminal and the other electrode connected to said first output terminal with said other electrode being responsive to either a first biasing potential or a second biasing potential for respectively inhibiting or permitting conduction through said diode;
- a three-electrode semiconductor switch element connected by two of its electrodes between said first input terminal and said second output terminal, with said switch element having a control electrode responsive to either said first biasing potential or said second biasing potential for respectively permitting or inhibiting conduction through said switch element;
- a series circuit for selectively providing said first or said second biasing potential said series circuit including a bistable tunnel diode; and
- a first D.C. connection between said control electrode and a point intermediate said series circuit; a second D.C. connection between said diode other electrode and a point intermediate said series circuit, and a first control input terminal connected to said series circuit which is adapted to receive a signal for selectively placing said tunnel diode into at least one of its stable conducting states.

3,316,426

COUNTER WITH INTERSTAGE COUPLING-CIRCUIT AND GATE COOPERATING TO MOMENTARILY DISCONNECT COUNTER-STAGE SUPPLY TO EFFECT COUNTING

Issel Imahashi, Nagano-ken, Japan, assignor to Kabushiki Kaisha Suwa Seisakusha

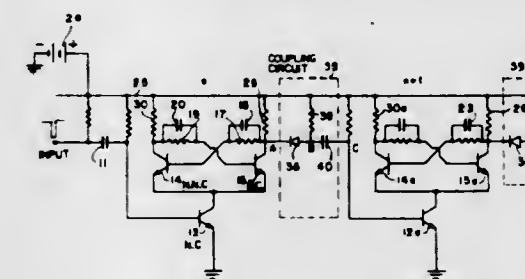
Filed Apr. 27, 1965, Ser. No. 451,132

Claims priority, application Japan, May 4, 1964, 39/25,082

10 Claims. (Cl. 307-88.5)

1. A system having at least two flip-flop circuits connected in a chain comprising each of said flip-flop circuits including a pair of cross-connected transistors switchable between two stable

states in which one of said transistors is rendered conductive when the other is non-conductive and vice versa, triggering means for each of said flip-flop circuits having applied thereto a triggering signal for rendering the conductive one of said transistors non-conductive and for maintaining non-conductive the non-conductive one of said transistors whereby upon termination of said triggering pulse the previously non-conductive transistor is rendered conductive for switching the stable state of said cross-connected transistors,



connecting means coupled between one of said transistors of each flip-flop circuit and said triggering means of the next succeeding flip-flop in the chain including diode means which is rendered conductive when said flip-flop switches to one of its two stable states and is rendered non-conductive when said flip-flop switches to the other of its stable states, each said connecting means including capacitor means connected between said diode means and said triggering means, and source means for producing a charging current for flow through said capacitor means when said diode means is rendered non-conductive whereby when said diode means is rendered conductive a triggering signal is applied to said triggering transistor of the next succeeding flip-flop.

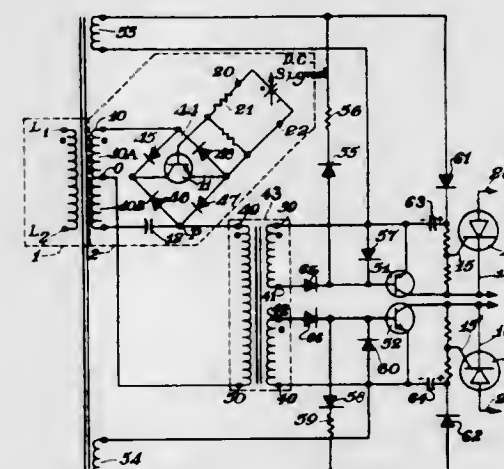
3,316,427

PHASE SHIFT GATE DRIVE CIRCUIT

Nicholas G. Muskovac, Williamstown, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts

Original application Nov. 19, 1963, Ser. No. 324,626, now Patent No. 3,304,438, dated Feb. 14, 1967. Divided and this application June 10, 1966, Ser. No. 556,696

5 Claims. (Cl. 307-88.5)



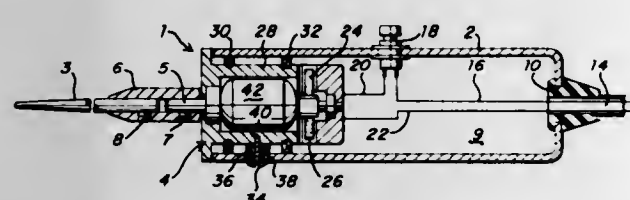
1. An electrical apparatus including in combination a phase shifting means for producing an output voltage variable in phase relationship to an applied alternating voltage and connectible to a pair of controlled rectifiers for applying firing signals thereto; said phase shifting means including a first and second branch circuit in parallel connection; said first branch circuit including a pair

of impedances having a first output terminal therebetween, said second branch circuit including a capacitor and a bridge of rectification have a second output terminal therebetween, said bridge having two parallel branches and a transistor connected therebetween; signal means connected to said transistor to vary the relative conductance thereof and deliver an alternating output of said phase shifting means variable in phase relationship to the applied voltage; amplifying means; and means coupling said first and second output terminals to said amplifying means; said amplifying means being connectible to said pair of controlled rectifiers for applying amplified firing signals in the alternate positive waves of alternating current whereby the time of application of the respective firing signals may be varied with respect to initial application of the respective positive half-cycles of said alternating voltage.

3,316,428

PORTABLE ROLL PICKER

Edward E. Hart, Springfield, Ohio, assignor to Globe Industries, Inc., Dayton, Ohio, a corporation of Ohio
Continuation of application Ser. No. 315,630, Oct. 11, 1963. This application Oct. 31, 1966, Ser. No. 591,030
2 Claims. (Cl. 310—51)



1. A portable battery operated roll picker comprising, in combination:

- a hollow elongated housing open on one end thereof adapted to be hand held,
- a high speed electric motor operating at a speed of at least 10,000 r.p.m. mounted coaxially at the open end of said housing, and having an output shaft protruding from said open end of said housing,
- an elongated spindle member mounted to the motor output shaft and extending coaxially with said housing, said spindle member having a first mode resonant frequency substantially within the range of the no load motor speed and when driven above said resonant frequency serves to strip lint from textile machinery rolls, and
- elastic vibrating damping mounting means encircling said motor for holding and retaining said motor-spindle assembly with respect to said housing in spaced relationship therefrom to provide the sole support therefor and permitting restricted relative movement of the motor with respect to the housing at or near the resonant frequency of the spindle member while preventing physical contact of the motor with said housing and damping out motor and spindle vibration sufficiently to enable the motor to run through the critical speed.

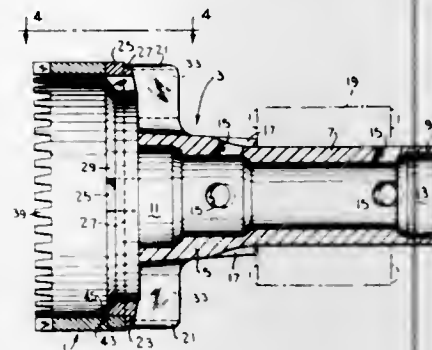
3,316,429

INDUCTOR DRUM AND SUPPORTING CONSTRUCTION FOR ELECTROMAGNETIC MACHINES

Ralph L. Jaeschke, Kenosha, Wis., assignor to Eaton Yale & Towne Inc., a corporation of Ohio
Filed Feb. 3, 1964, Ser. No. 341,987
9 Claims. (Cl. 310—93)

1. An integral drum and supporting quill assembly for electromagnetic machines comprising a drum formed of iron and spacedly notched around one margin thereof, a quill formed of aluminum which is cast against said margin of the drum to form a continuous ring abutment

with said margin and to form lock and key connections between the notches and cast material which extends from said continuous ring into the notches, and circular segmental portions extending from said continuous ring

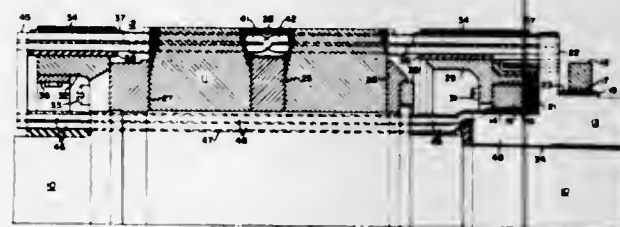


axially into the inside of said margin, said quill being formed with a hub portion and groups of spokes, each group extending therefrom to a part of the ring portion from which one of said segmental portions extends.

3,316,430

DIRECT CURRENT DYNAMOELECTRIC MACHINE

John J. Riley, Lockport, N.Y., John W. Erickson, Los Angeles, Calif., and William R. Harding, Blacksburg, Va., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 6, 1963, Ser. No. 321,833
2 Claims. (Cl. 310—204)



1. In a dynamoelectric machine, an armature member having a shaft, an armature core disposed on the shaft and having generally longitudinal peripheral slots, a commutator on the shaft adjacent the armature core, a plurality of armature coils disposed in said slots, each coil having one coil side lying in a slot and connected to a bar of said commutator and having another coil side lying in a different slot and connected to a commutator bar spaced from the first-mentioned bar by one intervening bar, and a tap conductor extending between the intervening commutator bar and the midpoint of the coil at the end of the armature core opposite to the commutator, said shaft having slots therein and said tap conductors being disposed in the slots of the shaft, each shaft slot containing two tap conductors connected so that they carry currents flowing in opposite directions.

3,316,431

CURRENT COLLECTOR CONTACT MEANS

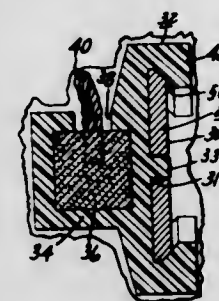
Arthur P. Manoni, Rochester, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Feb. 8, 1965, Ser. No. 430,934

8 Claims. (Cl. 310—239)

6. In a dynamoelectric machine having a housing and a current collector member rotatably supported therein, current collector means within said housing comprising, a pair of brush holders, each brush holder having a brush box with an open end, a closed end, a side wall slot and an abutment in said side wall slot, each brush box having a mounting flange with a slot parallel to said brush box, a fixed brush holder support for each brush holder including a tongue slidably engageable in the slot of each mounting flange in a direction opposite to that of brush

movement, and a brush spring having one end engageable with the closed end of each brush box, each brush spring being engageable with its respective side wall abutment to preload the spring to facilitate assembly, and re-

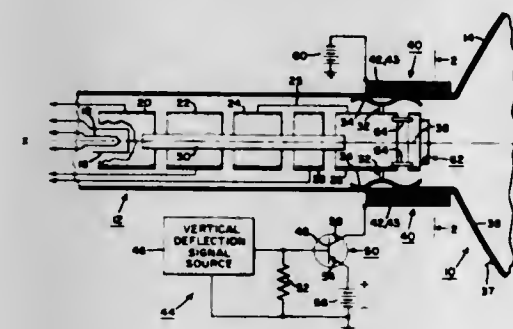


leasable from its abutment to urge its respective brush against said current collector member and maintain said respective brush holder in fixed engagement with said support by brush spring reaction.

3,316,432

CATHODE RAY TUBE ELECTRON GUN MOUNT WITH UNITARY MAGNETIC CENTERING AND GETTERING MEANS

Bernard J. Smith, Camillus, N.Y., assignor to General Electric Company, a corporation of New York
Filed Nov. 13, 1963, Ser. No. 323,348
2 Claims. (Cl. 313—75)



1. In a cathode ray tube having integrally joined neck and screen portions wherein an electromagnetic deflection yoke is axially mounted on the neck portion and energized for deflecting an electron beam passing there-through for scanning the screen portion of the cathode ray tube, and wherein the magnetic beam deflection center defined by the yoke is to coincide with a desired beam deflection center within the neck portion, a beam centering device comprising an annular permanent magnet mounted axially within the neck portion of the tube and providing a central aperture through which the electron beam passes, said annular permanent magnet having a recess therein for reception of gettering material, and being poled to produce a static magnetic field of parallel flux lines extending across said aperture in a direction transverse to the electron beam in the region of said desired beam deflection center for effecting a constant deflection thereof sufficient to center the electron beam on the screen portion.

3,316,433

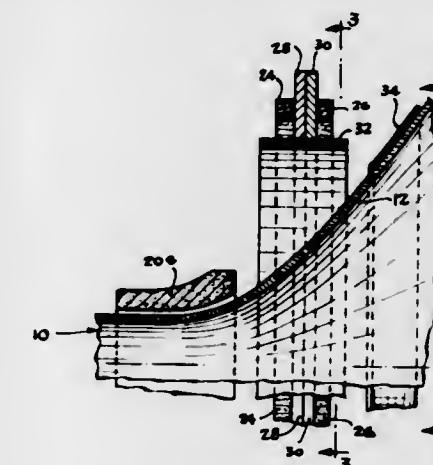
MAGNETIC CENTERING DEVICE AND SUPPORT MEANS FOR POST DEFLECTION CONTROL OF ELECTRON BEAMS

Sol L. Relches and Lindsley Clarke, both % Park Products Co., 566 N. Eagle St., Geneva, Ohio 44041
Filed July 26, 1963, Ser. No. 297,885
3 Claims. (Cl. 313—77)

1. A color television image display mechanism for use with a color cathode ray tube of the type having an axis, a plurality of electron guns spaced from the axis and effective to produce cathode ray beams initially parallel to the axis and in the same direction therealong, and a view-

ing screen on the axis and in the path of the electron beams from said guns, said cathode ray tube further having phosphors on the viewing screen disposed in complementary arrays of dots equal in number to said electron guns and means interposed between the phosphors and the electron guns effective to cause the phosphor dots of each array to be illuminated by electrons from the electron guns respectively when the electrons approach the viewing screen from predetermined directions, whereby the ray beams produce image elements of their respective colors when they approach the viewing screen from said predetermined directions, said mechanism including:

a cathode ray beam deflection mechanism positioned between the electron guns and the viewing screen, said mechanism producing time varying fields cross-wise of said axis to sweep the ray beams in unison in a scanning pattern, whereby the ray beams in unison are scanned in a pattern defining an image at the viewing screen and flaring as the viewing screen is approached from the electron guns, said deflection mechanism including a magnetic core encircling the ray beams between the viewing screen and the electron guns and prior to substantial deflection of the ray beams;



a color purity mechanism adjacent the magnetic core and on the side thereof nearest the viewing screen, said color purity mechanism including a pair of ring magnets of substantially large diameter than the diameter of said magnetic core and having substantially identical degrees of diametral magnetization, said ring magnets being adjacent to each other and coaxially disposed about the axis of the tube, said ring magnet being individually rotatable about the axis of the tube, whereby a field of adjustable intensity and orientation is provided within the tube and is effective on the ray beams after deflection; and a magnetic shield encircling the ray beams on the side of said color purity mechanism nearest the viewing screen, said shield being generally conical in shape and extending along the regions of travel of the electron beams where they most closely approach the ring magnets when under maximum deflection.

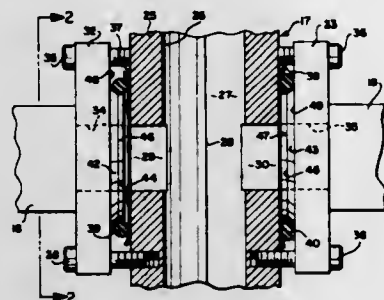
3,316,434

WINDOW SUPPORT STRUCTURE FOR AN X-RAY FLOW COUNTER

Carl W. Hansen, Chagrin Falls, Ohio, assignor to Picker X-Ray Corporation, Waite Manufacturing Division, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Sept. 6, 1963, Ser. No. 307,133
7 Claims. (Cl. 313—93)

1. An X-ray proportional counter comprising:
(a) a housing including a wall member defining an ionization chamber and a communicating window opening;

- (b) a retaining plate member connected to the wall member and having an aperture aligned with said opening;
- (c) a flexible X-ray window disposed between said members;
- (d) an endless resilient tensioning element frictionally connected to said window and between the window and one of said members;



- (e) securing means connected to the members for drawing said members together to press said element against said window and compress the element; and
- (f) said one member having a tapered surface engaging said element to tension the element and the frictionally connected window, said tapered surface being positioned to increase such tension as the members are drawn together by the securing means.

3,316,435
ELECTROLUMINESCENT PANEL FOR CLOCK RADIO SETS
 James W. Kelso, Pacific Palisades, Calif., assignor to Packard-Bell Electronics Corporation, Los Angeles, Calif., a corporation of California
 Continuation of abandoned application Ser. No. 38,867, June 27, 1960. This application Dec. 23, 1963, Ser. No. 332,565

5 Claims. (Cl. 313-108)



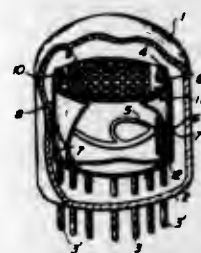
1. An indicator panel, including, an electroluminescent panel having a phosphor layer, a metallic layer having one side positioned against one side of the phosphor layer, a first transparent ceramic layer against the other side of the phosphor layer, and a second transparent ceramic layer against the other side of the metallic layer, a metallized vacuum plated flexible sheet of plastic against said first transparent layer and with the sheet of plastic including indicia, means for adhering said sheet of plastic to said first ceramic layer to prevent the electroluminescent panel from cracking, and means for introducing an A.C. signal across said phosphor and said metallic layers.

3,316,436
SECONDARY EMISSION MEANS FOR GAS-FILLED GLOW DISCHARGE CHARACTER DISPLAY TUBES
 Taisaku Kizaki, Mobara-shi, Chiba, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
 Filed Sept. 17, 1963, Ser. No. 309,477
 Claims priority, application Japan, Sept. 20, 1962, 37/40,595

6 Claims. (Cl. 313-109.5)

1. A glow discharge character display tube, comprising: a closed vessel containing an ionizable gas, anode means mounted within said closed vessel, said anode means in-

cluding electrode means electrically connected to said anode means, at least one cathode means mounted within said closed vessel in operable association with said anode means, individual ones of said cathode means each having a distinctive shape to represent a predetermined character, said anode means and said electrode means having surfaces of lower secondary electron emission and higher



starting potentials of glow discharge than the surfaces of said cathode means such that when an alternating voltage is applied between said anode means and said cathode means a glow discharge is prevented from forming on said anode means during the alternate cycles of the alternating voltage when said anode means are negative with respect to said cathode means.

3,316,437
FUEL INJECTION TYPE SPARK PLUG WITH AN ATOMIZING NOZZLE
 Walter Weins, Stuttgart, Germany, assignor to Robert Bosch GmbH, Stuttgart, Germany
 Filed Apr. 27, 1965, Ser. No. 451,199
 Claims priority, application Germany, June 11, 1964, B 77,192

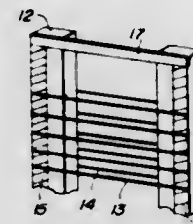
6 Claims. (Cl. 313-129)



1. A spark plug, particularly for use in gas turbines, comprising a center electrode including a tubular front portion having a front end, a median portion consisting of current-conducting non-metallic material, and a rear portion, said median portion having an axial blind bore communicating with the interior of said front portion and a substantially radial blind bore communicating with said axial bore; a tubular insulator sealingly surrounding said median portion and having a substantially radial bore communicating with the radial bore of said median portion; a metallic shell surrounding said insulator and defining therewith an annular compartment which communicates with the bore of said insulator; means for sealing the axial ends of said compartment; fuel admitting means sealingly connected with said shell and arranged to discharge fuel solely into said compartment so that such fuel flows only through said bores and into the interior of said front portion; an outer electrode secured to said shell and spacedly surrounding said front end and having duct means communicating with the interior of said front portion; and a fuel injection nozzle connected to said front end and having duct means communicating with the interior of said front portion.

3,316,438
STRUCTURE OF GRIDS FOR ELECTRON TUBES
 Hideo Iwayanagi, Mobara-shi, Chiba-ken, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
 Filed Nov. 6, 1963, Ser. No. 321,734
 Claims priority, application Japan, Nov. 13, 1962, 37/49,787

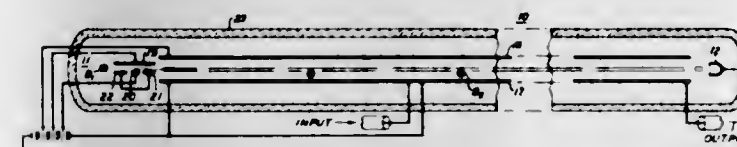
3 Claims. (Cl. 313-350)



1. A grid assembly for an electron tube comprising first and second insulating support members positioned in spaced parallel relationship, a first plurality of equally spaced parallel grid wires interconnecting said first and second support members in a first plane tangent to one corresponding side of each support member, and a second plurality of equally spaced parallel grid wires interconnecting said first and second support members in a second plane tangent to a second corresponding side of each support member, said first and second planes being parallel and said first and second grid wires being in complete alignment with each other so that corresponding ones form pairs lying in planes perpendicular to a plane including said support members, first and second metalized surfaces on each of said support rods covering a portion of the area of contact of said grid wires along the entire length of said rods, said grid wires being soldered to the metalized surfaces with which they contact, said rods being of substantially rectangular cross section and said metalized surfaces covering approximately one-half of opposite faces thereof, said metalized surfaces on opposite faces of said rectangular rod being staggered on each rod so as to avoid back to back disposition of said surfaces.

3,316,439
ELECTRON BEAM DEVICE
 Johan Wilhelm Klüver, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
 Filed Oct. 17, 1963, Ser. No. 316,812

4 Claims. (Cl. 315-3.5)



1. An electron beam device comprising: an electron gun for forming and projecting an electron beam along a central axis; a pair of elongated conductive members located on opposite sides of the axis; means for producing a first direct-current electric field between said conductive members; means for producing a magnetic field transverse to both the first electric field and the central axis; said electron gun comprising a cathode, an anode, and an electron collector; the emitting surface of the cathode and the collecting surface of the collector lying on the same plane; the anode being located on a plane parallel with the cathode and collector; and means for producing a second direct-current electric field between the anode and the cathode which is substantially transverse to the magnetic field;

the second electric field being defined by the inequality

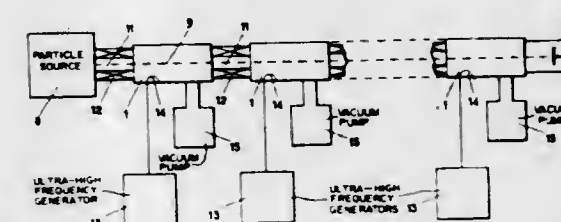
$$E < B \sqrt{\frac{4kT_c}{m}}$$

where E is the intensity of the second electric field, B is the flux density of the magnetic field, k is Boltzmann's constant, T_c is the absolute temperature of the cathode, and m is the mass of an electron.

3,316,440
CAVITY RESONATOR DELAY CIRCUIT HAVING INTERDIGITALLY SUPPORTED DRIFT TUBES AND A CONTINUOUS UNDULATING CONDUCTOR

Hubert Leboutet and Germaine Vincent, both of 79 Blvd. Haussmann, Paris, France
 Filed June 28, 1963, Ser. No. 291,337
 Claims priority, application France, July 4, 1962, 902,897

12 Claims. (Cl. 315-5)



1. A delay circuit for particle beam devices, comprising at least one cavity resonator bounded by an envelope having at least one axis of symmetry, a series of drift tubes located substantially along said axis, each of said drift tubes being supported by rod-shaped elements, said rod-shaped elements being approximately situated within a common plane passing substantially through said axis and being alternately fixed to opposite points of said envelope thereby forming a substantially interdigital structure in an axial plane of said envelope, and a continuous conductor woven to and fro passing between successive drift tubes within a plane passing substantially through said axis and having its extremities fixed to said envelope, and means to enable propagation of a particle beam along said axis of symmetry through the drift tubes of said cavity.

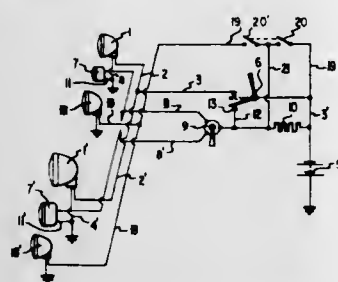
3,316,441
FOG LIGHT SYSTEM WHICH OVERRIDES DIMMER RESISTOR FOR TURN INDICATOR LIGHTS
 Friedrich K. H. Nallinger, Stuttgart, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
 Filed Mar. 20, 1964, Ser. No. 353,560

Claims priority, application Germany, Mar. 29, 1963, D 41,249

7 Claims. (Cl. 315-83)

1. A turn-indicator blinker-light system, comprising: a primary vehicle light system, blinker-type turn indicator lights, a voltage source, an energizing circuit for said turn indicator lights including switch means for selectively connecting said turn indicator lights to said voltage source and first means for reducing the brightness of the turn indicator lights upon connecting of primary said vehicle light system to said voltage source, fog light means, further switch means for selectively connecting said fog light means to said voltage source, and second means connecting said first means with said further switch means for de-energizing said first means in response to actuation of said further switch means so that the turn indicator lights are turned on

with the full brightness thereof upon energization of the fog light means by said further switch means

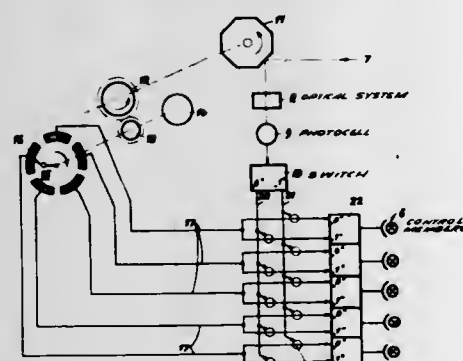


independently of the condition of energization of said primary vehicle light system.

3,316,442 APPARATUS FOR CONTROLLING HEADLIGHTS BY COUNTERLIGHT

Konrad Zuse, Hunfeld, Im Haselgrund,
Hesse, Germany

Continuation of application Ser. No. 342,760, Feb. 5, 1964. This application Dec. 13, 1965, Ser. No. 513,408
Claims priority, application Germany, Mar. 27, 1958, Z 6,580; Apr. 11, 1958, Z 6,603; Apr. 12, 1958, Z 6,604; Feb. 4, 1959, Z 7,098
17 Claims. (Cl. 315—83)



1. Apparatus for directing an illuminating beam in an ahead direction from a movable vehicle which comprises a first, polygonal mirror for scanning an ahead positioned angular sector for selectively directing light received from said sector in response to the direction of receipt, mounting means for said mirror for enabling rotation thereof about an axis positioned vertically with respect to said ahead direction, a photocell positioned in receiving relation with light reflected from said mirror for generating a control signal in response to light received from said mirror, an array of plural directive light sources for disposition on said vehicle for collectively generating an illuminating beam in said ahead direction when energized, rotatable switching means, said last named means having mounting means for rotation in relation with said mirror, connecting means for selectively energizing the light sources of said array in response to the rotary positioning of said rotatable switch means and to the cooperative occurrence of said control signal.

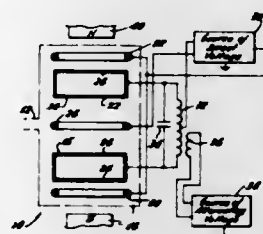
3,316,443 MAGNETIC FIELD CONTROLLED APPARATUS WITH MEANS TO OSCILLATE ELECTRONS FOR THE IONIZATION OF GAS MOLECULES

Lorin K. Hansen, Santa Monica, Calif., assignor, by mesne assignments, to Robert A. Cornog, Woodland Hills, Calif.

Filed Aug. 23, 1961, Ser. No. 133,407
1 Claim. (Cl. 315—111)

In combination for obtaining a controlled production of charged particles from a plurality of molecules, a source of direct voltage, first means coupled electrically to the source of direct voltage and provided with an ex-

tended length in a first direction and constructed to provide a substantially uniform electrical field along the extended length in the first direction and provided with an opening for a movement of electrons through the first means in the first direction, second means coupled electrically to the source of direct voltage and provided with an extended length in the first direction and constructed to provide a substantially uniform electrical field along the extended length in the first direction and provided with a second opening to obtain a movement of electrons in the first direction through the second opening, the second means being displaced relative to the first means in the first direction to obtain a movement of electrons in the first direction between the first and second means through the openings in the first and second means, means coupled electrically to the first and second means

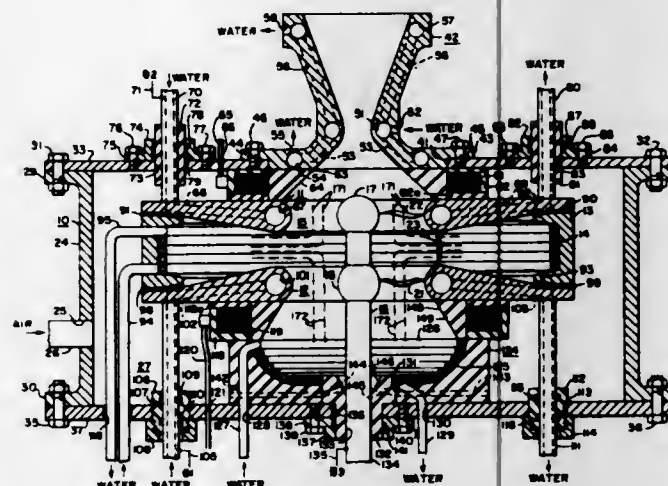


to introduce alternating voltages to the first and second means with the phase of the alternating voltage introduced to the first means being displaced relative to the phase of the alternating voltage introduced to the second means to obtain a movement of electrons in the first direction between the first and second means through the openings in such means and to obtain the production of charged particles from the molecules as a result of such movement, third means disposed between the first and second means in the first direction to control the movement of electrons in the first direction between the first and second means, and means coupled electrically to the third means to bias the third means relative to the first and second means for obtaining a movement of electrons between the first and second means only in a limited portion of each half cycle of the alternating voltage and with sufficient energy to ionize molecules.

3,316,444 ARC HEATER FOR USE WITH THREE-PHASE ALTERNATING CURRENT SOURCE AND CHAMBER AND ELECTRODE STRUCTURE FOR USE THEREIN

Raymond M. Mentz, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 11, 1964, Ser. No. 374,401
18 Claims. (Cl. 315—111)

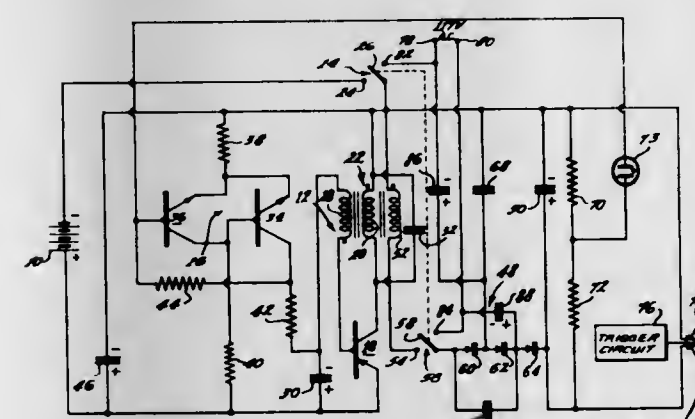


5. Arc heater apparatus comprising, in combination, means forming an arc chamber, means for admitting gas to be heated into the chamber, a first toroidal electrode

disposed in the chamber, a second toroidal electrode disposed in the chamber in substantial coaxial alignment with the first toroidal electrode and spaced therefrom a predetermined distance, a rod electrode in the chamber disposed substantially along the axes of the first and second toroidal electrodes, heat shield means disposed between the first and second toroidal electrodes, first field coil means disposed adjacent the first toroidal electrode and adapted to be energized, second field coil means disposed adjacent the second toroidal electrode and adapted to be energized, nozzle means for the chamber, and means for applying a three-phase alternating current potential to the first and second toroidal electrodes and to the rod electrode for setting up three arc paths in the chamber.

3,316,445 TRANSISTORIZED POWER SUPPLY FOR A STORAGE CAPACITOR WITH A REGULATING FEEDBACK CONTROL

Richard W. Ahrons, Somerville, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Continuation of application Ser. No. 686,411, Sept. 26, 1957. This application Apr. 26, 1963, Ser. No. 277,069
18 Claims. (Cl. 315—183)



14. A battery-operable power supply for energizing a photoflash lamp which requires the application thereto of a certain voltage within at least a given range of voltages to provide a useful light flash, said power supply comprising, in combination,

- (a) an oscillator circuit,
- (b) means to couple the battery to said oscillator circuit for normally causing oscillations in said oscillator circuit,
- (c) rectifying means,
- (d) means connecting said rectifying means to said oscillator circuit to rectify said oscillations and to provide an output voltage within said range of voltages, and
- (e) a feedback circuit connected between said rectifying means and said oscillator circuit, said feedback circuit including a gas discharge glow lamp responsive to said output voltage and adapted to be energized to glow and thus provide an indication of the continuance of said output voltage, said feedback circuit being adapted to feed back to said oscillator circuit, through said glow lamp,

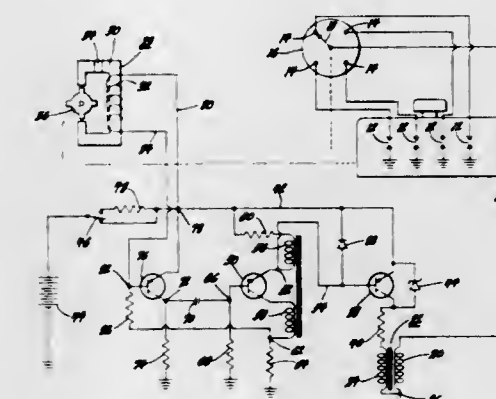
- (1) a first voltage effective to stop oscillations in said oscillator circuit when said output voltage reaches a first value at the high voltage end of said range of voltages, and
- (2) a second voltage effective to automatically restore oscillations in said oscillator circuit when said output voltage decays to a second value at the low voltage end of said range of voltages,
- (f) said output voltage thereby being automatically maintained within said range of voltages, and said

glow lamp serving to indicate the continuance of said output voltage and, thus, the readiness of said power supply to energize the photoflash lamp.

3,316,446 DIODE SHUNTED TRANSISTOR IGNITION SYSTEM FOR INTERNAL COMBUSTION ENGINES

Gerald O. Huntzinger, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 4, 1963, Ser. No. 314,059
10 Claims. (Cl. 315—206)



1. An ignition system for an internal combustion engine comprising, a plurality of spark discharge devices for igniting the combustible mixture of said engine, an ignition coil having a primary winding and a secondary winding, rotatable spark distributing means connecting said secondary winding with said spark discharge devices, a transistor having emitter, collector and base electrodes, a source of direct current, a circuit for energizing said primary winding connected across said source of direct current including said primary winding and the emitter and collector electrodes of said transistor, a switching means operated in synchronism with said engine and driven in synchronism with said rotatable spark distributing means, means connecting said switching means between the base electrode of said transistor and a first side of said source of direct current, an inductor separate from said ignition coil, means connecting said inductor between one side of said switching means and a second side of said source of direct current, said inductor being connected across the emitter and base electrodes of said transistor, and a diode connected in parallel with said inductor having an anode connected with the base electrode of said transistor and a cathode connected with the emitter electrode of said transistor said inductor developing a voltage of self-induction which biases said transistor nonconductive when said switching means is nonconductive, the energy received by said inductor from said source of direct current when said switching means is conductive being released through said diode when said switching means is nonconductive.

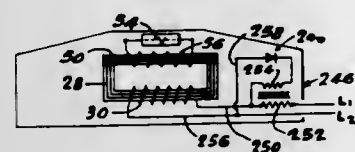
3,316,447 INDUCTIVELY ENERGIZED UNIT WITH MEANS TO IMPEDE PRIMARY CURRENT FLOW

Alexander E. Hochstein, Toledo, Ohio, assignor to The Strong Electric Corporation, Toledo, Ohio, a corporation of Delaware

Original application Oct. 3, 1960, Ser. No. 59,897, now Patent No. 3,146,954. Divided and this application Mar. 6, 1964, Ser. No. 349,921
1 Claim. (Cl. 315—206)

In combination, a system including a primary electrically energizable electromagnetic unit, a removable secondary electromagnetic unit, a current consuming me-

dium connected with the secondary unit, said secondary unit being normally in inductive relation with the primary unit whereby current flow through the primary unit inductively establishes current flow in the secondary unit

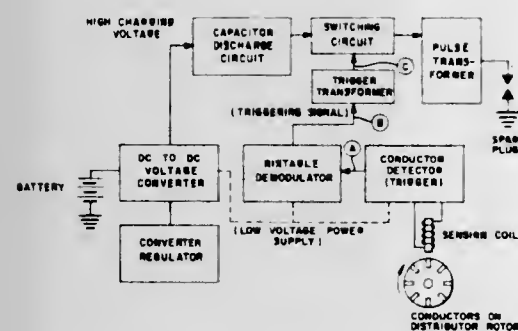


and current consuming medium, and means including a saturable reactor and a rectifier in circuit with the primary unit to impede current flow thereto when the secondary unit is out of inductive relation with the primary unit.

3,316,448

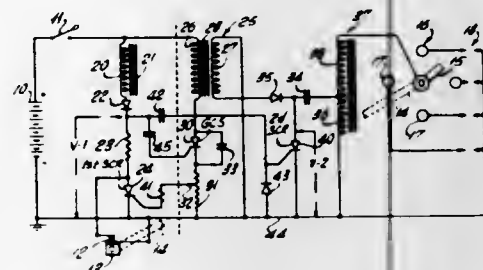
CONTACTLESS IGNITION SYSTEM

James T. Hardin and Rodger T. Lovrenich, both of Lambertville, Mich., assignors to Eltra Corporation, Toledo, Ohio, a corporation of New York
Filed Oct. 15, 1965, Ser. No. 496,626
9 Claims. (Cl. 315-209)



1. An ignition system for an internal combustion engine including at least one spark discharge device, comprising, in combination, a power converter for supplying a source of high voltage charging current to an energy storage device and a source of intermediate direct current voltage from a low voltage supply, said power converter including a power transformer having primary and secondary windings, a solid state oscillator operatively connected to said low voltage power supply and to said primary windings whereby alternating current through said primary winding will induce said high voltage charging current in said secondary winding and a diode rectifier operatively connected to said primary winding through intermediate taps to rectify voltage induced in said primary by autotransformer action to provide said intermediate direct current voltage, a triggering means for periodically discharging the energy from said energy storage device to said spark discharge device at a rate proportional to engine speed, said triggering means comprising (1) a transistor oscillator circuit operatively connected to said intermediate direct current voltage source and having a parallel resonant circuit whereby variations timed in proportion to engine speed of the total effective impedance of the parallel resonant circuit will cause said oscillator to periodically oscillate, (2) a demodulator circuit operatively connected to said oscillator whereby said periodic oscillations are demodulated to a signal having periodic sharp voltage variations timed in proportion to engine speed, and (3) control means operatively connected to said demodulator and responsive to said sharp voltage variations for periodically causing said energy storage device to discharge to said spark discharge device.

3,316,449
IGNITION CIRCUIT
Halsey P. Quinn, Morris Plains, N.J., assignor to Tung-Sol Electric Inc., a corporation of Delaware
Filed June 22, 1964, Ser. No. 376,725
6 Claims. (Cl. 315-214)

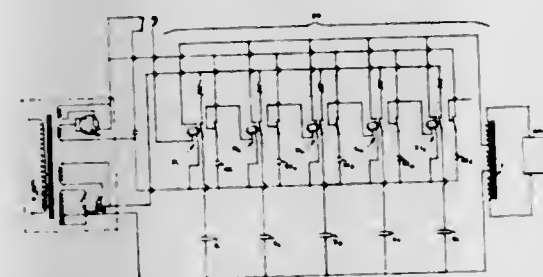


1. An ignition circuit for an internal combustion engine having a spark plug in each combustion chamber comprising,

- a source of direct current;
- a pair of breaker contacts controlled to open and close in synchronism with the movements of the engine's pistons;
- an inductor including a winding on a ferromagnetic core for generating a current pulse when current through the winding is cut off;
- a charging transformer including a primary winding and a secondary winding on a ferromagnetic core for generating a charging pulse in its secondary winding when current is cut off in its primary winding;
- a storage capacitor for storing a quantity of electricity produced by said secondary winding;
- an output transformer including a primary winding and a secondary winding for transferring the electricity stored in the storage capacitor to a distributor and spark plugs;
- a first charging circuit connected across said source of current including in series, said inductor, and a first silicon controlled rectifier having an anode, a cathode, and a control electrode, said breaker contacts connected across the anode and cathode;
- a second charging circuit connected across said source and including in series, the primary winding of the charging transformer, a voltage divider, and a gate controlled switch having an anode, a cathode, and a control electrode;
- a first coupling circuit comprising a resistor connected between a mid-point on the voltage divider and the control electrode of the first silicon controlled rectifier for making the rectifier conductive when a current through the primary winding of the charging transformer reaches a predetermined value;
- a capacitor charging circuit connected across the secondary winding of the charging transformer including in series, said storage capacitor, and the primary winding of the output transformer;
- a storage capacitor discharge circuit for discharging the storage capacitor and generating a spark at one of the spark plugs, said discharge circuit including in series connection, the storage capacitor, the primary winding of the output transformer, and the anode-cathode circuit of a second silicon controlled rectifier;
- a second coupling circuit comprising a first capacitor connected between one end of the inductor and the control electrode of said silicon controlled rectifier for making the second rectifier conducting when the breaker contacts are opened;
- and a third coupling circuit comprising a second capacitor connected between one end of the inductor and the control electrode of the gate controlled switch for making the switch conductive when the breaker

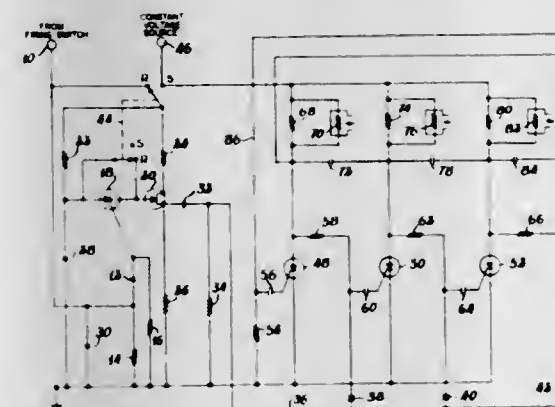
contacts are opened and for making the switch non-conductive when the current through the inductor is cut off.

3,316,450
ADJUSTABLE FLASH FOR PHOTOGRAPHY
Michel Troubetzkoi, 4054 Dorchester Blvd. W., Montreal, Quebec, Canada
Filed Aug. 26, 1963, Ser. No. 304,428
2 Claims. (Cl. 315-239)



1. Apparatus for producing light for photographic work, comprising in combination a rare gas filled ultra violet ray emitting tube, a transparent pane disposed between said tube and the object to be illuminated, said pane being coated on at least one face thereof with a fluorescent powder, electrical supply circuit means including a plurality of condensers, an auto-transformer connected to said tube and to said condensers, switching means and delay means for successively discharging said condensers into said tube, through said auto-transformer, to thereby produce a rapid succession of short electrical impulses of predetermined duration having an amperage considerably higher than the normal operating amperage of said tube, resulting in a rapid succession of luminous flashes produced by said tube and said coated pane.

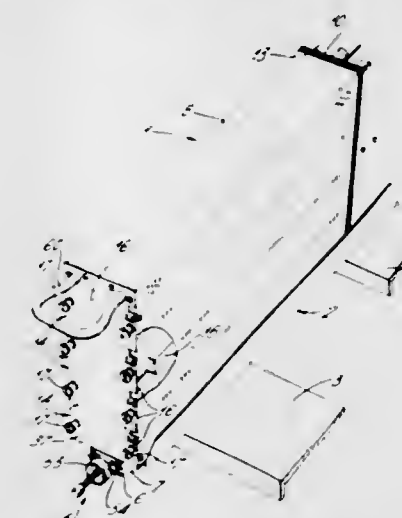
3,316,451
INTERVALOMETER
Robert L. Silberman, 470 Groveland, Highland Park, Ill. 61535
Filed Dec. 7, 1964, Ser. No. 416,406
10 Claims. (Cl. 317-80)



1. An improved intervalometer comprising the combination of a multivibrator, means for energizing said multivibrator to generate a plurality of spaced pulses at its output, a multistage stepping circuit, means for applying the pulse generated at the output of said multivibrator to said stepping circuit for causing said stages to be activated in succession to thereby provide a plurality of successive event initiating signals, gate means adapted to be connected in circuit with said multivibrator for limiting the output of the latter to a single pulse such that only one stage of the stepping circuit is activated to provide a single event initiating signal, and selectively operable switching means in circuit with said gate means for connecting said gate means to said multivibrator to

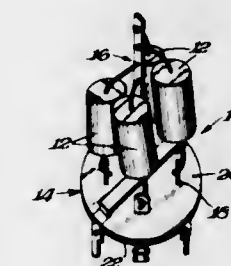
permit only a single pulse output therefrom or for disconnecting said gate means from said multivibrator to permit a plurality of spaced pulses at the output thereof.

3,316,452
CASES OF THE KIND FOR CONTAINING ELECTRICAL EQUIPMENT
Alan Barlow, Cheltenham, England, assignor to S. Smith & Sons (England) Limited, London, England, a British company
Filed Oct. 5, 1965, Ser. No. 493,057
Claims priority, application Great Britain, Oct. 12, 1964, 41,610/64
6 Claims. (Cl. 317-99)



3. A case for containing electrical equipment, comprising a plurality of elongated sub-cases, an outer body structure of elongated form for housing the sub-cases one above the other, and means releasably retaining the sub-cases one above the other within the outer body structure, each sub-case including a rectangular box-element including a lid providing a compartment for containing a respective part of the electrical equipment, and an electrical connector comprising a plug carried by the box-element and projecting from a rear end of the box-element, and said outer body structure including a front panel apertured for receiving said sub-cases, an apertured rear panel spaced lengthwise of the body structure from the front panel, and means mounting the sub-cases one above the other extending lengthwise between the front and rear panels with the electrical connector of each box-element projecting through the apertured rear panel.

3,316,453
CAPACITOR REPLACEMENT UNIT
Arthur H. Lassers, Williamstown, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Oct. 23, 1965, Ser. No. 503,800
5 Claims. (Cl. 317-99)



1. A capacitor replacement mounting arrangement comprising a metal mounting ring having lugs extending therefrom, a terminal support assembly including an insulating wafer having a plurality of spaced terminals thereon, said support assembly being joined to said mounting

ring, a substantially centrally disposed upright stem affixed to a transverse strap, said transverse strap being secured at each end to said mounting ring, said upright stem extending substantially perpendicular to said transverse strap and said mounting ring, and said upright stem having terminal means thereon.

3,316,454

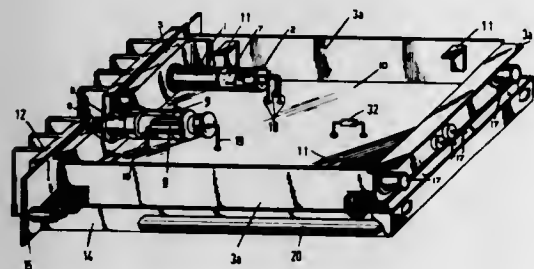
COOLING ARRANGEMENT FOR THERMALLY LOADED ELEMENTS OF A STRUCTURAL UNIT FOR ELECTRICAL APPARATUS

Hans Donath and Gerd Nothnagel, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany

Filed Aug. 30, 1965, Ser. No. 483,880

Claims priority, application Germany, Aug. 28, 1964, S 92,852

8 Claims. (Cl. 317-100)



1. A cooling arrangement for elements of a structural unit for apparatus in electrical communication technology, which unit is provided with lateral side rails and rear plug contacts, and is constructed as a shallow plug-in assembly of flat construction having a front means which can be received in a supporting structure adjacent to those of other similar structural units, said structural unit comprising a frame and a shield casing tightly sealed with respect to high frequency radiation by means including a cover at opposite sides to form a casing, a printed circuit plate surrounded by said shield casing in a shielded manner, said printed circuit plate carrying, in addition to other structural parts, thermally highly loaded structural elements such as transistors, resistances and the like which are disposed thereon in electrically favorable relation to cooperable components thereof, relatively massive metal pieces having good heat conduction characteristics to which the thermally highly loaded structural elements are connected in good heat conducting relation, said massive metal pieces, in turn extending from the respective favorable circuit locations of the associated structural elements through the front wall of the shield casing to the front means and connected therewith in good heat conducting relation.

3,316,455

FLAT-PACK CIRCUIT MODULES ASSEMBLY

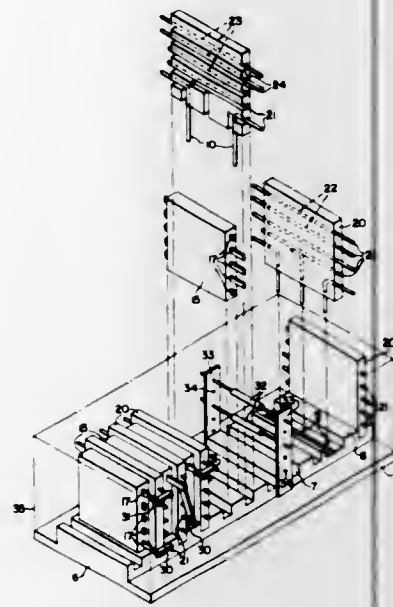
William L. Huckle III, Baltimore, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 31, 1965, Ser. No. 484,033

8 Claims. (Cl. 317-100)

4. In a flat-pack circuit modules assembly, the combination of an elongated thin rectangular base member having a component mounting face thereon and an array of parallel rows of pin-accommodating holes extending from said mounting face through said base member; a plurality of flat thin conductor-containing elements each having discrete corresponding conductors disposed in a common plane with output pins extending from a bottom edge portion of the element through the pin-accommodating holes of a respective row of such holes and with electrical leads extending from another side edge portion of the element in spaced-apart array in a direction perpen-

dicular to such mounting face; a plurality of flat-pack microcircuit modules disposed between said conductor-containing elements and each having a plurality of leads in a side edge thereof in spaced-apart array extending par-



allel to the array of leads of said conductor-containing elements; and lead-connecting conductor means electrically joining leads of the microcircuit modules selectively with leads of the conductor-containing elements.

3,316,456

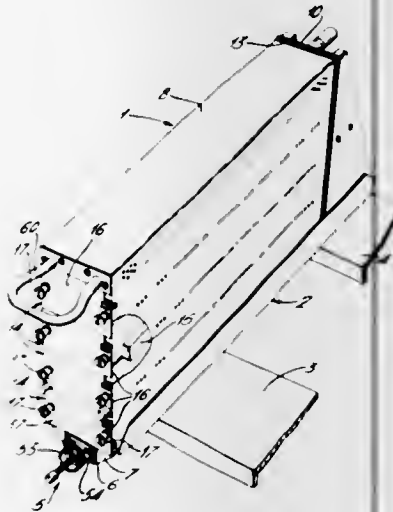
TRAYS OF THE KIND FOR USE IN MOUNTING CASES CONTAINING ELECTRICAL EQUIPMENT

Alan Barlow, Cheltenham, England, assignor to S. Smith & Sons (England) Limited, London, England, a British company

Filed Oct. 5, 1965, Ser. No. 493,056

Claims priority, application Great Britain, Oct. 9, 1964, 41,283/64

14 Claims. (Cl. 317-100)



11. An arrangement for use in mounting electrical equipment on a supporting structure, comprising a case for containing the electrical equipment, and a tray for securing to said supporting structure, said tray including a base portion for abutting the supporting structure, a guide-way for receiving the case, means releasably retaining the case with its base in the guide-way, and a substantially rigid honeycomb structure interposed in the tray between the guide-way and the base portion for contributing to rigidity of the tray.

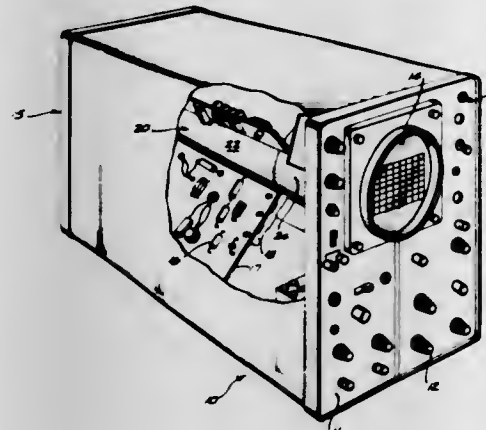
3,316,457

ASSEMBLY FOR PACKAGING ELECTRONIC COMPONENTS

Nicolaas H. Klos, Oceanside, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Oct. 23, 1965, Ser. No. 504,029

3 Claims. (Cl. 317-100)



1. An assembly of circuit boards for electronic components comprising:

- a pair of spaced substantially parallel plates having opposing surfaces;
 - a pair of coaxial support rings each rigidly affixed to a different one of opposing surfaces of said plates;
 - a cylindrical elongated structural member supported by said rings and defining therewith a central longitudinal axis of said assembly for electronically shielding a member positioned therein; and
 - at least one pair of brackets each affixed to a different one of said rings at a substantially similar angular position on the periphery of said ring;
- each of said brackets including securing means adapted to receive and secure one pair of edges of said circuit boards when the other pair of edges of said boards are positioned substantially parallel with said longitudinal axis.

3,316,458

ELECTRONIC CIRCUIT ASSEMBLY WITH RECESSED SUBSTRATE MOUNTING MEANS

Dietrich A. Jenny, Santa Ana, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Jan. 29, 1965, Ser. No. 428,913

3 Claims. (Cl. 317-101)



1. In an electronic circuit assembly a generally planar substrate, said substrate having on one side thereof a first surface and a second surface, the second surface being in depressed relation to said first surface as seen in side-elevational view to define a recess in the substrate, ramp surfaces of inclined plane configuration as seen in side-elevational view interconnecting the first surface and the second surface, electrically conductive path means on said respective surfaces to provide terminal electrical lead means on said second surface, arcuate protuberances on said terminal lead means and above said second surface,

and a discrete electronic component being entirely within the recess defined by the elevational displacement of said first and second surfaces, said arcuate protuberances supporting the component from the lead means.

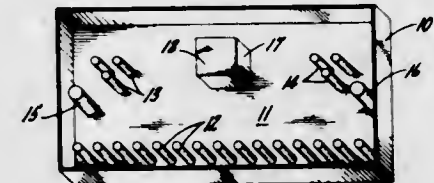
3,316,459

HERMETICALLY SEALED THIN FILM MODULE

Guy Robert Stutzman, Fort Wayne, Ind., assignor to the United States of America as represented by the Secretary of the Navy

Filed May 6, 1965, Ser. No. 453,848

5 Claims. (Cl. 317-101)



1. A hermetically sealed thin film electric circuit module comprising:

- a metal cup with upstanding fixed terminal pins and capacitor blocks within the cup, said terminal pins and capacitor blocks being electrically insulated from said metal cup;
- a vitreous substrate material of the same coefficient of thermal expansion as said metal cup within said cup and sealed to said cup, said terminal pins, and said capacitor blocks by vitreous-to-metal molecular seals with opposite ends of each terminal pin and the capacitor block exposed and with one face of said vitreous substrate on the open side of said metal cup being optically flat;
- thin film deposited circuitry including thin film resistors and diodes on said optically flat surface of said vitreous substrate connecting one of the exposed ends of said terminal pins and capacitor blocks and discrete active elements resistance welded to said one ends of said terminal pins, the other ends of said terminal pins having means forming a multiple connector; and
- a metal cover of the same coefficient of thermal expansion as said metal cup fixed to said cup by metallic fusion to said cup with an inert gas therein to hermetically seal said thin film circuitry in the gas environment within said cup and cover whereby a thin film plug-in type module is provided.

3,316,460

EXPANDABLE CASE FOR CIRCUIT BOARDS AND INSTRUMENTS

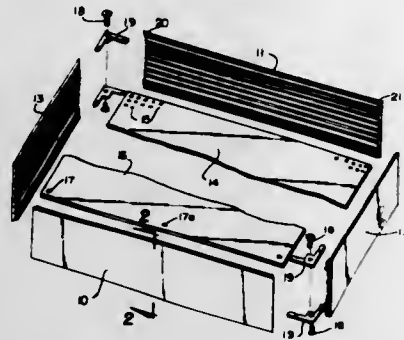
Ray R. Scoville, 5083 Commonwealth Ave., La Canada, Calif. 91011

Filed May 11, 1965, Ser. No. 454,911

21 Claims. (Cl. 317-101)

17. A housing structure for electrical components comprising a plurality of rectangular plate members separably disposed adjacent one another to form a frame, at least one removable rectangular planar structure within said frame, each of said plate members having a ribbed interior surface providing a plurality of elongated grooves, the grooves on each of said plate members mating with like elongated grooves in the adjacent ones of said plate members in said frame to form grooves extending substantially continuously from one to the next of said separable plate members for slidably supporting side and end edges of said planar structure within said frame along said continuously extending grooves, each of said plate members further including connector ducts integral with said plate member, the connector ducts of each of said plate members

being positioned closely adjacent to and in substantially mating relation with the connector ducts in an adjacent one of said plate members, and removable bracket means having unitary portions extending between and engaging



interior surface portions of the substantially mating connector ducts of adjacent ones of said plate members for holding said plate members in assembled relation in said frame.

3,316,461 INSTALLATION STAND FOR DEVICES OF HIGHEST FREQUENCY TECHNOLOGY, ESPECIALLY DIRECTIONAL RADIO EQUIPMENT

Oskar Henke, Munich, and Alfred Lukas, Munich-Aubing, Germany, assignors to Siemens & Halske Aktiengesellschaft Berlin and Munich, Germany, a corporation of Germany

Filed Dec. 23, 1964, Ser. No. 420,830
Claims priority, application Germany, Dec. 30, 1963, S 88,923

8 Claims. (Cl. 317-120)

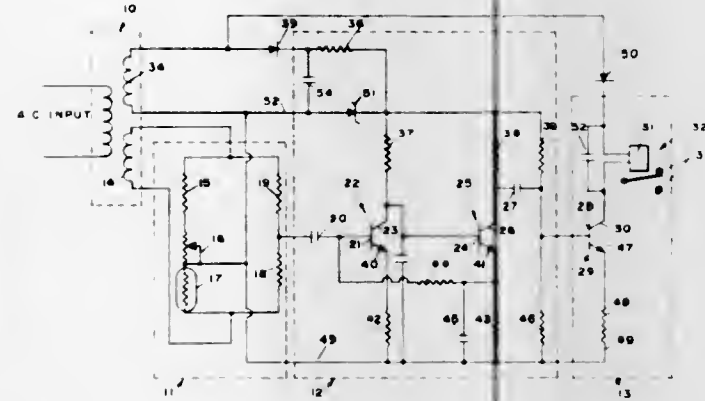


1. A stand for receiving and supporting apparatus units of electrical communications technology comprising a rack structure, a plurality of elongated casings, means for mounting each apparatus unit in a respective casing with a highest frequency input of each apparatus unit at a top end of a respective casing, each apparatus unit being formed of conductor elements and conductor connections grouped together in a closed block and consisting of a functionally complete and whole unit capable of separate functionality with respect to one another and having the elements thereof arranged from top to bottom in functional succession with the uppermost element having the highest frequency input with respect to the other elements, means for mounting said casings vertically within said rack structure and horizontally adjacent one another, and an input conduit having an end portion connected at the top end of one of said casings to the highest frequency input and including means for electrically connecting one end of said conduit to the highest frequency electrical input of the respective apparatus unit and for mechanically sup-

porting the respective apparatus unit in the respective casing when the respective apparatus unit is fully inserted into the respective casing.

3,316,462 VOLTAGE COMPENSATION CIRCUIT

John L. Moe, Winona, Minn., assignor to Waynco, Inc.
Filed July 20, 1964, Ser. No. 388,341
8 Claims. (Cl. 317-123)

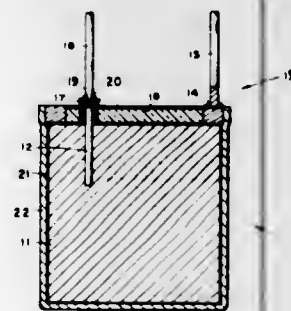


7. In a control circuit having an amplifier actuated switching circuit, the improvement wherein means are provided for furnishing a substantially pure D.C. supply voltage to the amplifier when the line voltage is at its rated value and said means supplies a ripple voltage component when said line voltage drops below a predetermined value, said ripple component being combined with the signal in said amplifier and further amplified to increase the output of said amplifier to compensate for drops in line voltage.

3,316,463 PLATED PACKAGING FOR ELECTRONIC COMPONENTS

Salvatore J. Comado, Lawrence R. Sparrow, and Jerry Braiman, Indianapolis, Ind., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware

Filed Sept. 25, 1964, Ser. No. 399,159
14 Claims. (Cl. 317-230)

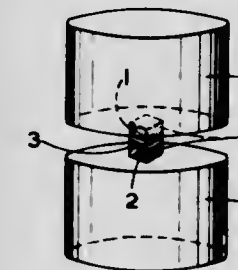


1. An hermetically sealed electrical device comprising a first electrode having a terminal riser, a dielectric film intimately covering the surface of said electrode and a semiconductor layer overlying the dielectric layer, a seal cap comprising a glass body disposed on the semiconductor layer, said body having first and second terminals spaced from each other and joined to the body in glass-to-metal seals, said first terminal being connected to said riser in an hermetically sealed joint, said second terminal surrounding the glass body, and an hermetically impervious metal layer, disposed on the semiconductive layer,

forming a second electrode of and encasing the device, and said metal layer having a margin embracing the second terminal in an hermetically sealed joint.

3,316,464 LASER DIODE WITH METAL CONTACTS PLATED OVER THE SIDES OF THE SEMICONDUCTOR

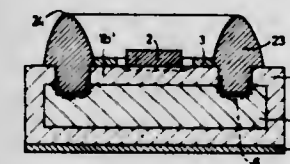
Cyril Hilsum, Malvern, England, assignor to National Research and Development Corporation, London, England, a British corporation
Filed June 5, 1964, Ser. No. 372,812
Claims priority, application Great Britain, June 5, 1963, 22,457/63
4 Claims. (Cl. 317-234)



4. A semiconductor radiation emitting diode formed of a semiconductor compound of a group three element with a group five element and provided with two molybdenum stubs secured in good thermal and electrical contact with the p and n regions of the diode respectively, said stubs being large in comparison with the diode and serving both as heat-sinks and electrical contacts for the diode, and provided with plating of gold and zinc over the p-type region of the diode and plating of gold and tin over the n-type region of the diode, each area of plating extending over its respective semiconductor region except for at least a narrow strip on each side of the exposed junction edge and continuing over at least part of each molybdenum stub.

3,316,465 MULTI-LAYER JUNCTION SEMICONDUCTOR DEVICES SUCH AS CONTROLLED RECTIFIERS AND TRANSISTORS, CONTAINING ELECTRO-POSITIVE PROTECTIVE COATING

Gotz von Bernuth, Ottomar Jantsch, and Dieter Krockow, all of Munich, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin and Erlangen, Germany, a corporation of Germany
Continuation of application Ser. No. 183,531, Mar. 29, 1962. This application Mar. 18, 1966, Ser. No. 535,611
Claims priority, application Germany, Mar. 29, 1961, S 73,228
3 Claims. (Cl. 317-234)



1. A multi-layer semiconductor device, comprising a semiconductor body having a region of n-type conductance and two p-type regions forming two respective p-n junctions with said n-type zone, said n-type region having an n-type surface zone between said two junctions, an electropositive coating on said surface zone, a housing gas-tightly enclosing said body and containing ammonia in contact with said body at said zone and contact means from said n-type and p-type regions to outside said enclosure.

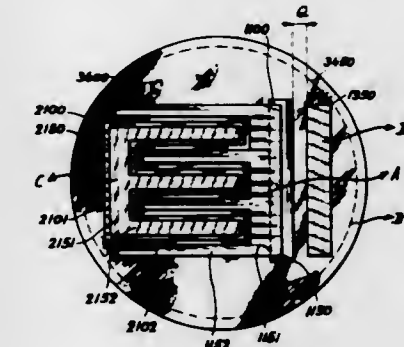
3,316,466 INTEGRATED TWO TRANSISTOR SEMI-CONDUCTOR DEVICE

Václav Husa, Pecky, Jaroslav Cihelka, Prague, Ladislav Černý, Sadska, Josef Kříž and Josef Ladnar, Prague, and František Luxa, Horní Pocerice, Czechoslovakia, assignors to Státní výzkumný ústav silnoproudé elektrotechniky, Bechovice, Czechoslovakia

Filed Oct. 6, 1964, Ser. No. 401,931

Claims priority, application Czechoslovakia, Oct. 7, 1963, 5,496/63

9 Claims. (Cl. 317-235)



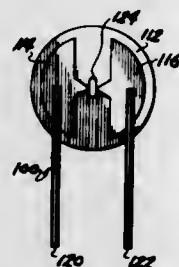
1. An integrated semiconductor device comprising a first transistor having a first emitter, a first collector and a first base and a second transistor having a second emitter, a second collector and a second base, said semiconductor device comprising

- a semiconductor body having a base portion of determined conductivity type and a first layer of opposite conductivity type on said base portion;
- a first emitter layer of strip configuration and of the same conductivity type as the base portion of said semiconductor body on the first layer of said semiconductor body comprising said first emitter, said first emitter layer forming a pn junction with said first layer of said semiconductor body;
- a second emitter layer of comb configuration and of the same conductivity type as the base portion of said semiconductor body on the first layer of said semiconductor body spaced from said first emitter layer, said second emitter layer having a connecting bridge and a plurality of mutually spaced extensions each extending from said connecting bridge to a determined distance from said first emitter layer, said second emitter layer forming a pn junction with said first layer of said semiconductor body;
- a first base contact layer of strip configuration on and in ohmic contact with the first layer of said semiconductor body spaced a determined distance from and parallel with said first emitter layer;
- a contact layer of comb configuration on the first layer of said semiconductor body, said contact layer having a connecting bridge parallel with and partially covering and in ohmic contact with said first emitter layer and a plurality of mutually spaced extensions extending from said connecting bridge into the spaces between the extensions of said emitter layer;
- a second emitter contact layer of comb configuration similar to that of said second emitter layer superimposed upon and in ohmic contact with said second emitter layer;
- a first terminal electrically connected to said contact layer;
- a second terminal electrically connected to said first base contact layer;
- a third terminal electrically connected to said second emitter contact layer; and
- a fourth terminal electrically connected to the base portion of said semiconductor body.

3,316,467

SPARK GAP ELECTRONIC COMPONENT
Leonard Sperry, Milwaukee, Wis., assignor to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware

Filed Aug. 5, 1965, Ser. No. 477,530
12 Claims. (Cl. 317-256)

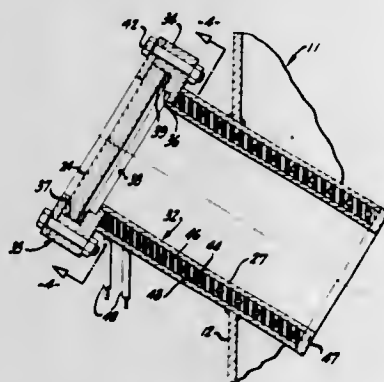


1. A component for use in electrical circuits, which comprises an insulating supporting body at, least two conductive means secured to electrically separated portions of the supporting body, a pair of elongate terminating conductors each having a portion remote from one end thereof secured to a portion of one of the conductive means, the portions of the conductive means being electrically separated, said one end of the conductors being adapted for the formation of conductive connections in an electrical circuit, and an air gap extending through the supporting body intermediate those portions of the conductive means to which the conductors are secured which are closest to one another.

3,316,468

VIEWING METHOD AND APPARATUS FOR HIGH VACUUM SYSTEMS
Charles W. Hanks, Orinda, Calif., assignor to Temescal Metallurgical Corporation, Berkeley, Calif., a corporation of California

Filed May 3, 1963, Ser. No. 277,821
7 Claims. (Cl. 317-262)



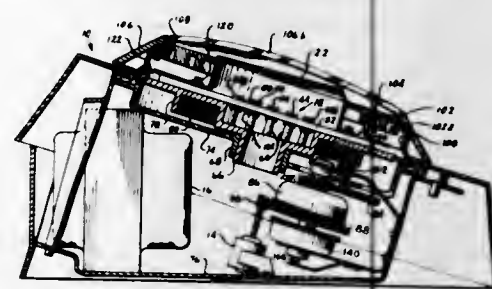
1. An apparatus for viewing the interior of a vacuum chamber which contains condensable vapor molecules, ions and free electrons comprising, a viewing tube adapted to be supported in a position extending through a wall of a vacuum chamber, a window disposed across the outer end of said viewing tube, and means for generating a negative electrostatic field at the interior surface of said window whereby positive ions entering said field are accelerated onto said window for cleaning thereof.

6. A method of cleaning a viewing window disposed across the outer end of a viewing tube supported in a position extending through a wall of a vacuum chamber which contains condensable vapor molecules, ions and free electrons, which method comprises generating a negative electrostatic field at the interior surface of the window, accelerating and focusing the positive ions entering the viewing tube onto the window by means of the electrostatic field, whereby condensed vapor molecules deposited upon the interior surface of the window are bombarded by the accelerated and focused ions.

3,316,469

PLURAL MOTOR REMOTE CONTROL SYSTEM
Paul A. Dicke, New Bremen, Ohio, assignor to Crown Controls Corporation, New Bremen, Ohio, a corporation of Ohio

Filed Sept. 3, 1963, Ser. No. 305,936
8 Claims. (Cl. 318-41)



1. The combination including:

an energy source, a reversible antenna drive motor; means connecting said motor to an antenna for rotation thereof, said means connecting said motor to an antenna including a variable speed gear mechanism and speed change means connected to said variable speed gear mechanism, said speed change means including mechanism varying the ratio between the input and output of said gear mechanism by operation of said speed change means;

switch means connecting said energy source to said drive motor for selectively actuating said motor in a forward or a reverse direction to thereby rotate said antenna in a forward or reverse direction, said switch means including a switch setting means connected to said switch, said switch setting means including a manually rotatable cam having an arcuate cam surface and a cam follower connected to said slidable switch actuator and operatively engaged by said cam surface for setting the switch position, portions of said cam surface having a changing radius for shifting said switch from one position to another, said switch means being connected to said speed change means so that said speed change means is actuated at predetermined relative positions of said cam and said cam follower;

a control motor, said control motor being adapted to be connected to said energy source through said switch means, said control motor being connected to drive said cam follower with respect to said cam surface from a manually selected position wherein said switch means connects said energy source to said control motor toward a surface portion of said cam in which said follower causes said switch to disconnect said drive motor from said source.

3,316,470

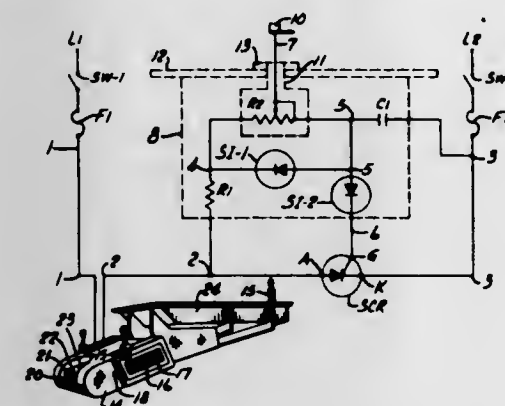
SILICON CONTROLLED RECTIFIER CONTROL CIRCUIT FOR RECIPROCATING MOTORS

Junius Denny Scott, 54 Ridge Ave.,
Homer City, Ind. 15748

Filed May 3, 1966, Ser. No. 547,348
2 Claims. (Cl. 318-130)

1. A feeder supply circuit to provide substantial lineal potentiometer control for feeding material which consists of a controlled semiconductor rectifier having an anode and a cathode, a gate for said controlled semiconductor rectifier, a pair of diodes having their anodes connected together and to one end of a potentiometer and to one side of a condenser, the other side of said condenser connected to the cathode of said controlled semiconductor rectifier, the cathode of one diode connected to the gate of said controlled semiconductor rectifier, the cathode of the other of said diodes connected to the other end of said potentiometer and to the anode of said controlled semiconductor rectifier, said controlled semi-

conductor rectifier anode and cathode representing the opposite ends of a parallel circuit, a resistance inserted in said connection between said cathode of said other of said diodes and said anode of said controlled semiconductor rectifier, two terminals representing a source of pulsating supply current, the operating coil of an electromagnetic vibratory feeder having one end connected to one terminal representing a source of current supply and



having the other end of said feeder operating coil connected to one end of said parallel circuit, and the other terminal representing a source of pulsating supply current connected to the other end of said parallel circuit.

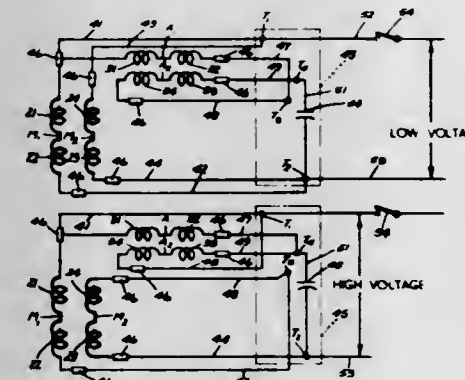
2. The feeder supply circuit of claim 1 characterized in that said resistance is connected between said other end of said potentiometer and the anode of said controlled semiconductor rectifier.

3,316,471

MULTI-VOLTAGE ALTERNATING CURRENT ELECTRIC MOTOR

Eugene A. Holdgreve, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York

Filed Jan. 11, 1965, Ser. No. 424,599
4 Claims. (Cl. 318-225)



1. In a dual-voltage single-phase alternating current induction type motor, a stator member having a core, a distributed main winding comprising two sections formed by at least one group of coils arranged on the core, with each coil group defining a primary operating pole; a distributed auxiliary winding carried by said core electrically displaced from said main winding, said auxiliary winding comprising two sections formed by at least one group of coils defining a corresponding number of secondary operating poles; said auxiliary winding being connected in series with capacitor means and in parallel with said main winding; said main winding sections being connected in parallel and concurrently said auxiliary winding sections being connected in series for operation at a first lower voltage whereby the motor is capable of producing a predetermined torque level at said first lower voltage; and said main winding sections being serially connected, and said auxiliary winding sections being concurrently connected in parallel for operation at a second

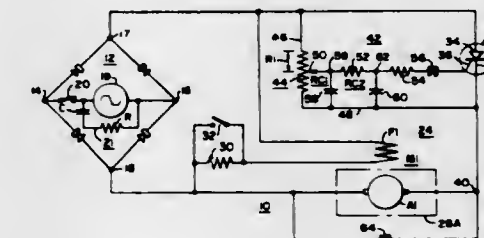
higher voltage, whereby the motor is capable of producing approximately said predetermined torque level at said second higher voltage.

3,316,472

CONTROL CIRCUIT FOR ELECTRON VALVE IN MOTOR CONTROL SYSTEM

Joseph C. Taylor, Hempfield Township, Irwin, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 31, 1964, Ser. No. 341,594
7 Claims. (Cl. 318-331)



1. A motor system comprising a source of periodic successive unipolar waves, said source having first and second output terminals of opposite polarity, a controlled electric valve having a control electrode and first and second power electrodes, which valve with forward voltage applied thereacross is rendered abruptly conductive in the forward direction in response to the application of a conduction initiating control signal to its control electrode, means coupling said first output terminal to said first power electrode, an electric motor including field means and an armature winding, a first circuit including said armature winding connected between said second output terminal and said second power electrode, an asymmetric path connected across said first circuit, said asymmetric path being oppositely polarized relative to said valve, a control circuit for supplying conduction initiating control signals to said control electrode, said control circuit comprising intermediately tapped D.C. passable first resistive means D.C.-coupled between said first output terminal and said second power electrode, D.C.-passable second resistive means having one end D.C.-coupled to an intermediate tap of said first resistive means, the other end of said second resistive means being D.C.-coupled to said control electrode, a first capacitor coupled between said tap and said second power electrode to provide a first RC circuit including said capacitor and said first resistive means and having an output across said capacitor, and a second capacitor coupled between said second power electrode and said other end of the second resistive means to provide a second RC circuit including the second capacitor and the second resistive means, the second RC circuit being interposed between the first RC circuit and said control electrode, said second RC circuit having an output across said second capacitor which is applied across the control electrode and the second power electrode.

3,316,473

AUTOMOTIVE CIRCUIT PROTECTOR

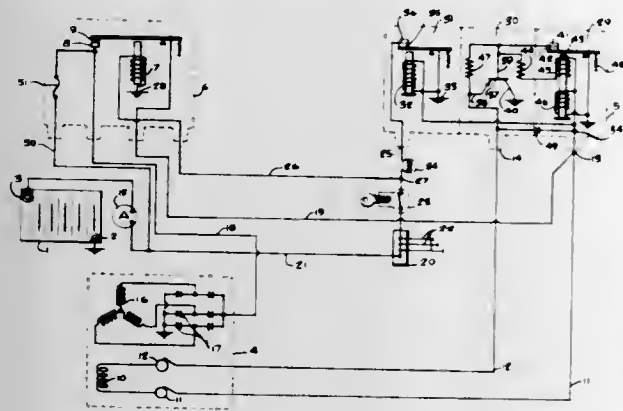
Cary H. Pruitt, 114 E. Okmulgee,

Muskogee, Okla. 74401

Filed Oct. 28, 1963, Ser. No. 319,127
3 Claims. (Cl. 320-61)

1. An automotive electrical system having a chargeable storage battery with a grounded terminal and a power terminal, an alternator for charging said battery, a voltage regulator for controlling the voltage output from said alternator to said battery, and a field relay having an actuating coil and a pair of normally open contacts, said alternator having a field winding and a stator winding, said stator winding including a rectifier for changing the alternating current output of said stator winding to direct

current, said regulator having a first terminal and a second terminal and interconnected voltage regulator components responsive to a predetermined voltage at said first terminal to block current flow between said second terminal and ground, a first conductor interconnecting said first terminal and one side of said field winding and one of said field relay contacts, a second conductor connecting said second terminal and the other side of said field winding, a third conductor connecting the other of said field relay contacts and the output terminal of said rectifier, a fourth conductor connecting the power terminal of said battery to said field relay actuating coil, an ignition switch for selectively interrupting said fourth conductor for



opening said contacts, for selectively preventing current flow from said power terminal to said regulator first terminal and to said field winding to prevent drain on said battery when said ignition switch is open, a fifth conductor connecting said third conductor to said fourth conductor between said battery power terminal and said ignition switch, and a fuse in said fifth conductor, whereby an excessive current flow through said fifth and third conductors and rectifier causes said fuse to interrupt said fifth conductor, said third conductor retaining conducting ability to impress a regulating voltage through said first conductor onto said first terminal during subsequent generator operation without replacing said fuse.

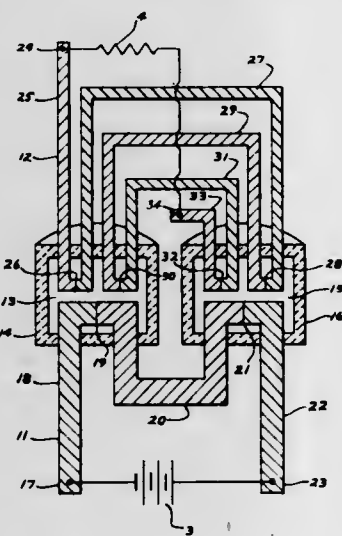
3,316,474

THERMOELECTRIC TRANSFORMER

Tenny Lode, Mankato, Minn., assignor to Rosemount Engineering Company, Minneapolis, Minn., a corporation of Minnesota

Filed May 21, 1964, Ser. No. 379,775

14 Claims. (Cl. 321-1.5)



1. A thermoelectric transformer including a primary circuit having a source of electromotive force and a plurality of dissimilar electrical conducting materials effectively

electrically connected to each other at primary junctions and connected across said source in a primary close series loop to cause a current flow in said primary loop operative to cause heating in a first set of said primary junctions and cooling in a second set of said primary junctions; and a secondary circuit having a load and a plurality of dissimilar electric conducting materials effectively electrically connected to each other at secondary junctions and connected across said load in a closed series loop to induce an electrical potential across said load in response to a temperature difference between a first set of said secondary junctions and a second set of said secondary junctions; said first set of primary junctions and said first set of secondary junctions being in heat conducting relationship to each other; and means to tend to maintain the temperature differential between said second set of primary junctions and said second set of secondary junctions at a substantially constant value.

3,316,475

PORTABLE HIGH-VOLTAGE GENERATOR DEVICE

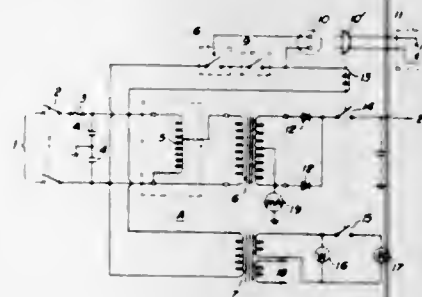
Kaname Hayama, Fuji-shi, and Ichijiro Sato, Yokohama, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

Filed Dec. 4, 1963, Ser. No. 328,079

Claims priority, application Japan, July 3, 1963,

38/48,891

1 Claim. (Cl. 321-15)



A portable high voltage generator device suitable for use in combination with an electro-flocking device for electro-flocking a fibrous or granular material onto the surface of an object, said generator comprising a output voltage controlling circuit including a transformer, a power source, a voltage regulator connected between said power source and the primary winding of said transformer, and rectifiers connected between the secondary winding of said transformer and the output of the said circuit to provide a rectified output voltage of adjustable magnitude, and means for switching said output voltage on and off; a high frequency oscillator and booster circuit including at least two oscillator tubes, at least two oscillator and booster transformers each having a metallic oxide magnetic core, a resistor and capacitor connected in parallel and to ground, an oscillator coil coupled to one of the latter transformers and having one end connected to the control grids of the oscillator tubes and the other end grounded through said resistor and capacitor, the output of the output voltage controlling circuit being connected to the screen grids of the oscillator tubes and to the anodes thereof through the primary windings of the respective oscillator and booster transformers whereby the secondary windings of these transformers provide high frequency oscillating voltages of a magnitude dependent upon the output voltage of the output voltage controlling circuit; and a voltage doubling circuit connected to the last-mentioned secondary windings and including at least two semiconductor rectifiers through which any residual charges at the high voltage output of the device are dissipated upon switching off the output voltage controlling circuit.

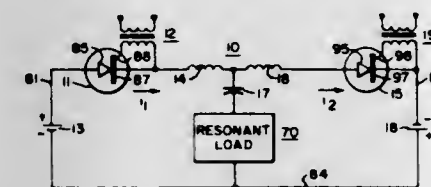
3,316,476

HIGH POWER SINE WAVE GENERATOR

Wayne R. Olson and Edward H. Hooper, Baltimore, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 28, 1963, Ser. No. 291,559

6 Claims. (Cl. 321-45)



1. A high power sine wave generator adapted to be connected to at least one source of electrical potential, comprising in combination: a resonant load having a predetermined output frequency; a first circuit including a semiconductor switch device adapted to be rendered selectively conductive, an inductance, and a capacitance connected in series circuit combination between said load and said source of electrical potential, said inductance and said capacitance forming a series resonant circuit having a predetermined frequency of resonance substantially the same as said output frequency, said capacitance further adapted to have a first charge state by current flowing through said load when said semiconductor switch is rendered conductive; and a second circuit including another semiconductor switch adapted to be rendered selectively conductive when said semiconductor switch of said first circuit is non-conducting, another inductance and said capacitance of said first circuit coupled together in another series circuit combination across said load, said another inductance and said capacitance also forming another series resonant circuit having a frequency of resonance substantially the same as said output frequency, said capacitance adapted to have an opposite charge state by current flowing through said load when said another semiconductor switch is rendered conductive, whereby electrical energy is transferred to said resonant load during both states of said capacitance.

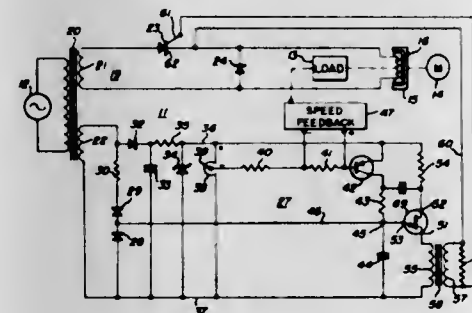
3,316,477

SYNCHRONIZING CIRCUIT

Kenneth L. Shrider, Mayfield Heights, and Robert G. Schleman, Cleveland Heights, Ohio, assignors to Reliance Electric and Engineering Company, a corporation of Ohio

Filed Nov. 26, 1962, Ser. No. 239,972

9 Claims. (Cl. 321-46)



9. A synchronizing circuit for a semi-conductor controlled rectifier supplying a load with direct current from an A.C. source during positive half-cycles of said source voltage, comprising in combination, a constant potential D.C. voltage source means, an impedance and a capacitor connected in series across a load resistor and first and second diode rectifiers connected in series to be energized from said source, said diode rectifiers poled in the same direction to conduct current during the negative half-cycles of non-said D.C. voltage source means,

means connecting said first diode rectifier in parallel with said capacitor such that said capacitor is rectifier to prevent said capacitor from charging clamped to the forward voltage drop across said first during said negative half-cycles, a pulse transformer having a secondary connected to fire said controlled rectifier, a primary on said pulse transformer, a unijunction transistor having first and second bases and an emitter. means connecting said unijunction transistor bases and said pulse transformer primary in series across said constant potential D.C. voltage source means, said emitter being connected to the junction between said impedance and capacitor to trigger said unijunction transistor into conduction upon the capacitor conduction of said controlled rectifier, charging to a predetermined voltage level from said D.C. voltage source means, the triggering of said unijunction transistor causing a pulse to be delivered from said pulse transformer to fire said controlled rectifier at a controlled phase angle during the positive half-cycles of the source voltage.

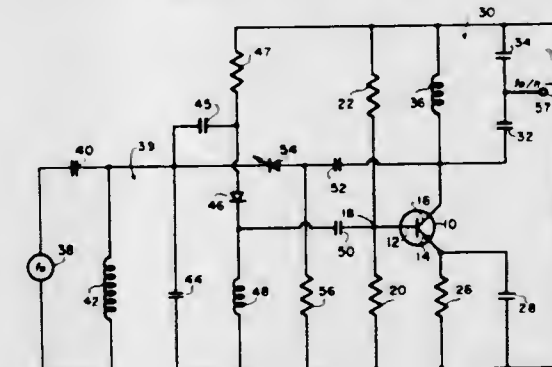
3,316,478

REGENERATIVE FREQUENCY CHANGER FOR MULTIPLYING AND DIVIDING

Salomon Polaniecki, Cincinnati, Ohio, assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed Oct. 23, 1963, Ser. No. 318,409

1 Claim. (Cl. 321-65)

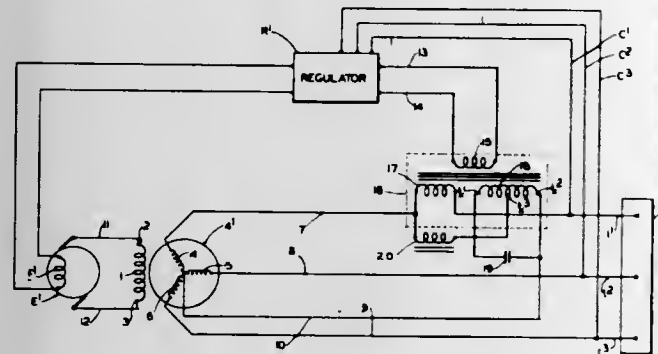


A frequency multiplier for multiplying an input frequency f_0 to an output frequency f_0/n , where n is any number, comprising:

- a high impedance source of input signals at frequency f_0 ;
- a first parallel resonant circuit connected across said source, said parallel resonant circuit being tuned to a frequency $f_0(n-1)/n$;
- a non-linear semiconductor impedance device;
- an amplifier comprising a transistor having base, emitter, and collector electrodes;
- an input circuit for said amplifier, said input circuit comprising an inductor tuned to frequency f_0/n , said inductor being connected in series with said non-linear semiconductor impedance device across said first parallel network, said inductor being connected across the base and emitter electrodes of said transistor;
- an output circuit for said amplifier, said output circuit comprising a second parallel resonant circuit tuned to said output frequency f_0/n ;
- a regenerative feedback path from said output circuit to said input circuit, said feedback path including a voltage sensitive variable capacitance semiconductor device in series with said non-linear impedance device and said inductor, said feedback circuit constituting a series resonant network tuned broadly to said output frequency f_0/n ;

and means for establishing a running direct voltage back bias on said voltage sensitive variable capacitance semiconductor device.

3,316,479
REGULATING SYSTEMS FOR ALTERNATING CURRENT GENERATORS
 Waldo J. Friedrich, Highland, Ill., assignor to Basler Electric Company, Highland, Ill., a corporation of Illinois
 Filed Jan. 5, 1966, Ser. No. 530,752
 16 Claims. (Cl. 322-25)

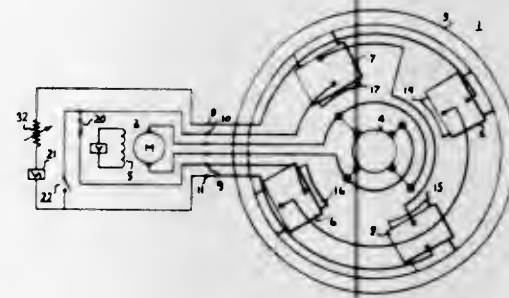


1. A regulating system for an A.C. generator having a field winding and generating windings, said generating windings being electrically connectable through respective conductors to a load; said regulating system comprising: regulator means connected to at least two of said conductors and being responsive to the voltage therebetween for applying a variable current to the field winding of said generator to maintain said voltage substantially at a fixed level;
 a saturable reactor having a saturable magnetic core and output winding means on said core connected with said regulator means for supplying substantially constant voltage A.C. power thereto, said reactor including also a first power input winding interconnected with a pair of said conductors for applying to said core an A.C. magnetizing force which is a function of the voltage across said pair of said conductors; and
 means including a second power input winding for applying to said core an A.C. magnetizing force which is a function of the current in at least one of said conductors, saturation of said core being effective to substantially limit the A.C. voltage supplied to said regulator means to a preselected level whereby a substantially constant A.C. voltage is supplied to said regulator means by said reactor over a wide range of load currents.

3,316,480
SYSTEM FOR CONTROLLING THE TIME CONSTANT OF A SHUNT FIELD
 Marvin A. Baker, Erie, Pa., assignor to General Electric Company, a corporation of New York
 Continuation of application Ser. No. 287,691, June 13, 1963. This application Sept. 23, 1966, Ser. No. 581,657
 6 Claims. (Cl. 322-83)

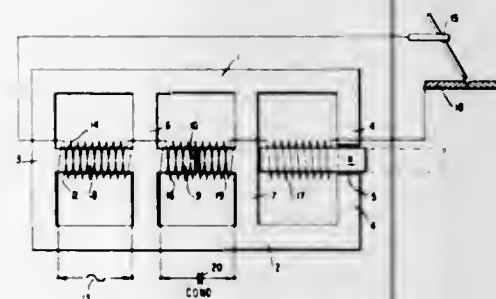
1. A circuit for controlling the response time of a dynamoelectric machine to changes in the field excitation without the use of additional windings, comprising, in combination:
 (a) a dynamoelectric machine having field poles and a shunt field winding including a first portion and a second portion, wound on said field poles, each portion normally generating magnetic flux in the same direction so that both portions aid in the excitation of said machine;

(b) switch means for the field circuit of said machine; said switch means having a first condition connecting said first portion and said second portion of said shunt field winding to a source of exciting voltage during a first operating range of said machine so that said first and second portions generate the magnetic flux providing the excitation of said machine, said switch means having a second condition connecting only said first portion of said shunt field winding to the source while disconnecting said second portion of said shunt winding from the source so that



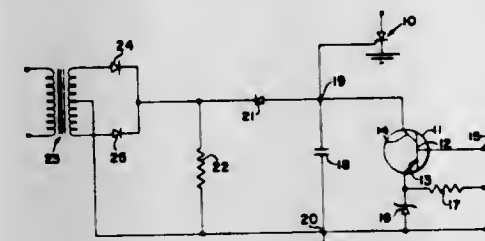
said second portion of said winding is responsive only to the excitation in said first winding portion to generate a magnetic force which inhibits the time rate of change of the flux of said first winding portion, said switch means being operative in said second condition to connect a low impedance path in parallel with said second portion of said winding.

3,316,481
SHELL TYPE WELDING TRANSFORMER
 Frederick C. Owen, 206 Fenton Place, Charlotte, N.C. 28207
 Filed Sept. 16, 1966, Ser. No. 579,983
 9 Claims. (Cl. 323-6)



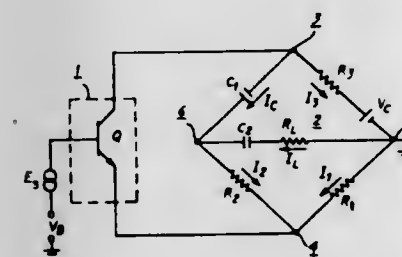
1. A shell type welding transformer comprising a generally rectangular core including longitudinal leg portions and end leg portions, a pair of intermediate leg portions connecting opposite longitudinal leg portions of said core intermediate said end leg portions, a first longitudinal leg section extending between one of said end leg portions and the adjacent intermediate leg portion, a second longitudinal leg section extending between said pair of intermediate leg portions, an air gap in the other of said end leg portions at one end of the core, a shunt core section longitudinally movable in said air gap, said first and second longitudinal leg sections and said shunt core section disposed substantially normal to said pair of intermediate leg portions, inductively coupled primary and secondary windings for producing a secondary output current positioned about said first and second longitudinal leg sections and said shunt core section, and said shunt core section movable toward and away from the other intermediate leg portion to adjust the secondary output current from a predetermined minimum to a predetermined maximum.

3,316,482
CONTROL CIRCUIT FOR SILICON CONTROLLED RECTIFIER SYSTEMS
 Eugene S. McVey, Charlottesville, Va., assignor to Basic Incorporated, Cleveland, Ohio, a corporation of Ohio
 Filed Mar. 16, 1964, Ser. No. 352,038
 18 Claims. (Cl. 323-22)



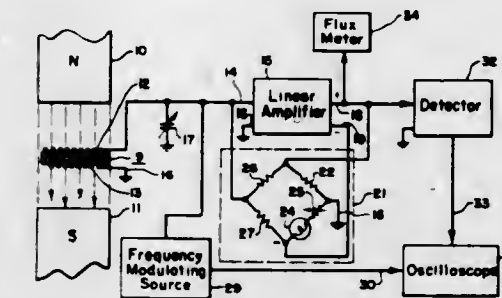
1. In combination with a silicon controlled rectifier, circuit means for regulating the output thereof comprising a transistor, means for supplying a variable input signal to said transistor to produce responsive changes in the transistor current, a capacitance connected to receive current from said transistor, means for applying the voltage developed across said capacitance to the silicon controlled rectifier to determine the firing thereof, whereby such firing is a function of the input signal to the transistor, discharge circuit means for said capacitance including a resistance device and a rectifier therebetween, and means for applying a pulsing direct current voltage through said resistance device to said rectifier, the rectifier being rendered conductive at a predetermined voltage value in each pulsation thus applied to its cathode for discharging of said capacitance.

3,316,483
BRIDGE TYPE PHASE CORRECTOR FOR WAVE TRANSMISSION NETWORKS
 James R. Hall, Canoga Park, Calif., assignor to Radio Corporation of America, a corporation of Delaware
 Filed Dec. 18, 1964, Ser. No. 419,364
 4 Claims. (Cl. 323-123)



1. An electrical circuit comprising a bridge network having first, second and third resistive arms and a fourth reactive arm,
 a load having a low impedance relative to the value of any one of said resistive arms coupled between first and second junctions defined by said first and third resistive arms and by said second resistive and said fourth reactive arms respectively,
 said third resistive and said fourth reactive arms being coupled to a third junction, said first and second resistive arms being coupled to a fourth junction, and
 generator means responsive to an input waveform for applying a current to said third junction and a voltage to said fourth junction, said current having a magnitude determined by the sum of the currents in said first and second resistive arms.

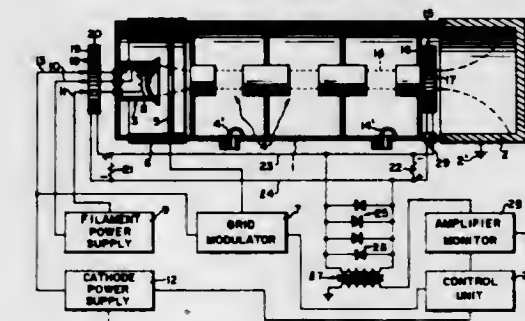
3,316,484
MAGNETIC FLUX MEASURING APPARATUS USING NUCLEAR MAGNETIC RESONANCE
 Robert Adler, Northfield, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
 Filed Sept. 15, 1964, Ser. No. 396,522
 3 Claims. (Cl. 324-5)



1. Apparatus for measuring the flux density of static magnetic fields of the type comprising an oscillator having a predetermined nominal operating frequency, a nuclear resonance probe adapted for insertion in said magnetic field, exhibiting magnetic resonance at a frequency proportional to the intensity of said magnetic field and coupled to and comprising a frequency determining element for said oscillator to deliver a disturbance to said oscillator at said magnetic resonance frequency, means for varying, at a predetermined rate determined by the desired duration of said disturbance, the relationship between the operating frequency of said oscillator and the magnetic resonance frequency of said probe as determined by the strength of said magnetic field, and means for detecting the resultant disturbance in the signal developed by said oscillator when said probe resonant frequency and said oscillator frequency coincide:

the improvement which consists of said oscillator comprising a substantially linear amplifier provided with a feedback loop from its output circuit to its input circuit, said feedback loop being constructed and arranged to provide a feedback signal to said input circuit which is a function of the amplitude of the signal present at said output circuit, and means for controlling the loop gain having an effective time constant of at least the same order of magnitude as said duration of said disturbance so as to render the amplitude disturbance in the signal developed by said oscillator generally proportional to the time integral of the disturbance delivered by said probe.

3,316,485
BEAM CURRENT MEASUREMENT BY INDUCTIVE TECHNIQUES FOR HIGH FREQUENCY ELECTRON DISCHARGE DEVICES
 Albert D. La Rue, Los Altos, Richard H. L. Bibb, Palo Alto, and Robert S. Symons, Los Altos, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
 Filed Oct. 8, 1962, Ser. No. 229,057
 10 Claims. (Cl. 324-24)



1. A method of measuring current in a high power pulsed electron discharge device comprising the steps of:
 (a) forming a pulsed electron beam,

output means for combining the signals produced by said wave shaping circuits to produce the composite PQRS wave, said output means including means for preventing the feedback of each of said output signals into the others.

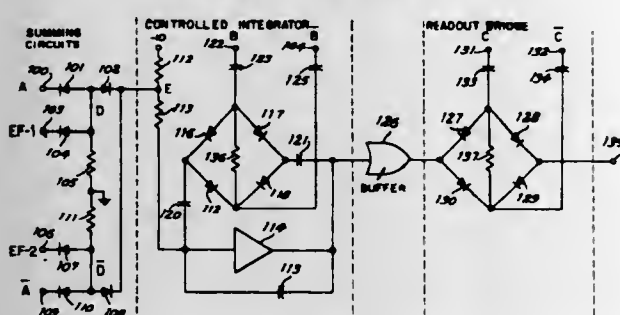
3,316,492

SIGNAL PROCESSING SYSTEM EMPLOYING REFERENCE-SIGNAL CONTROLLED-INTEGRATOR FOR INTEGRATING RESULTANT OF TWO SUMMING-CIRCUITS HAVING COMPLEMENTARY INPUTS

Murray H. Mott, San Diego, Albert T. Roome, Escondido, and Carl W. Erickson, San Diego, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed May 6, 1964, Ser. No. 365,537

7 Claims. (Cl. 328-143)



1. A signal processing system for ascertaining the coincidence of a multiple unit code signal relative to a reference signal consisting of cyclically repetitive identical code signals linked by redundant code units comprising: a first summing circuit arranged to accept said code signal and said reference signal; a second summing circuit arranged to accept the inverse of said signal inverse and said reference signal; an integrator circuit connected to receive the outputs of said summing circuits, said integrator circuit being operative to integrate its input for the duration of said reference signals; and an output circuit connected to receive the signal generated by the said integrator circuit, said output circuit being cyclically responsive to a signal code incident with the last unit of each repetitive code signal of said reference signal for producing on output commensurate with the amplitude of the output signal of said integrator circuit during each said last unit.

3,316,493

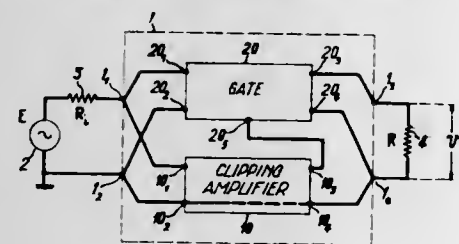
CONTROLLED LINEAR DETECTOR

Gilbert Marcel Ferrieu, Route du Port, Locquemeau, France

Filed June 30, 1964, Ser. No. 379,186

Claims priority, application France, Aug. 20, 1963, 945,131

5 Claims. (Cl. 329-101)



1. A controlled linear detector for alternating current signals comprising a gate circuit having a signal input, a control input and an output, said gate circuit having either a passing or a non-passing condition according to the polarity of a control signal applied to said control input, a clipping amplifier having a signal input and a clipped signal output, said clipped signal output delivering a sub-

stantially constant amplitude signal the polarity of which changes with that of the signal applied to said signal input of said clipping amplifier, means for applying said alternating current signals to both said signal inputs, means for applying signals from said clipped signal output as control signals to said control input of said gate circuit, and means for applying signals received at said signal output of said gate circuit to a utilization circuit.

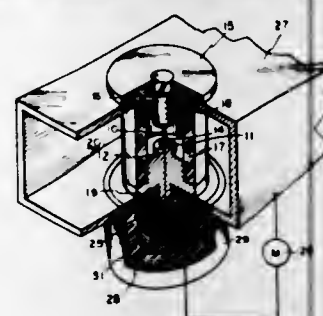
3,316,494

SEMICONDUCTOR MICROWAVE POWER DETECTOR

Richard I. Harrison, Jericho, and Joseph Zucker, Queens, N.Y., assignors to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware

Filed May 4, 1964, Ser. No. 364,609

4 Claims. (Cl. 329-161)



1. Apparatus for detecting microwave power in a waveguide which comprises

- a wafer of extrinsic semiconductor material having a carrier concentration of not more than 10^{16} carriers per cubic centimeter,
- a non-injecting probe contacting one face of said wafer,
- an ohmic contact mounted on the opposing face of said wafer and having a contact area at least 10 times as large as the contact area of said probe, and
- means for mounting said wafer probe and contact in the waveguide with said probe being positioned at a point of maximum field intensity therein, a voltage which is a function of the microwave power in the waveguide being generated between said probe and contact.

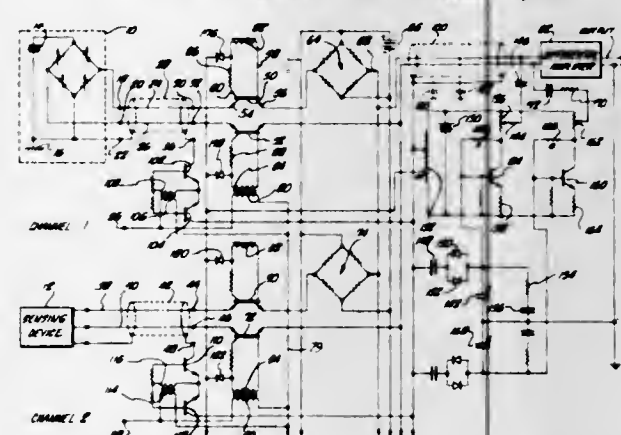
3,316,495

LOW-LEVEL COMMUTATOR WITH MEANS FOR PROVIDING COMMON MODE REJECTION

Paul N. Sherer, Pasadena, Calif., assignor to Consolidated Systems Corporation, Monrovia, Calif., a corporation of California

Filed July 6, 1964, Ser. No. 380,584

12 Claims. (Cl. 330-30)



9. A low level commutating circuit for successively connecting a plurality of signal sources across the input terminals of a differential amplifier wherein each signal source has a potential reference point which may vary

in voltage with respect to a ground point connected to the differential amplifier, the commutating circuit comprising a plurality of solid state switching elements for selectively connecting each of the signal sources across the input terminals of the differential amplifier, each switching element providing low impedance current path in response to a current pulse across a pair of control electrodes, a plurality of switching elements for selectively connecting the potential reference point of each signal source to a common terminal, a floating power supply having output taps at different relative potentials, one tap of the power supply being connected to said common terminal, means including a plurality of diodes respectively connecting another tap of the power supply to one of the control electrodes of each of the solid state switching elements, and first and second current sources having their output terminals connected respectively between each of the input terminals of the differential amplifier and said ground point.

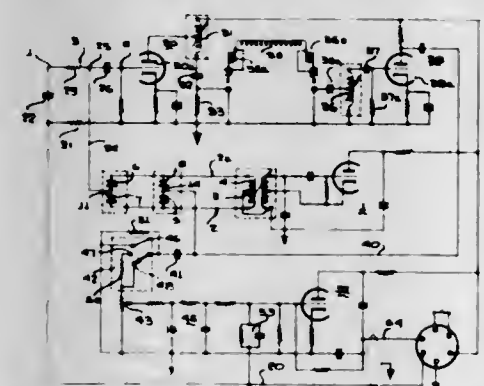
3,316,496

MODULATOR-DEMODULATOR AUDIO AMPLIFIER

John B. Brombaugh, Ithaca, N.Y., assignor to D. H. Baldwin Company, a corporation of Ohio

Filed Apr. 19, 1962, Ser. No. 188,803

11 Claims. (Cl. 330-174)



1. A modulator-demodulator, comprising a first diode, a second diode, a third diode, a fourth diode, said diodes being all similarly poled, said first and second diodes being connected in series, said third and fourth diodes being connected in series with each other, said third and fourth diodes taken in series being connected in parallel with said first and second diodes taken in series, a source of audio signal connected to the junction of said first and second diodes, an output circuit connected to the junction of said third and fourth diodes, and a source of high frequency carrier signal connected in balanced relation across said first and second diodes, said source of high frequency carrier signal having a midpoint connected to a point of reference potential and providing said high frequency carrier signal in push-pull relation with respect to said point of reference potential, and wherein is further provided a high pass coupling circuit including series capacitance coupled to said junction of said first and second diodes, a transmission network coupled to said coupling circuit, said transmission network having an output lead, means connecting said output lead to said junction of said third and fourth diodes, and an audio output circuit coupled to said last named junction.

3,316,497

PHASE CONTROLLED OSCILLATOR LOOP WITH VARIABLE PASSBAND FILTER

Robert R. Brooks, Willingboro, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

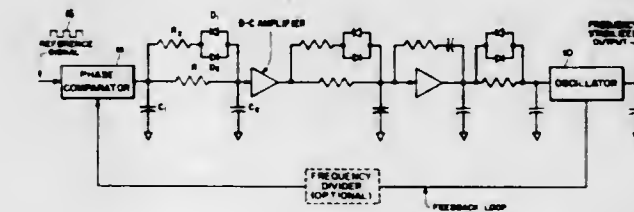
Filed July 9, 1965, Ser. No. 470,945

1 Claim. (Cl. 331-17)

In a system for maintaining synchronism between an oscillator and a cyclically-recurring input variation under

conditions where a rapid "pull-in" of the oscillator is desired following a change in the recurrence frequency of the input variation, as well as maximum freedom from the deleterious effects of noise impulses during periods of oscillator synchronization, the combination of:

- a phase comparator adapted to receive said input variation;
- a feedback loop connecting said oscillator to said phase comparator, the latter acting to develop an error signal the magnitude of which is dependent upon the phase difference between said input variation and the output wave from said oscillator;
- a filter network having a non-linear input vs. output characteristic over an error signal range that encompasses both synchronous and asynchronous modes of oscillator operation;
- said filter network including a series resistor and at least one shunt capacitor, the resistance-capacitance relationship thereof being determinative of the frequency passband possessed by said network;
- means connecting said phase comparator to said oscillator through said filter network, the latter having a predetermined frequency passband during periods when said oscillator is synchronized with said input variation; and



means for modifying the bandwidth of said filter network during periods when said oscillator is out of synchronism with said input variation; said means for modifying the bandwidth of said filter network during periods when said oscillator is out of synchronism with said input variation including an impedance unit connected in parallel relationship with the said series resistor of said network, said impedance unit having a non-linear voltage vs. current characteristic; said impedance unit comprising a resistor in series with the parallel combination of two diodes connected with opposed polarities insofar as the passage of said error signal through said filter network is concerned; such that the frequency passband of said filter network is modified, during periods when said oscillator is out of synchronism with said reference signal, by an amount which is a non-linear function of the amplitude of the error signal output of said phase comparator.

3,316,498

VOLTAGE CONTROLLED OSCILLATOR HAVING FORWARD BIASED DIODE

Robert N. Doble, Palo Alto, and Robert James Miller, San Bruno, Calif., assignors to General Precision, Inc., Binghamton, N.Y., a corporation of Delaware

Continuation of application Ser. No. 380,534, July 6, 1964.

This application July 8, 1966, Ser. No. 563,920

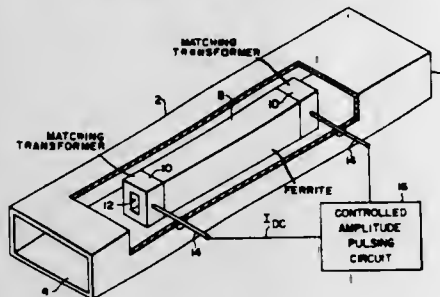
5 Claims. (Cl. 331-30)

1. A voltage-controlled oscillator comprising a transistor having at least an emitter electrode and a collector electrode, a tunable circuit including a variable inductive element, a capacitive element and a diode, said inductive element being connected between the collector electrode of the transistor and a source of reference potential, said capacitor and said diode being connected in series at a point providing an input coupling terminal for a control voltage, said serially connected diode and capacitor being coupled in parallel with the variable in-

3,316,506

LATCHING FERRITE PHASE SHIFTER HAVING A PREDETERMINED PHASE SHIFT WHEN SWITCHED FROM ONE MAJOR REMANENT STATE TO THE OTHER

Lawrence R. Whicker, Severna Park, and Raymond R. Jones, Baltimore, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

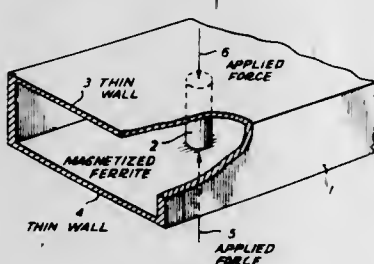
Filed Aug. 24, 1965, Ser. No. 482,072
8 Claims. (Cl. 333-24.1)

1. In combination; a waveguide for the passage of energy; a single ferrite element longitudinally disposed within said waveguide; said element having an aperture extending therethrough; an electrical conductor extending through said aperture; said element having a major positive remanent state of flux density and a major negative remanent state of flux density in response to a predetermined positive current pulse and a predetermined negative current pulse respectively on said conductor; said element differentially phase shifting the energy through said waveguide a nominal 360° when switched from one major remanent state to the other major remanent state; and controlled amplitude pulsing means connected to said conductor for resetting the flux to one of said major remanent states and for setting the flux to a selected state intermediate said remanent states whereby a selected lesser differential phase shift of said microwave energy occurs.

3,316,507

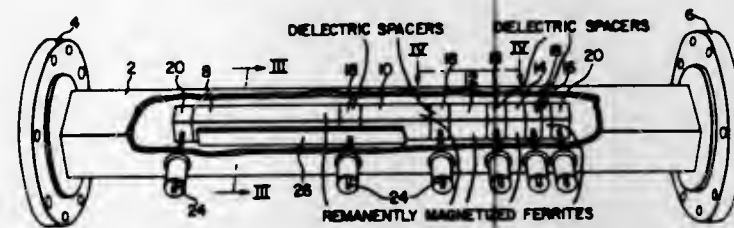
MAGNETOSTRICTIVE TUNING OF THE MAGNETIC PARAMETERS OF GYROMAGNETIC MATERIALS USED IN WAVE TRANSMISSION DEVICES

George L. Heiter, Whippany, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 10, 1965, Ser. No. 486,328
7 Claims. (Cl. 333-24.1)

1. In an electromagnetic energy transmission device having a member of material exhibiting magnetostrictive properties positioned within said device for gyromagnetic interaction with electromagnetic energy propagating in said device and requiring a defined nominal value of magnetic field directed through said member to render said device operational, means for directing through said member a magnetic field having a value different from said nominal value and means for magnetostrictively tuning said directed magnetic field through said member to said nominal value.

3,316,508

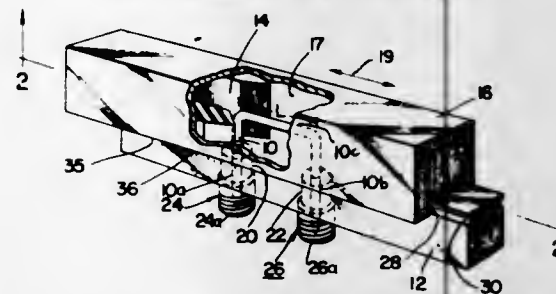
LATCHING MICROWAVE DIGITAL ATTENUATOR
Raymond R. Jones, Baltimore, and Joseph A. Kempic, Ellicott City, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of PennsylvaniaFiled Aug. 24, 1965, Ser. No. 482,071
7 Claims. (Cl. 333-24.2)

1. A microwave amplitude modulator comprising in combination; a waveguide; at least one ferrite element disposed within said waveguide; said ferrite element having a first remanent state and a second remanent state; means for selectively latching said ferrite element in said first and said second state; resistive means disposed on opposite sides of said ferrite element; said ferrite element in one of its remanent states concentrating the electric field of the microwave power in the region of the ferrite element and in the other remanent state displacing said electric field to the position of said resistive means.

3,316,509

VARIABLE PHASE SHIFTER

Donald R. Ayer and W. Ralph Lowe, Nashua, N.H., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware

Filed May 21, 1963, Ser. No. 282,012
10 Claims. (Cl. 333-31)

1. A variable phase shifter for high frequency electric signals, said phase shifter comprising, in combination, a transmission line having an inner conductor disposed within an outer conductor system, said inner conductor being the central portion of a loop having end portions connected to said central portion and angularly disposed with respect thereto, one of said end portions serving as an input terminal of said transmission line and the other of said end portions serving as an output terminal of said transmission line, first and second insulators having different dielectric constants disposed within said transmission line between said inner conductor and said outer conductor system and in tandem with each other, and means for changing the relative lengths of said insulators disposed within said transmission line.

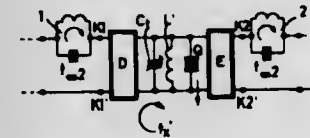
3,316,510

ELECTRICAL LADDER-TYPE FILTERWerner Poschenrieder and Gerhard Götz, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany
Continuation of application Ser. No. 269,526, Apr. 1, 1963. This application June 10, 1966, Ser. No. 556,778
Claims priority, application Germany, Apr. 5, 1962, S 78,852

7 Claims. (Cl. 333-72)

1. An electrical ladder-type filter circuit having an electromechanical oscillator disposed in a transverse branch

which generates an attenuation pole in the blocking range of the filter, a circuit element disposed in parallel with the electromechanical oscillator, as a result of which a parallel resonance frequency lying in the filter blocking range occurs in said transverse branch, a two-port net disposed in said circuit preceding said transverse branch and a two-port net disposed in said circuit following said transverse branch, said two-port nets each containing at least one longitudinal branch and one transverse branch, with a longitudinal branch of each disposed adjacent the transverse branch containing the electromechanical oscillator, a resonance circuit connected ahead of the first mentioned two-port net which is disposed in a branch thereof of

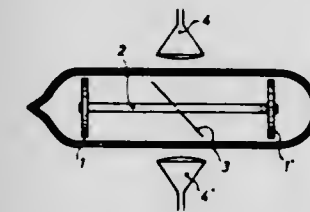


said filter circuit, and a resonance circuit connected behind said second mentioned two-port net which is disposed in a branch thereof of said filter circuit, the resonance frequency of said last mentioned resonance circuits disposed ahead of and behind said two-port nets corresponding, at least approximately, to the parallel resonance frequency occurring in the filter blocking range of the transverse branch containing the electromechanical oscillator, such resonance circuits being so constructed, with respect to the nature of the branch in which they are disposed, that they effect a compensation of the parallel resonance frequency occurring in said transverse branch containing the electromechanical oscillator.

3,316,511

PASSIVE GAS CELL FREQUENCY STANDARD IN THE MILLIMETER WAVE RANGE

Günter Schulten, Hamburg, Schnelsen, Germany, assignor to North American Phillips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 6, 1963, Ser. No. 321,848
Claims priority, application Germany, Dec. 5, 1962, P 30,702
2 Claims. (Cl. 333-76)

1. A passive frequency standard in the millimeter wave range, comprising two plane parallel metal plates arranged in a sealed gas-filled vessel and having a mutual spacing of $n \cdot \lambda/2$, and a thin mica foil interposed between said plates and inclined at an angle of 45° to the plates for input coupling of the micro-wave energy.

3,316,512

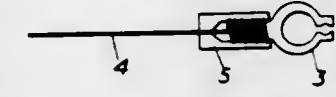
DAMPER FOR CROSSBAR SWITCH SELECT FINGER

Charles Vazquez and Guy Claude Dufresnoy, Paris, France, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Mar. 4, 1964, Ser. No. 349,293
Claims priority, application France, Mar. 6, 1963, 926,981, Patent 1,361,935
9 Claims. (Cl. 335-112)

1. In a crossbar switch, a select bar having a normal position and an off-normal position, a resilient select finger and means for securing it to said bar for movement with

said bar between said normal position and said off-normal position, elastic vibration damping means encircling said select finger near its junction with said select bar for damping the vibration of said resilient select finger, said means

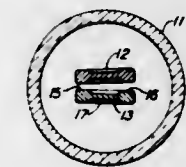


for securing including select bar tab means on said bar and tab gripping means on said finger, and said vibration damping means encircling said tab gripping means and said finger.

3,316,513

SEALED CONTACT REED SWITCH HAVING CONTOURED REEDS

Kenneth F. Bradford, Murray Hill, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Jan. 3, 1966, Ser. No. 518,044
6 Claims. (Cl. 335-154)

1. In a switching device sensitive to variations in contact resistance, the combination comprising:
a sealed vessel;
a first contact sealed in said vessel as a cantilever and having a flat free end;
a second contact for engaging said first contact to open and close an electrical path, said second contact being sealed in said vessel as a cantilever and having a flat free end overlapping and spaced from the flat free end of said first contact, the flat free end of said second contact including two ribs separated by a web, said two ribs for engaging the flat free end of said first contact one after the other and being disposed along the long axis of said first contact and one of said first and second contacts being out of parallel with the other whereby the order in which said two ribs engage said first contact remains fixed and the first rib to engage said first contact electrically connects said first and second contacts and carries and extinguishes any electrical arc appearing between said first and second contacts and the last rib to engage said first contact is not subject to any electrical arc and establishes a connection having a stable contact resistance between said first and second contacts.

3,316,514

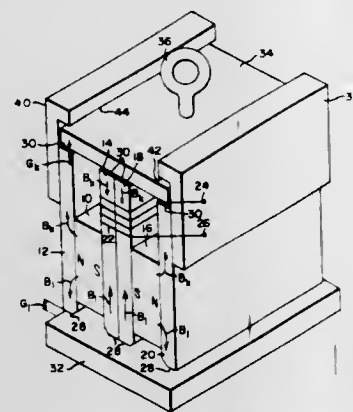
FAIL SAFE ELECTRO-MAGNETIC LIFTING DEVICE WITH SAFETY-STOP MEANS

Raymond J. Radus, Monroeville, and Lawrence R. Scott, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 29, 1965, Ser. No. 443,331
4 Claims. (Cl. 335-291)

3. In magnetic lifting apparatus for moving magnetic loads and being operative with a source of control signals, the combination of: a permanent magnetic flux transfer device including a permanent magnet for supplying magnetic flux, a pair of pole members, said permanent magnet being disposed between said pair of pole members for providing a first and a second magnetic circuit respectively through a load and a keeper end of said device, with the magnetic flux dividing between said magnetic circuits according to their relative reluctance, and a control winding disposed in at least one of said

magnetic circuits for controlling the reluctance thereof in response to control signals being applied thereto; said load disposed for moving at said load end of said magnetic device in said first magnetic circuit with a load air gap being formed between said load and said pole pieces at said load end of said device; a keeper member movably disposed at said keeper end of said magnetic device, with a keeper air gap being formed between said keeper member and the pole pieces at said keeper end of said device; and safety means connected to said device to prevent the inadvertent dropping of said load; said apparatus operative for moving said load by disposing said load and said keeper members adjacent said load

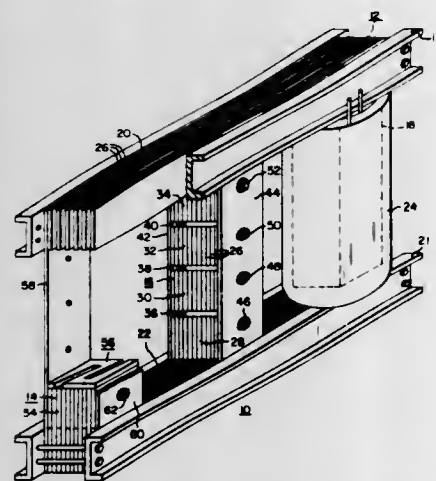


and keeper ends of said device respectively so that said load and keeper air gaps are a minimum and by applying a control signal to said control winding to transfer a majority of the magnetic flux to said first magnetic circuit with said load being held to said magnet device by a strong attractive force, said load being movable by the application of mechanical force to said keeper member so that said keeper member moves away from said keeper end of said magnetic device until being restricted by said safety means, said keeper air gap being a maximum when said keeper member is restricted by said safety means so that the inadvertent application of a control signal to said control winding will not transfer sufficient flux to said keeper member to drop said load.

3,316,515

GAPPED MAGNETIC CORE STRUCTURES

John A. Bock and Theodore R. Specht, Sharon, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 15, 1965, Ser. No. 439,535
3 Claims. (Cl. 336—100)



1. A magnetic core comprising a plurality of stacks of metallic laminations arranged to form a magnetic circuit; said stacks of laminations having a predetermined build dimension perpendicular to the major planes of said stacked laminations; at least one spacer member having predetermined thickness, width and length dimensions;

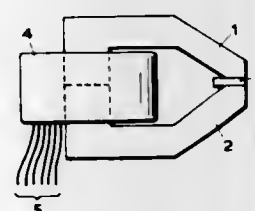
said at least one spacer member having at least two spaced contact surfaces connected by a flexible intermediate portion which allows the width dimension to decrease when stressed; the unstressed width dimension of said at least one spacer member being at least as large as the build dimension of said stacks of metallic laminations; said at least one spacer member being disposed between two of said stacks of metallic laminations, with its thickness dimension separating said stacks, the major planes of the stacked laminations being substantially perpendicular to said spacer member, and the width dimension of said spacer member being substantially perpendicular to the major planes of said stacked laminations; and, means applying a force to said stacked laminations in a direction perpendicular to the major planes of said stacked laminations, reducing the width dimension of said spacer member and allowing the force to be applied to said stacked laminations.

3,316,516

VARIABLE Q TRANSDUCER

Patrick Francis Condon, Sutton Coldfield, and Frederick Martin Gray, Stafford, England, assignors to The English Electric Company Limited, London, England, a British company

Filed Apr. 17, 1962, Ser. No. 207,134
2 Claims. (Cl. 336—152)



1. A variable Q transducer consisting solely of a closed core which is made entirely of magnetic material having high electrical resistivity, except for an insert of magnetic material of relatively low electrical resistivity, a plurality of coils wound on the core and an armature of unmagnetized magnetic material of high electrical resistivity which is located so as to bridge said insert and which is mounted for automatic arbitrary movement towards and away from said insert which movement varies the Q of the transducer and provides a movement detection factor.

3,316,517

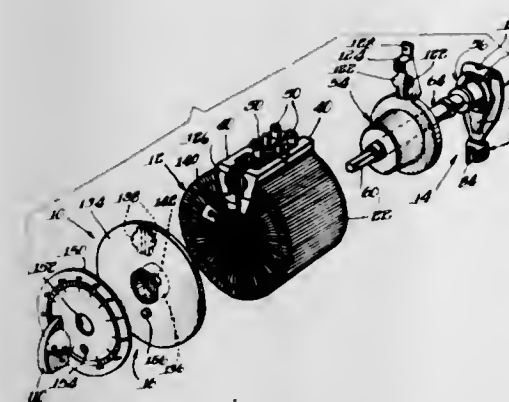
VARIABLE TRANSFORMER WITH WINDING HOLDING CORE HOUSING

Fredrick I. Ellin, Skokie, Ill., assignor to Consolidated Electronics Industries Corp., Skokie, Ill., a corporation of Delaware

Filed May 19, 1965, Ser. No. 456,978
10 Claims. (Cl. 336—149)

1. In a variable transformer, the combination comprising: an annular magnetic core; an electrical winding on said core; insulation means fixed between said core and said winding; radially extending contact arm means mounted for movement in an angular path and including a conductive element carried in electrical contact with said winding, said contact arm means further having a non-round aperture generally aligned with the central axis of said core; mounting means for coupling said contact arm and means on said core and winding, including hub support means, first positioning means fixing said hub support means against rotational movement relative to said core and winding, bushing means, second positioning means non-rotatably mounting said bushing means to said hub support means, enclosure means having a non-round portion fittedly engaging the aperture of said contact arm means and including parts capturing means receiving an end portion of said bushing means for rotatable and lim-

ited axially slidable movement; drive shaft means slidably and rotatably disposed in said bushing means; and selectively operable fastening means acting to secure said



drive shaft means to said parts capturing means, whereby to permit axial repositioning of said shaft means without disturbing the relative positions of said contact arm means and said winding.

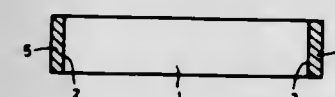
3,316,518

CERAMIC RESISTOR CONTACTED BARRIER-FREE WITH NOBLE METAL

Hartmut Seitor, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany.

Continuation of application Ser. No. 254,757, Jan. 29, 1963. This application Aug. 2, 1966, Ser. No. 569,762
Claims priority, application Germany, Feb. 2, 1962, S 77,855

3 Claims. (Cl. 338—25)



1. A ceramic semiconductor resistor comprising a body having opposite end surfaces and consisting of sintered together doped ferroelectric crystallite particles with perovskite-structure from two-valent and four-valent metals with high positive temperature coefficient of resistance and with a substantially negligible voltage dependence of the entire resistance, the ceramic semiconductor body being provided at the opposite end surfaces thereof with barrier-free contact areas by conducting a hot reducing gas thereover, a pair of barrier-free metal contact layers each disposed on a respective opposite end surface of said body, said contact layers being a noble metal which is ineffective to reduce the four-valent metal oxide of the ferroelectric material contained in said body, said device having a characteristic such that the negative oxide-forming enthalpy of said noble metal is smaller than the formation enthalpy of the transition from Ti_2O_3 to TiO_2 .

3,316,519

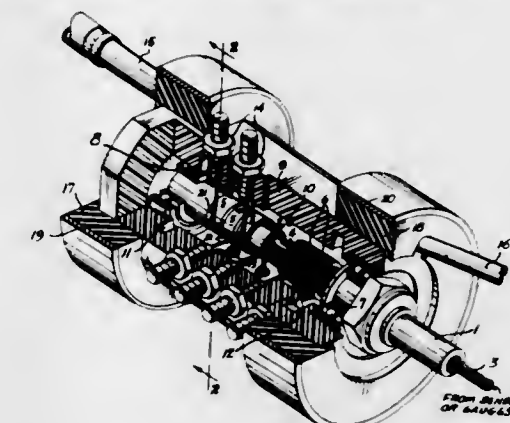
WATER COOLED AND LUBRICATED ELECTRICAL SLIP RINGS

Frank F. Maytone, Federal Way, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware

Filed Nov. 12, 1963, Ser. No. 323,019
4 Claims. (Cl. 339—5)

1. A slip ring assembly, comprising:
(a) a housing defining a chamber, liquid water contained in said chamber,
(b) a shaft mounted for rotation in said chamber,

(c) at least one slip ring mounted to said shaft for rotation therewith,
(d) at least one brush mounted in said chamber so as to be in contact with said slip ring,



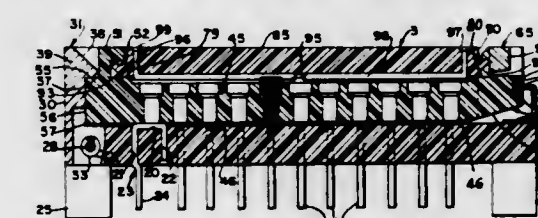
(e) said brush and said slip ring being immersed in said water in said chamber so as to be lubricated and cooled thereby.

3,316,520

ELECTRICAL INTERCONNECTING DEVICES

Hamilton Herman, New Canaan, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey

Filed Sept. 23, 1964, Ser. No. 398,656
5 Claims. (Cl. 339—18)

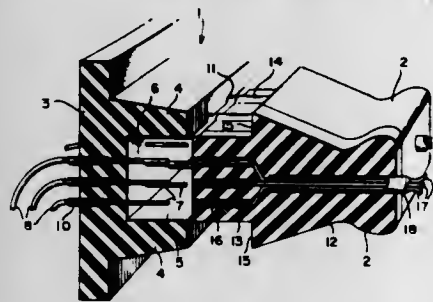


1. In an electrical interconnecting device of the type described, the combination of
a base of electrical insulating material having an upper surface portion;
an intermediate member of insulating material having upper and lower surface portions;
an upper member of insulating material having a lower surface portion;
a first group of electrically conductive wires secured to said base and exposed at said upper surface portion thereof in mutually parallel relation, said first group of wires having elongated portions lying in a common plane parallel to and projecting upwardly from said upper surface portion of said base;
a second group of electrically conductive wires secured to said upper member and exposed at said lower surface thereof in mutually parallel relation, said second group of wires having elongated portions lying in a common plane parallel to and projecting downwardly from said lower surface portion of said upper member;
releasable means for securing said intermediate member to said base with said lower surface portion of said intermediate member facing said upper surface portion of said base, said intermediate member being provided with a plurality of spaced apertures;
releasable means for securing said upper member to said intermediate member with said lower surface portion of said upper member facing said upper surface portion of said intermediate member, the wires of said second group extending across the wires of said first group when said inter-

mediate and upper members are so secured by said releasable means, said apertures being so located that, when said intermediate and upper members are so secured by said releasable means, each of said apertures is disposed at a point where a wire of said second group crosses a wire of said first group; and a plurality of connector pins each disposed in a different one of said apertures to establish an electrical connection between the corresponding wires of said first and second group,

each of said connector pins comprising an axially compressible body the ends of which are deformable and have transverse dimensions materially greater than the diameter of said wires, said connector pins each being axially compressed between said base and upper member, when said intermediate and upper members are secured by said releasable means, with said wires extending across the respective end faces of the corresponding pin, and with the end faces of said pins being subjected to localized compressive deformation such that each of said end faces embraces the projecting wire with which it is engaged.

3,316,521
VARIABLE TERMINATION STRIP CONNECTOR
Ralph P. Fletcher, Jr., 315 169th Place SW., Bothell, Wash. 98011, and Charlie T. Perkins, 1430 SW. 148th, Seattle, Wash. 98106
Filed Feb. 12, 1964, Ser. No. 344,280
2 Claims. (Cl. 339-21)

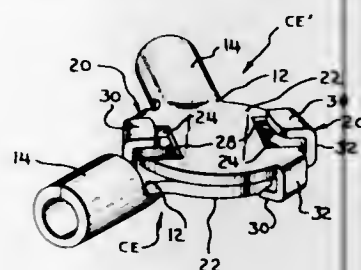


1. An electrical connector comprising, a receptacle member and a plurality of mating plug members, said receptacle including an elongated base portion and spaced parallel ribs extending from one surface thereof to form an elongated recess, a plurality of connector pins in the body of said base and protruding into said recess perpendicular to the bottom thereof, said pins being uniformly spaced in a plurality of uniformly spaced rows running the length of said recess, a plurality of uniformly spaced indexing grooves in one of said ribs within said recess, each of said plug members including a grip portion and an elongated portion for reception within said recess, indexing ribs on the elongated portions for guiding said plug members into said recess, a plurality of connector sleeves within the body of each of said plugs having the same spacing as said pins, and means for connecting electrical wires to said pins and connector sleeves, whereby any one of said plugs may be inserted at random along the length of said receptacle for pin-to-pin connection between said lead wires.

3,316,522
CONNECTOR ELEMENTS
Henry William Demler, Sr., Lebanon, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Apr. 6, 1964, Ser. No. 357,475
11 Claims. (Cl. 339-47)

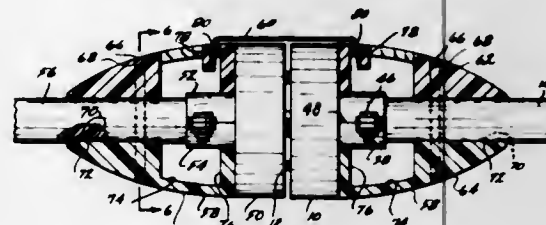
1. A connector element comprising a conductor-receiving portion adapted to secure a conductor means therein, a connector portion spaced from said conductor-receiving

portion, lug means extending outwardly from said connector portion, said connector portion having slots therein spaced from said lug means with which additional lug means on a similar connector element mate to lock the connector elements together upon relative movement



therebetween, and a metal strip passable over one face of the connector portion and through opposing slots on this and at least one similar connector element engaged therewith, thereby preventing relative movement of the engaged connector elements.

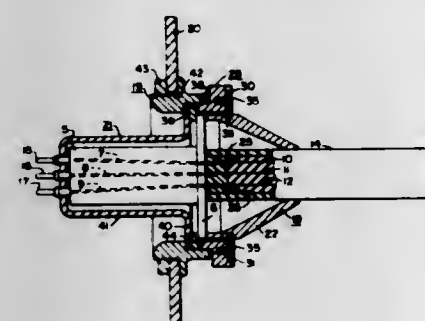
3,316,523
ELECTRICAL CORD ACCESSORY
George J. Trangmar, 418 S. Shaffer, Orange, Calif. 92666
Filed Nov. 20, 1964, Ser. No. 412,734
3 Claims. (Cl. 339-75)



1. In combination:
a first electrical plug including a spaced-apart transversely-extending cord clamp defining an indentation;
a first electrical cord affixed to said first electrical plug by said cord clamp;
a second electrical plug to mate with said first electrical plug, also including a spaced-apart transversely-extending cord clamp defining an indentation;
a second electrical cord affixed to said second electrical plug by said cord clamp;
first and second accessories for each of said first and second plugs, each of said accessories including:
first and second sections of insulating material matable to define a conical exterior configuration, said sections each further defining internal chambers to receive said cord and internal extensions to matingly engage said plug in said indentation, by locking engagement with said transversely-extending clamp; and
means for locking said first and second sections in mating relationship affixed to said plug and said cord whereby to provide a smoothly tapered transitional surface between said plug and said cord.

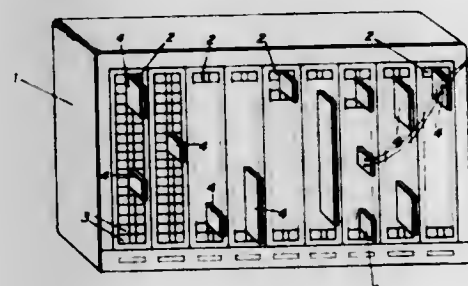
3,316,524
CABLE CONNECTOR ASSEMBLY
Andre Pastor, Baltimore, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 19, 1965, Ser. No. 441,140
1 Claim. (Cl. 339-89)
A cable connector assembly, comprising a flexible cable having an electrical connector plug at one end

thereof with a radially-extending shoulder flange on the cable-extension end of such plug of greater diameter than that of said cable; a sleeve element encircling the cable end, said sleeve element having an end for abutment with a face of the flange of said connector plug, and being of such size as to be substantially no greater than the diameter of such flange, and having an annular groove in its outer periphery; a removable ring-like threaded ele-



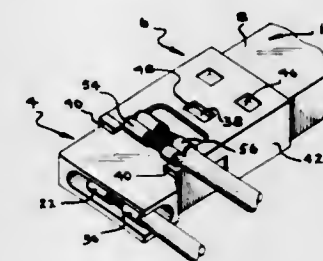
ment for threaded connection to a complementary connector element affiliated with a socket for said connector plug, said ring-like threaded element having an inner overall diameter greater than the outer diameter of the flange of said plug to permit it to pass thereover; a multi-part retaining ring which nests in such groove; and machine screws separately securing the parts of said retaining ring to a rear portion of said ring-like element.

3,316,525
ARRANGEMENT OF CONTACT SPRING STRIPS
Johannes Bernutz, Ludwigsburg-Hoheneck, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 5, 1964, Ser. No. 409,215
Claims priority, application Germany, Nov. 14, 1963, St 21,324
3 Claims. (Cl. 339-176)



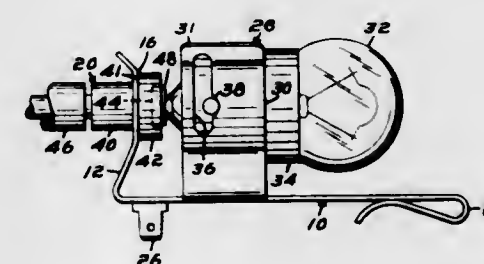
1. Electric contact making devices, comprising:
a housing;
a plurality of contact springs;
means including openings through a wall of the housing and insulating studs along other walls of the housing for supporting said contact springs in rows in said housing;
a contact knife-blade bearing a conductive section;
a filler piece;
said filler piece being shaped to fit between said insulating studs and serve as a guide to receive and to hold said contact knife blade;
each contact spring incorporating a terminal lug;
each terminal lug being proportioned to fit through one of said openings in the housing, and
each elastically deformable stud being arranged to deform most readily in a direction transverse to the plane of the filler piece.

3,316,526
IODINE LAMP CONNECTOR
Luciano Obert and Gianfranco D'Urso, Turin, Italy, assignors to AMP Incorporated, Harrisburg, Pa.
Filed Nov. 27, 1964, Ser. No. 414,199
Claims priority, application Italy, Nov. 30, 1963, 24,469/63
5 Claims. (Cl. 339-176)



1. A coaxial electrical connector of generally rectangular cross-section for engagement with a device having a sleeve and tab insulated therefrom, said connector comprising an insulating housing formed internally with a passageway, an inner tab receptacle of flag form disposable within the said housing passageway and being resilient against constraint of the insulating housing, the said housing including at its rear end a transverse slot in communication with said housing passageway for reception of a conductor secured in flag fashion to the said inner receptacle, an outer electrical receptacle disposable on said insulating housing for resiliently engaging the sleeve, the outer receptacle having at its rear end a transverse crimping ferrule for flag connection to a conductor wire and the said outer receptacle slidably receiving within its rear end a forward end of the rectangular insulating section housing, the receptacle projecting forwardly of the said insulating housing, and cooperating stop means limiting relative movement between the outer receptacle, insulating housing and inner receptacle.

3,316,527
LAMP ASSEMBLY
Robert T. Murray, Needham, Mass., assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Jan. 18, 1966, Ser. No. 521,295
2 Claims. (Cl. 339-188)



1. A socket assembly for an electrical element comprising a base portion having a terminal end bent up to provide a tail piece, said tail piece being bifurcated to provide a pair of spaced leg portions and an arm extending from each side edge of said base portion toward the same plane as that toward which said tail piece is directed, each of said arms having a terminal end bent away from the longitudinal midplane of said base portion, and having an arcuate portion and a vertical slot, for engaging the pin of an electrical element, formed through a portion of said terminal end toward said base portion, each of said leg portions having an edge and each of said edges being arced to form an engagement portion, said engagement portion engaging an insulating member, said insulating member comprising a flange portion and a tubular

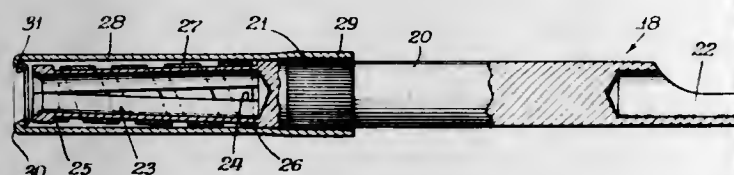
body portion extending from said flange portion and forming a shoulder therewith, said shoulder butting said leg portions against said engagement portions and said base portion having a blade termination extending therefrom.

3,316,528

ELECTRICAL CONNECTOR CONTACTS

Mitchell A. Juris, Chicago, and Joseph A. Storcel, North Riverside, Ill., and Lawrence T. Lhota, Granada Hills, Calif., assignors to Amphenol Corporation, a corporation of Delaware

Filed July 1, 1964, Ser. No. 379,626
1 Claim. (Cl. 339-259)



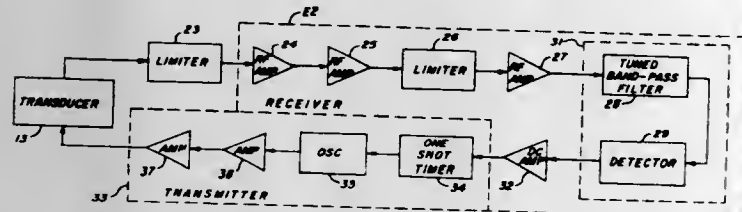
In an electrical connector, a contact comprising a relatively long slender body portion consisting of a single integral piece of high conductivity metal having a rearward end including means for attaching a flexible conductor thereto and having a forward end including a generally cylindrical split sleeve comprising a pin socket, said socket being split into a plurality of separate individual jaws in opposed relationship to each other, with said split sleeve having a reduced outer diameter portion extending between a rearwardly facing shoulder adjacent the front of the sleeve and forwardly facing shoulder adjacent the rearward end of said sleeve; a tubular hood for providing a limiting orifice of fixed dimension surrounding and enclosing said split sleeve and closely spaced with respect to the outer surfaces of the aforesaid jaws, together with a relatively flat, thin radial compression coil spring of plural helical convolutions encircling and intimately contacting the aforesaid split sleeve substantially along the full distance between the aforesaid shoulders to resiliently contact said sleeve uniformly along the length thereof, yet arranged to contact the tubular hood of the assembly upon insertion of a pin into said split sleeve to prevent permanent deformation of the jaws by flexing beyond their elastic limit.

3,316,529

ACOUSTIC TRANSPONDER

Charles H. O'Donnell, Willowick, and John S. Tame, Cleveland Heights, Ohio, assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Aug. 26, 1964, Ser. No. 392,344
1 Claim. (Cl. 340-2)



An acoustic transponder comprising in combination: a reversible transducer for broadcasting an acoustical output signal in response to an electrical input signal and for producing an electrical output signal in response to an acoustical input signal;

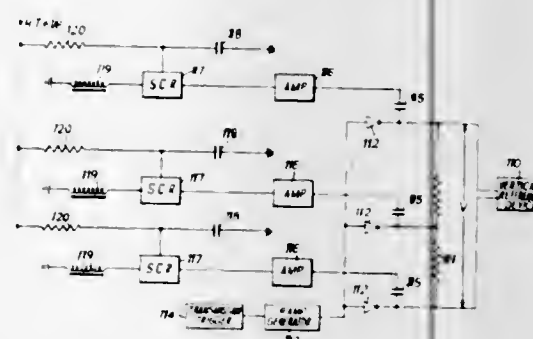
a first limiter connected to the electrical output of said transducer;
first radio frequency amplifier means connected to the output of said first limiter;
a second limiter connected to the output of said first radio frequency amplifier means;
a second radio frequency amplifier means connected to the output of said second limiter;
a tuned band-pass filter connected to the output of said second radio frequency amplifier means;
a detector connected to the output of said tuned band-pass filter;
a direct current amplifier connected to the output of said detector;
a one shot timer connected to the output of said direct current amplifier;
an oscillator connected to the output of said one shot timer; and
amplifier means connected between the output of said oscillator and the electrical input of the aforesaid transducer.

3,316,530

ECHO-SOUNDING APPARATUS WITH STABILIZED NARROW BEAM

Peter Roy Hopkin and William Halliday, London, England, assignors to S. Smith & Sons (England) Limited, London, England, a British company

Filed July 13, 1964, Ser. No. 381,982
10 Claims. (Cl. 340-3)



3. Echo-sounding apparatus having a row of transmitting transducers, a series of switches for effecting individual energization of the transducers, a control device for generating a steering signal representing the required deviation of the beam from a direction normal to the transducers, a voltage divider to which the steering signal is applied, a saw-tooth voltage generator and a series of comparators connected on the one hand to individual tapings of the voltage divider and on the other hand to the saw-tooth voltage generator, each of the series of switches being operated by a respective one of the comparators when the saw-tooth voltage reaches a value related to the voltage applied to that comparator by the voltage divider, whereby the transducers are energized in sequence at intervals determined by the magnitude of the steering signal.

3,316,531

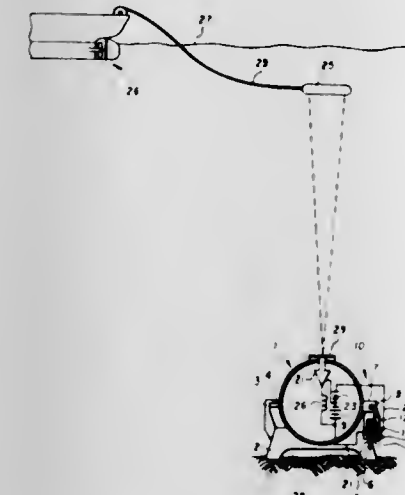
RELEASE MECHANISM

Buford M. Baker, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Aug. 17, 1965, Ser. No. 505,297
6 Claims. (Cl. 340-7)

1. A release mechanism for holding two objects together comprising in combination a frame, first and second pivotally mounted levers on said frame, a compression spring mounted between said frame and said first lever to exert a force for rotating said first lever away from

said frame, and a wire attached to but insulated from said frame and said first lever, thereby to hold said first lever against said spring and hold said spring in compression.



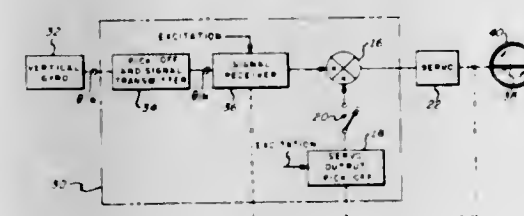
sion, said second lever being supported on one end by said first lever and pivotally mounted at the other end to said frame.

3,316,532

AIRCRAFT FOLLOW-UP SERVOMECHANISM INDICATING APPARATUS

Richard E. Schaffer, Scottsdale, Ariz., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed July 20, 1964, Ser. No. 383,863
3 Claims. (Cl. 340-27)



1. A follow-up servomechanism of the type comprising a reference input member including means for providing a first signal proportional to the position of said reference member from a datum position, a servomotor for positioning an output member, and means driven by said servomotor for providing a second signal proportional to the position of said output member relating to said datum position, means for producing an error signal proportional to the difference between said first and second signals, and said servomotor being controlled in accordance with said error signal, whereby said output member is driven into positional correspondence with said input member as said error signal is nulled, wherein the improvement comprises means for varying the null position of said output member relative to said datum position for given positions of said input member relative to said datum position including:

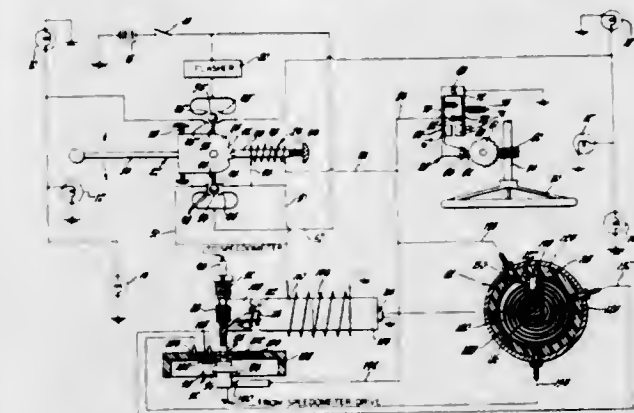
- a further signal generating means driven by said servomotor for providing a further signal proportional to the position of said output member relative to said datum position, and
- means for combining said error signal and said further signal in predetermined ratios and for controlling said servomotor in accordance with said combined signal.

3,316,533

VEHICLE TURN SIGNAL SYSTEM

Nathaniel B. Kell, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Apr. 16, 1964, Ser. No. 360,349
9 Claims. (Cl. 340-56)



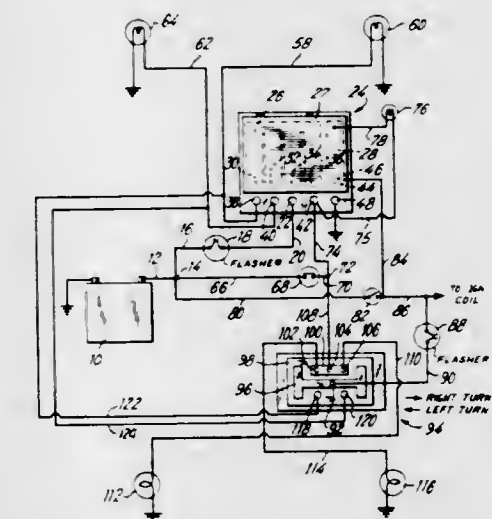
1. A motor vehicle turn signal system comprising first switching means movable between a neutral position and an operative position and normally biased to said neutral position, electromechanical detent means for releasably maintaining said first switching means in said operative position, second switching means for releasing said detent means in response to a predetermined rotation of the steering shaft of said vehicle, third switching means operative independently of said second switching means for releasing said detent means in response to a predetermined distance of travel of said vehicle, release of said detent means permitting said first switching means to return to said neutral position.

3,316,534

AUTOMOTIVE SIGNALING SYSTEM

Jesse R. Hollins, 1059 E. 22nd St., Brooklyn, N.Y. 11210

Filed Oct. 19, 1964, Ser. No. 404,634
5 Claims. (Cl. 340-74)



1. In a vehicle signaling system for an automobile having right and left front and rear signaling lamps, a source of electrical energy, an ignition switch movable between an "open" position and a "closed" position, a hazard switch having a first section and a second section jointly movable between a "hazard on" position and a "hazard off" position, a flasher and an indicator lamp observable in the interior of the automobile, said indicator lamp having a resistance that is high relative to the resistance of the rear signaling lamps:

- circuit means
 - connecting the source of electrical energy, the ignition switch in "closed" position, the first

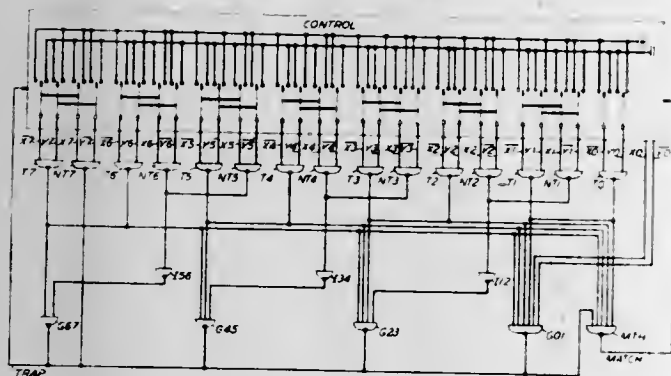
section of the hazard switch in "hazard off" position and the indicator lamp in series with one another and in series with the rear signaling lamps, and

- (ii) connecting the rear signaling lamps in parallel with one another
- (iii) so that when the ignition switch is in "closed" position and the hazard switch is in "hazard off" position, the indicator lamp due to its high resistance will burn steadily and the rear signaling lamps due to their low resistances will not burn,
- (iv) the steady burning of the indicator lamp showing that an electrical path through at least one of the rear signaling lamps has been closed and that said rear signaling lamp is operable, and
- (b) other circuit means
 - (i) connecting the source of electrical energy, the flasher and the second section of the hazard switch in "hazard on" position in series with one another and in series with the right and left front and rear signaling lamps,
 - (ii) connecting said signaling lamps in parallel with one another, and
 - (iii) connecting the second section of the hazard warning switch in "hazard on" position in series with the indicator lamp and the first section of the hazard switch,
 - (iv) said last-named series connection thereby connecting the indicator lamp in parallel with the right and left front and rear signaling lamps
 - (v) so that when the hazard switch is in "hazard on" position and regardless of the position of the ignition switch, the indicator lamp will flash and the right and left front and rear signaling lamps will flash.

3,316,535

COMPARATOR CIRCUIT

Benjamin T. Fought, Columbus, Ohio, assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 2, 1965, Ser. No. 445,094
16 Claims. (Cl. 340-146.2)



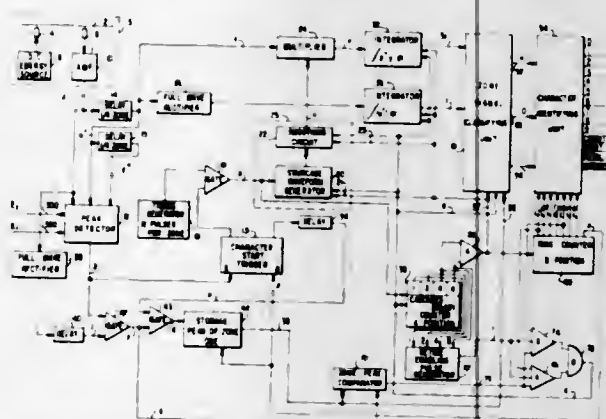
1. A comparator circuit for comparing a first binary number with a second binary number comprising a plurality of stages, means for applying signals representative of three corresponding adjacent bits in each of said numbers to respective ones of said stages with signals representative of alternate bits in each of said numbers being applied to two adjacent ones of said stages, output means in each of said stages, means in each of said stages responsive to either of the respective two most significant bits in said second number being greater than the corresponding bit in said first number for inhibiting the output means in the same stage, means connecting each of said inhibiting means to the output means in all lower order stages for inhibiting the operation of all lower order output means responsive to the operation of said each inhibiting means, means in each of said stages responsive to either of the respective two

least significant bits in said first number being greater than the corresponding bit in said second number for operating the respective output means if said respective output means is not inhibited from operating, and means responsive to the operation of any one of said output means for indicating that said first number is greater than said second number.

3,316,536

SINGLE CHANNEL CHARACTER SENSING APPARATUS

Douglas R. Andrews, Rochester, Minn., and David L. Noble, Monte Sereno, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Continuation of application Ser. No. 334,232, Dec. 30, 1963. This application June 8, 1966, Ser. No. 556,245
15 Claims. (Cl. 340-146.3)



7. Apparatus for converting into a useful form characters written in human language in which the characters are divided into a plurality of parallel zone strips having a height approximately equal to the height of the characters and are written with magnetic ink, said apparatus comprising:

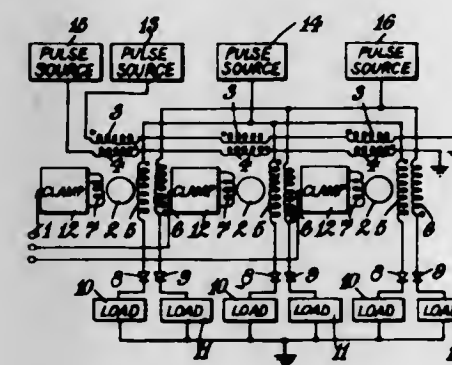
- a character sensing station having a single gap read head;
- means to move each character relative to said character sensing station whereby said zone strips sequentially traverse said read head;
- means to obtain from said read head a characteristic signal for each character traversing said read head, said characteristic signal comprising a sequence of relatively positive and negative sloping zone signals, each of said zone signals being derived from a single zone strip;
- detecting means operative in response to the first peak of said characteristic signal for providing a character start pulse;
- timing means responsive to said character start pulse for establishing successive equally spaced zone start pulses;
- zone integrating means for sequentially integrating the absolute values of said zone signals providing a zone integral signal;
- signal generating means adapted to successively generate correlation signals in response to successive zone start pulses;
- multiplying means for successively multiplying the major portion of each of said zone signals by one of said successively generated correlating signals;
- integrating means for successively integrating the output product of said multiplying means; and
- classification means for generating a first pulse in response to positive integrals of the output products exceeding in value a specified multiple of the associated zone integral signal, a second pulse in response to negative integrals of the output products exceeding in value a specified multiple of the associated zone integral signal, and a third pulse in

response to integrals of the output products of approximately zero value, said pulses collectively being representative of the character sensed.

3,316,537

MAGNETIC CORE LOAD SELECTION SYSTEM

John Alfred Ashton, Stoneleigh, Epsom, England, assignor to Decca Limited, London, England, a British company
Filed Jan. 29, 1964, Ser. No. 340,902
Claims priority, application Great Britain, Jan. 31, 1963, 3,974/63
16 Claims. (Cl. 340-166)



1. A system for steering an electric current to a selected one out of a number of separate loads comprising a corresponding number of square loop magnetic cores, an interrogate winding on each core, a clamping winding on each core, drive means for applying currents simultaneously to the interrogate windings of all the cores in a sense such as to switch the cores from a "re-set" state to a "set" state, clamping circuits for each core operable, when energized, to put a low impedance across said clamping winding on the associated core, selector means for selectively energizing one clamping circuit so as to prevent the selected core from switching on application of current to the interrogate windings, a drive winding on each core connected in series with a uni-directional element and a load, and a load current source arranged to feed each drive winding, the uni-directional element being arranged to be driven to cut-off by the E.M.F. developed across the associated drive winding when the associated core switches to the "set" state.

3,316,538

CIRCUIT ARRANGEMENT FOR PROCESSING PARTS OF WORDS IN ELECTRONIC COMPUTERS

Robert Piloty, Stuttgart-Kaltental, Dietrich Pabst, Markgroningen, Wurttemberg, and Walter Thiele, Schwenningen, Wurttemberg, Germany, and Walter Bauer, deceased, late of Stuttgart, Germany, by Magda Bauer, nee Beck, and Degenkolb Gabriel, nee Bauer, Stuttgart-Sollenbuch, Germany, and Barbara Bauer, Haltingen, Sudbaden, Germany, legal heirs, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed July 25, 1963, Ser. No. 302,756
Claims priority, application Germany, July 31, 1962, St 19,548
4 Claims. (Cl. 340-172.5)

1. A circuit arrangement for processing variable length data word items in a data processing system organized for processing word signal groups of fixed length, comprising:

means for signalling the beginning and end positions of a data word item with reference to a full complement of positions within a word of predetermined fixed length;

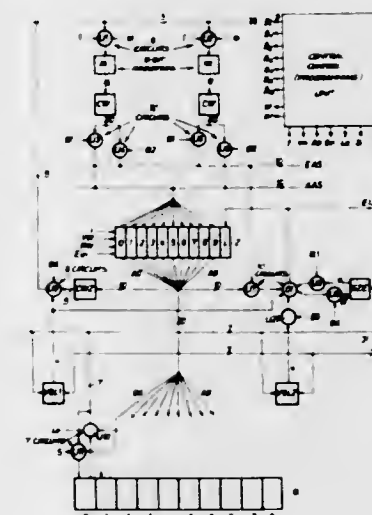
a register having the capacity to store a word having said predetermined fixed length;

a set of data signal conveying bus lines;

means coupled to said position signalling means for effecting a sequential transfer of data signals between successive stages of said register and said set of bus lines commencing at an initial position in said register corresponding to said beginning position signal and proceeding thru a terminal position in said register corresponding to said end position signal, and including

a ring counter having an idle position I and a plurality of active positions corresponding to the said full complement of positions in a word of said predetermined fixed length;

means effective at the beginning of a cycle of operation of said transfer effecting means for setting said ring counter to an initial active position corresponding to said beginning position signalled by said signalling means;



means thereafter effective to advance the state of said counter through a predetermined sequence of said active positions including a position corresponding to the said terminal position;

means conditioned by said operation terminating means for setting said counter to the said idle position;

means coupled to said counter, said bus lines and said register for effecting transfer of data signals between said bus lines and said register in correspondence with the active positions of said counter;

said counter including a plurality of flip flops, a transistor of each being connected to a common emitter resistance; and

means rendered effective upon completion of the transfer of data relative to said terminal position of said register for terminating the operation of said transfer effecting means and for transmitting a signal indicative of such termination of the associated transfer operation.

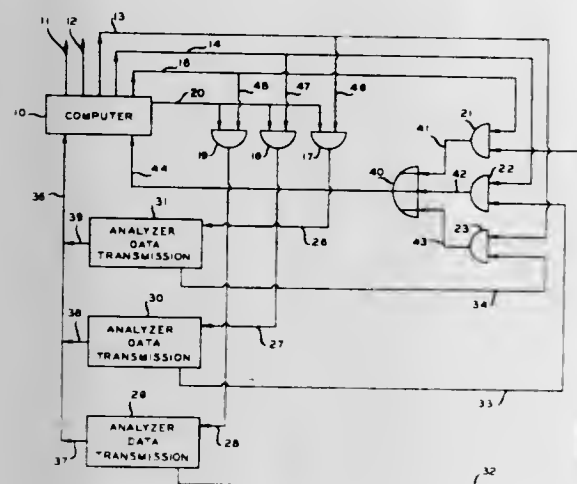
3,316,539

COMPUTER DATA READ-IN CONTROL SYSTEM

Robert G. Carleton, Saxonville, Mass., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Feb. 6, 1964, Ser. No. 342,941
6 Claims. (Cl. 340-172.5)

3. Apparatus comprising a computing means, a first gate means, a second gate means, multiple gates within each of said gate means, means for passing multiple interrogation signals in sequence from said computing means

to said first gate means, each of said interrogation signals passed to a separate gate within said first gate means, means for passing said multiple interrogation signals from said computing means to said second gate means, each of said interrogation signals passed to a separate gate within said second gate means, multiple data transmission means, means for passing a signal from each of said data transmission means to a separate gate within said second gate means, a sense channel means communicating between said second gate means and said computing means, means for passing a sense signal from each of said multiple gates in said second gate means through said sense



channel to said computing means upon the simultaneous receiving of an interrogation signal and a ready signal by each of said gates within said second gate means, a single read channel communicating between said computing means and said first gate means, means for passing a read signal through said read channel to each of said gates within said first gate means, and means for passing a signal from each of said gates within said first gate means to a separate data transmission means of said multiple data transmission means upon the simultaneous receiving of an interrogation signal and a read signal by each of said gates within said first gate means.

3,316,540

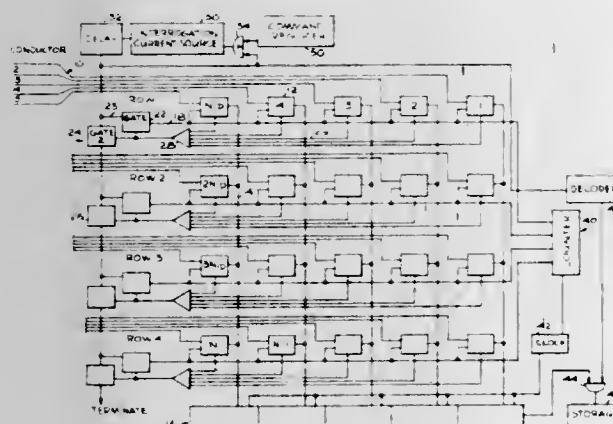
SELECTION DEVICE

Samuel Nissim, Malibu, Calif., assignor to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Continuation of application Ser. No. 335,628, Jan. 3, 1964.

This application Sept. 19, 1966, Ser. No. 580,498

16 Claims. (Cl. 340-172.5)



1. In combination with a plurality of binary elements each capable of assuming either a first or second state,

means for sequentially generating coded signals identifying those elements in a first state, said means comprising: means interconnecting said elements in a matrix comprised of rows and columns; a register; means for sequentially reading out the contents of each of said rows into said register; a counter; means for driving said counter to a different predetermined count in response to the contents of each row being read out; means for concurrently shifting the contents of said register and incrementing said counter; and means responsive to a predetermined binary signal being shifted out of said register for reading out the contents of said counter.

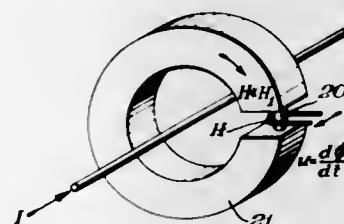
3,316,541

MAGNETIC CORE MEMORY DEVICE

Walter Fischer, Silver Spring Md., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts

Filed June 30, 1959, Ser. No. 823,875

2 Claims. (Cl. 340-174)



1. In a magnetic core memory matrix, closed magnetizable cores as memory cells, said cores having small dimensions and so constructed and arranged as to enable a memory current flowing through a memory cell to induce a magnetic field strength which is smaller for the larger part of its path than for the smaller part of its path, said cores comprising a plurality of substantially parallel thin pins spaced between a pair of rectangular plates in an array, said pins being in the order of magnitude of 1 mm. in length and of lesser diameter and spaced apart at a distance greater than the pin diameter and of the order of a few multiples of the pin diameter, said pins being of rectangular hysteresis material, said plates being of high permeability material and providing a common back loop for the magnetic fluxes through said plurality of pins in said array and an air gap of less than one-tenth thousandth of the pin length.

3,316,542

DOUBLE SIGNAL TO NOISE RATIO IN A SEARCH MEMORY

George A. Fedde, Norristown, and Charles A. Nelson, Philadelphia, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

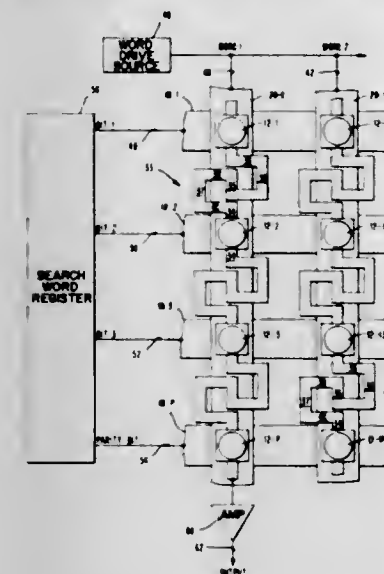
Filed Apr. 23, 1963, Ser. No. 275,106

17 Claims. (Cl. 340-174)

1. A search memory comprising a plurality of individual storage devices organized into rows and columns for storing information bits and special character bits therein, the devices of each of said columns storing the bits of a complete information unit, and a related special character bit; actuating means including a search means adapted to receive a multi-bit search unit including information bits and a special character bit; connecting means interconnecting all of said bits of said search means to said storage devices; said storage devices producing output signals when properly actuated by means of said actuating

means; and output means interconnecting said information bit storage devices and said special character bit storage devices to sum the respective signals produced and

at least sufficient to switch the film to said one state, and means for reading out the information item at a predetermined distance along the register.



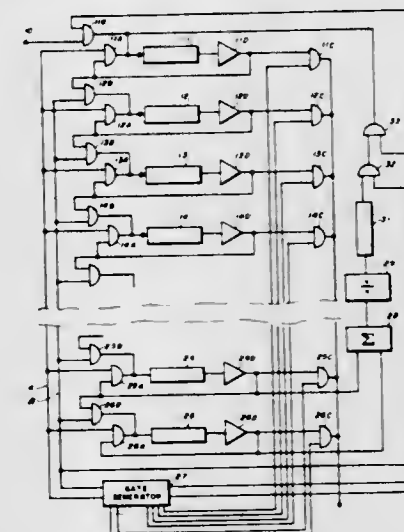
3,316,544

REAL-TIME RUNNING MEAN GENERATOR

Victor C. Anderson, San Diego, Calif., assignor to The Regents of the University of California

Filed May 22, 1963, Ser. No. 282,439

9 Claims. (Cl. 340-174.1)



produce an output signal whose amplitude is greater than that available from said information bit storage devices alone.

3,316,543

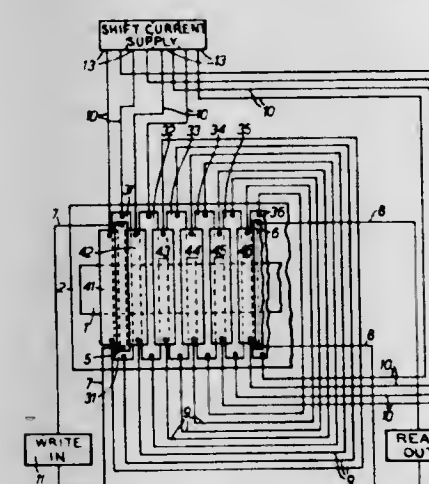
MAGNETIC THIN FILM INFORMATION SHIFTING REGISTERS

Andrew Charles Tickle, Stevenage, England, assignor to International Computers and Tabulators Limited

Filed Jan. 20, 1964, Ser. No. 338,794

Claims priority, application Great Britain, Feb. 12, 1963, 5,656/63

10 Claims. (Cl. 340-174)



1. A thin magnetic film information shifting register including a continuous length of anisotropic thin magnetic film having two stable states in which the magnetisation vector is aligned respectively in opposite directions substantially along the length of the film, the film initially all being in one of said states, means for switching a small area of the film to the opposite state to enter an information item into the register, at least three shifting conductor groups lying transverse the film and magnetically linked therewith the conductors of the groups being cyclically interleaved along the film length, means for applying asymmetrical shifting current signals to the conductor groups in cyclic sequence to produce a resultant magnetic field progressing in one direction along the film length to shift the switched area, the shifting field being distributed so that the effective field acting on the leading edge of the shifted area corresponds in sign to said opposite state and has a magnitude less than that required to switch the film, and the effective field acting on the trailing edge of the shifted area corresponds in sign to the initial magnetic state of the film and has a magnitude

1. A real-time running mean generator for generating the real-time running mean of quantized analog signals comprising:

a plurality of recirculating delay means connected serially together through a plurality of first gating means, each of said delay means having an input and an output, a different one of said gating means connected to the input of each delay means; one of said delay means comprising a signal-input delay means and having a gate connected to its input to receive an input signal; at least two of said delay means having combining and normalizing means connected to their outputs for combining and normalizing their outputs; second gating means for inserting said normalized outputs into said signal input delay means; and means for sequentially reading out the outputs of each of said delay means.

3,316,545

DETECTOR FOR NATIVE PARTICLES OF GOLD AND PLATINUM

Jess M. Reed, 620 S. Inglewood Ave., Inglewood, Calif. 90301

Filed July 27, 1964, Ser. No. 385,363

4 Claims. (Cl. 340-236)

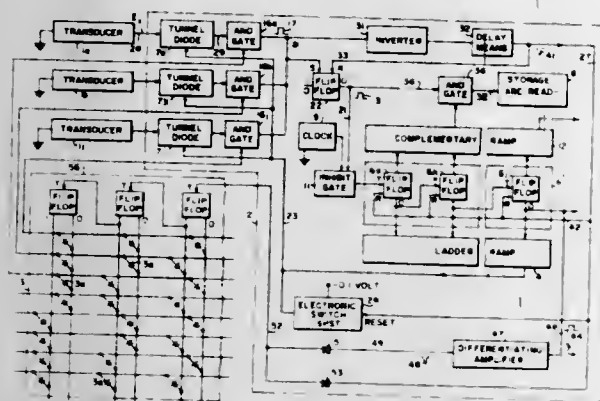
1. A device for detecting small particles of electrically conductive material such as metallic gold or platinum, the device comprising in combination:

a relatively smooth, slide surface of electrically conducting material, which surface is divided into at least two separate areas by a thin insulating gap of predetermined width; channel means at least partially enclosing said slide surface to contain a sample of finely divided material such as crushed ore, sand or gravel, for movement of said material over said surface between the two areas, whereby electrically-conducting particles contained therein may transiently bridge said insulating gap, and thus close an electrical circuit between said two areas; and an electric power source and electric-responsive indicating means, each forming a segment of a continuous circuit through said successive surface areas,

whereby closing of the circuit by one or more of said particles causes the indicating means to signal the presence of electrically-conducting particles in the sample.

3,316,546

ANALOG TO DIGITAL CONVERTER SYSTEM
John M. Bentley, Glen Burnie, Walter J. Lytle, Catonsville, and Charles P. Holt, Jr., Baltimore, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 15, 1963, Ser. No. 317,867
16 Claims. (Cl. 340-347)

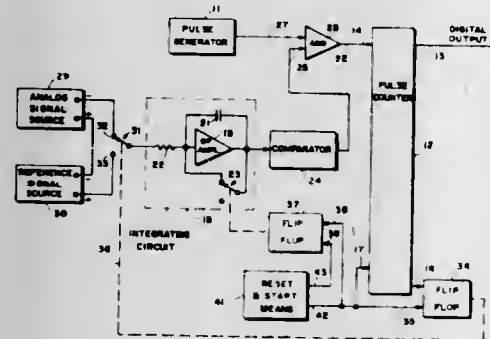


1. An analog-to-digital converter comprising an electronic digital counter operable to count in binary digital representation of an analog in one direction from a selected lower value over a range of values at least as great as the variation of the analog input, electrical summation network means electrically coupled to said counter to generate a ramp function reference voltage, means responsive to an error signal represented by the algebraic sum of the analog input and the output of said summation network means for recycling said counter.

3,316,547

INTEGRATING ANALOG-TO-DIGITAL CONVERTER

Stephan K. Ammann, Mountain View, Calif., assignor to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware
Filed July 15, 1964, Ser. No. 382,852
14 Claims. (Cl. 340-347)

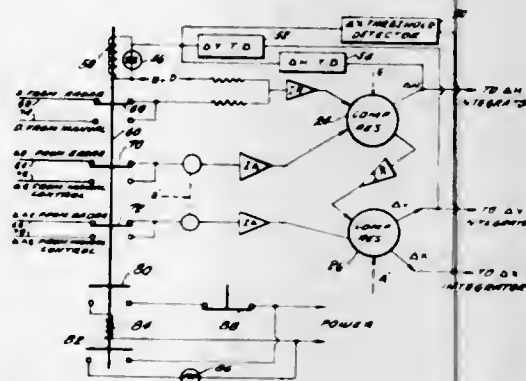


1. An integrating analog-to-digital converter comprising pulse generating means for generating a series of pulses having equal time separation, pulse counter means for producing a digital output representative of a number of pulses applied to its input, integrating means for generating an output signal proportional to the time integral of an input signal applied thereto, means for applying a first input signal to said integrating means to produce a first integrated output signal, means responsively coupled to said integrating means for initiating transmission of pulses from said pulse generating means to the input of said counter means when said first integrated output signal has a first level, said counter means being driven from a predetermined starting count to a

full scale count in a first time interval beginning at the time said first integrated output signal is at said first level, said first integrating output signal varying from said first level to a second level during said first time interval, means for applying a second input signal to said integrating means with a polarity opposite to said first input signal and at a time corresponding to the termination of said first time interval, said integrating means producing a second integrated output signal in response to said second input signal varying from said second level to said first level during a second time interval immediately following said first time interval, and means responsively coupled to said integrating means for terminating transmission of pulses from said pulse generating means to said counter means at the termination of said second time interval, whereby the digital output of said counter means at the termination of said second time interval is representative of the ratio of the integrals of said first and second input signals.

3,316,548

AUTOMATIC RADAR TRACKING SYSTEM
Salvatore P. D'Amico, Huntington, N.Y., assignor to Sperry Rand Corporation, Ford Instrument Company Division, Long Island City, N.Y., a corporation of Delaware
Filed Nov. 1, 1965, Ser. No. 505,875
21 Claims. (Cl. 343-7.4)



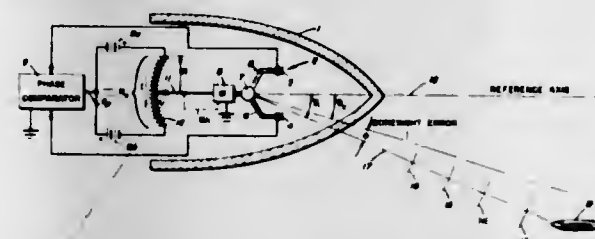
3. A radar tracking system comprising:
an antenna;
first means operatively connected to said antenna for automatically producing an error signal indicative of a change of position of a target being tracked;
second means responsive to said error signal for automatically changing the position of said antenna to correspond with the change of position of the target;
and third means responsive to a predetermined magnitude of said error signal for preventing said second means from automatically changing the position of said antenna in response to an error signal of greater magnitude than said predetermined magnitude.

3,316,549

RADOME PHASE COMPENSATING SYSTEM
Richard H. Hallendorff, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Mar. 16, 1966, Ser. No. 536,591
6 Claims. (Cl. 343-7.4)

1. In a radar system including a rotatable antenna pair for receiving a wavefront from a target and a radome enclosing said antenna pair and producing a refractive effect on said wavefront prior to reception by said antenna pair, a phase compensating sub-system for compensating for the known manner in which said refractive effect varies as a function of the position of said antenna pair, said phase compensating system comprising, in combination, rotating means for rotating said antenna pair, phase comparator circuit means operably connected to said rotating means and to each antenna element of

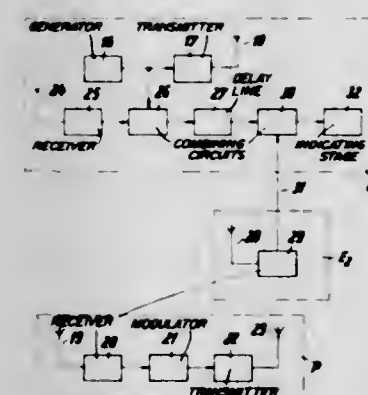
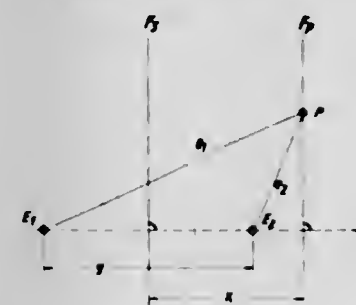
said antenna pair adapted to produce a control signal for said rotating means effective to cause said rotating means to rotate said antenna pair towards said target, in accordance with the phase difference of said wavefront as received by each antenna element of said antenna pair, and



correcting circuit means conditioned in accordance with the known manner in which said refractive effect varies as a function of antenna pair position and operably connected to said phase comparator circuit means for correcting the control signal produced by said phase comparator circuit means to compensate for said refractive effect.

3,316,550

NAVIGATION SYSTEM
Alexander Prichodjko, Oberelchingen, Kreis Neu-Ulm, Germany, assignor to Telefunken Patentverwertungs G.m.b.H., Ulm (Danube), Germany
Filed July 8, 1963, Ser. No. 293,472
Claims priority, application Germany, July 6, 1962, T 22,421, T 22,422, T 22,423
36 Claims. (Cl. 343-15)



1. A method of determining the distance x between a plane F_P containing a point P and the plane of symmetry between two high frequency stations at E_1 and E_2 which are spaced apart a distance g according to the equation

$$x = \frac{(e_1 + e_2)(e_1 - e_2)}{2g}$$

wherein e_1 is the distance between P and E_1 and e_2 is the distance between P and E_2 , said method comprising the steps of:

(a) producing the factors $(e_1 + e_2)$ and $(e_1 - e_2)$ as transit time sections and transforming the same into pulse trains containing pulses of a pulse repetition frequency

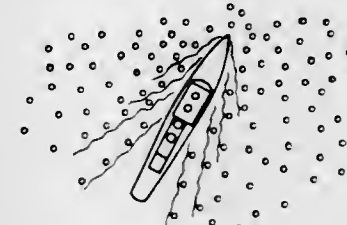
$$f = \frac{c}{g\sqrt{2D}}$$

wherein c is the propagation velocity of the signals travelling said distances e_1 and e_2 , and D represents an arbitrarily selectable unit of length into which g is to be substituted;

(b) counting the number of pulses of both transit time sections; and
(c) multiplying the counted values by each other; and
(d) determining whether the transit time between one of the two stations and P is shorter or longer than the transit time between the other of the two stations and P , thereby to derive an algebraic sign for x to indicate on which side of the plane of symmetry F_P the plane F_P lies.

3,316,551

METHOD OF GATHERING HYDROLOGIC AND HYDRANTIC DATA BY THE USE OF ELECTROMAGNETIC RERADIATORS
Allen Martin Feder and David Thomas Barry, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Jan. 14, 1965, Ser. No. 425,396
1 Claim. (Cl. 343-18)



A method of navigational mapping comprising the steps of depositing coated polystyrene beads onto the surface of a body of water, allowing said beads to become randomly dispersed over the surface of said body of water, radar scanning the body of water to detect the coated beads thereon, and radar scanning a second time after passage of a vessel through the area covered by said coated beads to detect the path of said vessel marked by the disrupted pattern of said coated beads.

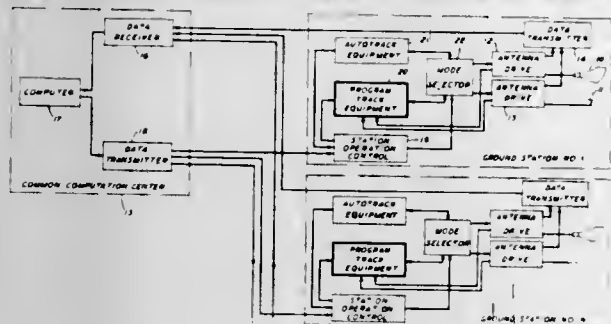
3,316,552

SATELLITE COMMUNICATION ANTENNA DIRECTION SYSTEM

Elton J. Reid, Gillette, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 29, 1965, Ser. No. 451,868
14 Claims. (Cl. 343-117)

12. A program track system for developing relatively continuous antenna pointing signals, which comprises, in combination: means for receiving from a distant computation center digital data which defines the expected positions and velocities at discrete selected times only of each of a number of orbiting satellites; means for storing said digital data; means for continuously reading out said digital data to produce sequences of digital pulse signals; linear interpolation means responsive to said digital data for developing position and velocity specifications for each of said satellites at other specified times which comprises, signal processing means including, means for storing digital pulse signals, means for selectively converting said digital signals to analog signals, means for incrementally altering the magnitude of said analog signals linearly in accordance with a scheduled dependent on said velocity specifications, means for converting incrementally altered signals into digital signals, means for continuously altering said sequences of pulse signals representative of said received position specifications in accordance with said altered digital signals to produce interpolated digital signals, means for developing digital signals which define the momentary position of a tracking antenna, means for converting said antenna position signals into analog signals,

means for converting said interpolated digital signals into analog signals, means for algebraically combining said analog antenna position signals and said analog inter-



polated signals to produce error signals, and means for converting said analog error signals into digital error signals.

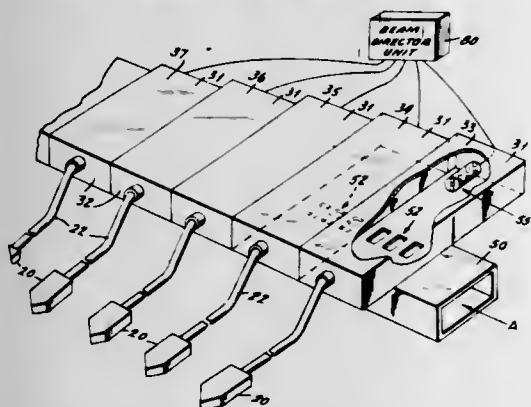
3,316,553

PARALLEL FEED ANTENNA SYSTEM WITH PHASE SHIFT SWITCHING

Judd Blass, Bayside, N.Y., assignor to Blass Antenna Electronics Corporation, Long Island City, N.Y., a corporation of Delaware

Filed Oct. 15, 1962, Ser. No. 230,358

19 Claims. (Cl. 343-854)



1. An antenna system comprising a plurality of radiating elements; said radiating elements being positioned in a predetermined array; a plurality of branch signal channels; connecting means operatively connecting each of said radiating elements to corresponding ones of said branch signal channels at a first end region of said branch signal channels; a main signal channel; directional coupler means operatively constructed to couple an introduced signal between said main signal channel and said plurality of branch signal channels; said directional coupler means directing said coupled signal towards a second end region of each of said branch signal channels; said second end regions each including reflecting means constructed to reflect said coupled portion towards said first end region; said first end regions being an outlet for said coupled signals between said branch signal channels and said radiating elements to form a signal beam; adjustment means individually controlling the characteristic of each of said reflecting means whereby the phase of each of said coupled signals at said first end regions may be individually varied; the scan angle of said signal beam determined by the additive phase effect of said coupled signals.

3,316,554

MULTI-POINT RECORDERS

Kenneth B. Parker, Jr., Norristown, and Albert E. Pasch, Gwynedd Valley, Pa., assignors to Leeds and Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Oct. 7, 1964, Ser. No. 402,215

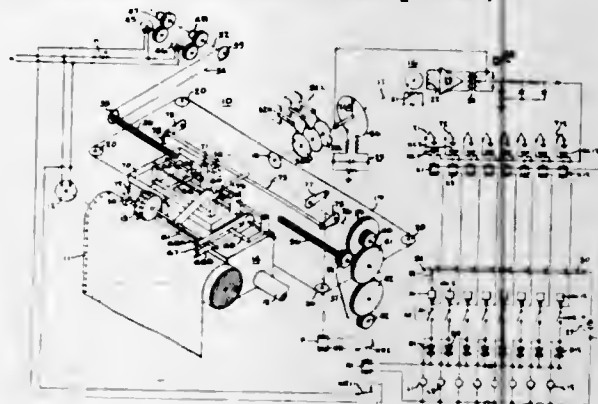
22 Claims. (Cl. 346-34)

1. A multi-point recorder system comprising a recorder carriage movable transversely of a recorder

chart to position corresponding with balance of a measuring circuit,

a multi-point printer mounted on said carriage for movement into printing engagement with the chart, a multi-point switch having movable contact structure in sequence engageable with contacts respectively corresponding with different measuring points connectable to said measuring circuit,

drive means continuously mechanically connected to said multi-point printer and to said multi-point switch for advancing said movable contact structure of the multi-point switch in synchronism with advance of markers of the multi-point printer and including actuating means operable to effect printing movement of said multi-point printer,



print-hold-out means including a solenoid normally in energization state precluding printing movement of said printer by said actuating means,

control relay means having contacts in the energization circuit of said solenoid, and

a plurality of point-selector switches in the energization circuit of said relay means and respectively in series with said contacts of the multi-point switch to effect, when any one or any combination of the point-selector switches is closed, a change in the energization state of said solenoid for printing of only the selected measuring point or points.

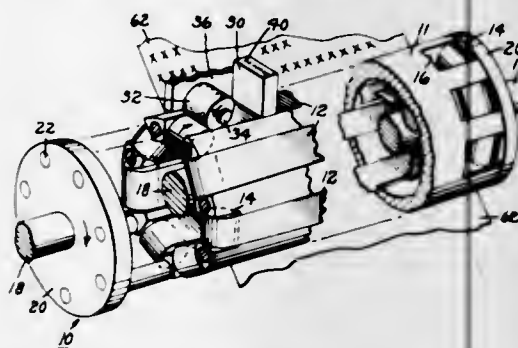
3,316,555

ELECTROSTATIC PAGE PRINTER

Benjamin J. Barish, Detroit, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Apr. 29, 1963, Ser. No. 276,315

13 Claims. (Cl. 346-74)



6. Recording apparatus comprising: a cylinder rotatable along the longitudinal axis thereof; a plurality of strips of recording medium carried by said cylinder, each of said strips a recording medium being spaced from each other and extending along the outer periphery of said cylinder parallel to its longitudinal axis; a matrix-type recording head; means for effecting relative movement between said recording head and each individual strip of recording medium in a direction parallel to the longitudinal axis of said cylinder to record on each strip of recording medium a line of information; and means for rotating said cylinder to transfer from said strips of recording medium to a record-receiving sheet said lines of information.

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DESIGNS

APRIL 25, 1967

207,477

DISPLAY SPINNER

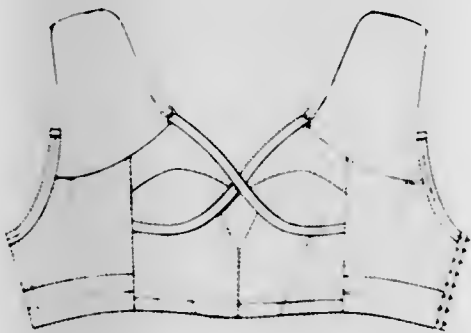
Shirley McLarty, 417 Blanning St.,
Dallas, Tex. 75218
Filed Oct. 21, 1965, Ser. No. 87,688
Term of patent 14 years
(Cl. D1—2)



207,478

BRASSIERE

Charles M. Sachs, West Englewood, and Edward E. Astor,
Fort Lee, N.J., assignors to International Latex Cor-
poration, a corporation of Delaware
Filed Oct. 11, 1965, Ser. No. 87,391
Term of patent 14 years
(Cl. D2—24)



207,479

FACE GUARD FOR A HELMET

Fred R. Dunning, Brecksville, Ohio, assignor to Dungan-
ard, Inc., Brecksville, Ohio, a corporation of Ohio
Filed Sept. 9, 1966, Ser. No. 3,784
Term of patent 14 years
(Cl. D2—233)



207,480

COMBINED SOLE AND HEEL UNIT FOR FOOTWEAR

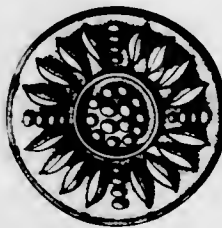
Henry Bettle, Stocks Wicks Lane, Formby,
Lancashire, England
Filed June 3, 1966, Ser. No. 2,556
Claims priority, application Great Britain Feb. 24, 1966
Term of patent 14 years
(Cl. D2—320)



207,481

KNOB

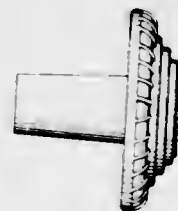
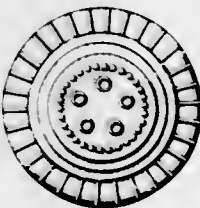
Anthony J. Carsello, Hollywood, Calif., assignor to Ajax
Hardware Manufacturing Corp., City of Industry,
Calif., a corporation of California
Filed June 27, 1966, Ser. No. 2,815
Term of patent 14 years
(Cl. D10—8)



207,482

KNOB

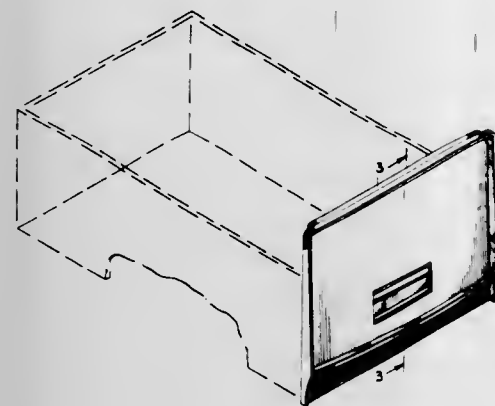
Anthony J. Carsello, Hollywood, Calif. (5071 W. Silverarrow Drive, Palos Verdes, Calif. 90274)
Filed June 27, 1966, Ser. No. 2,822
Term of patent 14 years
(Cl. D10—8)



207,483
COMBINED DRAWER FRONT, PULL, AND LABEL HOLDER

Robert J. Dottinger, Fairview, N.J., assignor to Cole Steel Equipment Co., Inc., New York, N.Y., a corporation of New York

Filed Sept. 15, 1965, Ser. No. 87,018
Term of patent 14 years
(Cl. D10—8)



207,484
HINGE

Dagfinn O. Amdal, Rockford, Ill., assignor to National Lock Co., Rockford, Ill., a corporation of Delaware

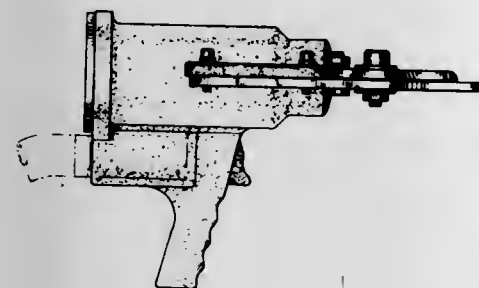
Filed Feb. 17, 1966, Ser. No. 1,082
Term of patent 14 years
(Cl. D10—9)



207,485
FOWL NECK CUTTER

Kenneth E. Belknap, Dinuba, Calif., assignor to Baush & Lomb Corporation, Rochester, N.Y., a corporation of New York

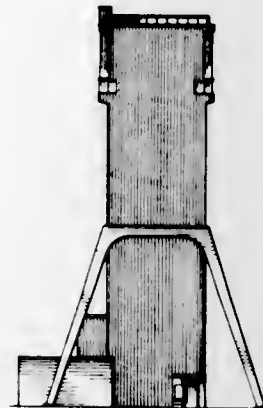
Filed June 27, 1966, Ser. No. 2,829
Term of patent 14 years
(Cl. D11—1)



207,486
HEADFRAME

Leo Borasio, Denver, Svend A. Ronlov, Englewood, and Chester C. Jancewicz, Lakewood, Colo., assignors, by mesne assignments, to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

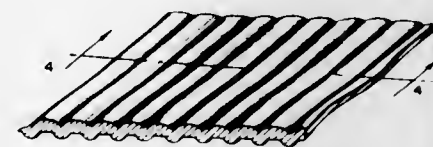
Filed Feb. 3, 1966, Ser. No. 908
Term of patent 14 years
(Cl. D13—1)



207,487
FILTER PAPER

Southwick W. Briggs, Montgomery County, Md., and William A. Brazzol, Washington, D.C. (both % Stone Filter Co. Incorporated, 900 Franklin St. NE., Washington, D.C. 20017)

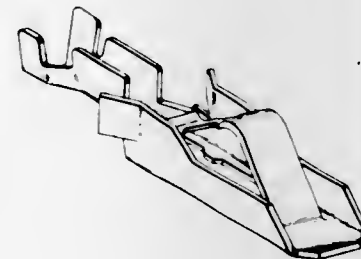
Filed Dec. 28, 1964, Ser. No. 83,165
Term of patent 14 years
(Cl. D16—1)



207,488
ELECTRICAL CONNECTOR

Charles Edward Reynolds, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Filed June 28, 1965, Ser. No. 85,914
Term of patent 14 years
(Cl. D26—1)



207,489
OPERATING LEVER FOR AN ELECTRICAL SWITCH

Harry J. Collins, Jr., Bayside, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware

Filed Mar. 30, 1965, Ser. No. 84,519
Term of patent 14 years
(Cl. D26—13)



207,490
TELEPHONE SET

Marco Zanuso, Milan, Italy, and Richard Sapper, Stuttgart-Degerloch, Germany, assignors to Società Italiana Telecomunicazioni Siemens S.p.A., Milan, Italy

Filed May 23, 1966, Ser. No. 2,410
Term of patent 14 years
(Cl. D26—14)



207,491
TELEPHONE SET

Marco Zanuso, Milan, Italy, and Richard Sapper, Stuttgart-Degerloch, Germany, assignors to Società Italiana Telecomunicazioni Siemens S.p.A., Milan, Italy

Filed June 10, 1966, Ser. No. 2,639
Term of patent 14 years
(Cl. D26—14)



207,492
MONSTRANCE OR THE LIKE
Ernelle Johnson, 559 Johnson St., Cocoa, Fla. 32922

Filed Aug. 26, 1965, Ser. No. 86,730
Term of patent 14 years
(Cl. D29—23)



207,493
GOLF PUTTER

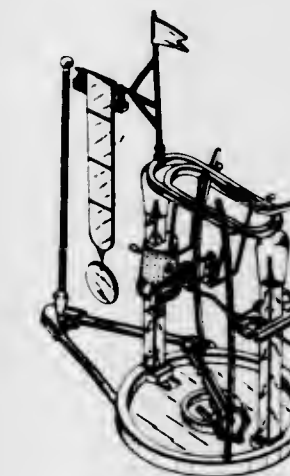
Robert J. Mader, 1607 Hickory St., Torrance, Calif. 90503

Filed July 11, 1966, Ser. No. 3,034
Term of patent 7 years
(Cl. D34—5)



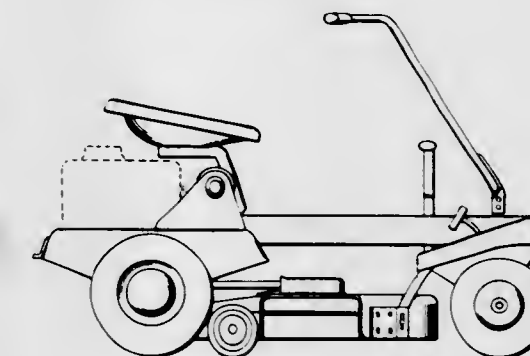
207,494
CIRCUS-ACT-SIMULATING GAME TOY
John W. Ryan, Bel Air, Calif., assignor to Mattel, Inc., a corporation of California

Filed Feb. 1, 1966, Ser. No. 830
Term of patent 14 years
(Cl. D34—15)



207,495
RIDING LAWN MOWER
William H. Armstrong and Jack L. Ponkey, Birmingham, Mich., assignors to Presto Lock Co., Inc., Garfield, N.J., a corporation of New York

Filed May 5, 1966, Ser. No. 2,180
Term of patent 14 years
(Cl. D40—1)

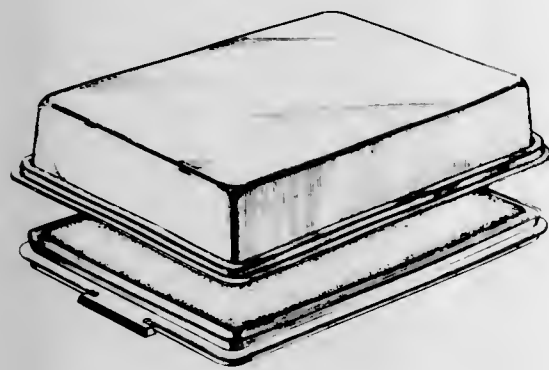


207,496

CAKE CONTAINER

James B. Swett, Barrington, R.I., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

Filed July 6, 1965, Ser. No. 86,041
Term of patent 14 years
(Cl. D44-1)



207,497

COFFEE SERVER

Charles J. Scavullo, Great Neck, N.Y., assignor to Legion Utensils Co., Inc., a corporation of New York

Filed June 10, 1966, Ser. No. 2,637
Term of patent 14 years
(Cl. D44-21)

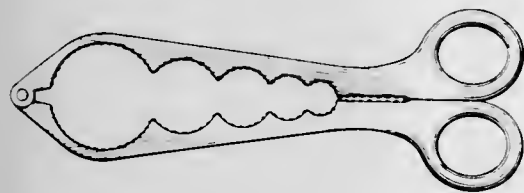


207,498

CONTAINER OPENER

Albert E. Bissonnette, Denver, Colo.
(4800 Hale Parkway, #710, Denver, Colo. 80220)

Filed June 13, 1966, Ser. No. 2,650
Term of patent 14 years
(Cl. D44-29)

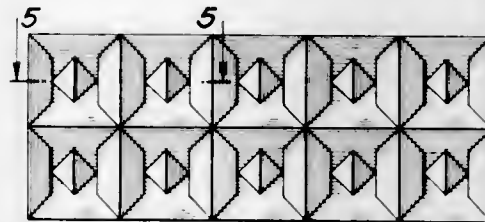


207,499

VENTILATED LENS FOR LIGHTING FIXTURES

Mitchell Bobrick, 605 Erskine Drive,
Pacific Palisades, Calif. 90272
Original design application Dec. 9, 1965, Ser. No. 127.
Divided and this application Sept. 26, 1966, Ser. No. 4,021

Term of patent 14 years
(Cl. D48-16)



207,500

LIGHT DIFFUSER

Lawrence P. Mellyn, Gloucester, R.I., assignor to General Electric Company, a corporation of New York

Filed June 21, 1966, Ser. No. 2,765
Term of patent 14 years
(Cl. D48-20)



207,501

SPOON OR SIMILAR ARTICLE

Ellen B. Manderfield, Syracuse, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York

Filed Mar. 17, 1966, Ser. No. 1,508
Term of patent 14 years
(Cl. D54-12)



207,502

FORK OR SIMILAR ARTICLE OF FLATWARE

Siro R. Toffolon, Meriden, Conn., assignor to The International Silver Company, Meriden, Conn., a corporation of Connecticut

Filed Mar. 17, 1966, Ser. No. 1,526
Term of patent 14 years
(Cl. D54-12)

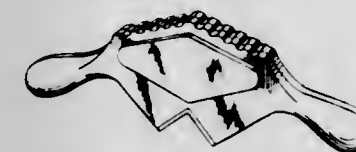


207,503

EDGE BEVELING TOOL

Martin Leibow, 7007 Mason Dells,
Dallas, Tex. 75230

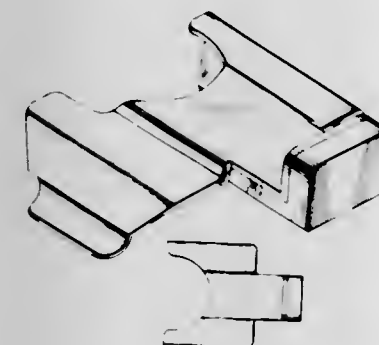
Filed June 24, 1966, Ser. No. 2,803
Term of patent 14 years
(Cl. D54-13)



207,504

CLIP FOR REMOVING EXPLOSIVELY-OPERATED WEDGE-TYPE ELECTRICAL CONNECTORS

Carl Raymond Hedberg, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Oct. 20, 1965, Ser. No. 87,622
Term of patent 14 years
(Cl. D54-13)

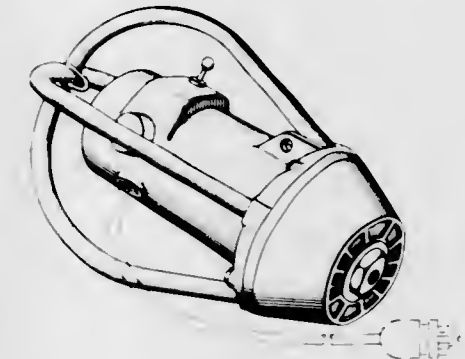


207,505

PORTABLE MOTOR FOR CONCRETE VIBRATORS

Ona Louis Whitman, Glendale, Calif., assignor to Viber Company, Burbank, Calif., a corporation of California

Filed Aug. 1, 1966, Ser. No. 3,301
Term of patent 14 years
(Cl. D54-14)



207,506

STRINGED INSTRUMENT

Dennis L. Kager, Colonia, N.J., assignor to The Ampeg Company, Inc., Linden, N.J., a corporation of New York

Filed Mar. 30, 1966, Ser. No. 1,699
Term of patent 14 years
(Cl. D56-1)



207,507

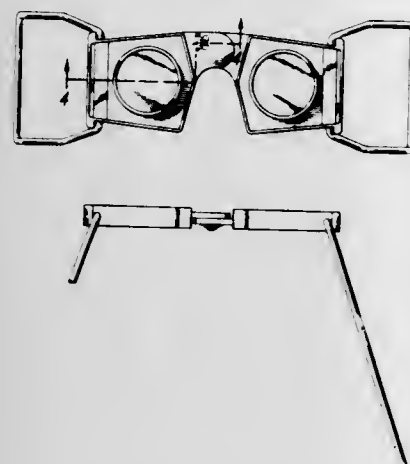
HARPSICHORD

Caleb Warner, Lexington, Mass., assignor, by direct and mesne assignments, to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio

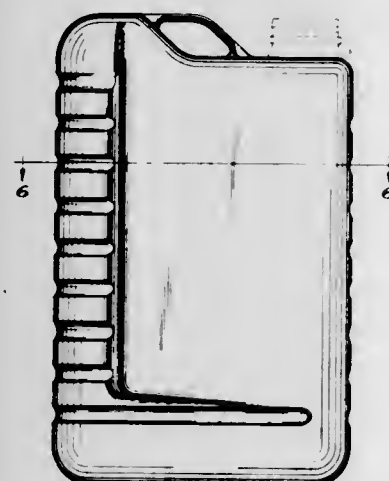
Filed June 15, 1966, Ser. No. 2,687
Term of patent 14 years
(Cl. D56-9)



207,508
FOLDING AND ADJUSTABLE STEREOSCOPE
 Thomas N. Hubbard, P.O. Box 105,
 Northbrook, Ill. 60042
 Filed Mar. 7, 1966, Ser. No. 1,306
 Term of patent 14 years
 (Cl. D57-1)



207,509
JUG
 Laddie M. Thomka and Richard C. Cross, both of Mid-
 land, Mich., assignors to The Dow Chemical Company,
 Midland, Mich., a corporation of Delaware
 Filed May 9, 1966, Ser. No. 2,210
 Term of patent 14 years
 (Cl. D58-5)



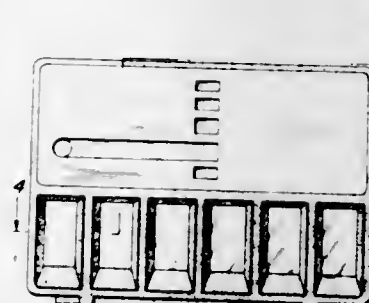
207,510
BOTTLE
 Bruce L. Roberts, Rossford, Ohio, assignor to Owens-Illi-
 nois, Inc., Toledo, Ohio, a corporation of Ohio
 Filed July 7, 1966, Ser. No. 2,965
 Term of patent 14 years
 (Cl. D58-8)



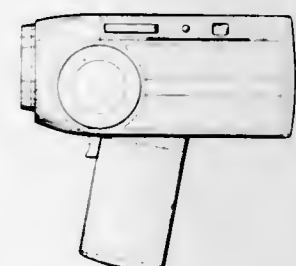
207,511
BOTTLE
 Mary Anne Riordan, Spring Lake, N.J., and Stephan Lion,
 New York, N.Y., assignors, by mesne assignments, to
 E. R. Squibb & Sons, Inc., New York, N.Y., a corpora-
 tion of Delaware
 Filed July 6, 1965, Ser. No. 86,046
 Term of patent 14 years
 (Cl. D58-8)



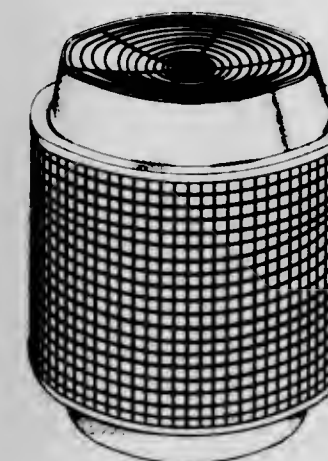
207,512
**COMBINED SHIPPING AND DISPLAY BOX FOR
 BOTTLED GOODS**
 Jerome Gould, Los Angeles, Calif., assignor to Paul Mas-
 son, Inc., Saratoga, Calif., a corporation of California
 Filed Sept. 10, 1965, Ser. No. 86,936
 Term of patent 14 years
 (Cl. D58-26)



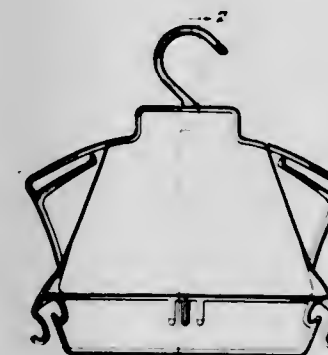
207,513
CAMERA OR THE LIKE
 Acton Bjorn, Copenhagen, Denmark, assignor to Eumig
 Elektrizitaets- und Metallwaren-Industrie, Vienna,
 Austria
 Filed June 23, 1965, Ser. No. 85,867
 Claims priority, application Austria Dec. 24, 1964
 Term of patent 14 years
 (Cl. D61-1)



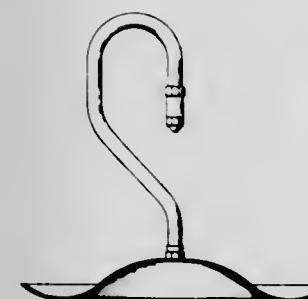
207,514
**CASING FOR REFRIGERATION SYSTEM CON-
 DENSING UNITS OR THE LIKE**
 Walter W. Hoyle, Fayetteville, N.Y., assignor to Carrier
 Corporation, Syracuse, N.Y., a corporation of Dela-
 ware
 Filed Apr. 18, 1966, Ser. No. 1,914
 Term of patent 14 years
 (Cl. D62-4)



207,515
GARMENT HANGER
 Robert Phillips, Roslyn, N.Y., assignor to Bernard Plas-
 tics Molding Corp., Woodside, N.Y., a corporation of
 New York
 Filed Sept. 21, 1966, Ser. No. 3,948
 Term of patent 14 years
 (Cl. D80-8)



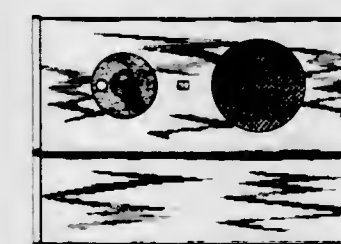
207,516
AGRICULTURAL HEATER
 James George Speidel, 5613 Balboa Drive, Orlando, Fla.
 32808; Shirley J. Speidel, administratrix of said James
 G. Speidel, deceased
 Filed Feb. 8, 1965, Ser. No. 83,729
 Term of patent 14 years
 (Cl. D81-1)



207,517
**COMBINED SURGICAL INSTRUMENT CLEANER
 AND STERILIZER**
 George Perkins and David E. Workman, Pasadena, Calif.,
 assignors to Vernitron Corporation, Farmingdale, N.Y.,
 a corporation of New York
 Filed Jan. 27, 1966, Ser. No. 810
 Term of patent 14 years
 (Cl. D83-1)



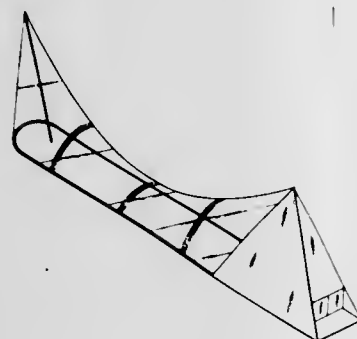
207,518
BLOOD VELOCITY INDICATOR
 Warren Blair, Conshohocken, Pa., and Donald E. Dailey,
 Evansville, Ind., assignors to Smith Kline & French
 Laboratories, Philadelphia, Pa., a corporation of Penn-
 sylvania
 Filed Apr. 8, 1966, Ser. No. 1,822
 Term of patent 14 years
 (Cl. D83-1)



207,519
RADIOTHERAPY IRRADIATION UNIT
 Peter Waine, Heaton Chapel, Stockport,
 Cheshire, England
 Filed May 31, 1966, Ser. No. 2,996
 Claims priority, application Great Britain Dec. 1, 1965
 Term of patent 14 years
 (Cl. D83—1)



207,520
COMBINATION CABANA AND SOLARIUM THEREFOR
 Mike Tecton, 115 5th St. NE.,
 Washington, D.C. 20002
 Filed Sept. 3, 1965, Ser. No. 86,849
 Term of patent 14 years
 (Cl. D83—1)



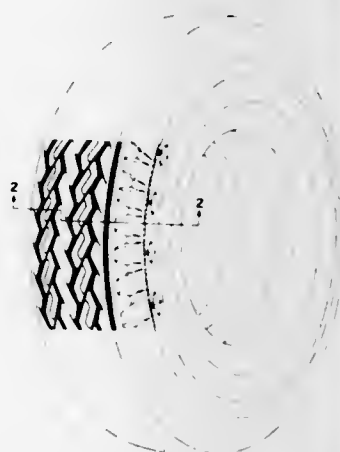
207,521
DECORATIVE HEATING PAD
 Betty Joan Durr, 429 W. 45th St.,
 New York, N.Y. 14301
 Filed Nov. 12, 1965, Ser. No. 88,078
 Term of patent 14 years
 (Cl. D83—1)



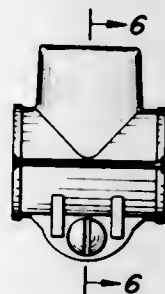
207,522
ELECTRONIC STETHOSCOPE
 Bernard B. King, Venice, Calif., assignor, by mesne assignments, to Douglas Aircraft Company, Inc., Santa Monica, Calif., a corporation of Delaware
 Filed May 2, 1966, Ser. No. 2,127
 Term of patent 14 years
 (Cl. D83—12)



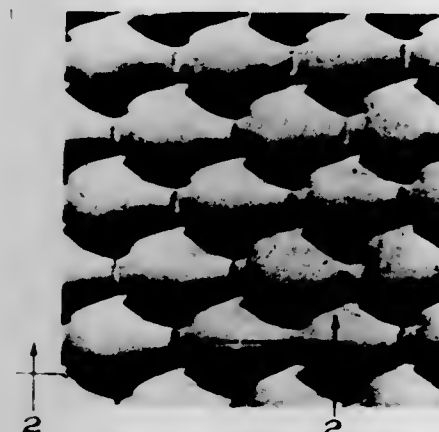
207,523
TIRE
 Robert M. Allen, Akron, Ohio, assignor to The Good-year Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
 Filed Mar. 11, 1966, Ser. No. 1,419
 Term of patent 14 years
 (Cl. D90—20)



207,524
SADDLE FOR SUPPORTING A SPRINKLER HEAD
 Floyd A. Terwilliger, 1232 SE. 12th Ave.,
 Deerfield Beach, Fla. 33441
 Filed Feb. 15, 1966, Ser. No. 1,042
 Term of patent 14 years
 (Cl. D91—3)



207,525
CARPET UNDERLAY
 Charles A. SanGiovanni, 46 Thorney Ave.,
 Huntington Station, N.Y. 11746
 Filed Nov. 15, 1966, Ser. No. 4,664
 Term of patent 14 years
 (Cl. D92—4)



207,526
DISPENSER FOR BEVERAGES, FOODS AND THE LIKE
 Ernest N. Martin, Darwin B. Maxson, and Joseph F. Scheffer, all of Escondido, Calif., assignors to Columware, Inc., Lynwood, Calif., a corporation of California
 Filed May 31, 1966, Ser. No. 2,461
 Term of patent 14 years
 (Cl. D94—3)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 25TH DAY OF APRIL, 1967

NOTE:—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Boyer, Joseph M., to Northrop Corp. Open ring antenna. Northrop Corp.: See—
Re. 26,196, 4-25-67, Cl. 343-742. Boyer, Joseph M. Re. 26,196.
Kamborian, Jacob S. Heel seat lasting with breast line pincers. Re. 26,197, 4-25-67, Cl. 12-145. Rossnan, Michael. Fishing devices. Re. 26,198, 4-25-67, Cl. 43-36.

LIST OF PLANT PATENTEES

Link, John F., Jr. Azalea. 2,733, 4-25-67, Cl. 57.

LIST OF DESIGN PATENTEES

AMP Inc.: See—
Reynolds, Charles E. 207,488.
Hedberg, Carl R. 207,504.
Ajax Hardware Mfg. Corp.: See—
Carsello, Anthony J. 207,481.
Allen, Robert M., to The Goodyear Tire & Rubber Co. Tire. 207,523, 4-25-67, Cl. D90-20.
Amdal, Dagfinn O., to National Lock Co. Hinge. 207,484, 4-25-67, Cl. D10-9.
Ampeg Co., Inc.: See—
Kager, Dennis L. 207,506.
Armstrong, William H., and J. L. Ponkey, to Presto Lock Co., Inc. Riding lawn mower. 207,495, 4-25-67, Cl. D40-1.
Baldwin, D. H., Co.: See—
Warner, Caleb. 207,507.
Bausch & Lomb Inc.: See—
Belknap, Kenneth E. 207,485.
Bernard Plastics Molding Corp.: See—
Phillips, Robert. 207,515.
Bettle, Henry. Combined sole and heel unit for footwear. 207,480, 4-25-67, Cl. D2-320.
Belknap, Kenneth E., to Bausch & Lomb Inc. Fowl neck cutter. 207,485, 4-25-67, Cl. D11-1.
Bissonnette, Albert E. Container opener. 207,498, 4-25-67, Cl. D44-29.
Bjorn, Acton, to Eumig Elektrizitaets- und Metallwaren Industrie. Camera, or the like. 207,513, 4-25-67, Cl. D61-1.
Blair, Warren, and D. E. Dalley, to Smith Kline & French Laboratories. Blood velocity indicator. 207,518, 4-25-67, Cl. D83-1.
Bobrick, Mitchell. Ventilated lens for lighting fixtures. 207,499, 4-25-67, Cl. D48-16.
Borasio, Leo, S. A. Ronlov, and C. C. Jancewicz, to United States Borax & Chemical Corp. Headframe. 207,486, 4-25-67, Cl. D13-1.
Briggs, Southwick W., and W. A. Brazzerol. Filter paper. 207,487, 4-25-67, Cl. D16-1.
Carrier Corp.: See—
Hoyle, Walter W. 207,514.
Carsello, Anthony J., to Ajax Hardware Mfg. Corp. Knob. 207,481, 4-25-67, Cl. D10-8.
Carsello, Anthony J. Knob. 207,482, 4-25-67, Cl. D10-8.
Cole Steel Equipment Co., Inc.: See—
Dottinger, Robert J. 207,483.
Collins, Harry J., Jr., to Cutler-Hammer, Inc. Operating lever for an electrical switch. 207,489, 4-25-67, Cl. D26-13.
Columware, Inc.: See—
Martin, Ernest N., Maxson, and Scheffer. 207,526.
Cutler-Hammer, Inc.: See—
Collins, Harry J., Jr. 207,489.
Dottinger, Robert J., to Cole Steel Equipment Co., Inc. Combined drawer front, pull, and label holder. 207,483, 4-25-67, Cl. D10-8.
Douglas Aircraft Co., Inc.: See—
King, Bernard B. 207,522.
Dow Chemical Co., The: See—
Thomka, Laddie M., and Cross. 207,509.
Dungard, Inc.: See—
Dunning, Fred R. 207,479.
Dunning, Fred R., to Dungard, Inc. Face guard for a helmet. 207,479, 4-25-67, Cl. D2-233.
Durr, Betty J. Decorative heating pad. 207,521, 4-25-67, Cl. D83-1.
Eumig Elektrizitaets- und Metallwaren Industrie: See—
Bjorn, Acton. 207,513.
General Electric Co.: See—
Mellyn, Lawrence P. 207,500.
Goodyear Tire & Rubber Co., The: See—
Allen, Robert M. 207,523.
Gould, Jerome, to Paul Masson, Inc. Combined shipping and display box for bottled goods. 207,512, 4-25-67, Cl. D68-28.
Hedberg, Carl R., to AMP Inc. Clip for removing explosively-operated wedge-type electrical connectors. 207,504, 4-25-67, Cl. D54-13.
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16-87.8	3,315,297	35-9	3,315,373	145	3,315,457	660	3,315,541	37	3,315,606	287	3,315,676
146	3,315,298	26	3,315,374	159	3,315,458	665	3,315,542	108	3,315,607	288	3,315,677
17-2	3,315,299	35	3,315,375	58-21.12	3,315,460		3,315,543	126	3,315,608	303.18	3,315,678
	3,315,300		3,315,376	85	3,315,461	695	3,315,544		3,315,609	346	3,315,679
18-1	3,315,301	48	3,315,377	152	3,315,462	789	3,315,545	139	3,315,610	395	3,315,680
	3,315,302	61	3,315,378	59-79	3,315,463	801	3,315,546	235	3,315,611	399	3,315,681
	3,315,303	36-3	3,315,379	60-12	3,315,464		3,315,547	104-25	3,315,612	129-1	3,315,682
4	3,315,304	19.5	3,315,380	24	3,315,465	75-3	3,316,081	151	3,315,613	21	3,315,683
13	3,315,305	37-24	3,315,381	36	3,315,466	12	3,316,082	172	3,315,614	131-84	3,315,685
	3,315,306	135	3,315,382	39.17	3,315,467	44	3,316,083	177	3,315,615	235	3,315,686
14	3,315,307	153	3,315,383	39.72	3,315,468	128	3,316,084	105-248	3,315,616	261	3,315,687
	3,315,308	191	3,315,384	54.5	3,315,469		3,316,085	369	3,315,617	132-9	3,315,688
16.5	3,315,309	38-143	3,315,385		3,315,470	134	3,316,086	106-38.8	3,316,105	79	3,315,689
17	3,315,310	40-2	3,315,386	203	3,315,471	76-112	3,315,548	58	3,316,106	148	3,315,690
18	3,315,311		3,315,387	251	3,315,472	77-58	3,315,549	59	3,316,107	134-57	3,315,691
	3,315,312	28	3,315,388	61-46.5	3,315,473	82-21	3,315,550	62	3,316,108	167	3,315,692
19	3,315,313	53	3,315,389	62-3	3,315,474	45	3,315,551	65	3,316,109	136-6	3,316,125
26	3,315,314	81	3,315,390	12	3,315,475	83-78	3,315,552		3,316,110	86	3,316,126
30	3,315,315	106.52	3,315,391	20	3,315,476	82	3,315,553		3,316,111	175	3,316,127
36	3,315,316	143	3,315,392	24	3,315,477	588	3,315,554	124	3,316,112	137-43	3,315,693
42	3,315,317	145	3,315,393	45	3,315,478	84-1.24	3,316,341	146	3,316,113	110	3,315,694
43	3,315,318	209	3,315,394	48	3,315,479	85-1.5	3,315,555	163	3,316,114	232	3,315,695
44	3,315,319	334	3,315,395	63	3,315,480	32	3,315,556	287	3,316,115	244	3,315,696
19-107	3,315,320	336	3,315,396	115	3,315,481	75	3,315,557	306	3,316,116	246.22	3,315,697
157	3,315,321	42-1	3,315,397		3,315,482	80	3,315,558	107-8	3,315,618	269	3,315,698
250	3,315,322	43-9	3,315,398	137	3,315,483	87-2	3,315,559	69	3,315,619	321	3,315,699
21-57	3,316,056	17.2	3,315,399	174	3,315,484	88-14	3,315,560		3,315,620	375	3,315,700
22-200.1	3,315,323	24	3,315,400	218	3,315,485	24	3,315,561	108-34	3,315,621	624.18	3,315,702
23-2	3,316,057	25	3,315,401		3,315,486		3,315,562	109-59	3,315,622	138-111	3,315,703
	3,316,058	36	Re. 26,198	226	3,315,487		3,315,563	111-1	3,315,623	121	3,315,704
125	3,316,059	55	3,315,402	241	3,315,488	89-1.5	3,315,564	112-262	3,315,624	139-26	3,315,705
153	3,316,060		3,315,403	286	3,315,489	1,807	3,315,565		3,315,625	88	3,315,706
165	3,316,061	44-51	3,316,070	333	3,315,490	40	3,315,566	113-1	3,315,626	122	3,315,707
204	3,316,062	69	3,316,071	338	3,315,491	183	3,315,567	114-45	3,315,627	144-326	3,315,718
224	3,316,063	46-1	3,315,404	381	3,315,492	91-44	3,315,568		3,315,628	148-33.5	3,315,719
283	3,316,064	41	3,315,405	64-30	3,315,493	378	3,315,569	206	3,315,629	135	3,316,129
324	3,316,065	118	3,315,406	65-1	3,316,073	401	3,315,570	230	3,315,630	175	3,316,130
338	3,316,066	232	3,315,407	19	3,316,075	92-8	3,315,571	115-18	3,315,631	125	3,315,709
356	3,316,067	47-9	3,315,408	30	3,316,076	99	3,315,572	116-114	3,315,632	140-1	3,315,710
24-30.5	3,315,324	17	3,315,409	65	3,316,077	171	3,315,573		3,315,633	112	3,315,711
66	3,315,325	34	3,315,410	134	3,316,078	93-1	3,315,574	132	3,315,634		3,315,712
134	3,315,326	43	3,315,411	141	3,316,079	53	3,315,575	135	3,315,746	141-1	3,315,713
25-1	3,315,327	49-246	3,315,412	66-50	3,315,494	55.1	3,315,576	117-4	3,316,117	143-32	3,315,714
28-72	3,315,328	280	3,315,413	96	3,315,495	94-13	3,315,577	33.5	3,316,118	36	3,315,715
76	3,315,329	449	3,315,414	67-7.1	3,315,496	22	3,315,578	36.8	3,316,119	174	3,315,716
29-25.16	3,315,330	51-97	3,315,415	55	3,315,497	95-10	3,315,579	76	3,316,120	144-326	3,315,717
25.42	3,315,331	105	3,315,416	68-9	3,315,498	11	3,315,580	106	3,316,121	148-33.5	3,316,128
105	3,315,332	163	3,315,417	12	3,315,499	42	3,315,581	136	3,316,122	135	3,316,129
155.5	3,315,333	206	3,315,418	133	3,315,500	89	3,315,582	155	3,316,123	175	3,316,130
155.64	3,315,334	237	3,315,419	181	3,315,501	94	3,315,583	227	3,316,124		3,316,131
163.5	3,315,335	294	3,316,072	70-240	3,315,502	96-1	3,316,087	118-1	3,315,635	149-101	3,316,132
	3,315,336	309	3,316,073	383	3,315,503	1.5	3,316,088	246	3,315,636	150-5	3,315,718
183	3,316,068	378	3,315,420	408	3,315,504	29	3,316,089	503	3,315,637	1.5	3,315,719
198	3,316,069	52-66	3,315,421	456	3,315,505		3,316,090	505	3,315,638	151-38	3,315,720
203	3,315,337	116	3,315,422	71-2.3	3,316,080	84	3,316,091	642	3,315,639	41.74	3,315,721
234	3,315,338	160	3,315,423	72-9	3,315,506	91	3,316,092	119-29	3,315,640	152-359	3,315,722
249	3,315,339	206	3,315,424	16	3,315,507	92	3,316,093	53	3,315,641	156-2	3,316,133
267	3,315,340	223	3,315,425	66	3,315,508	100	3,316,094	109	3,315,642	47	3,316,134
278	3,315,341	235	3,315,426	145	3,315,509		3,316,095	120-42.03	3,315,643	69	3,316,135</

CLASSIFICATION OF PATENTS

156-267	3,316.138	198-85	3,315.785	221-223	3,315.841	248-174	3,315.931	260-239	3,316.246	271-3	3,315.955	
158-91	3,315.723	102	3,315.786	310	3,315.842	226	3,315.932	239.1	3,316.247	46	3,315.956	
115	3,315.724	131	3,315.787	222-50	3,315.843	309	3,315.933	239.3	3,316.248	64	3,315.957	
116	3,315.725	137	3,315.788	52	3,315.844	376	3,315.934	239.3	3,316.249	68	3,315.958	
117	3,315.726	165	3,315.789	95	3,315.845	429	3,315.935	272-72	3,316.250	72	3,315.959	
160-84	3,315.727	168	3,315.790	130	3,315.846	460	3,315.936	273-9	3,316.251	9	3,315.960	
326	3,315.728	195	3,315.791	327	3,315.847	249-44	3,315.937	239.55	3,316.252	43	3,315.961	
72	3,316.139	213	3,315.792	361	3,315.848	46	3,315.938	246	3,316.253	94	3,315.962	
198	3,316.140	220	3,315.793	491	3,315.849	250-49.5	3,316.402	243	3,316.254	95	3,315.963	
162-100	3,316.141	230	3,315.794	501	3,315.850	65	3,316.403	244	3,316.255	97	3,315.964	
202	3,316.142	233	3,315.795	559	3,315.851	83.3	3,316.404	244	3,316.256	125	3,315.965	
232	3,316.143	200-11	3,316.363	223-32	3,315.852	85	3,316.405	246	3,316.257	274-1	3,315.966	
343	3,316.144	16	3,316.364	70	3,315.853	106	3,316.406	247.1	3,316.258	23	3,315.967	
165-9	3,315.729	3,316.365	94	3,315.854	108	3,316.407	208	3,316.408	247.2	3,316.259	277-3	3,315.968
23	3,315.730	48	3,316.366	224-1	3,315.855	214	3,316.409	247.2	3,316.260	11	3,315.969	
42	3,315.731	3,316.367	45	3,315.856	218	3,316.410	219	3,316.411	247.7	3,316.261	205	3,315.970
47	3,315.732	61.04	3,316.368	48	3,315.857	226	3,316.412	248	3,316.262	207	3,315.971	
48	3,315.733	61.58	3,316.369	226-21	3,315.859	234	3,316.413	248	3,316.263	237	3,315.972	
80	3,315.734	67	3,316.370	47	3,315.860	251-67	3,315.939	249.7	3,316.264	280-34	3,315.973	
108	3,315.735	80	3,316.371	90	3,315.861	252-8.8	3,316.174	250	3,316.265	43.2	3,315.974	
111	3,315.736	114	3,316.372	136	3,315.862	32.5	3,316.175	250	3,316.266	91	3,315.975	
119	3,315.737	116	3,316.373	227-19	3,315.863	47	3,316.176	256.4	3,316.268	103	3,315.976	
134	3,315.738	122	3,316.374	229-4.5	3,315.864	51.5	3,316.177	256.4	3,316.269	104.5	3,315.977	
165	3,315.739	140	3,316.375	5.6	3,315.865	63.7	3,316.178	265	3,316.270	124	3,315.979	
172	3,315.740	152	3,316.376	7	3,315.866	147	3,316.179	265	3,316.271	291.7	3,316.272	
166-5	3,315.741	160	3,316.377	14	3,315.867	301.2	3,316.180	296	3,316.272	296	3,316.273	
6	3,315.742	168	3,316.378	31	3,315.868	344	3,316.181	307	3,316.273	307	3,316.274	
9	3,315.743	3,316.379	37	3,315.870	451	3,316.182	510	3,316.275	326	3,316.275	282-22	3,315.983
59	3,315.745	201-6	3,316.155	43	3,315.871	520	3,316.183	348	3,316.276	283-21	3,315.985	
206	3,315.747	204-7	3,316.158	51	3,315.872	520	3,316.184	348	3,316.277	111	3,315.986	
167-33	3,316.145	23	3,316.159	51	3,315.873	253-1	3,315.940	381	3,316.278	190	3,315.987	
52	3,316.146	28	3,316.160	52	3,315.874	254-45	3,315.942	381	3,316.279	197	3,315.988	
53.1	3,316.147	79	3,316.161	52	3,315.875	256-22	3,315.943	397.3	3,316.280	231	3,315.989	
65	3,316.148	129	3,316.162	55	3,315.876	259-9	3,315.944	397.3	3,316.281	373	3,315.990	
3,316.149	141	159.17	3,316.165	72	3,315.877	72	3,315.945	429	3,316.283	387-52.05	3,315.993	
3,316.150	151	195	3,316.166	206	3,315.878	108	3,315.946	429	3,316.284	53.5	3,315.994	
3,316.151	268	3,316.167	230-45	58	3,315.880	111	3,315.947	453	3,316.285	189.36	3,315.995	
78	3,316.153	200-16	3,315.796	233-7	3,315.882	260-2	3,316.185	462	3,316.287	290-1	3,316.111	
82	3,316.154	16.5	3,315.797	235-60	3,315.884	13	3,316.189	464	3,316.288	292-61	3,315.998	
169-19	3,315.748	19.5	3,315.798	60.17	3,315.886	17.1	3,316.190	467	3,316.289	292-61	3,315.999	
170-159	3,315.749	40.5	3,315.799	61	3,315.887	18	3,316.191	484	3,316.290	76	3,316.000	
3,315.750	46	3,315.800	235-60	61.11	3,316.391	23	3,316.192	484	3,316.291	86	3,316.001	
172-9	3,315.751	56	3,315.801	61.12	3,316.392	23.5	3,316.193	500	3,316.292	153	3,316.002	
19	3,315.752	3,315.802	60.17	61.12	3,316.393	28	3,316.194	500	3,316.293	194	3,316.003	
96	3,315.753	65	3,315.803	145	3,315.889	29.6	3,316.195	515	3,316.295	244	3,316.004	
173-12	3,315.754	208-17	3,316.168	175	3,316.393	3,316.196	553	3,316.297	521	3,316.296	267	3,316.005
174-45	3,316.342	111	3,316.169	183	3,316.394	3,316.197	561	3,316.298	521	3,316.296	296	3,316.006
84	3,316.343	164	3,316.170	185	3,316.395	3,316.198	583	3,316.299	583	3,316.299	337	3,316.007
106	3,316.344	209-44	3,315.804	236-34	3,315.890	3,316.199	586	3,316.300	586	3,316.300	341.12	3,316.007
126	3,316.345	111.8	3,315.805	46	3,315.891	3,316.200	593	3,316.301	593	3,316.301	294-19	3,316.008
175-56	3,315.755	143	3,315.806	59	3,316.172	3,316.201	593	3,316.302	593	3,316.302	82	3,316.009
178-5.4	3,316.346	315	3,315.807	62	3,316.173	29.7	3,316.202	593	3,316.303	87	3,316.010	
6.7	3,316.347	210-34	3,316.172	62	3,316.173	33.6	3,316.203	593	3,316.304	95	3,316.011	
7.2	3,316.348	59	3,316.173	130	3,315.808	38	3,316.204	594	3,316.305	136	3,316.012	
7.5	3,316.349	130	3,315.809	369	3,315.810	41	3,316.205	606.5	3,316.306	16	3,316.013	
17	3,316.352	375	3,315.811	487	3,315.812	45.8	3,316.206	607	3,316.307	35	3,316.014	
179-1	3,316.353	487	3,315.812	515	3,315.813	3,316.207	607	3,316.308	607	3,316.308	89	3,316.015
18	3,316.354	515	3,315.813	586	3,315.814	3,316.208	615.5	3,316.309	615.5	3,316.309	239	3,316.016
3,316.355	211-15	45	3,315.815	240-6.4	3,316.397	3,316.209	621	3,316.310	621	3,316.310	385	3,316.017
3,316.356	60	3,315.816	71	3,315.817	44	3,316.398	644	3,316.311	644	3,316.311	440	3,316.018
90	3,316.357	71	3,315.817	148	3,315.818	78	3,316.399	648	3,316.312	298-17.6	3,316.019	
100.2	3,316.358	148	3,315.818	163	3,315.819	89	3,315.900	666	3,316.313	299-2	3,316.020	
3,316.359	212-35	3,315.820	211	3,315.901	211	3,315.901	3,316.214	666	3,316.313	301-5	3,316.021	
3,316.360	55	3,315.821	231	3,315.902	231	3,315.902	3,316.215	668	3,316.315	108	3,316.022	
75	3,315.757	212-35	3,315.822	242-18	3,315.903	63	3,316.216	671	3,316.316	16	3,316.023	
77	3,315.758	55	3,315.821	242-18	3,315.903	67	3,316.217	671	3,316.317	26	3,316.024	
79.2	3,315.759	214-17	3,315.823	242-18	3,315.903	67	3,316.217	671	3,316.317	37	3,316.025	
181-27	3,315.760	75	3,315.823	242-18	3,315.903	67	3,316.217	671	3,316.317	51	3,316.026	
48	3,315.761	83.2	3,315.826	242-18	3,315.903	67	3,316.217	671	3,316.317	52	3,316.027	
182-164	3,315.762	300	3,315.827	242-18	3,315.903	67	3,316.217	671	3,316.317	52	3,316.027	
187-8.54	3,315.763	302	3,315.828	242-18	3,315.903	67	3,316.217	671	3,316.317	52	3,316.027	
8.75	3,315.764	392	3,315.829	242-18	3,315.903	67	3,316.217	671	3,316.317	52	3,316.027	
29	3,315.765	40	3,315.830	242-18	3,315.903	67	3,316.217	671	3,316.317	52	3,316.027	
52	3,315.766	56	3,315.831	242-18	3,315.903	67	3,316.217	671	3,316.317	52	3,316.027	
57	3,315.767	215-40	3,315.832	242-18	3,315.903	67	3,316.217	671	3,316.317	52	3,316.027	
188-67	3,315.768	217-69	3,315.833	242-18	3,315.903	67	3,316.217	671	3,316.317	52	3,316.027	
73	3,315.769	219-10.55	3,316.380	242-18	3,315.903	67	3,316.217	671	3,316.317	52	3,316.027	
90	3,315.770	76	3,316.381	242-18	3,315.903	67	3,316.217	671	3,316.317	52	3,316.027	
190-16	3,315.771	79	3,316.382	242-18	3,315.903	67	3,316.217	671	3,316.317	52	3,316.027	
43	3,315.772	86	3,316.383	242-18	3,315.903	67	3,316.217	671	3,316.317	52	3,316.027	
191-12.4	3,316.361	233	3,316.384	242-18	3,315.903	67	3,316.217	671	3,316.317	52	3,316.027	
27	3,316.362	236	3,316.385	242-18	3,315.903	67	3,316.217	671	3,316.317	52	3,316.027	
192-48	3,315.773	272	3,316.386	242-18	3,315.903	67	3,316.217	671	3,316.317	52	3,316.027	
193-37	3,315.774	354	3,316.387	242-18	3,315.903	67	3,316.217	671	3,316.317	52	3,316.027	
195-51	3,316.156	442	3,316.388	242-18	3,315.903	67	3,316.217	671	3,316.317	52	3,316.027	
3,316.157	454	3,316.389	242-18	3,315.903	67	3,316.217	671	3,316.317	671	3,316.317	52	3,316.027
197-15	3,315.775	464	3,316.390	242-18								

GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

(NOTE.—CODES ARE CHANGED AS OF JANUARY 1, 1967)

Alabama.....	1	Kentucky.....	21	Oregon.....	41
Alaska.....	2	Louisiana.....	22	Pennsylvania.....	42
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4 : RE.26.196	6 : 3.315.682	6 : 3.316.067	9 : 3.315.356	11 : 3.316.115	17 : 3.315.592
3.315.280	3.315.692	3.316.071	3.315.409	3.316.501	3.315.606
3.315.362	3.315.696	3.316.086	3.315.434	3.316.501	3.315.617
3.315.669	3.315.700	3.316.088	3.315.549	3.315.291	3.315.621
3.315.917	3.315.701	3.316.158	3.315.556	3.315.341	3.315.626
3.316.413	3.315.704	3.316.194	3.315.637	3.315.424	3.315.638
3.316.532	3.315.713	3.316.233	3.315.647	3.315.454	3.315.640
5 : 3.315.667	3.315.732	3.316.279	3.315.684	3.315.545	3.315.693
6 : 3.315.272	3.315.734	3.316.290	3.315.721	3.315.677	3.315.710
3.315.273	3.315.742	3.316.292	3.315.737	3.315.683	3.315.712
3.315.311	3.315.760	3.316.301	3.315.750	3.315.723	3.315.718
3.315.343	3.315.765	3.316.317	3.315.778	3.315.727	3.315.720
3.315.350	3.315.796	3.316.343	3.315.831	3.315.712	3.315.764
3.315.355	3.315.803	3.316.353	3.315.832	3.315.913	3.315.783
3.315.358	3.315.812	3.316.358	3.315.863	3.315.970	3.315.786
3.315.367	3.315.814	3.316.359	3.315.879	3.316.015	3.315.809
3.315.379	3.315.829	3.316.360	3.315.884	3.316.200	3.315.815
3.315.396	3.315.840	3.316.362	3.315.915	3.316.389	3.315.825
3.315.400	3.315.849	3.316.381	3.315.956	3.316.488	3.315.837
3.315.403	3.315.855	3.316.383	3.315.960	3.315.961	3.315.839
3.315.406	3.315.866	3.316.387	3.315.961	3.315.838	3.315.843
3.315.430	3.315.870	3.316.401	3.316.000	3.316.061	3.315.846
3.315.452	3.315.871	3.316.404	3.316.020	3.316.384	3.315.850
3.315.464	3.315.891	3.316.414	3.316.054	3.315.373	3.315.890
3.315.471	3.315.898	3.316.415	3.316.120	3.315.792	3.315.894
3.315.474	3.315.903	3.316.420	3.316.123	3.315.305	3.315.908
3.315.478	3.315.921	3.316.424	3.316.187	3.315.301	3.315.920
3.315.490	3.315.922	3.316.435	3.316.195	3.315.310	3.315.923
3.315.491	3.315.925	3.316.443	3.316.304	3.315.347	3.315.926
3.315.503	3.315.929	3.316.457	3.316.307	3.315.351	3.315.930
3.315.527	3.315.932	3.316.458	3.316.348	3.315.353	3.315.937
3.315.535	3.315.952	3.316.460	3.316.405	3.315.374	3.315.957
3.315.563	3.315.963	3.316.468	3.316.417	3.315.520	3.315.971
3.315.577	3.315.966	3.316.483	3.316.520	3.315.328	3.315.977
3.315.583	3.315.973	3.316.485	3.316.492	3.315.441	3.315.992
3.315.585	3.315.982	3.316.485	3.316.495	3.315.740	3.315.994
3.315.589	3.315.985	3.316.492	3.316.498	3.315.946	3.316.018
3.315.601	3.315.989	3.316.498	3.316.503	3.316.108	3.316.022
3.315.611	3.315.990	3.316.505	3.316.505	3.316.145	3.316.023
3.315.613	3.315.991	3.316.523	3.316.523	3.316.211	3.316.025
3.315.627	3.315.996	3.316.544	3.316.544	3.316.212	3.316.044
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3.315.665	3.316.006	3.316.547	3.316.547	3.316.229	3.316.085
3.315.666	3.316.007	3.316.547	3.316.548	3.316.312	3.316.092
3.315.672	3.316.016	3.316.548	3.316.312	3.316.411	3.316.098
3.315.673	3.316.036	3.316.548	3.316.411	3.315.582	3.316.099
3.315.674	3.316.038	3.316.548	3.316.411	3.315.582	3.316.100
3.315.680	3.316.110	3.316.548	3.316.411	3.315.582	3.316.103
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3.316.176	3.315.380	3.316.249	3.316.278	3.316.172	3.316.234
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3.316.189	3.315.419	3.316.299	3.316.319	3.316.205	3.316.283
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3.316.264	3.315.487	3.316.371	3.316.324	3.316.220	3.316.333
3.316.313	3.315.512	3.316.373	3.316.328	3.316.225	3.316.339
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3.316.330	3.315.579	3.316.448	3.316.419	3.316.242	3.316.380
3.316.335	3.315.635	3.316.555	3.316.439	3.316.248	3.316.390
3.316.341	3.315.636	27 : 3.315.283	3.316.445	3.316.270	3.316.396
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3.316.350	3.315.779	3.315.312	3.316.477	3.316.274	3.316.428
3.316.352	3.315.780	3.315.319	3.316.497	3.316.282	3.316.433
3.316.364	3.315.789	3.315.391	3.316.507	3.316.284	3.316.434
3.316.365	3.315.801	3.315.481	3.316.513	3.316.286	3.316.447
3.316.372	3.315.842	3.315.588	3.316.552	3.316.287	3.316.469
3.316.377	3.315.955	3.315.598	35 : 3.316.178	3.316.293	3.316.478
3.316.385	3.315.974	3.315.656	36 : 3.315.274	3.316.305	3.316.487
3.316.388	3.316.011	3.315.694	3.315.275	3.316.306	3.316.504
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3.316.517	3.316.040	3.315.953	3.315.309	3.316.369	3.315.455
3.316.528	3.316.073	3.316.039	3.315.313	3.316.376	3.315.615
18 : 3.315.397	3.316.089	3.316.202	3.315.331	3.316.395	3.315.725
3.315.431	3.316.090	3.316.232	3.315.334	3.316.400	3.315.736
3.315.521	3.316.125	3.316.374	3.315.363	3.316.423	3.315.747
3.315.567	3.316.133	3.316.425	3.315.365	3.316.430	3.315.924
3.315.639	3.316.137	3.316.462	3.315.368	3.316.431	3.316.170
3.315.914	3.316.143	3.316.474	3.315.372	3.316.432	3.316.231
3.316.079	3.316.164	3.316.536	3.315.388	3.316.494	3.316.236
3.316.153	3.316.188	28 : 3.315.572	3.315.390	3.316.496	3.316.294
3.316.155	3.316.208	3.315.631	3.315.425	3.316.499	3.316.315
3.316.241	3.316.223	3.315.854	3.315.428	3.316.534	3.316.322
3.316.357	3.316.311	3.316.258	3.315.444	3.316.548	3.316.473
3.316.363	3.316.327	3.316.259	3.315.445	3.316.553	41 : 3.315.459
3.316.446	3.316.378	29 : 3.315.352	3.315.447	37 : 3.315.282	3.315.593
3.316.459	3.316.379	3.315.392	3.315.456	3.315.320	3.315.758
3.316.463	3.316.393	3.315.423	3.315.479	3.315.354	3.315.852
3.316.470	3.316.398	3.315.489	3.315.482	3.315.446	3.315.897
3.316.471	3.316.403	3.315.500	3.315.485	3.315.499	3.316.047
3.316.533	3.316.409	3.315.505	3.315.486	3.315.530	42 : 3.315.335
19 : 3.315.427	3.316.427	3.315.555	3.315.493	3.315.612	3.315.337
3.315.591	3.316.453	3.315.565	3.315.496	3.315.634	3.315.357
3.315.698	3.316.500	3.315.595	3.315.502	3.315.661	3.315.364
3.315.901	3.316.527	3.315.604	3.315.525	3.315.705	3.315.404
3.315.902	3.316.539	3.315.659	3.315.541	3.315.795	3.315.407
3.315.969	26 : 3.315.306	3.315.836	3.315.557	3.315.798	3.315.413
20 : 3.315.361	3.315.318	3.315.986	3.315.574	3.315.826	3.315.429
3.315.477	3.315.345	3.316.030	3.315.575	3.315.844	3.315.443
3.315.623	3.315.375	30 : 3.315.402	3.315.602	3.315.906	3.315.461
3.315.668	3.315.376	31 : 3.315.359	3.315.620	3.316.008	3.315.466
3.315.691	3.315.418	3.315.451	3.315.643	3.316.041	3.315.467
3.315.823	3.315.469	3.315.519	3.315.655	3.316.102	3.315.506
3.315.878	3.315.497	3.315.539	3.315.663	3.316.326	3.315.508
21 : 3.315.279	3.315.516	3.315.883	3.315.676	3.316.481	3.315.513
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3.315.642	3.315.538	33 : 3.315.285	3.315.733	3.315.324	3.315.528
3.315.646	3.315.570	3.316.048	3.315.752	3.315.336	3.315.551
3.315.833	3.315.584	3.316.509	3.315.767	3.315.339	3.315.564
3.315.853	3.315.619	34 : 3.315.300	3.315.770	3.315.340	3.315.587
3.315.867	3.315.650	3.315.361	3.315.771	3.315.386	3.315.603
3.315.935	3.315.664	3.315.405	3.315.776	3.315.401	3.315.616
3.315.968	3.315.678	3.315.442	3.315.777	3.315.411	3.315.618
22 : 3.315.348	3.315.686	3.315.522	3.315.790	3.315.457	3.315.711
3.315.629	3.315.715	3.315.523	3.315.805	3.315.468	3.315.726
3.316.063	3.315.716	3.315.533	3.315.816	3.315.510	3.315.735
3.316.303	3.315.728	3.315.552	3.315.830	3.315.511	3.315.759
3.316.308	3.315.729	3.315.628	3.315.834	3.315.514	3.315.763
23 : 3.315.410	3.315.753	3.315.675	3.315.859	3.315.550	3.315.775
24 : Re.26.198	3.315.761	3.315.702	3.315.861	3.315.569	3.315.807
3.315.360	3.315.800	3.315.719	3.315.862	3.315.571	3.315.810
3.315.366	3.315.841	3.315.738	3.315.869	3.315.586	3.315.822
3.315.614	3.315.847	3.315.739	3.315.880	3.315.594	3.315.866
3.315.633	3.315.872	3.315.766	3.315.881	3.315.607	3.315.882
3.315.670	3.315.874	3.315.845	3.315.910	3.315.662	3.315.943
3.315.730	3.315.876	3.315.851	3.315.911	3.315.695	3.315.995
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3.315.918	3.315.933	3.316.050	3.315.936	3.315.703	3.316.057
3.316.013	3.315.942	3.316.052	3.315.983	3.315.749	3.316.075
3.316.119	3.315.949	3.316.076	3.315.993	3.315.774	3.316.087
3.316.386	3.315.978	3.316.101	3.316.012	3.315.782	3.316.088
3.316.394	3.315.984	3.316.105	3.316.033	3.315.785	3.316.106
3.316.418	3.316.014	3.316.109	3.316.042	3.315.804	3.316.107
3.316.455	3.316.034	3.316.122	3.316.055	3.315.820	3.316.132
3.316.476	3.316.035	3.316.126	3.316.060	3.315.888	3.316.166
3.316.489	3.316.056	3.316.127	3.316.070	3.315.895	3.316.205
3.316.506	3.316.104	3.316.156	3.316.093	3.315.939	3.316.222
3.316.508	3.316.111	3.316.157	3.316.094	3.315.948	3.316.244
3.316.524	3.316.135	3.316.163	3.316.095	3.316.009	3.316.250
3.316.541	3.316.140	3.316.167	3.316.096	3.316.019	3.316.255
3.316.546	3.316.146	3.316.185	3.316.097	3.316.045	3.316.294
3.316.549	3.316.168	3.316.191	3.316.113	3.316.062	3.316.333
25 : Re.26.197	3.316.173	3.316.198	3.316.118	3.316.068	3.316.366
3.315.287	3.316.179	3.316.221	3.316.130	3.316.069	3.316.370
3.315.288	3.316.186	3.316.260	3.316.134	3.316.124	3.316.375
3.315.308	3.316.199	3.316.265	3.316.136	3.316.138	3.316.383
3.315.317	3.316.214	3.316.266	3.316.139	3.316.150	3.316.394
3.315.332	3.316.222	3.316.267	3.316.147	3.316.159	3.316.400

42 : 3,316,472	47 : 3,316,228	48 : 3,315,768	49 : 3,316,337	53 : 3,315,432	55 : 3,315,387
3,316,480	48 : 3,315,295	3,315,819	51 : 3,315,458	3,315,518	3,315,543
3,316,491	3,315,314	3,315,822	3,315,504	3,315,671	3,315,605
3,316,514	3,315,325	3,315,987	3,315,653	3,315,690	3,315,657
3,316,515	3,315,327	3,316,010	3,315,799	3,315,717	3,315,731
3,316,522	3,315,383	3,316,112	3,315,835	3,315,856	3,315,773
3,316,542	3,315,473	3,316,129	3,315,857	3,315,928	3,315,781
3,316,554	3,315,488	3,316,131	3,315,864	3,316,486	3,315,808
44 : 3,315,559	3,315,492	3,316,154	3,315,887	3,316,519	3,315,824
3,315,722	3,315,531	3,316,210	3,315,997	3,316,521	3,315,873
3,315,748	3,315,568	3,316,261	3,316,032	3,315,326	3,315,877
45 : 3,315,408	3,315,649	3,316,295	3,316,165	3,315,927	3,315,976
3,315,706	3,315,697	3,316,329	3,316,276	3,316,192	3,316,245
3,315,817	3,315,741	3,316,347	3,316,298	3,316,196	3,316,246
3,316,117	3,315,743	3,316,421	3,316,392	3,316,197	3,316,367
47 : 3,315,395	3,315,744	3,316,531	3,316,482	3,316,285	3,316,429
3,315,772	3,315,745	3,316,551	3,316,490	3,315,281	3,316,467
3,315,934	3,315,755	49 : 3,315,284	53 : 3,315,398	3,315,294	58 : 3,315,679
3,316,182	3,315,756	3,315,532	3,315,422		

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207,494	207,498	24 : 207,487	207,511	207,525	207,500
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U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

April 25, 1967

Volume 837

Number 4

TRADEMARKS

NOTICES

Withdrawal of Attorney

To expedite the handling of requests for permission to withdraw as attorney, under Rule 36, the request should be submitted in triplicate (original and two copies) and indicate thereon the present mailing address of the attorney who is withdrawing.

JOSEPH SCHIMMEL,
Apr. 18, 1967. *Solicitor.*

CONDITION OF TRADEMARK APPLICATIONS AS OF FEBRUARY 28, 1967

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]..... 17,447
Date of oldest new application..... Jan. 13, 1966
Date of oldest amended application (filing date)..... May 13, 1963

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44.....	1-21-66	7-30-64
(II) F. H. WETHERBEE, Classes 1, 3, 6, 7, 9, 10, 18, 22, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B.....	1-13-66	5-13-63
Renewals (All Classes).....	1-24-67
Sec. 12 (c) Publications (All Classes).....	1-31-67

Applications filed during the month of February 1967—2,064

Registration Issued 347—No. 827,711 to No. 828,057
Renewals Issued 100

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TM 837 O.G.—10

TM 151

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105. A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 203,899. Topp Import & Export, Inc., Miami, Fla. Filed Oct. 13, 1964.



Class 21—Electrical Apparatus, Machines, and Supplies

For Radios, Television Sets, Intercom Systems, Storage Batteries, Electric Toasters, and Electric Fans.

Class 36—Musical Instruments and Supplies

For Tape Recorders.

First use Sept. 10, 1964.

SN 203,964. Grain Processing Corporation, Muscatine, Iowa. Filed Oct. 14, 1964.



Class 18—Medicines and Pharmaceutical Preparations

For Vitamin Supplements and Antibiotics for Mixing Into Livestock and Poultry Feeds.

Class 46—Foods and Ingredients of Foods

For Livestock and Poultry Feed Ingredients of a Food Nature.

First use on or about Mar. 23, 1964.

SN 223,297. Richard P. Fall, d.b.a. Bio Metal Associates, El Segundo, Calif. Filed 7-14-65.

BioQuip

Class 2—Receptacles

For Storage Containers in the Form of Boxes, Cases, Trays, Cages, and Plastic Jars for Natural Science Specimens.

TM 152

Class 32—Furniture and Upholstery

For Storage Containers in the Form of Cabinets and Drawers for Natural Science Specimens.

First use Apr. 19, 1965.

SN 231,233. Rodgers Hydraulic Incorporated, d.b.a. High Pressure Hydraulics Co., Minneapolis, Minn. Filed Oct. 22, 1965.



The drawing is lined for the color yellow.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Hydraulic Pressure Control Valves, Directional Control Valves, Check Valves, and Quick-Connect Couplers.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Hydraulic Pumps and Hydraulic Cylinders.

First use August 1961.

SN 232,978. Morrie Chaitlen, d.b.a. C. & E. Marshall Co., Chicago, Ill. Filed Nov. 19, 1965.

MARCO

Class 5—Adhesives

For Bifocal Cement, Pearl Cement, Dial Cement, and Glue.

Class 15—Oils and Greases

For Jewelers' Lathe Oil, Clock Oil, Watch Oil, Chronometer Oil, Bracelet Watch Oil, and Watch Gear Lubricant.

Class 16—Protective and Decorative Coatings

For Watch Plate Finish, Dial Enamel, Transparent Silver Lacquer, and Lacquer Thinner.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Silver Solder, Soft Solder, Hard Soldering Solution, and Soft Soldering Fluid.

First use as early as 1915.

APRIL 25, 1967

U. S. PATENT OFFICE

TM 153

SN 236,035. Fred Meyer, Inc., Portland, Ore. Filed Jan. 10, 1966.

SONNY BOY

Class 6—Chemicals and Chemical Compositions

For Household Bleach.

First use at least as early as April 1959.

Class 37—Paper and Stationery

For Paper Products—Namely, Facial and Toilet Tissue.

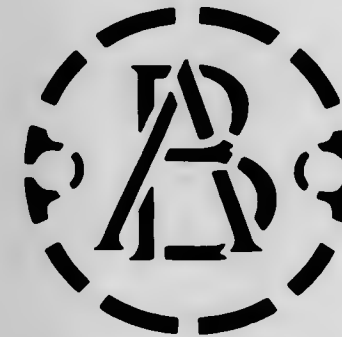
First use at least as early as 1964.

Class 46—Foods and Ingredients of Foods

For Creamed Honey; Peanut Butter; Pickles; Stuffed Olives; Ripe Olives; Salad Dressing; Mayonnaise; Tomato Products—Namely, Sauce, Catsup and Purée; Prepared Mustard; Vinegar; Canned Vegetables; Dried Beans; Cake Mix; Flour; Canned Milk; Cooking Oil; Vegetable Shortening; Margarine; Table Salt; Tea; Soda Crackers; Canned Dog and Cat Food; Frozen Vegetables; and Frozen Dessert Pies.

First use at least as early as 1927.

SN 236,345. Anderson Boyes & Company Limited, Motherwell, Scotland. Filed Jan. 13, 1966.



Class 21—Electrical Apparatus, Machines, and Supplies

For Mining-Type Electrical Switchgear.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Mining Machinery, Coal Cutters, and Parts Thereof.

First use April 1923; in commerce February 1965.

SN 239,855. Auto Pak Company, Washington, D.C. Filed Mar. 1, 1966.

AUTO-PAK

Class 2—Receptacles

For Containers Used With Waste Material Compaction Apparatus.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Compaction Apparatus for Waste Material.

First use on or about Dec. 1, 1963.

SN 240,139. Deseret Pharmaceutical Company, Inc., Salt Lake City, Utah. Filed Mar. 4, 1966.

DESERET

Owner of Reg. Nos. 654,041, 791,487, and others.

Class 18—Medicines and Pharmaceutical Preparations

For Medicines and Pharmaceutical Preparations and Vitamins and Dietary Supplements.

First use December 1956.

Class 44—Dental, Medical, and Surgical Appliances

For Medical and Surgical Aids and Appliances Comprising Indwelling or Intravenous Catheter Sets, Intravenous Catheters, Intravenous Catheter or Cannula Placement Instruments, Infusion Sets, Indwelling Catheter and Syringe Sets, Devices for the Administration of Anesthetics, Including Appliances of the Hypodermic Syringe Type for Administration of Paracervical and Pudential Anesthetics, Surgical Masks, and Intra-Uterine Contraceptive Devices.

First use Jan. 10, 1958.

SN 249,465. John H. Breck, Inc., Springfield, Mass. Filed July 5, 1966.

GOLDEN SECRET

Class 51—Cosmetics and Toilet Preparations

For Creme Rinse and Conditioning Cream for the Hair and Skin Conditioner.

Class 52—Detergents and Soaps

For Hair Shampoo.

First use June 14, 1966.

SN 252,177. Robert Koreska, d.b.a. Firma W. Koreska, Vienna, Austria. Filed Aug. 11, 1966.

TIXO

Owner of Austrian Reg. No. 55,297, dated Aug. 3, 1965.

Class 11—Inks and Inking Materials

For Duplicating Inks; Carbon Paper, and Typewriter Ribbons.

Class 37—Paper and Stationery

For Hectographing Paper, Indigo Paper, Duplicating (Copying) Paper, Hot-Sealing Paper, and Copying Papers of All Kinds.

Class 52—Detergents and Soaps

For Cleaning Agents for Typewriters.

SN 259,047. Associated Design Group, Salt Lake City, Utah. Filed Nov. 21, 1966.



Class 12—Construction Materials

For Construction Material, Specifically Wall Panels.

Class 32—Furniture and Upholstery

For Furniture—Namely, Benches, Planters, and Bench-Planter Combinations.

First use July 22, 1965.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 260,213. Young & Conway, Morganfield, Ky. Filed Dec. 7, 1966.

IF YOU DON'T KNOW YOUR SEEDS KNOW YOUR SEEDSMAN

For Field Seeds.
First use at least as early as 1935.

Class 2—Receptacles

SN 232,316. Brown Company, New York, N.Y., assignee of KVP Sutherland Paper Company, Kalamazoo, Mich. Filed Nov. 8, 1965.

PIK-A-STIK

For Cartons Formed From Paperboard.
First use Dec. 18, 1957.
Subj. to Infr. with SN 242,277.

SN 232,433. United States Box Crafts, Inc., Brooklyn, N.Y. Filed Nov. 9, 1965.

IMPERIAL

For Display Box.
First use Oct. 11, 1965.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 240,085. Evans-Aristocrat Industries, Inc., Elizabeth, N.J. Filed Mar. 3, 1966.



For Billfolds, Letter Cases, Toilet Cases, Photo Cases, Pass Cases, Card Cases, and Key Cases.
First use Mar. 1, 1945.

SN 252,902. Standard Plastic Products, Inc., South Plainfield, N.J. Filed Aug. 22, 1966.

CONSUL

For Attaché Cases.
First use Dec. 30, 1965.

TM 154

SN 257,562. Sirco Products Company, Inc., Mount Vernon, N.Y. Filed Oct. 31, 1966.

FAIRFIELD COUNTY

For Handbags.
First use Oct. 20, 1966.

SN 258,682. Fashion Tress, Inc., Miami Beach, Fla. Filed Nov. 15, 1966.



For Ladies' Wig Luggage Made of Vinyl, Patent Leather, and Tapestry.
First use on or about Nov. 1, 1964.

Class 4—Abrasives and Polishing Materials

SN 210,559. J. Goddard & Sons, Ltd., Leicester, England. Filed Jan. 25, 1965.

GODDARD'S SILVER CARE

The term "Silver Care" is disclaimed apart from the trademark as a whole. Priority claimed under Sec. 44(d) on British Reg. No. 869,020, dated Sept. 8, 1964. Owner of U.S. Reg. Nos. 260,103, 794,980, and others.

For Combined Silver Cleaning and Silver Polishing Preparation.
First use Aug. 5, 1964; in commerce Aug. 5, 1964.

SN 233,133. Rubber-Seal Products Co. Inc., Dayton, Ohio. Filed Nov. 22, 1965.

ZOOM-POLE

For Abrasive Tools—Namely, Abrasive Surfaced Material in Tubular or Rod-Like Form.
First use Feb. 2, 1965.

SN 235,339. Roto-Finish Company, Kalamazoo, Mich. Filed Dec. 27, 1965.

ROTO-BRITE

Owner of Reg. Nos. 397,895, 628,642, and 647,055.
For Chemicals and Chemical Compositions for Use in De-burring, Cleaning, Descaling, Burnishing, Finishing, and Polishing Apparatus and Operations.
First use Nov. 3, 1965.

APRIL 25, 1967

U. S. PATENT OFFICE

TM 155

SN 257,044. The Dow Chemical Company, Midland, Mich. SN 234,680. J. Strickland & Co., Memphis, Tenn. Filed Oct. 24, 1966. Filed Dec. 15, 1965.



Owner of Reg. Nos. 140,588, 807,016, and others.
For Pads for Scouring, Polishing, and Cleaning; and Automotive Polish.
First use Nov. 7, 1957; at least as early as 1910, in a different form.

Class 5—Adhesives

SN 227,015. Denso-Chemie G.m.b.H., Leverkusen-Rheindorf, Germany. Filed Sept. 2, 1965.



Owner of German Reg. No. 771,968, dated Dec. 24, 1962.
For Tapes With Adhesive Compounds.

SN 244,475. Essex Chemical Corporation, Clifton, N.J. Filed Apr. 28, 1966.



The lining shown in the drawing is intended as shading only and does not represent any particular color.
For Synthetic Resin Emulsion Adhesive.
First use Oct. 29, 1964.

Class 6—Chemicals and Chemical Compositions

SN 222,558. Epic Chemicals, Inc., Brooklyn, N.Y. Filed July 2, 1965.

SWELL

Owner of Reg. No. 782,983.
For Room Deodorant and Air Freshener, Fly and Mosquito Killer, and Ant and Roach Spray.
First use May 17, 1965.

SN 223,791. Industrial Dyestuff Company, Providence, R.I. Filed July 20, 1965.

INDYECO

For Gas Fading Inhibitors for Textiles.
First use Nov. 6, 1964.



Owner of Reg. No. 412,142.
For Flea Powder To Be Used on Dogs, Cats, and Birds Against Fleas, Lice, Ticks, and Certain Other Pests.
First use Jan. 21, 1953.

SN 234,681. J. Strickland & Co., Memphis, Tenn. Filed Dec. 15, 1965.



Owner of Reg. No. 412,142.
For Bug Killer in Powder Form for Use Against Roaches, Ants, Spiders, Silverfish, Bedbugs, and Certain Other Crawling Insects.
First use Jan. 21, 1953.

SN 241,713. Universal Oil Products Company, Des Plaines, Ill. Filed Mar. 23, 1966.

AID-3

For Additive To Prevent Carburetor Ice Formation and as Corrosion Inhibitor.
First use Aug. 17, 1965.

SN 256,817. Betz Laboratories, Inc., Philadelphia, Pa. Filed Oct. 20, 1966.

LIQUI-TREAT

For Chemicals Employed in the Treatment of Boiler Water, Boiler Feed Water, Steam and Steam Condensate.
First use Aug. 1, 1966.

SN 256,873. The Sherwin-Williams Company, Cleveland, Ohio. Filed Oct. 20, 1966.

VERSACEL

For Chemical Blowing Agent.
First use Sept. 8, 1966.

SN 256,964. Organon Inc., West Orange, N.J. Filed Oct. 21, 1966.

MONOSTICON

Owner of Reg. Nos. 721,497 and 807,999.
For Laboratory Test Kit for the Detection of Infectious Mononucleosis.
First use Oct. 12, 1966.

SN 257,111. Union Carbide Corporation, New York, N.Y. Filed Oct. 24, 1966.

LINDE

For Carbon Dioxide.
First use on or about Sept. 4, 1966.

SN 257,388. Hercules Blue Co., Ltd., d.b.a. Colloidal Products Corporation, Sausalito, Calif. Filed Oct. 27, 1966.

TRONIC

For Spreader-Activator for Herbicide Sprays.
First use Oct. 3, 1966.

TM 156

OFFICIAL GAZETTE

APRIL 25, 1967

SN 257,569. American Cyanamid Company, Wayne, N.J.
Filed Oct. 31, 1966.

ACCURAC

Owner of Reg. No. 721,496.
For Cationic Polymer for Increasing the Retention of Filler
or Pigment in Paper Making Stock.
First use July 25, 1965.

SN 257,675. Boone M. Vernon, d.b.a. Ashworth Chemical
Company, Memphis, Tenn. Filed Oct. 31, 1966.

radar

For Rodenticide.
First use Oct. 17, 1960.

SN 264,365. E. I. du Pont de Nemours and Company, Wil-
mington, Del. Filed Feb. 10, 1967.

RIGHT

For Fabric Softener.
First use Nov. 11, 1966.

Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 229,879. St. Thomas, Incorporated, Gloversville, N.Y.
Filed Oct. 11, 1965.

SMOK-PAK

Owner of Reg. No. 423,665.
For Leather Cigarette Cases.
First use May 15, 1939.

SN 251,167. Klina L. Zemansky, d.b.a. K.D. Research and
Development Co., National City, Calif. Filed July 11, 1966.

CIG-OUT

For Fireproof Pouch for Smokers.
First use June 22, 1966.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 236,848. Sears, Roebuck and Co., Chicago, Ill. Filed
Jan. 19, 1966.

HERITAGE

For Actions for Barreled Shoulder Type Arms, Exclusive
of Bazooka Type.
First use on or about Nov. 4, 1965.
Subj. to Intf. with SN 236,765.

Class 10 — Fertilizers

SN 251,532. Federal Chemical Company, Louisville, Ky.
Filed Aug. 2, 1966.



For Fertilizers.
First use Apr. 4, 1966.

SN 252,773. University Laboratories, Inc., New York, N.Y.
Filed Aug. 19, 1966.

GREEN EARTH

For Soil Concentrate or Additive for Depleted Soils.
First use Aug. 9, 1966.

SN 253,644. Farmers Mfg. Co., Inc., Dorsey, Ill. Filed Sept.
1, 1966.

AGRISERUM

For Organic Plant Serum.
First use Aug. 20, 1966.

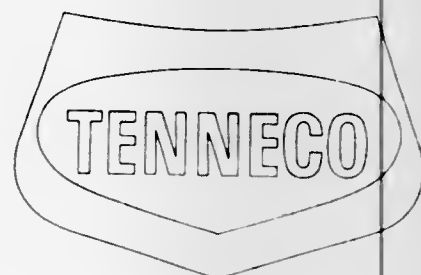
Class 12 — Construction Materials

SN 241,823. Tenneco Inc., Houston, Tex., by change of name
from Tennessee Gas Transmission Company, Houston, Tex.
Filed Mar. 24, 1966.

TENNECO

For Paper and Paperboard Used in the Gypsum Wallboard
Construction Industry.
First use Mar. 7, 1966.

SN 241,825. Tenneco Inc., Houston, Tex., by change of name
from Tennessee Gas Transmission Company, Houston, Tex.
Filed Mar. 24, 1966.



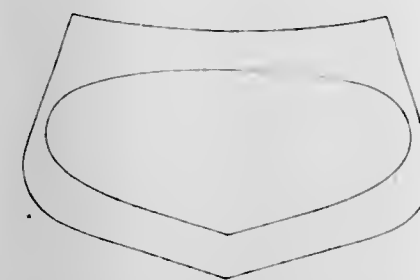
For Paper and Paperboard Used in the Gypsum Wallboard
Construction Industry.
First use Mar. 7, 1966.

APRIL 25, 1967

U. S. PATENT OFFICE

TM 157

SN 241,827. Tenneco Inc., Houston, Tex., by change of name
from Tennessee Gas Transmission Company, Houston, Tex.
Filed Mar. 24, 1966.



For Paper and Paperboard Used in the Gypsum Wallboard
Construction Industry.
First use Mar. 7, 1966.

SN 246,075. Goodyear Aerospace Corporation, Akron, Ohio.
Filed May 19, 1966.

Z

For Laminated Panels Constructed of Two Thin Sheets of
Metal, Plastic, or Wood Bonded Together in a Sandwich-Type
Structure.
First use Jan. 22, 1965.

SN 247,374. Logan Co., Louisville, Ky. Filed June 6, 1966.

Stan Gard

For Metal Window Guards.
First use May 9, 1966.

SN 248,164. Republic Steel Corporation, Cleveland, Ohio.
Filed June 15, 1966.

DUROFLASH

For Stainless Steel Roof Flashing for Buildings.
First use May 25, 1966.

SN 249,532. Joslyn Mfg. and Supply Co., Chicago, Ill., as-
signee of Hayden-Shaw Mineral Products, Inc., Detroit,
Mich. Filed July 5, 1966.

KRE-A-PATCH

For Floor Patching Composition.
First use Nov. 19, 1951.

SN 263,337. United States Steel Corporation, Pittsburgh,
Pa. Filed Jan. 26, 1967.

PRIME RIB

For Metal Roofing and Siding Sheets.
First use Dec. 29, 1966.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 239,467. Treffleries Leon Bekaert, PVBA, Zwevegem,
Belgium. Filed Feb. 23, 1966.

PANTANET

Owner of Belgian Reg. No. 3,564, dated Apr. 5, 1963.
For Wire Netting and Wire Mesh, and Fencing Made
Therefrom.

Class 16 — Protective and Decorative Coatings

SN 237,883. Mobil Oil Corporation, New York, N.Y., by
change of name from Socony Mobil Oil Company, Inc., New
York, N.Y. Filed Feb. 2, 1966.

MOBILZINC

Owner of Reg. Nos. 667,297, 744,011, and others.
For Industrial Paint-Like Coatings—Namely, Anticorro-
sive Protective Coatings for Metals.
First use June 21, 1965.

SN 238,976. Sol Schwartz & Sons Distributors, Inc., Ja-
maica, N.Y. Filed Feb. 16, 1966.



The mark comprises three stylized letters "S."
For Pure Shellac.
First use on or about Oct. 25, 1965.

Class 18 — Medicines and Pharmaceutical Preparations

SN 222,353. Farbwerke Hoechst Aktiengesellschaft vormals
Meister Lucius & Bruning (German corporation), Frank-
furt am Main, Germany, assignee, by mesne assignment, of
Farbwerke Hoechst Aktiengesellschaft vormals Meister
Lucius and Bruning (German company), Frankfurt am
Main, Germany. Filed June 30, 1965.

TERBOLAN

Owner of German Reg. No. 317,876, dated July 31, 1924.
For Antihypertonic.

SN 223,133. Canadian Hoechst Limited, Montreal, Quebec,
Canada, by change of name and assignment from Lloyd
Brothers, Inc., Cincinnati, Ohio. Filed July 12, 1965.

DIABETA

For Medicinal Preparation for Reducing the Concentration
of Sugar in the Blood.
First use May 1963.

SN 228,647. Cutter Laboratories, Inc., Berkeley, Calif.
Filed Sept. 27, 1965.

ALOCINE

Owner of Reg. No. 679,894.
For Hog Cholera Vaccine for Use in Veterinary Medicine.
First use Apr. 22, 1958.

SN 230,085. Sauter Laboratories, Inc., Nutley, N.J. Filed Oct. 13, 1965.

COUNTERNOID

For Rectal Suppositories.
First use Oct. 8, 1965.

SN 235,581. E. R. Squibb & Sons, Inc., New York, N.Y., assignee of Olin Mathieson Chemical Corporation, New York, N.Y. Filed Dec. 30, 1965.

CHROMALBIN

For Radio-Chromated Serum Albumin.
First use Nov. 15, 1965.

SN 235,753. Ferring AB, Malmö, Sweden. Filed Nov. 3, 1965.

LEVITRAST

For X-Ray Contrast Medium.
First use Mar. 26, 1964; in commerce Mar. 26, 1964.

SN 241,327. Dr. August Wolff Chemische-Pharmazeutische Fabrik Kommanditgesellschaft, Bielefeld, Germany. Filed Mar. 18, 1966.

SEDOVEGAN

Owner of German Reg. No. 601,931, dated Oct. 20, 1950.
For Preparation for the Treatment of Nervously Induced Heart, Circulatory, Stomach, and Intestinal Conditions.

SN 244,012. Nejo Pharmacal, Inc., Houston, Tex. Filed Apr. 21, 1966.

THERALONES

For Therapeutic Vitamins for Human Consumption.
First use at least as early as June 25, 1965.

SN 244,600. Mead Johnson & Company, Evansville, Ind. Filed Apr. 29, 1966.

Mead Johnson
LABORATORIES

Owner of Reg. Nos. 173,340, 790,132, and others.
For Food Supplements Containing Vitamins and/or Minerals for Human Use and Pharmaceutical Preparations.
First use Apr. 28, 1966; 1965 as to "Mead Johnson."

SN 244,876. Beardmore, Inc., Hasbrouck Heights, N.J. Filed May 4, 1966.

EXCEL-DERM FORMULA 'B'

The applicant disclaims the term "Formula 'B,'" apart from the mark as shown.

For Skin Cleaning and Conditioning Preparation To Be Rubbed Directly on the Skin.
First use before Apr. 15, 1966.

SN 245,839. Merck & Co., Inc., Rahway, N.J. Filed May 17, 1966.

TEND

For Medicinal Dressing for Veterinary Use.
First use Apr. 7, 1966.

SN 245,937. Mallingson Pharmaceuticals, Inc., Alexandria, Va. Filed May 18, 1966.

HYDRAX

For Magnesium Carbonate and Aluminum Hydroxide Gel Used as an Ingredient in Medicinal Preparations for the Relief of Pain.

First use at least as early as Dec. 19, 1965.

SN 246,202. Sandoz, Inc., Hanover, N.J. Filed May 20, 1966.

DIAPID

For Medicament Useful in the Treatment of Diabetes Insipidus—Namely, 8-Lysine Vasopressin.
First use Apr. 11, 1966.

SN 251,613. Dietone Vitamin Products Corporation, New York, N.Y. Filed Aug. 3, 1966.

NUTRAGEN

For Nutritional Supplement Containing Vitamins and Minerals for Horses.
First use at least in August 1963.

SN 251,831. Norden Laboratories, Inc., Lincoln, Nebr. Filed Aug. 5, 1966.



For Eye and Ear Ointment for Use by Veterinarians.
First use Apr. 1, 1966.

SN 252,527. Aktiebolaget Astra, Södertälje, Sweden. Filed Aug. 17, 1966.

BETALOC

For Beta-Receptor-Blocking Agents.
First use July 11, 1966; in commerce July 11, 1966.

SN 254,441. Giant Chemical Corporation, Shiremanstown, Pa. Filed Sept. 14, 1966.

THALOIN

For Laxative Preparation.
First use on or about Jan. 2, 1915.

SN 254,470. Richardson-Merrell Inc., New York, N.Y. Filed Sept. 14, 1966.

QUINAGESIC

For Leg Muscle Relaxant Preparation.
First use Aug. 2, 1966.

SN 262,087. Allied Mills, Inc., Chicago, Ill. Filed Jan. 9, 1967.

KETOLENE

For Medicated Preparation for Use in the Prevention and/or Treatment of Acetonemia (Ketosis) in Dairy Cattle.
First use Dec. 10, 1965.

SN 264,471. Syntex Laboratories, Inc., Palo Alto, Calif. Filed Feb. 13, 1967.

NORQUEN

For Steroid Hormones.
First use Jan. 31, 1967.

SN 264,485. American Home Products Corporation, New York, N.Y. Filed Feb. 13, 1967.

CUMULUN

For Analgesic Preparation.
First use Feb. 2, 1967.

SN 264,707. Foster-Milburn Company, Buffalo, N.Y. Filed Feb. 15, 1967.

HEXA-KERI

Owner of Reg. Nos. 677,093, 802,955, and others.
For Antipruritic, Antibacterial Oil, Used for Treatment of Dry and Irritated Skin Conditions.
First use Jan. 12, 1967.

Class 19—Vehicles

SN 233,015. Sippel Equipment Company, Inc., d.b.a. Tecto Company, South Bend, Ind. Filed Nov. 19, 1965.

TECTO

For Green Tire Handling Trucks and Skids, and Pallet Stacking Hardware for Tires.
First use Feb. 14, 1964.

SN 233,716. Kaiser Jeep Corporation, Toledo, Ohio. Filed Dec. 1, 1965.

COMMANDO

For Automotive Passenger Land Vehicles.
First use Nov. 24, 1965.

SN 234,671. Arnold, Schwinn & Co., Chicago, Ill. Filed Dec. 15, 1965.



For Bicycle Parts and Accessories—Namely, Saddles and Reflectors.
First use July 19, 1960, on bicycle saddles.

SN 235,940. Societe Anonyme Andre Citroen, Paris, France. Filed Jan. 6, 1966.

DS 21

Priority claimed under Sec. 44(d) on French Reg. No. 537,493, dated July 27, 1965 (Seine); Natl. Inst. No. 265,792. Owner of U.S. Reg. No. 661,873.
For Motor Cars.

FIBERFAB

For Automobile Bodies; Automobile Body Parts—Namely, Front Shells, Rear Shells, Front Sections, Rear Sections, Half Front Sections, Half Rear Sections, Quarter Sections, Splash Panels, Quarter Panels, Hoods, Fenders, Tails, Cows, Noses, Windshields, Doors, Windows, Headlight Covers, Bucket Seats, Bucket Seat Shells, Dash Panels and Dash Boards; Automobile Chassis; Automobile Chassis Parts—Namely, Floor Pans, Tube Chassis Kits, Rear Hangers, Frame Rails, Springs, and Axles.
First use September 1963.

SN 245,471. Chia S.p.A., Turin, Italy. Filed May 12, 1966.



The drawing is lined to indicate texture and not color.
For Automobile Bodies; and Automobiles.
First use May 1, 1930; in commerce June 1, 1949.

SN 246,842. A to Z Rental, Inc., Chicago, Ill. Filed May 31, 1966.

AZTEC

For Camping Trailers.
First use on or about Jan. 15, 1966.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 234,403. Dura-Tronics Lamps, Inc., Dallas, Tex. Filed Dec. 13, 1965.

DURA-TRONICS

For Lamp Starters and Incandescent and Fluorescent Lamps.
First use at least as early as May 21, 1962.

SN 236,481. Electronic Controls, Inc., Wilton, Conn. Filed Jan. 14, 1966.

TINY-T

For Electrical Switches and Relays.
First use Aug. 18, 1965.

SN 237,319. Eaton Yale & Towne Inc., Cleveland, Ohio. Filed Jan. 26, 1966.



Applicant disclaims any rights in the word "Control" separate and apart from the mark as shown.

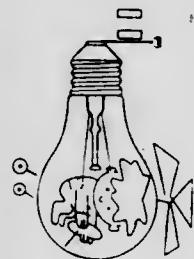
For Electrical Controls for Driving and Operating Industrial Trucks, Including Lift Trucks.
First use on or about Nov. 30, 1964.

SN 241,501. Nicholl Brothers, Inc., Kansas City, Mo. Filed Mar. 21, 1966.

SCOTSMAN

For Battery Operated Lights.
First use Apr. 26, 1965.

SN 242,636. Noma Lites Corp., St. Joseph, Mo. Filed Apr. 4, 1966.



For Electricity Illuminated Christmas Tree Ornaments, Decorative Lighting Sets, Electric Lamps, and Light Reflectors.

First use Mar. 9, 1966.

SN 242,806. Duro-Test Corporation, North Bergen, N.J. Filed Apr. 6, 1966.



For Electric Lamps.
First use April 1946.

SN 243,854. The Economy Engine Company, Youngstown, Ohio. Filed Apr. 20, 1966.

ALTRONIC

For Ignition Systems for Use in Internal Combustion Engines.
First use Jan. 21, 1966.

SN 259,384. Waste King Corporation, Los Angeles, Calif. Filed Nov. 25, 1966.

HUSH MASTER

Owner of Reg. Nos. 595,854, 679,534, 747,169, and 748,699.
For Electric Garbage Disposers.
First use Mar. 14, 1966.

Class 22 — Games, Toys, and Sporting Goods

SN 223,581. O. O. Ressel, d.b.a. Woodrow Wilson Co., Corona Del Mar, Calif. Filed July 16, 1965.

LUCKY NUMBERS GAME

Applicant makes no claim to the words "Number" or "Game" apart from the mark as shown.
For Envelopes To Be Used by Others in Promoting the Sale of Their Goods Through a Customer Participation Game.
First use June 15, 1965.

SN 234,623. Chicco's Tomahawk Golf Putters, North Miami, Fla. Filed Dec. 15, 1965.



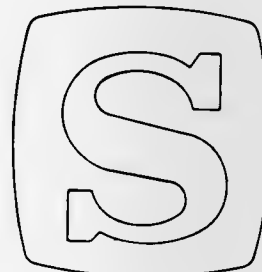
Owner of Reg. No. 777,308.
For Golf Clubs.
First use January 1963.

SN 236,578. Lou J. Eppinger Manufacturing Company, Dearborn, Mich. Filed Jan. 17, 1966.

NOSTEALUM

For Insect and Fish Harness-Type Hooks for Use With Natural Fish Baits.
First use on or about Aug. 1, 1921.

SN 243,907. Shakespeare Company, Kalamazoo, Mich. Filed Apr. 20, 1966.



For Sporting Goods—Namely, Golf Balls, Clubs, Bags, Fishing Reels, and Archery Equipment.
First use May 1, 1962.

SN 244,643. Mattel, Inc., Hawthorne, Calif. Filed May 2, 1966. SN 246,599. Parisl Industries, Inc., Brooklyn, N.Y. Filed May 25, 1966.



Applicant disclaims the words "A Tested Pre-School Toy by Mattel" apart from the mark as shown. Owner of Reg. Nos. 635,129 and 753,681.
For Toys for Pre-School Children.
First use Feb. 22, 1966.

SN 244,657. Milton Bradley Company, Springfield, Mass. Filed May 2, 1966.



For Equipment Comprising Colored Balls and a Catapult-Type Figure Head for Playing a Parlor Game.
First use Jan. 1, 1966.

SN 244,659. Milton Bradley Company, Springfield, Mass. Filed May 2, 1966.

MOSQUITO

For Toy Equipment Comprising a Platform Containing Obstacles and a Spring Loaded Pop-Off Device for Playing an Action Game.
First use Jan. 1, 1966.

SN 244,663. Milton Bradley Company, Springfield, Mass. Filed May 2, 1966.

BIRD BRAIN

For Equipment Comprising a Three-Dimensional Selector Wheel With a Bird-Shaped Cover for Playing a Card-Type Parlor Game.
First use Jan. 1, 1966.

SN 244,709. Leon D. Hoffman, Jr., Silver Spring, Md. Filed May 2, 1966.

THINK A LINK

For Equipment Sold as a Unit for Playing an Educational Game.
First use Jan. 6, 1966.

SN 246,597. Parisl Industries, Inc., Brooklyn, N.Y. Filed May 25, 1966.

CLASS OF '68

For Stuffed Toys.
First use May 19, 1966.

CLASS OF '67

For Stuffed Toys.
First use May 19, 1966.

SN 263,871. Mattel, Inc., Hawthorne, Calif. Filed Feb. 3, 1967.

BABY SAY 'N SEE

No claim of exclusive right is made to "Baby," alone, for these goods.
For Dolls, Doll Clothing, and Doll Accessories.
First use Dec. 13, 1966.

SN 263,873. Mattel, Inc., Hawthorne, Calif. Filed Feb. 3, 1967.

LENORE

For Dolls, Doll Clothing, and Doll Accessories.
First use Dec. 13, 1966.

SN 263,874. Mattel, Inc., Hawthorne, Calif. Filed Feb. 3, 1967.

LAMBIE-PIE

For Plush Animal Toys and Accessories Therefor.
First use Dec. 13, 1966.

SN 263,875. Mattel, Inc., Hawthorne, Calif. Filed Feb. 3, 1967.

BABY'S HUNGRY!

For Dolls, Doll Clothing, and Doll Accessories.
First use Dec. 13, 1966.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 218,160. American Screen Process Equipment Co., Chicago, Ill. Filed May 5, 1965.

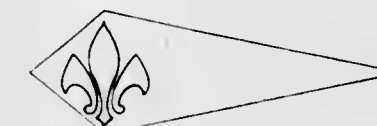


Applicant disclaims the words "Screen Process" apart from the mark as shown.

For Mechanical Apparatus Used in Screen Process Printing, in Preparation of Screen Process Stencils, in Processing and Handling of Stock Associated With Screen Process Printing.

First use Jan. 1, 1961.

SN 225,778. The La Fleur Corporation, Los Angeles, Calif. Filed Aug. 16, 1965.



For Machinery—Namely, Pumps, Turbines, and Compressors; and Bearings for Pumps, Turbines, and Compressors.
First use on or about Sept. 30, 1961.

SN 226,986. A.C. Rubber Manufacturing Co. Ltd., Vancouver, British Columbia, Canada. Filed Sept. 2, 1965.

MINI-MUFFLE

Priority claimed under Sec. 44(d) on Canadian application filed Mar. 11, 1965; Reg. No. 143,678, dated Jan. 28, 1966. Applicant disclaims any exclusive use of the word "Muffle" apart from the mark as shown.
For Marine Engine Silencers.

SN 228,132. Champion, Incorporated, Tulsa, Okla. Filed Sept. 20, 1965.

CHAMPION

For Machines, and Replacement Parts on Same Which Are Used in the Application of Fertilizing Materials in Agriculture.

First use Dec. 2, 1963.

SN 228,144. Flint & Walling Manufacturing Co., Inc., Kendallville, Ind. Filed Sept. 20, 1965.

HOOSIER

For Water Supply Systems and Pneumatic Water Supply Systems With Controllers, Indicators and Regulators for Assembly in Said Systems, Especially for Domestic and Agricultural Installations, Water Conditioning Equipment, Pumps, and Electric-Driven Jet Pumps.
First use 1888.

SN 230,017. Albe S.A., Lugano-Viganello, Switzerland. Filed Sept. 23, 1965.



The representation of the goods is disclaimed apart from the mark as shown. Owner of Swiss Reg. No. 204,940, dated June 25, 1964.

For Metal Cutting Tools To Be Secured on and Operated by Machine Tools.

SN 235,285. Dover Corporation, New York, N.Y. Filed Dec. 27, 1965.

LEVA-LIZER

For Equalizing System Including a Rigid Structural Assembly for Vehicle Lifts.
First use Nov. 10, 1965.

SN 239,635. Linde Aktiengesellschaft, Holtriageskreuth, Germany. Filed Feb. 25, 1966.

HYDRO-STABIL

For Hydraulic Pumps and Motors.
First use on or about Dec. 15, 1965; in commerce on or about Dec. 15, 1965.

SN 239,908. Hi-Test Premier Products, Inc., New York, N.Y. Filed Mar. 1, 1966.

Pro-Forge

For Long Nose Pliers.
First use Feb. 1, 1966.

SN 242,280. Borg-Warner Corporation, Chicago, Ill., assignee of Precision Automotive Components Company, Ballwin, Mo. Filed Mar. 30, 1966.

AUTO-MECH

For Carburetor Tune-Up Kits.
First use July 15, 1963.

SN 243,034. Rubin Stern, Philadelphia, Pa. Filed Apr. 8, 1966.

R-S

For Sewing Machine Parts—Namely, Needle Bars and Pulleys.
First use Mar. 17, 1966.

SN 243,255. Perma-Sharp Israel Limited, Tel Aviv, Israel. Filed May 25, 1965.

SHALOM

The word "Shalom" is a word in the Hebrew language and means "peace."
For Razor Blades.
First use Jan. 29, 1965; in commerce Jan. 29, 1965.

SN 245,339. Paramount Paper Products Company, Omaha, Nebr. Filed May 10, 1966.

PAR-A-MATIC

For Label Dispensers and Applicators.
First use Jan. 5, 1966.

SN 248,153. Mount Hope Machine Company, Incorporated, Raynham, Mass. Filed June 15, 1966.

weftrol

For Weft Straighteners.
First use not later than Sept. 26, 1965.

SN 248,275. Raymond P. Wolgast, d.b.a. Detroit Body Products, Royal Oak, Mich. Filed June 16, 1966.

MULESKINNER

For Rotary Wire Brushes for the Removal of Paint and Other Matter From Automotive Bodies.
First use Apr. 1, 1965.

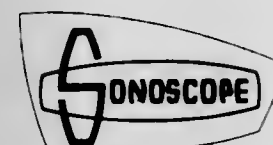
Class 26—Measuring and Scientific Appliances

SN 190,271. MGM Telestudios Inc., New York, N.Y. Filed Apr. 3, 1964.

GEMINI

For Combined Unitarily Housed Television and Motion Picture Cameras, and Parts Thereof.
First use Jan. 24, 1964.

SN 232,869. Sonoscope, Inc., St. Petersburg, Fla. Filed Nov. 17, 1965.



For Semi-Automatic, Electronic Audio-Visual Machine Which Comprises a Tape Recorder and Slide Projector Synchronized for Program Narration in Conjunction With the Projection of Film Slides.
First use Oct. 9, 1964.

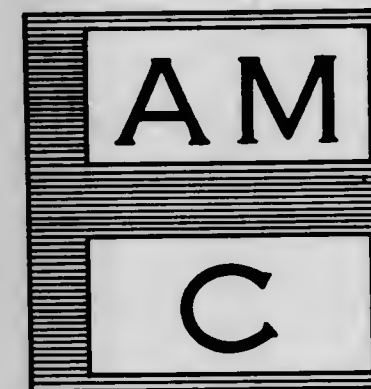
SN 237,098. Eaton Yale & Towne Inc., Cleveland, Ohio. Filed Jan. 24, 1966.



No registration rights are claimed for the word "Control" apart from the mark as shown, but applicant waives none of its common law rights in said mark or any feature thereof.

For Electrical Controls for Driving and Operating Industrial Electric Trucks, Including Lift Trucks.
First use Aug. 24, 1965.

SN 240,575. Automated Measurements Corporation, Los Gatos, Calif. Filed Mar. 10, 1966.



The drawing is lined for the color blue which is claimed as an integral feature of the mark.
For Electronic Testing Apparatus and Components Thereof.
First use Jan. 21, 1966.

SN 241,648. Dodge Manufacturing Corporation, Mishawaka, Ind. Filed Mar. 23, 1966.

DODGE

Owner of Reg. Nos. 244,945 and 245,508.
For Electrical Drive and Drive-Control Apparatus Other Than Automotive—Namely, Apparatus for Controlling Speed, Rotation, or Torque, Applied to a Shaft or Other Driven Machine Element, and Related Instrumentation Associated Therewith for Measuring or Indicating Quantities or Conditions in the Functioning Thereof; and Parts Thereof.
First use in or about February 1952.

SN 242,959. American Optical Company, Southbridge, Mass. Filed Apr. 8, 1966.

ARCOTE

Owner of Reg. No. 800,038.
For Ophthalmic and Sunglass Lenses and Lens Blanks Coated With Absorptive, Anti-Reflective Film.
First use June 1964.

SN 243,032. The Stanley Works, New Britain, Conn. Filed Apr. 8, 1966.

POWERLOCK

For Tape Rules.
First use on or about Jan. 7, 1963.

Class 27—Horological Instruments

SN 242,337. The Dayton Company, d.b.a. J. B. Hudson Co., Minneapolis, Minn. Filed Mar. 31, 1966.

J·B·H

Owner of Reg. No. 761,335.
For Watch Cases Composed in Whole or in Part of Gold or Silver or Other Precious Metal.
First use about Mar. 16, 1966.

Class 28—Jewelry and Precious-Metal Ware

SN 237,339. Gorham Corporation, Providence, R.I. Filed Jan. 26, 1966.

CHELSEA

For Sterling Flatware.
First use Dec. 30, 1965.

SN 261,014. C. H. Stuart & Co. Inc., Newark, N.Y. Filed Dec. 19, 1966.

ROYAL CREST

Owner of Reg. No. 764,250.
For Men's and Women's Jewelry.
First use Jan. 26, 1966.

Class 29 — Brooms, Brushes, and Dusters

SN 229,346. The Glidden Company, Cleveland, Ohio. Filed Oct. 5, 1965.

MR. WHITE

The word "White" is disclaimed apart from the mark as shown, without relinquishing any rights therein under the common law.

For Paint Brushes.

First use Dec. 26, 1960.

Class 30 — Crockery, Earthenware, and Porcelain

SN 169,824. Castleton China, Inc., New Castle, Pa. Filed May 28, 1963.

BLUE TULIP

For China Dinnerware.

First use May 6, 1963.

Class 31 — Filters and Refrigerators

SN 226,708. Aquariums Incorporated, Maywood, N.J. Filed Aug. 30, 1965.

MAGIC-MAGNET DRIVE

Applicant disclaims the word "Drive" separate and apart from the mark.

For Aquarium Filter.

First use July 20, 1965.

SN 226,709. Aquariums Incorporated, Maywood, N.J. Filed Aug. 30, 1965.

DYNAFLO MOTOR FILTER

Applicant disclaims "Motor Filter" separate and apart from the mark.

For Aquarium Filter.

First use July 20, 1965.

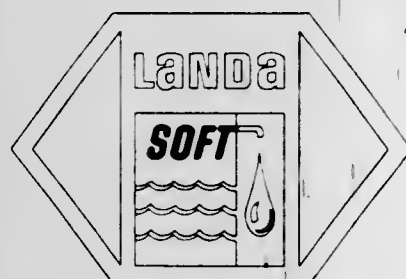
SN 246,794. The Landa Company, St. Paul, Minn. Filed May 27, 1966.

LANDA

For Water Conditioning Equipment—Namely, Equipment for Ion Exchange Type Water Conditioners and Filters and Chemical Feeders for Water Conditioning.

First use Apr. 22, 1966.

SN 246,795. The Landa Company, St. Paul, Minn. Filed May 27, 1966.



For Water Conditioning Equipment—Namely, Equipment for Ion Exchange Type Water Conditioners and Filters and Chemical Feeders for Water Conditioning.

First use Apr. 22, 1966.

SN 247,153. Service Appliance Company, Inc., Bristol, Va. Filed June 2, 1966.

SEAPCO

For Home Freezers.

First use May 23, 1966.

SN 247,663. American Prefinished Panel Corporation, Miami, Fla. Filed June 9, 1966.

Thermo-Rigid

For Casings for Freezers and Walk-In Refrigerators.

First use Jan. 14, 1966.

Class 32 — Furniture and Upholstery

SN 236,991. Haak Mfg., Inc., San Bernardino, Calif. Filed Jan. 21, 1966.



For Patio Table Sets, and Stadium and Bleacher Seat Covers.

First use on or before Apr. 1, 1964, on patio table sets.

SN 246,039. Burris Manufacturing Company, Incorporated, Lincolnton, N.C. Filed May 19, 1966.

BURRIS

For Furniture—Namely, Chairs, Love Seats and Sofas.

First use on or about May 1, 1949.

SN 246,041. Burris Manufacturing Company, Incorporated, Lincolnton, N.C. Filed May 19, 1966.



The words "The" and "Chair" are disclaimed apart from the mark as a whole.

For Chairs.

First use Oct. 1, 1965; May 1, 1949, as to "Burris."

SN 246,042. Burris Manufacturing Company, Incorporated, d.b.a. Wayne Upholstering Company, Lincolnton, N.C. Filed May 19, 1966.

WAYNE

For Furniture—Namely, Chairs, Love Seats, and Sofas.

First use on or about Jan. 1, 1960.

SN 247,977. Shelf Studio, Ltd., New York, N.Y. Filed June 13, 1966.



The word "Shelf" is disclaimed when used apart from the mark.

For Suspension Wall-Hung, Stand on Floor, Half on Floor and Suspended, Separate, Sectional, and Assembled Articles of Furniture—Namely, Shelving, Cabinets, Chests, Desks, Drawer Shelves, Files, Hi-Fi and Electronic Apparatus Cabinets, Bars, Upright Mounts, Room Dividers, Tables and Chairs, and Combinations Thereof.

First use June 1, 1966.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 225,308. William B. Hamilton, d.b.a. Hamilton Mfg. Co., Costa Mesa, Calif. Filed Aug. 9, 1965.



Applicant hereby disclaims the words "Flicker Flame" apart from the mark as a whole.

For Gas Fired Simulated Fireplace Logs, Fireplace Screens, Fireplace Tools Including Brooms, Shovels and Pokers, and Stands for Such Tools; and Fireplace Cranes and Fireplace Andirons.

First use June 1965.

SN 230,311. United Suffolk Corp., Hauppauge, N.Y. Filed Oct. 15, 1965.

USC POWERAY

For Asphalt Heaters.

First use Aug. 27, 1965.

SN 246,232. Geo. D. Roper Corporation, Kankakee, Ill. Filed May 23, 1966.

TWIN COOK & KEEP

Owner of Reg. No. 787,864.

For Cooking and Baking Units—Namely, Stoves, Ranges, Ovens, and Wall-Mounted, Cabinet-Based and Countertop Units.

First use June 15, 1965.

SN 246,624. Ventfabrics Incorporated, Chicago, Ill. Filed May 25, 1966.

VENTLINE

Owner of Reg. Nos. 527,288, 763,505, and others.

For Flexible Tubing for Use Especially in Air Conditioning Installations.

First use Apr. 18, 1966.

SN 247,618. H. C. Oswald Supply Co., Inc., New York, N.Y. Filed June 8, 1966.

OSCO

For Incinerators, Coal, Oil, and Gas Fired Steam Boilers and Water Tank Heaters, Gas Ranges, Grates, Grate Bars and Similar Boiler and Heater Parts Therefor.

First use Oct. 3, 1930.

SN 247,627. Selas Corporation of America, Dresher, Pa. Filed June 8, 1966.

DURADIANT

Owner of Reg. No. 418,677.

For Fluid Fuel Burners and Parts Therefor.

First use July 1944.

SN 247,763. Air Reduction Company, Incorporated, New York, N.Y. Filed June 10, 1966.

ASTRO-PAK

For Packaged Welding Wire.

First use Sept. 13, 1962.

SN 259,383. Waste King Corporation, Los Angeles, Calif. Filed Nov. 25, 1966.



Owner of Reg. Nos. 363,261, 700,869, and 720,613.

For Ranges, Stoves, Ovens, Broilers, and Surface Units.

First use at least as early as February 1962.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 236,203. Robbins Tire and Rubber Company, Inc., Tusculum, Ala. Filed Jan. 11, 1966.

LONG LIFE

For Inner Tubes.

First use at least as early as July 29, 1949.

SN 239,430. Morak Brakes, Inc., Brooklyn, N.Y. Filed Feb. 23, 1966.

M.A.

Owner of Reg. No. 811,278.

For Brake Linings.

First use Feb. 26, 1965.

SN 241,779. The Hercules Tire & Rubber Company, Stamford, Conn. Filed Mar. 24, 1966.

HERCULUG

For Pneumatic Tires and Tubes.

First use Jan. 13, 1966, on tires.

SN 242,394. Security Tire and Rubber Company, Inc., Richmond, Va. Filed Mar. 31, 1966.

SECURITY VELVET RIDE

No exclusive claim is made to the words "Velvet Ride" apart from the mark as shown.
For Pneumatic Tires.
First use May 28, 1964.

SN 242,395. Security Tire and Rubber Company, Inc., Richmond, Va. Filed Mar. 31, 1966.

SECURITY MOTORWAY

For Pneumatic Tires.
First use May 28, 1964.

SN 242,396. Security Tire and Rubber Company, Inc., Richmond, Va. Filed Mar. 31, 1966.

SECURITY TRACTION

No exclusive claim is made to the word "Traction" apart from the mark as shown.
For Pneumatic Tires.
First use May 28, 1964.

SN 263,316. "Automatic" Sprinkler Corporation of America, d.b.a. Blaze Guard Manufacturing Company, Cleveland, Ohio. Filed Jan. 26, 1967.

GATER HIDE

For Municipal and Industrial Fire Hose.
First use in the year 1955.

SN 263,317. "Automatic" Sprinkler Corporation of America, d.b.a. Blaze Guard Manufacturing Company, Cleveland, Ohio. Filed Jan. 26, 1967.

RHINO HIDE

For Municipal and Industrial Fire Hose.
First use in the year 1955.

SN 263,318. "Automatic" Sprinkler Corporation of America, d.b.a. Blaze Guard Manufacturing Company, Cleveland, Ohio. Filed Jan. 26, 1967.

BLAZE GUARD

For Municipal and Industrial Fire Hose.
First use in the year 1955.

SN 263,319. "Automatic" Sprinkler Corporation of America, d.b.a. Blaze Guard Manufacturing Company, Cleveland, Ohio. Filed Jan. 26, 1967.

GUARDIRON

For Municipal and Industrial Fire Hose.
First use in the year 1955.

SN 263,321. "Automatic" Sprinkler Corporation of America, d.b.a. Blaze Guard Manufacturing Company, Cleveland, Ohio. Filed Jan. 26, 1967.

BLAZE FLEX

For Municipal and Industrial Fire Hose.
First use in the year 1960.

SN 263,322. "Automatic" Sprinkler Corporation of America, d.b.a. Blaze Guard Manufacturing Company, Cleveland, Ohio. Filed Jan. 26, 1967.

ARMOR HIDE

For Municipal and Industrial Fire Hose.
First use in the year 1957.

SN 263,323. "Automatic" Sprinkler Corporation of America, d.b.a. Blaze Guard Manufacturing Company, Cleveland, Ohio. Filed Jan. 26, 1967.

BLAZERON

For Municipal and Industrial Fire Hose.
First use in the year 1955.

Class 36—Musical Instruments and Supplies

SN 223,109. Farfisa S.p.A., Camerano, Italy. Filed July 12, 1965.

TRANSICORD

Owner of Italian Reg. No. 167,438, dated Dec. 7, 1964.
For Reed and Electronic Accordions, Electric Reed Organs, Electronic Organs, Electric and Nonelectric Guitars, Pianos Including Electronic and Electric Pianos, and Amplifiers for Use With the Same.

SN 223,110. Farfisa S.p.A., Camerano, Italy. Filed July 12, 1965.

TRANSIVOX

Owner of Italian Reg. No. 167,437, dated Dec. 7, 1964.
For Reed and Electronic Accordions, Electric Reed Organs, Electronic Organs, Electric and Nonelectric Guitars, Pianos Including Electronic and Electric Pianos, and Amplifiers for Use With the Same.

SN 225,099. Juan Vaquer Artigues, Mendoza, Argentina. Filed Aug. 6, 1965.

RONISCH

Owner of Argentine Reg. No. 538,205, dated Sept. 14, 1964.
For Pianos, Pianolas, and Harmoniums.

SN 225,230. Suzuki Violin Co., Ltd., Nakagawa-ku, Nagoya, Japan. Filed July 26, 1965.



For Stringed Musical Instruments.
First use June 25, 1930; in commerce June 19, 1960.

SN 247,651. U.S. Musical Merchandise Corp., New York, N.Y. Filed June 8, 1966.



For Guitars and Parts and Accessories Thereof.
First use Feb. 2, 1966.

SN 261,957. The Fred. Gretsch Mfg. Co., Brooklyn, N.Y. Filed Jan. 5, 1967.



For Guitars and Amplifiers.
First use July 15, 1959.

SN 262,465. M. Hohner Inc., Hicksville, N.Y. Filed Jan. 13, 1967.

VAMPER

For Harmonicas.
First use Sept. 9, 1966.

Class 37—Paper and Stationery

SN 227,500. William Harrison, New York, N.Y. Filed Sept. 9, 1965.



The outline itself and the word "System" are disclaimed.
For Paper Goods Especially Business Machine Cards, Records, etc.
First use on or about July 1, 1964.

SN 236,489. Industrial Stationery & Printing Co., Los Angeles, Calif. Filed Jan. 14, 1966.

WEST WIND

For Writing Tablets.
First use June 10, 1965.

SN 239,741. The Craftint Manufacturing Company, Cleveland, Ohio. Filed Feb. 28, 1966.



For Transparent Acetate Sheets Having Diverse Chromatic or Neutral Color Pigments Applied Thereto.
First use 1954.

SN 242,514. J. S. Staedtler, Nurnberg, Germany. Filed Apr. 1, 1966.

NYLOSTICK

For Stationery—Namely, Pencils, Pencil Slips, Slate Pencils, Pointers, Pencil Protectors, Pencil Cases (Not of Precious Material), Mechanical Pencils and Refill Leads Therefor, Lead Holders and Refill Leads Therefor, Penholders, Erasers, Ball Point Pens, Ball Point Pencils and Refills for Ball Point Pens and Ball Point Pencils, Fountain Pens and Parts Thereof, Liquid Lead and Dry Ink Pens; and Drawing Materials—Namely, Chalk, Crayons, Pastels, and Felt Markers.
First use June 21, 1965; in commerce Aug. 12, 1965.

SN 253,022. Deluxe Check Printers, Incorporated, St. Paul, Minn. Filed Aug. 24, 1966.

FASHION CHECKS

For Bank Checkbooks.
First use Sept. 20, 1965.

SN 254,308. Norcross, Inc., New York, N.Y. Filed Sept. 12, 1966.

MAN SIZE

For Gift Wrapping Paper.
First use July 15, 1966.

SN 255,802. International Paper Company, New York, N.Y. Filed Oct. 5, 1966.

FEEDCOTE

Owner of Reg. Nos. 639,383, 786,035, and 787,572.
For Writing and Printing Papers.
First use Apr. 19, 1963.

SN 256,974. The T. H. Russell Company, Inc., Elmwood, Conn. Filed Oct. 21, 1966.

ABBREV-ACCOUNT

For Bookkeeping Supplies Sold as Separate Items—Namely, Printed Forms, Binders and Pegboards for Holding Forms, and Envelopes; and Collections of Such Items Sold as Sets.
First use May 2, 1966.

SN 256,975. The T. H. Russell Company, Inc., Elmwood, Conn. Filed Oct. 21, 1966.



For Bookkeeping Supplies Sold as Separate Items—Namely, Printed Forms, Binders and Pegboards for Holding Forms, and Envelopes; and Collections of Such Items Sold as Sets.
First use May 2, 1966.

SN 256,976. The T. H. Russell Company, Inc., Elmwood, Conn. Filed Oct. 21, 1966.

Abbrev-Account

For Bookkeeping Supplies Sold as Separate Items—Namely, Printed Forms, Binders and Pegboards for Holding Forms, and Envelopes; and Collections of Such Items Sold as Sets. First use May 2, 1966.

Class 38—Prints and Publications

SN 214,442. The Houston Post Company, Houston, Tex. Filed Mar. 18, 1965.

TEMPO

For Insert Type of Newspaper Supplement Designed Particularly for Newcomers in the Area. First use Feb. 14, 1965.

SN 222,154. The Houston Post Company, Houston, Tex. Filed June 28, 1965.

CLOSE-UP

For Newspaper Supplement for Distribution in a Particular Local Area, the Contents Being Slanted to the Needs of the Local Area. First use Feb. 11, 1965.

SN 222,155. The Houston Post Company, Houston, Tex. Filed June 28, 1965.

THE PASADENA POST

Applicant disclaims the word "Pasadena." For Newspaper Supplement for Distribution in a Particular Local Area, the Contents Being Slanted to the Needs of the Local Area. First use July 31, 1964.

SN 236,482. Eos-Presse Sommerfeld oHG, Grafenau, Germany. Filed Jan. 14, 1966.

VULCANETTES

For Printed Rubber Labels Which Are Applied by Vulcanization. First use 1938; in commerce Oct. 30, 1963.

SN 242,317. The Armstrong Daily, Inc., New York, N.Y. Filed Mar. 31, 1966.



Owner of Reg. Nos. 637,461 and 649,726. For Printed Turf Newspaper. First use Mar. 14, 1966.

SN 242,600. Harvest Years Publishing Company, San Francisco, Calif. Filed Apr. 4, 1966.

TIME FOR LIVING

For Syndicated Newspaper Column. First use Feb. 7, 1966.

SN 244,448. Sadtler Research Laboratories, Inc., Philadelphia, Pa. Filed Apr. 28, 1966.

SADTLER STANDARD SPECTRA

Applicant disclaims "Standard" and "Spectra" apart from the mark as a whole.

For Books, Microfilm, and Computer Tapes Containing Chemical and Physical Reference Data for Chemical Laboratory Uses.

First use October 1954.

SN 247,738. Travco Corporation, Brown City, Mich. Filed June 9, 1966.

Motorcader

For Newsletter Pertaining to Travel Activities. First use February 1966.

SN 249,156. Paul Gallat, Hialeah, Fla. Filed June 28, 1966.

Trak-a-Cone

For Paramagnetic Map of the Hurricane Area of the Western Hemisphere. First use June 10, 1966.

SN 249,365. United Publishing Corporation, Cleveland, Ohio. Filed June 30, 1966.

VETERINARY ECONOMICS

Owner of Reg. No. 786,187. For Magazine Published From Time to Time, Usually Monthly, Directed to Subjects of Interest to Veterinarians. First use July 1960.

SN 258,965. Xerox Corporation, Rochester, N.Y. Filed Nov. 18, 1966.

XEROX

Owner of Reg. Nos. 525,717, 596,380, and others. For Books; Newsletters; Newspapers Published for Students During the School Year and Catalogs Published Periodically; Programmed Instructions Consisting of Printed Sheets and Booklets; Booklets To Be Used as Training Courses; Facsimile Editions of Books; Facsimile Copies Made From Microfilm of Books and Other Printed Materials; and Visual Aids for Classroom Teaching, Consisting of Wall Charts and Pictures.

First use on or before Sept. 1, 1964.

SN 261,609. Lehar-Friedman Publications, Inc., New York, N.Y. Filed Dec. 29, 1966.

DISCOUNTLAND

For Annual Publication Devoted to the Discount Stores Field. First use Dec. 16, 1966.

Class 39—Clothing

SN 232,282. Bucking A.G., Zurich, Switzerland. Filed Nov. 8, 1965.

LODENCROWN

For Men's, Ladies', and Children's Clothing—Namely, Sweaters, Shirts, Blouses, Slacks, Trousers, Jackets, Suits, Topcoats, Overcoats, and Skirts.

First use on or about Dec. 31, 1948; in commerce as early as Feb. 28, 1965.

SN 232,829. Ford Lingerie, Inc., Chelsea, Mass. Filed Nov. 17, 1965.

Couturier Internationale

For Peignoir Sets, Petticoats, Half Slips, Pajama Sets, Night Gowns, Robes, Bras, Girdles, Pettipants, and Panties. First use on or about Aug. 2, 1965.

SN 233,614. Marie-Rose Zartarian, d.b.a. Marie-Rose, Philadelphia, Pa. Filed Nov. 30, 1965.

Marie-Rose

For Wearing Apparel—Namely, Girls' Dresses. First use Oct. 27, 1965.

SN 234,212. Kromer Cap Co., Inc., Milwaukee, Wis. Filed Dec. 8, 1965.



Applicant disclaims the words "Klean Kloth Kap" apart from the mark as shown.

For Caps and Hats. First use Mar. 30, 1915.

SN 235,413. Maison Neyret, Paris, France. Filed Dec. 28, 1965.

NEYRET

Priority claimed under Sec. 44(d) on French Reg. No. 534,201, dated July 1, 1965 (Seine); Natl. Inst. No. 254,492. For Custom and Ready-Made Dresses, Robes, Cloaks, Skirts, Blouses, Chemises, Housecoats, Pajamas, Corsets, Girdles, Slips, Bras, Underwear of All Types; Sweaters for Men, Women, and Children; Bathing Suits for Men, Women, and Children; and Gloves, Hats, and Bonnets for Men, Women, and Children.

First use 1856; in commerce 1921.

SN 240,387. Fashion Seal Uniforms, Inc., Huntington, N.Y. Filed Mar. 7, 1966.

CAST-A-WAYS

For Disposable Non-Woven Garments—Namely, Hospital Gowns, Examining Gowns, Operating Caps, Masks, Boots and Scrub Gowns; Industrial Apparel—Namely, Laboratory Coats, Coveralls, Pants, Shirts, and Aprons; Professional Apparel—Namely, Doctors' Coats, Shirts, Pants, and Gowns; and Beauty Parlor Garments—Namely, Peignoirs, Smocks, Bibs, and Jackets. First use Jan. 5, 1966.

SN 242,018. Jaymar-Ruby, Inc., Michigan City, Ind. Filed Mar. 28, 1966.

JAY-BLAZE

The drawing is lined for red, but color is not claimed as a feature of the mark. Owner of Reg. Nos. 510,752, 799,156, and others. For Men's Trousers. First use Mar. 2, 1966.

SN 245,082. Kops Bros., Inc., New York, N.Y. Filed May 6, 1966.

NEMO

Owner of Reg. No. 50,936 and others. For Women's Foundation Garments. First use Dec. 1, 1894.

SN 245,356. Tricotages Mecaniques Troyens, Lomme, Nord, France. Filed May 10, 1966.

3matelots

Owner of French Reg. No. 28,081, dated May 13, 1965 (Lille); Natl. Inst. No. 250,913.

For Suits, Jackets, Overcoats, Raincoats, Mufflers, Gloves, Scarves, Ties, Handkerchiefs, Bathing Suits, Hats and Berets, Hosiery, Knitted Jerseys and Jumpers; and Underwear—Namely, Briefs, Slips, Pants, Tights, Vests, Singlets and T-Shirts.

SN 247,574. E. D. Bullard Company, Sausalito, Calif. Filed June 8, 1966.

MICROPORITE

For Head Bands, Suspension Systems or Harnesses, and Sweat Bands for Use in Safety Head Wear. First use about May 26, 1966.

SN 248,185. Weldon, Inc., New York, N.Y. Filed June 15, 1966.

INSOMNIAX

For Men's, Women's, and Children's Sleepwear. First use Apr. 20, 1966.

SN 248,326. Sally Gee Creations, d.b.a. Sally Gee, Inc., New York, N.Y. Filed June 17, 1966.

SCULPTURED KNIT BY SALLY GEE

The word "Knit" is disclaimed apart from the mark as shown. "Sally Gee" is a fictitious name for Sally Goldenstein, a living individual, whose consent is of record. Owner of Reg. Nos. 748,503 and 768,813.

For Knitted Sweaters, Knitted Scarfs, and Knitted Sheaths, Worn by Women.

First use Apr. 9, 1962.

SN 248,771. Burlington Industries, Inc., New York, N.Y. Filed June 23, 1966.

Crochet Corner
by **ADLER**

Owner of Reg. No. 443,210.

For Men's, Women's, and Children's Socks.

First use May 4, 1966.

SN 249,433. Kalamazoo Pant Co., Kalamazoo, Mich. Filed July 1, 1966.

KAZOO

For Slacks.

First use January 1903.

SN 249,617. Joseph Bancroft & Sons Company, New York, N.Y. Filed July 6, 1966.

SHEERTEX

For Women's and Misses' Hosiery, Stockings, Half-Hose, Textured Hosiery, and Tights, Both Full-Fashioned and Seamless.

First use Jan. 9, 1946.

SN 249,618. Joseph Bancroft & Sons Company, New York, N.Y. Filed July 6, 1966.

DELECETTE

For Women's and Misses' Hosiery, Stockings, Half-Hose, Textured Hosiery, and Tights, Both Full-Fashioned and Seamless.

First use Feb. 4, 1952.

SN 249,790. Panzler Associates, Inc., New York, N.Y. Filed July 7, 1966.

STRIDERS

For Boys' Slacks and Play Shorts.

First use Mar. 4, 1946.

SN 250,920. June W. Barnett, Webster Groves, Mo. Filed July 25, 1966.

YIN 'N YANG

For Ladies' Dresses and Detachable Sleeves Therefor.

First use July 2, 1966.

SN 250,986. Melville Shoe Corporation, New York, N.Y. Filed July 25, 1966.

GAUNTLET-TIPPED

For Men's and Boys' Hosiery.

First use July 22, 1966.

SN 251,442. The Locker Room, Inc., Anniston, Ala. Filed Aug. 1, 1966.

THE LOCKER ROOM

For Men's Shirts, Suits, Hosiery, Sport Coats, Topcoats, Jackets, Ties, and Slacks; and Ladies' Slacks and Blouses.

First use Jan. 2, 1964.

SN 253,772. Miller-Sharkey Corporation, New York, N.Y. Filed Sept. 2, 1966.

DEMINETTES

For Women's and Misses' Coats, Suits, Jackets, and Skirts.

First use May 4, 1964.

SN 256,234. Rosenbaum & Hochberg, Inc., New York, N.Y. Filed Oct. 11, 1966.

Black Wisful

For Fur Coats, Jackets, Stoles, and Hats of the Dark Mink Variety.

First use Aug. 25, 1966.

SN 257,439. Endicott Johnson Corporation, Endicott, N.Y. Filed Oct. 28, 1966.

PLEDGE

For Children's Shoes.

First use Oct. 17, 1966.

SN 262,018. Blue Grass Industries, Inc., Carlisle, Ky. Filed Jan. 6, 1967.

BLUE GRASS

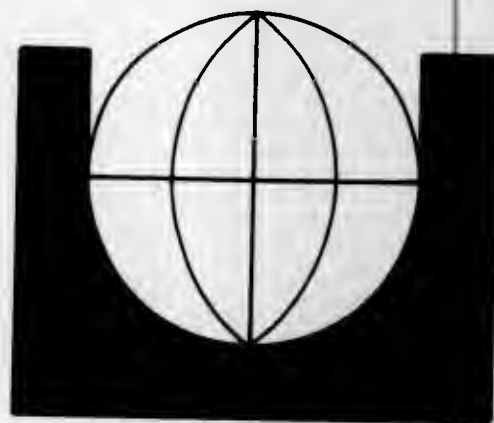
Owner of Reg. No. 814,073.

For Slips, Brassieres, and Panties.

First use at least as early as Dec. 13, 1966.

Class 40—Fancy Goods, Furnishings, and Notions

SN 253,323. MCA Inc., Universal City, Calif. Filed Aug. 29, 1966.



For Artificial Eyelashes.

First use Oct. 19, 1965.

Class 41—Canes, Parasols, and Umbrellas

SN 255,745. Burlington Industries, Inc., New York, N.Y. Filed Oct. 3, 1966.

CHALK OF THE TOWN

For Textile Fabrics in the Piece Suitable for Use in the Manufacture of Men's and Boys' Suits, Coats, and Slacks.

First use Nov. 26, 1964.

Bel ami

Owner of German Reg. No. 606,011, dated July 23, 1949.

For Umbrellas, Parasols, and Parts Thereof.

First use 1949; in commerce end of 1965.

SN 256,072. Dan River Mills, Incorporated, Danville, Va. Filed Oct. 10, 1966.

HOYA

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof.

First use Sept. 1, 1966.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 234,739. Duplex International, Ltd., New York, N.Y. Filed Dec. 16, 1965.

Duplex

The drawing is lined for red.

For Textile and Knitted Fabrics Composed of Wool and Synthetic Fibers and/or Blends Thereof.

First use in or about September 1961.

SN 256,073. Dan River Mills, Incorporated, Danville, Va. Filed Oct. 10, 1966.

DAN GO

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof.

First use Sept. 22, 1966.

SN 256,074. Dan River Mills, Incorporated, Danville, Va. Filed Oct. 10, 1966.

AMHERST

Owner of Reg. Nos. 430,705 and 555,097.

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof.

First use Apr. 2, 1946.

SN 245,299. Elfskin Corporation, Cherry Valley, Worcester, Mass. Filed May 12, 1966.

VYCOUNT

For Vinyl Sueded Cloth Used in a Counter of Shoes.

First use Feb. 12, 1966.

SN 251,064. Lawtex Corporation, d.b.a. Heirloom Carpet Mills, Dalton, Ga. Filed July 26, 1966.

CARPETS TO BE TREASURED

Applicant disclaims any exclusive right to use of the word "Carpets" apart from the mark as shown.

For Carpets.

First use Feb. 1, 1965.

SN 264,170. Deering Milliken, Inc., New York, N.Y. Filed Feb. 8, 1967.

TIPTREE

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers and Combinations Thereof.

First use on or about Jan. 5, 1967.

SN 264,171. Deering Milliken, Inc., New York, N.Y. Filed Feb. 8, 1967.

PRINT-O-PANE

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers and Combinations Thereof.

First use on or about Jan. 13, 1967.

SN 264,172. Deering Milliken, Inc., New York, N.Y. Filed Feb. 8, 1967.

MACATEE

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers and Combinations Thereof.

First use on or about Jan. 5, 1967.

SN 264,173. Deering Milliken, Inc., New York, N.Y. Filed Feb. 8, 1967.

MILROYAL

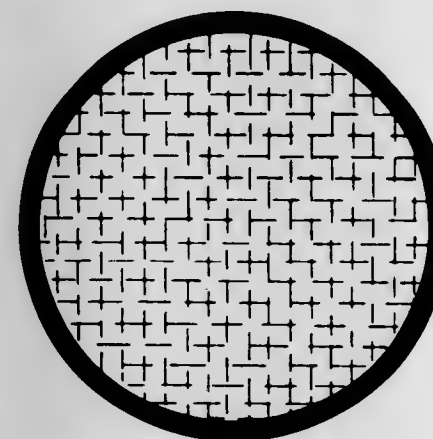
For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers and Combinations Thereof.

First use on or about Jan. 5, 1967.

The drawing is lined for the color yellow.

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers and Combinations Thereof.

First use in or about 1955.



SN 264,174. Deering Milliken, Inc., New York, N.Y. Filed Feb. 8, 1967.

GILTSPUR

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers and Combinations Thereof.
First use on or about Jan. 5, 1967.

SN 264,175. Deering Milliken, Inc., New York, N.Y. Filed Feb. 8, 1967.

HOTSPUR

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers and Combinations Thereof.
First use on or about Jan. 5, 1967.

SN 264,176. Deering Milliken, Inc., New York, N.Y. Filed Feb. 8, 1967.

BRAIDWOOD

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers and Combinations Thereof.
First use on or about Jan. 5, 1967.

SN 264,177. Deering Milliken, Inc., New York, N.Y. Filed Feb. 8, 1967.

COCKSPUR

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers and Combinations Thereof.
First use on or about Jan. 5, 1967.

Class 43—Thread and Yarn

SN 239,240. The Duplan Corporation, Winston-Salem, N.C. Filed Feb. 21, 1966.

GLO-LOFT

For Yarns of Textured Nylon or Polyester Combined With a Narrow Ribbon of Polyolefin Film.
First use Dec. 7, 1965.

Class 44—Dental, Medical, and Surgical Appliances

SN 238,695. Don Baxter, Inc., Glendale, Calif. Filed Feb. 14, 1966.

REDISET

For Medical Fluid Administration Sets.
First use Aug. 19, 1965.

SN 240,443. International Rectifier Corporation, El Segundo, Calif. Filed Mar. 8, 1966.

SHAMROCK

For Electrocardiograph Electrode Structure.
First use June 29, 1965.

SN 249,457. Universal Dental Company, Philadelphia, Pa. Filed July 1, 1966.

MACRON

For Artificial Teeth.
First use June 1, 1966.

SN 249,512. C. D. Denison Orthopaedic Appliance Corporation, Baltimore, Md. Filed July 5, 1966.

KENDALL-DENISON

For Shoulder Supported Arm Sling.
First use May 18, 1966.

SN 249,673. Physio-Control Corporation, Seattle, Wash. Filed July 6, 1966.

DERMA CIRC

For Electrodes for Use With Medical Apparatus.
First use Apr. 15, 1966.

SN 250,461. Deutsche Gold- und Silber-Schneideanstalt vormals Roessler, Frankfurt am Main, Germany. Filed July 18, 1966.

DEGUDENT

For Dental Alloys and Dental Ceramic Masses.
First use July 1962; in commerce Jan. 28, 1966.

SN 250,984. Lyn-Bar Enterprises, Sherman Oaks, Calif. Filed July 25, 1966.

ECONO-JET

For Hydro-Massager.
First use June 3, 1966.

SN 262,104. Axel Kistner Aktiebolag, Stockholm, Sweden. Filed Jan. 9, 1967.

SAN-I-TEMP

Owner of Swedish Reg. No. 118,193, dated Dec. 2, 1966.
For Protective Sheath for Thermometers, Particularly Clinical Thermometers.

Class 45—Soft Drinks and Carbonated Waters

SN 232,590. Piggly Wiggly Operators' Warehouse, Inc., Shreveport, La. Filed Nov. 12, 1965.

**King
Kooler**

No claim is made to the word "Kooler" apart from the mark in its entirety.
For Soft Drinks.
First use Oct. 20, 1965.

SN 239,291. Morton Foods, Inc., Dallas, Tex. Filed Feb. 21, 1966.

DICE

For Flavored Syrup for Making Soft Drinks.
First use Jan. 20, 1966.

SN 239,910. Hunts (Yarmouth) Limited, Great Yarmouth, Norfolk, England. Filed Mar. 1, 1966.



Owner of British Reg. No. B830,574, dated Feb. 8, 1962.
For Soft Drinks.

SN 244,706. Great Bear Spring Company, New York, N.Y. Filed May 2, 1966.



Applicant disclaims the words "Spring Pure Water" apart from the mark as shown. Owner of Reg. Nos. 136,315, 760,400, and others.
For Table Water.
First use Apr. 7, 1966; 1886 as to "Bear" and representation of a bear; 1915 as to "Great Bear."

SN 263,801. Morpan Products, Inc., New York, N.Y. Filed Feb. 2, 1967.

COCOLIN

For Soft Drink.
First use June 29, 1966.

Class 46—Foods and Ingredients of Foods

SN 165,807. National Dairy Products Corporation, New York, N.Y. Filed Apr. 1, 1963.



For Frozen Novelties in the Nature of Ice Cream, Ice Milk or Ices.
First use on or about Oct. 10, 1962.

SN 187,396. Central Soya Company, Inc., Fort Wayne, Ind. Filed Feb. 25, 1964.



No claim is made to the word "Chix" apart from the mark as shown.
For Dressed Chickens and Parts Thereof.
First use Feb. 1, 1964.

SN 218,925. Textron Inc., Providence, R.I. Filed May 14, 1965.



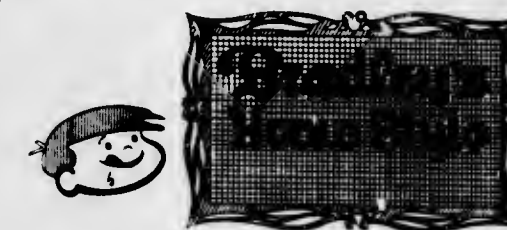
Although the drawing is lined for red, no claim to color is made. Owner of Reg. Nos. 348,793, 729,620, and others.
For Dry, Mixed Food Capable of Being Reconstituted With Water and Used as a Feed for Young Livestock, Particularly as a Substitute for Whole Milk.
First use on or about Sept. 14, 1964.

SN 221,994. Chicken Delight, Inc., Rock Island, Ill. Filed June 25, 1965.



The words "Fish 'n Chips" are disclaimed apart from the mark as shown. Owner of Reg. Nos. 578,807, 818,135, and others.
For Packaged Cooked Meal Consisting of Fried Fish and Potatoes.
First use Jan. 19, 1965.

SN 223,516. Bradley's Pies, Incorporated, Portland, Oreg. Filed July 16, 1965.



The drawing is lined for red and brown, but no claim is made to the colors so named. No claim is made to the words "Home Style" apart from the mark as shown. Owner of Reg. Nos. 216,799 and 653,496.
For Cookies, Cookie Rolls, Pastries, Pies, and Rolls of All Kinds.
First use 1949.

SN 230,875. "Nordsee" Deutsche Hochseefischerei G.m.b.H., Bremerhaven, Germany. Filed Oct. 21, 1965.



Priority claimed under Sec. 44(d) on German application filed Sept. 4, 1965; Reg. No. S21,200, dated June 29, 1966. The word "Nordkrone" means "north crown."
For Fish Preserves, Frozen, Fried, Smoked, Salted, and Dried Fish.

SN 232,477. Quintana & Co., Inc., Long Island City, N.Y. Filed Nov. 10, 1965.

HIDALGO

"Hidalgo" is a Spanish word which may be translated as "nobleman."
For Canned Beef.
First use May 4, 1965.

SN 233,988. Aro-Dressel Foods Corporation, Granite City, Ill. Filed Dec. 6, 1965.



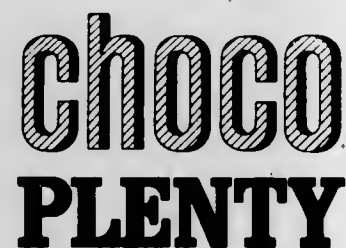
Owner of Reg. No. 660,610.
For Fresh Milk and Cream, Ice Cream Mix, Aerosol-Canned Whipped Cream, Butter, Margarine, Reconstituted Bottled Orange Juice, and Non-Carbonated Fruit Food Drinks.
First use June 14, 1963, on fresh milk.

SN 238,747. K & C Food Sales, d.b.a. King's Choice Foods Company, Los Angeles, Calif. Filed Feb. 14, 1966.

ROYAL COURT

For Fresh Frozen Vegetables—Namely, Peas, Mixed Vegetables, Lima Beans, Green Beans, Cob Corn, and Potatoes; Fresh Frozen Sea Foods—Namely, Swordfish Loins and Steaks, Cooked and Peeled Shrimp, and Lobster Tails; and Frozen Fresh Water Trout.
First use June 1, 1964, on fresh vegetables.

SN 238,970. Quaker City Chocolate & Confectionery Company, Philadelphia, Pa. Filed Feb. 16, 1966.



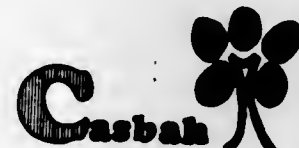
The drawing is lined for brown. Owner of Reg. No. 243,197.
For Candy Coated Milk Chocolate Candies.
First use Feb. 9, 1966.

SN 238,971. Quaker City Chocolate & Confectionery Company, Philadelphia, Pa. Filed Feb. 16, 1966.



The drawing is lined for pink and brown. Applicant disclaims the representation of the goods and the words "Milk Chocolate Candies" apart from the mark as shown. Owner of Reg. No. 243,197.
For Candy Coated Milk Chocolate Candies.
First use Feb. 9, 1966.

SN 239,148. Irobco Inc., New York, N.Y. Filed Feb. 18, 1966.



The drawing is lined for red and green.
For Whole Green Olives With Lemon Slices, and Cracked Green Olives With Lemon Slices, Chili Peppers and Spices.
First use Nov. 30, 1965.

SN 239,325. Seabrook Blanching Corporation, Edenton, N.C. Filed Feb. 21, 1966.

A LA DIETE

Applicant disclaims the word "Diete" apart from the mark as shown.
For Edible Low-Calorie Nuts.
First use Dec. 13, 1965.

SN 239,549. Southern States Cooperative, Incorporated, Richmond, Va. Filed Feb. 24, 1966.

BEEF BLEND

No claim is made to the word "Blend" apart from the mark in its entirety.
For Feed for Cattle, Sheep, and Goats.
First use Feb. 1, 1966.

SN 240,153. Castle & Cooke, Inc., d.b.a. Dole Company, Royal Hawaiian Macadamia Nut Company, and Bumble Bee Seafoods, Honolulu, Hawaii. Filed Mar. 4, 1966.



For Canned Fruits, Canned Fruit Juices, Canned Fish, Sugar, and Macadamia Nuts.
First use July 29, 1963.

SN 240,220. Universal Foods Corporation, Milwaukee, Wis. Filed Mar. 4, 1966.

AVVENTURA

The English equivalent of the Italian word "Avventura" is "adventure."
For Cheese.
First use on or about Feb. 7, 1966.

SN 240,688. Western Grain Company, Birmingham, Ala. Filed Mar. 10, 1966.



Applicant disclaims any exclusive rights in the words "Dog Food" apart from the mark as shown.
For Dog Food.
First use Jan. 23, 1966.

SN 240,733. Ben Hill Griffin, Inc., Frostproof, Fla. Filed Mar. 11, 1966.



No claim is made to the representation of the map of Florida apart from the mark as shown.
For Frozen Concentrate for Making Fruit Flavored Food Beverages.
First use May 1, 1964.

SN 241,607. The Welch Grape Juice Company, Inc., Westfield, N.Y. Filed Mar. 22, 1966.

FIESTA

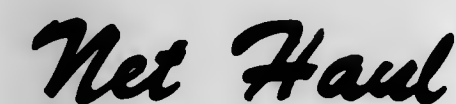
Owner of Reg. Nos. 273,603 and 736,501.
For Grape Juice, Fruit Juice Punch, and Frozen Juice Bars.
First use Feb. 22, 1930, on grape juice.

SN 241,695. Standard Fruits, Inc., Wenatchee, Wash. Filed Mar. 23, 1966.

GOLD BOND

For Fresh Pears and Apples.
First use Oct. 10, 1964.

SN 241,966. Brenner Candles, Inc., Atlantic City, N.J. Filed Mar. 28, 1966.



For Candy.
First use on or about Mar. 4, 1966.

SN 242,021. K-Foods Products Company, Inc., Pittsburgh, Pa. Filed Mar. 28, 1966.

RING-A-LINGS

For Sliced Onion Rings, Which Are Pickled in Water, Vinegar, Containing Sugar, Salt, Alum, Turmeric, U.S.P. Oil of Spice, and Polysorbate 80.
First use Feb. 15, 1966.

SN 242,624. Michigan Fruit Cannery, Inc., Chicago, Ill. Filed Apr. 4, 1966.



Owner of Reg. Nos. 384,355, 749,255, and others.
For Canned Puddings and Canned Pie Fillings.
First use Mar. 9, 1966.

SN 242,706. Beech-Nut Life Savers, Inc., d.b.a. Beech-Nut, New York, N.Y. Filed Apr. 5, 1966.

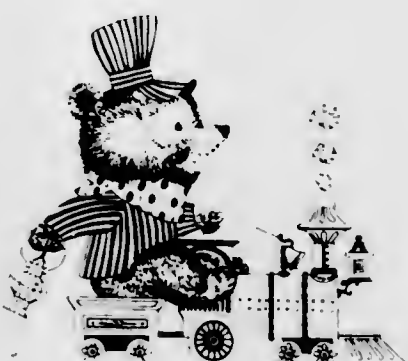
Beech-Nut



Owner of Reg. Nos. 89,613, 735,738, and others.
For Pre-Cooked Cereal for Babies.
First use Jan. 2, 1958.

SN 242,707. Beech-Nut Life Savers, Inc., d.b.a. Beech-Nut, New York, N.Y. Filed Apr. 5, 1966.

Beech-Nut



Owner of Reg. Nos. 89,613, 735,738, and others.
For Pre-Cooked Cereal for Babies.
First use Jan. 2, 1958.

SN 242,708. Beech-Nut Life Savers, Inc., d.b.a. Beech-Nut, New York, N.Y. Filed Apr. 5, 1966.

Beech-Nut



Owner of Reg. Nos. 89,613, 735,738, and others.
For Pre-Cooked Cereal for Babies.
First use Jan. 2, 1958.

SN 242,843. The Procter & Gamble Company, Cincinnati, Ohio. Filed Apr. 6, 1966.

ROBA

Owner of Reg. No. 521,732.
For Edible Vegetable Fats and Oils.
First use Mar. 11, 1926.

SN 242,931. The Procter & Gamble Company, Cincinnati, Ohio. Filed Apr. 7, 1966.

SILVER FROST

Owner of Reg. No. 508,711.
For Edible Vegetable Fats and Oils.
First use Mar. 19, 1926.

SN 242,992. Leaf Brands, Inc., Chicago, Ill. Filed Apr. 8, 1966.

SHADOW

For Chewing Gum.
First use Mar. 23, 1966.

SN 242,993. Leaf Brands, Inc., Chicago, Ill. Filed Apr. 8, 1966.

APOLLO

For Chewing Gum.
First use Mar. 22, 1966.

SN 244,605. McGarry Nut Products Co., Chicago, Ill. Filed Apr. 29, 1966.

Toasto-Nuts

For Candy-Covered Nuts.
First use Mar. 1, 1923.

SN 246,062. Fairmont Foods Company, Omaha, Nebr. Filed May 19, 1966.



For Fluid Milk, Buttermilk, Cream, Cottage Cheese, Butter, Food Dip Preparations With Cottage Cheese and Sour Cream Bases, Whipping Cream, Egg Nog (Non-Alcoholic), and Vegetable Base Cream Substitute Products.
First use Mar. 22, 1966.

SN 247,039. Lever Brothers Company, New York, N.Y. Filed June 1, 1966.

MRS. BUTTERWORTH'S

Owner of Reg. No. 722,714.
For Table Syrup.
First use June 27, 1960.

SN 247,253. Quality Bakers of America Cooperative, Inc., New York, N.Y. Filed June 3, 1966. COLLECTIVE MARK.

Bar-B-Q

Owner of Reg. No. 807,583.
For Baked Goods, To Wit, Bread, Rolls, Buns, Cake, and Sweet Rolls.
First use June 1962.

SN 247,823. Michigan Salt Company, St. Louis, Mich. Filed June 10, 1966.

SMOKE HOUSE SPECIAL

Applicant disclaims the word "Special" apart from the mark as shown.
For Salt Product Used in the Curing of Meats.
First use Oct. 29, 1965.

SN 247,991. International Minerals & Chemical Corporation, Skokie, Ill. Filed June 14, 1966.



Applicant disclaims the letters "MSG" apart from the mark as shown. Owner of Reg. Nos. 718,471, 814,407, and others.
For Monosodium Glutamate.
First use July 1964.

SN 249,862. Mars, Incorporated, d.b.a. M & M Candies, Wilmington, Del. Filed July 8, 1966.

PACER

For Candy.
First use June 17, 1966.

SN 260,306. Deer Park Baking Co., Elizabeth, N.J. Filed Dec. 8, 1966.

CHOCO-DELIGHTS

For Sugar Wafers.
First use at least as early as Apr. 4, 1960.

SN 261,434. Harwood Specialties Corporation, New York, N.Y. Filed Dec. 27, 1966.

PAPA CHINO'S

For Italian Ices.
First use Apr. 12, 1965.

SN 264,473. Kellogg Company, Battle Creek, Mich. Filed Feb. 13, 1967.

DURADENT

For Cereal Breakfast Foods.
First use Mar. 9, 1966.

Class 47 - Wines

SN 246,307. Grants of St. James's Limited, Burton-on-Trent, England. Filed May 23, 1966.

DOKTOR FAUSTUS

Owner of British Reg. No. 691,999, dated Sept. 4, 1957; and U.S. Reg. No. 801,052.
For Wines (Alcoholic).

SN 249,858. John Gross & Co., Baltimore, Md. Filed July 8, 1966.

CHERRY JUBILEE

No claim is made to the descriptive word "Cherry" apart from the mark as shown.
For Wine.
First use Apr. 22, 1966.

SN 251,770. Nugget Distributors' Cooperative of America, Inc., Stockton, Calif., assignee of Nugget Foods, Inc., d.b.a. Nugget Distributors of America, Stockton, Calif. Filed Aug. 5, 1966.

Nugget

Owner of Reg. No. 758,505.
For Cooking Wines.
First use May 12, 1964.

SN 252,424. San Martin Vineyards Company, d.b.a. San Martin Winery, San Martin, Calif. Filed Aug. 15, 1966.

APRIVETTE

For Apricot Wine.
First use Mar. 11, 1966.

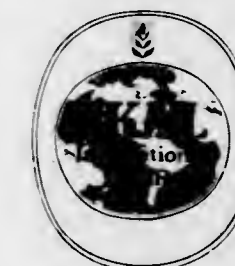
Class 48 - Malt Beverages and Liquors

SN 203,417. Swedish Beer Export Co. Aktiebolag, Goteborg, Sweden. Filed Oct. 6, 1964.



Applicant disclaims the right to the exclusive use of the word "Beer" apart from the mark as shown. Owner of U.S. Reg. No. 691,450.
For Beer.
First use July 20, 1964; in commerce Aug. 8, 1964.

SN 246,963. Swedish Beer Export Co. Aktiebolag, Goteborg, Sweden. Filed May 31, 1966.



Applicant disclaims the right to the exclusive use of the word "Beer" apart from the mark as shown. Owner of U.S. Reg. No. 691,450.
For Beer.
First use Oct. 1, 1965; in commerce Feb. 1, 1966.

SN 252,084. The Erie Brewing Company, Erie, Pa. Filed Aug. 10, 1966.

OLDE PUB

For Beer.
First use June 28, 1966.

Class 49 - Distilled Alcoholic Liquors

SN 238,846. Robert S. Delapenha, Jersey City, N.J. Filed Feb. 15, 1966.



For Blended Scotch Whisky.
First use Dec. 27, 1965.

SN 262,377. Joseph E. Seagram & Sons, Inc., d.b.a. Julius Kessler Company, New York, N.Y. Filed Jan. 12, 1967.

KESSLER

Owner of Reg. Nos. 372,573 and 583,793.
For Blended Whiskey.
First use at least as early as Oct. 20, 1953.

Class 50—Merchandise Not Otherwise Classified

SN 240,805. Tok-Back Inc., Berkeley, Calif. Filed Mar. 11, 1966.

TOK-BACK

For Voice Reflector for Determining the Manner in Which a Person Is Speaking.
First use Mar. 23, 1965.

SN 253,612. Marion J. Allen and Fred A. Ross, d.b.a. Ross-Craft, Stockton, Calif. Filed Sept. 1, 1966.

SNAP-N-SPRAY

For Electrical Outlet and Switch Covers To Protect Said Outlets and Switches During Painting.
First use June 27, 1965.

SN 257,081. Quality Products Manufacturing Co., Inc., Gardena, Calif. Filed Oct. 24, 1966.

HANDEE-DANDEE

For Rug Mat.
First use Sept. 6, 1966.

SN 263,611. Safety Sign Company, Cleveland, Ohio. Filed Jan. 30, 1967.

SSC

For Industrial and Safety Signs, Identification, Safety, and Instruction Markers, Name Plates, and Tapes.
First use at least as early as 1953.

Class 51—Cosmetics and Toilet Preparations

SN 149,303. L'Oreal, Societe Anonyme, Paris, France. Filed July 18, 1962.

KIRONE

Owner of French Reg. No. 419,916, dated May 8, 1952 (Seine); Natl. Inst. No. 514,229.
For Perfumes, Hair Conditioners, and Hair Waving Compositions.

SN 233,382. Ovation Cosmetics, Inc., Woodland Hills, Calif. Filed Nov. 26, 1965.

COLOR WAND

The word "Color" is disclaimed apart from the mark as a whole.
For Lipstick Kit Containing Different Colors in Separate Capsules With Applicator Brush.
First use Sept. 17, 1965.

SN 236,423. Societe Produits de Beaute-Parfums Jean d'Aveze, Paris, France. Filed Jan. 13, 1966.

CLAUDE D'ARAU

The name "Claude d'Arau" is fanciful. Priority claimed under Sec. 44(d) on French Reg. No. 535,786, dated July 16, 1965 (Seine); Natl. Inst. No. 258,179.
For Cosmetic Make-Up Lotions, Cosmetic Tonic Skin Lotions, Cosmetic Creams for the Face, Hands, and Nails.

SN 240,712. Helene Curtis Industries, Inc., Chicago, Ill. Filed Mar. 11, 1966.

COLORESSENCE

Owner of Reg. No. 774,747.
For Hair Coloring and Hair Toners.
First use on or about Feb. 2, 1961.

SN 240,959. Samtan Company, Fremont, Calif. Filed Mar. 14, 1966.



For Cosmetic Suntan Lotion.
First use May 1, 1965.

SN 241,757. Carter-Wallace, Inc., New York, N.Y. Filed Mar. 24, 1966.

DRY POWER

For Personal Deodorant.
First use Nov. 29, 1965.

SN 244,360. Helena Rubinstein, Inc., New York, N.Y. Filed Apr. 26, 1966.

BECOMING BLONDE

The word "Blonde" is disclaimed apart from the mark as shown.
For Hair Make Up for Tipping or Streaking.
First use Jan. 31, 1966.

SN 244,877. Beardmore, Inc., Hasbrouck Heights, N.J. Filed May 4, 1966.

EXCEL-DERM FORMULA 'B'

Applicant disclaims the term "Formula 'B'" apart from the mark as shown.
For Skin Conditioning and Cleaning Preparation.
First use before Apr. 15, 1966.

SN 246,914. Lander Co., Inc., New York, N.Y. Filed May 31, 1966.

UNTAMED

Owner of Reg. No. 406,794.
For Toilet Waters.
First use Sept. 7, 1965.

SN 246,970. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. Filed May 31, 1966.

POLITE

Owner of Reg. No. 816,057.
For Lotion for Chapped Hands, Face, and After Shaving.
First use May 20, 1966.

SN 247,674. Bristol-Myers Company, New York, N.Y. Filed June 9, 1966.

VITALIS

Owner of Reg. Nos. 271,624 and others.
For Cosmetics and Toilet Preparations—Namely, a Shaving Cream.
First use May 24, 1966.

SN 248,412. Bell Products, Inc., Omaha, Nebr. Filed June 20, 1966.

New Freedom

For Hair Controlling Solution.
First use Jan. 25, 1966.

SN 248,529. Revlon, Inc., New York, N.Y. Filed June 20, 1966.

BLONDSILK

For Hair Coloring Preparation.
First use Apr. 20, 1966.

SN 248,538. Revlon, Inc., New York, N.Y. Filed June 20, 1966.

ULTRASILK

For Hair Lightener.
First use Apr. 20, 1966.

SN 250,132. John H. Breck, Inc., Springfield, Mass. Filed July 13, 1966.

NEW IMAGE

Owner of Reg. Nos. 799,629 and 799,630.
For Hair Setting Preparation.
First use June 23, 1966.

SN 254,239. Clairol Incorporated, New York, N.Y. Filed Sept. 12, 1966.

BEACH PARTY

For Cosmetics and Toilet Preparations—Namely, a Hair Lightener.
First use July 8, 1966.

SN 254,240. Clairol Incorporated, New York, N.Y. Filed Sept. 12, 1966.

SCOOPY DO

For Cosmetics and Toilet Preparations—Namely, a Hair Setting Lotion.
First use July 8, 1966.

SN 254,241. Clairol Incorporated, New York, N.Y. Filed Sept. 12, 1966.

SCOOBY DEW

For Cosmetics and Toilet Preparations—Namely, a Hair Setting Lotion.
First use July 8, 1966.

RALLY

For Hair Preparations—Namely, Hair Dressing.
First use Aug. 16, 1966.

SN 261,702. William H. Pope, Pelham Manor, N.Y. Filed Dec. 30, 1966.

JUVEN-OIL

For Women's Cosmetic Products—Namely, Skin Lotions.
First use Dec. 22, 1966.

Class 52—Detergents and Soaps

SN 226,252. Lewis Research Laboratories, Inc., Englewood, N.J. Filed Aug. 23, 1965.

LL7

For Preparation for Cleaning, Sanitizing, Disinfecting, and Deodorizing.
First use on or about June 22, 1965.

SN 234,244. S & S Chemicals, Ltd., Honolulu, Hawaii. Filed Dec. 8, 1965.



For Polishes, Cleaners, and Brighteners for Metal and Other Hard Surfaced Products.
First use Oct. 1, 1965.

SN 236,545. A. E. Staley Manufacturing Company, Decatur, Ill. Filed Jan. 17, 1966.



Owner of Reg. No. 411,796.
For Powdered Toilet Bowl Cleaner and Tile Cleaner.
First use Sept. 30, 1965.

SN 237,088. Conchemco, Incorporated, d.b.a. Seidlitz Paint & Varnish Co., Kansas City, Mo. Filed Jan. 24, 1966.

DULZIT

For Liquid Compound for Removing the Top Portion of Previously Painted, Varnished or Enameled Surfaces in Preparation for Refinishing Thereof, for Removing Wax, Grease and Polish From Surfaces, and for Cleaning Soiled Surfaces and Brushes.
First use during January 1952.

SN 239,885. Dunn-Edwards Corporation, Los Angeles, Calif.
Filed Mar. 1, 1966.

Easy-Strip

For Wax-Free, Non-Flammable Paint and Varnish Remover.
First use Dec. 16, 1965.

SN 249,325. W. R. Grace & Co., New York, N.Y. Filed June 30, 1966.

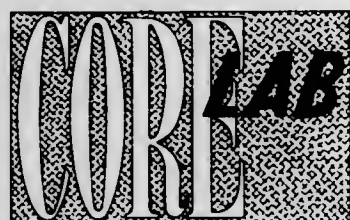
VESTAL

Owner of Reg. Nos. 190,608 and 191,634.
For Floor Wax Remover.
First use Dec. 19, 1947.

SERVICE MARKS

Class 100 — Miscellaneous

SN 220,359. Core Laboratories, Inc., Dallas, Tex. Filed June 4, 1965.



The drawing is lined for the color orange, but this application is not limited thereto.

For Petroleum Engineering Services Including, Without Limitation Thereto, Core Sampling and Analysis, Logging of Mud and Cuttings, Fluid Sampling and Analysis, Coordination of Downhole Data, Water Technology, Reservoir Engineering and Other Consulting Services, Development of Analytical Equipment and Procedures, and Data Processing and Computing.

First use February 1947.

SN 231,204. Parkette Commissary, Inc., Charleston, W. Va. Filed Oct. 22, 1965.

**SHONEY'S
"HOUSE FULL-O-CHICKEN"**

Owner of Reg. No. 652,848.
For Restaurant Services.
First use November 1964.

SN 235,765. Deady Chemical Company, Kansas City, Kans. Filed Jan. 4, 1966.



Owner of Reg. Nos. 734,316 and 749,981.
For Testing and Consultation Services With Reference to the Chemical Treatment of Water and Fuels.
First use September 1924.

SN 252,570. Hadco Corporation, Cleveland, Ohio. Filed Aug. 17, 1966.

CORRECT

For Germicidal Detergent Composition.
First use Mar. 25, 1966.

SN 260,206. Sunshine Chemical Corporation, Farmingdale, N.Y. Filed Dec. 7, 1966.



For Low-Suds Laundry Detergent, and All Purpose Spray Cleaner.
First use Jan. 4, 1965.

Class 101 — Advertising and Business

SN 232,542. Funteen, Inc., d.b.a. Funteener Club, Chicago, Ill. Filed Nov. 12, 1966.

FUNTEEN

For Forming Teen-Age Clubs and Sponsoring Social Activities; and Providing a Newsletter and Publication, Information on Events, and Discounts and Premiums on Various Activities to Members.

First use February 1965.

SN 233,118. National Fruit 'n Flowers Corporation, Denver, Colo. Filed Nov. 22, 1965.



For Furnishing Technical Advice and Assistance to Owners and Prospective Owners of Fruit and Flower Retail Stores Such as Training in the Merchandising and Handling of Fruit, Advising as to Counter and Window Displays, and Providing Advertising and Sales Aids.
First use on or about Mar. 1, 1965.

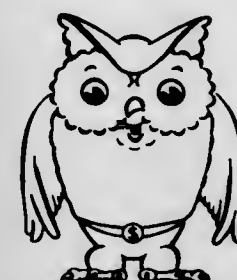
SN 236,498. Maritz, Inc., St. Louis, Mo. Filed Jan. 14, 1966.

**MOTIVATING MEN TO
SELL YOUR PRODUCT
IS OUR BUSINESS**

Owner of Reg. No. 775,151.
For Planning and Conducting Sales and Safety Incentive Programs.
First use Jan. 1, 1961.

Class 102 — Insurance and Financial

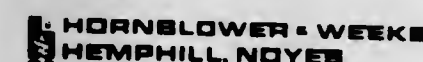
SN 239,239. Des Plaines National Bank, Des Plaines, Ill. Filed Feb. 21, 1966.



OWLIVER

For Banking Services—Namely, Savings and Loan Services, Trust Services, and Commercial Banking Services.
First use Sept. 13, 1965.

SN 239,627. Hornblower & Weeks-Hemphill, Noyes, New York, N.Y. Filed Feb. 25, 1966.



For Investment Banking, Investment Management and Brokerage Services, Including Public and Private Underwriting, Distribution and Placement of Corporate, Municipal and Governmental Securities, Investment Management and Counseling Services, and Brokerage of and Other Dealings in Securities and Commodities.
First use Jan. 21, 1966.

SN 253,570. Steadman Security Corporation, Washington, D.C. Filed Aug. 31, 1966.



For Operating and Managing Mutual Funds.
First use June 30, 1966.

Class 103 — Construction and Repair

SN 236,765. Ken Eyster Heritage Gunsmiths, Inc., Mount Vernon, Ohio. Filed Jan. 18, 1966.

HERITAGE GUNSMITHS

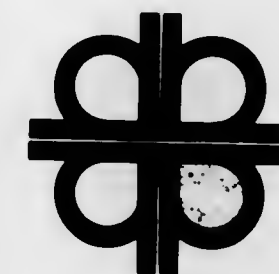
Without relinquishing any of its common law rights, applicant disclaims the word "Gunsmiths" apart from the mark as shown.

For Gunsmith Services Consisting of Manufacturing, Re-barrelling, and Repairing Guns.

First use June 1965.
Subj. to Intf. with SN 236,848.

Class 105 — Transportation and Storage

SN 222,812. Herbert S. Bonney, Jr., d.b.a. Tripgo Trails, Dallas, Tex. Filed July 7, 1965.



The representation of the map appearing on the drawing is disclaimed apart from the mark. The stippling on the drawing is for shading only.

For Operating and Managing a Travel Club for Motorists, Providing Maps, Travel Routings, Discounts on Supplies and Equipment and Travel Accommodations, and Promotion of Travel Safety for the Members.
First use on or about May 10, 1965.

Class 106 — Material Treatment

SN 243,535. Bloom Air Cushion Corporation, Bakersfield, Calif. Filed Apr. 15, 1966.

GASAPACK

Owner of Reg. Nos. 784,970 and 784,974.
For Oil Well Service Involving the Process of Packing Off Oil Wells With a Charge of High Pressure Nitrogen Followed by a Controlled Nitrogen Feed.
First use July 17, 1965.

SN 243,536. Bloom Air Cushion Corporation, Bakersfield, Calif. Filed Apr. 15, 1966.

GASAFOAM

Owner of Reg. Nos. 784,970 and 784,974.
For Oil Well Service Involving an Oil Well De-Sanding Process.
First use Nov. 5, 1965.

SN 243,537. Bloom Air Cushion Corporation, Bakersfield, Calif. Filed Apr. 15, 1966.

GASADRY

Owner of Reg. Nos. 784,970 and 784,974.
For Oil Well Service Involving the Process of Injecting Highly Ionized Gases With Steam Into Oil Wells.
First use Nov. 5, 1965.

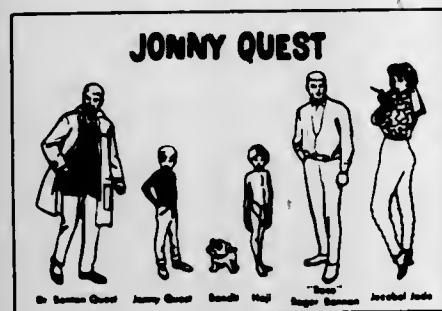
Class 107 — Education and Entertainment

SN 202,213. American Institute for Foreign Study (Connecticut corporation), Greenwich, Conn., assignee of American Institute for Foreign Study (Ohio corporation), Cincinnati, Ohio. Filed Sept. 21, 1964.

**AMERICAN INSTITUTE FOR
FOREIGN STUDY**

For Promoting Foreign Study, Including Arranging the Attendance of Students in Foreign Schools.
First use Aug. 21, 1964.

SN 208,393. Screen Gems, Inc., New York, N.Y. Filed Dec. 17, 1964.



For Entertainment Services Rendered Through the Medium of Television—Namely, an Animated Cartoon Program.
First use Nov. 27, 1964; Sept. 18, 1964, in a different form.

SN 208,394. Screen Gems, Inc., New York, N.Y. Filed Dec. 17, 1964.



For Entertainment Services Rendered Through the Medium of Television—Namely, an Animated Cartoon Program.
First use Nov. 27, 1964; Sept. 13, 1964, in a different form.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 246,467. Hotel-Motel Greeters International, Denver, Colo. Filed May 24, 1966.



Owner of Reg. No. 727,725.
For Indicating Membership in Applicant.
First use on or about May 1, 1910.

SN 222,579. Victor Horst and Edward Mara (joint owners), d.b.a. Holiday Dance Clubs, Washington, D.C. Filed July 2, 1965.

HOLIDAY DANCE CLUB

For Entertainment and Educational Services—Namely, the Organizing and Conducting of Activities and Dances.
First use Sept. 18, 1964.

SN 245,687. Columbia Pictures Corporation, New York, N.Y. Filed May 16, 1966.



Owner of Reg. Nos. 298,905, 693,680, and others.
For Leasing of Motion Pictures for Theatrical and/or Other Forms of Exhibition.
First use Mar. 31, 1966.

SN 247,481. The Castaways, Minneapolis, Minn. Filed June 7, 1966.

THE CASTAWAYS

For Entertainment Services in the Form of Vocal and Instrumental Renditions Through Recordings, Radio, TV, Stage, and Personal Appearances.
First use January 1963.

TRADEMARK REGISTRATIONS ISSUED PRINCIPAL REGISTER

Class 1—Raw or Partly Prepared Materials

- 827,711. GS AND DESIGN. Richard F. Morris, d.b.a. Morris Florists. SN 226,158. Pub. 2-7-67. Filed 8-20-65.
827,712. VILLA. Armour and Company. SN 248,100. Pub. 2-7-67. Filed 6-15-66.
827,713. CHEMICAST. Whip-Mix Corporation. SN 248,187. Pub. 2-7-67. Filed 6-15-66.
827,714. URAMOL. Lancaster Chemical Corporation, d.b.a. Gordon Chemicals, Inc. SN 248,343. Pub. 2-7-67. Filed 6-17-66.
827,715. PORCELLANA. American Renolit Corporation. SN 248,406. Pub. 2-7-67. Filed 6-20-66.
827,716. BADGER BRAND AND DESIGN. A. L. Gebhardt Co. SN 248,907. Pub. 2-7-67. Filed 6-24-66.
827,717. CORONET. Diatomic Chemical Company. SN 248,944. Pub. 2-7-67. Filed 6-27-66.

Class 2—Receptades

- 827,718. FAST-FLOW AND DESIGN. Raburn Products, Inc. SN 236,842. Pub. 2-7-67. Filed 1-19-66.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

- 827,719. BONE APPETIT AND DESIGN. Superior Pet Products, Inc. SN 246,208. Pub. 2-7-67. Filed 5-20-66.
827,720. UNILITE. United Case Company, Inc. SN 246,407. Pub. 2-7-67. Filed 5-23-66.

Class 4—Abrasives and Polishing Materials

- 827,721. TRUWAX. The Dentists' Supply Company of New York. SN 234,545. Pub. 2-7-67. Filed 12-14-65.
827,722. PRO GLO. The Procter & Gamble Company. SN 256,042. Pub. 2-7-67. Filed 10-10-66.

Class 5—Adhesives

- 827,723. SECON SEAL. Secon, Inc., by change of name from Air Seal Company, Inc. SN 232,050. Pub. 2-7-67. Filed 11-3-65.
827,724. CLIPPER. Canadian Technical Tape Ltd. SN 232,766. Pub. 2-7-67. Filed 11-16-65.
827,725. PERMATEX AND DESIGN. Permatex Company, Inc. SN 248,248. Pub. 2-7-67. Filed 6-16-66.

Class 6—Chemicals and Chemical Compositions

- 827,726. RODI AND DESIGN. Rose Patch & Label Company. SN 197,933. Pub. 2-7-67. Filed 7-15-64.

827,727. KM KERR-MCGEE AND DESIGN. Kerr-McGee Corporation, by change of name from Kerr-McGee Oil Industries, Inc. MULTIPLE CLASS (Classes 6 and 15). SN 229,256. Pub. 2-7-67. Filed 10-4-65.

827,728. R₃-TITRATION SET. The Denver Chemical Manufacturing Company, d.b.a. Wampole Laboratories. SN 234,271. Pub. 2-7-67. Filed 12-9-65.

827,729. R₃-SCREEN TEST. The Denver Chemical Manufacturing Company, d.b.a. Wampole Laboratories. SN 234,272. Pub. 2-7-67. Filed 12-9-65.

827,730. SNR. Allied Research Products, Inc., assignee of Allied Research Products, Inc. (Barrett Chemical Products Division). SN 236,216. Pub. 2-7-67. Filed 1-12-66.

827,731. SNRB. Allied Research Products, Inc., assignee of Allied Research Products, Inc. (Barrett Chemical Products Division). SN 236,220. Pub. 2-7-67. Filed 1-12-66.

827,732. R.P.D. NO. 255. Hill Manufacturing Company. SN 238,054. Pub. 2-7-67. Filed 2-4-66.

827,733. PERMATEX. Permatex Company, Inc. SN 240,948. Pub. 2-7-67. Filed 3-14-66.

827,734. LEUKOTROL. Chas. Pfizer & Co., Inc. SN 246,357. Pub. 2-7-67. Filed 5-23-66.

827,735. ATRATOL. Gelgy Chemical Corporation (New York corporation), by merger from Gelgy Chemical Corporation (Delaware corporation). SN 248,996. Pub. 1-17-67. Filed 6-27-66.

827,736. ACARAWAY. Gelgy Chemical Corporation (New York corporation), by merger from Gelgy Chemical Corporation (Delaware corporation). SN 250,148. Pub. 1-24-67. Filed 7-13-66.

827,737. ACAROL. Gelgy Chemical Corporation (New York corporation), by merger from Gelgy Chemical Corporation (Delaware corporation). SN 250,150. Pub. 1-24-67. Filed 7-13-66.

827,738. ACARIN. Gelgy Chemical Corporation (New York corporation), by merger from Gelgy Chemical Corporation (Delaware corporation). SN 250,152. Pub. 1-24-67. Filed 7-13-66.

827,739. ACAREX. Gelgy Chemical Corporation (New York corporation), by merger from Gelgy Chemical Corporation (Delaware corporation). SN 250,418. Pub. 1-24-67. Filed 7-13-66.

Class 7—Cordage

827,740. BUZZA CARDOZO AND DESIGN. Gibson Greeting Cards, Inc. MULTIPLE CLASS (Classes 7, 37, and 38). SN 243,819. Pub. 2-7-67. Filed 4-20-66.

827,741. SUPER 10. Sperry Rand Corporation. SN 245,985. Pub. 2-7-67. Filed 5-18-66.

827,742. SUPER 8. Sperry Rand Corporation. SN 245,986. Pub. 2-7-67. Filed 5-18-66.

827,743. PLANTERS. David Cordage Company. SN 246,889. Pub. 2-7-67. Filed 5-31-66.

Class 8—Smokers' Articles, Not Including Tobacco Products

827,744. J2 AND DESIGN. Japan Gas Lighter Corp. SN 257,490. Pub. 2-7-67. Filed 10-28-66.

Class 9—Explosives, Firearms, Equipments, and Projectiles

- 827,745. HI-FLEX CDF. The Ensign-Bickford Company. SN 238,204. Pub. 2-7-67. Filed 2-7-66.
 827,746. PLURA-JET. Explosives Engineering Company. SN 242,120. Pub. 2-7-67. Filed 3-29-66.

Class 10—Fertilizers

- 827,747. GS AND DESIGN. Richard F. Morris, d.b.a. Morris Florists. SN 226,156. Pub. 2-7-67. Filed 8-20-65.
 827,748. MAN-GRO. Eagle-Picher Industries, Inc. SN 246,163. Pub. 2-7-67. Filed 5-20-66.
 827,749. NITROJECTION. Shell Oil Company. SN 246,815. Pub. 2-7-67. Filed 5-27-66.

Class 11—Inks and Inking Materials

- 827,750. INK-A-DOT. Eby Chemical Company. SN 248,397. Pub. 2-7-67. Filed 6-20-66.
 827,751. TRI LUX. Switzer Brothers, Inc. SN 252,218. Pub. 2-7-67. Filed 8-11-66.

Class 12—Construction Materials

- 827,752. FORMULA PC PROTECTIVE COATING AND DESIGN. Alsde, Inc. SN 206,119. Pub. 1-31-67. Filed 11-13-64.
 827,753. K-13. Mfg. & Building Insulators of Texas, Inc. SN 234,048. Pub. 2-7-67. Filed 12-6-65.
 827,754. SIERRA SAWN. Simpson Timber Company. SN 241,535. Pub. 2-7-67. Filed 3-21-66.
 827,755. BEST HOMES AND DESIGN. W. G. Best Homes Corporation. SN 241,740. Pub. 2-7-67. Filed 3-24-66.
 827,756. KNOX HOMES AND DESIGN. Knox Homes Corporation. SN 241,783. Pub. 2-7-67. Filed 3-24-66.
 827,757. LESCO HOMES AND DESIGN. Lester Brothers, Incorporated. SN 241,787. Pub. 2-7-67. Filed 3-24-66.
 827,758. TWIN BEAR. Pinkham Lumber, Inc. SN 243,579. Pub. 2-7-67. Filed 4-15-66.
 827,759. AMER-X ETC. AND DESIGN. American Steel, Inc. SN 243,619. Pub. 2-7-67. Filed 4-18-66.
 827,760. KALDURE. Compro Corporation. SN 244,192. Pub. 2-7-67. Filed 4-25-66.
 827,761. TAPE DOPE. Hercules Chemical Co., Inc. SN 244,324. Pub. 2-7-67. Filed 4-26-66.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

- 827,762. WIRE-WELD. The Layne & Bowler Company. SN 227,686. Pub. 10-25-66. Filed 9-13-65.
 827,763. TACO. Trans-Atlantic Company. MULTIPLE CLASS (Classes 13 and 23). SN 234,709. Pub. 8-16-66. Filed 12-16-65.
 827,764. VALENCIA. The Stanley Works, by assignment and merger from Amerock Corporation. SN 244,381. Pub. 8-2-66. Filed 4-27-66.

Class 14—Metals and Metal Castings and Forgings

- 827,765. INDAR. P. R. Mallory & Co. Inc. MULTIPLE CLASS (Classes 14, 21, 23, and 34). SN 230,112. Pub. 2-7-67. Filed 10-14-65.
 827,766. DURON. Allis-Chalmers Manufacturing Company. SN 231,718. Pub. 2-7-67. Filed 10-28-65.
 827,767. WEIRNAMEL. National Steel Corporation. SN 240,464. Pub. 2-7-67. Filed 3-8-66.
 827,768. SSS. Armco Steel Corporation. SN 241,414. Pub. 2-7-67. Filed 3-21-66.

Class 15—Oils and Greases

- 827,727. (See Class 6 for this trademark.)

Class 16—Protective and Decorative Coatings

- 827,769. KRIL-TEX. Mary Carter Paint Co., d.b.a. Victor Paint Company. SN 201,095. Pub. 12-21-65. Filed 9-2-64.
 827,770. KRIL-TONE. Mary Carter Paint Co., d.b.a. Victor Paint Company. SN 201,096. Pub. 3-8-66. Filed 9-2-64.
 827,771. ASTRO. Badger Manufacturing Corporation. SN 230,502. Pub. 2-7-67. Filed 10-19-65.
 827,772. Q-RUST. Continental Coatings Corporation. SN 231,056. Pub. 2-7-67. Filed 10-22-65.
 827,773. CORRO-KLAD. Corroline Corporation. SN 242,570. Pub. 2-7-67. Filed 4-4-66.

Class 17—Tobacco Products

- 827,774. JUAN SEBASTIAN DEL CANO. El Cano Cigar Corporation (Proprietary) Limited. SN 239,134. Pub. 2-7-67. Filed 2-18-66.

Class 18—Medicines and Pharmaceutical Preparations

- 827,775. DELMARAGE. John Labatt Limited. SN 224,102. Pub. 2-7-67. Filed 7-23-65.
 827,776. ITCH-AID. Pharmacy Girl, Inc. SN 230,886. Pub. 2-7-67. Filed 10-21-65.
 827,777. LINCOMIX. The Upjohn Company. SN 238,321. Pub. 2-7-67. Filed 2-7-66.
 827,778. QUINORA. The Kendall Company. SN 238,541. Pub. 2-7-67. Filed 2-10-66.
 827,779. GARASONE. Schering Corporation. SN 240,961. Pub. 2-7-67. Filed 3-14-66.
 827,780. VALISONE. Schering Corporation. SN 240,962. Pub. 2-7-67. Filed 3-14-66.
 827,781. MISCELLANEOUS DESIGN. Dr. Günther Flegenbaum. SN 244,896. Pub. 2-7-67. Filed 5-4-66.
 827,782. NYQUIL. Richardson-Merrell Inc. SN 245,615. Pub. 2-7-67. Filed 5-13-66.
 827,783. EMPRIFED. Burroughs Wellcome & Co. (U.S.A.) Inc. SN 247,768. Pub. 2-7-67. Filed 6-10-66.
 827,784. SOOTHOL. American Home Products Corporation. SN 247,870. Pub. 2-7-67. Filed 6-13-66.
 827,785. P-1011. Bristol-Myers Company. SN 249,402. Pub. 2-7-67. Filed 7-1-66.
 827,786. HECLOX. Bristol-Myers Company. SN 249,404. Pub. 2-7-67. Filed 7-1-66.

- 827,787. BETAPEN. Bristol-Myers Company. SN 249,405. Pub. 2-7-67. Filed 7-1-66.
 827,788. P-125. Bristol-Myers Company. SN 249,406. Pub. 2-7-67. Filed 7-1-66.
 827,789. FLOR-DAC. Perry Medical Products, Inc. SN 249,792. Pub. 2-7-67. Filed 7-7-66.
 827,790. OXYGENAIT. Carter-Wallace, Inc. SN 251,050. Pub. 2-7-67. Filed 7-26-66.
 827,791. CARBOXASE. Carter-Wallace, Inc. SN 251,051. Pub. 2-7-67. Filed 7-26-66.
 827,792. HIBOXASE. Carter-Wallace, Inc. SN 251,052. Pub. 2-7-67. Filed 7-26-66.
 827,793. TOFRAMATE. Geigy Chemical Corporation (New York corporation), by merger from Geigy Chemical Corporation (Delaware corporation). SN 251,201. Pub. 2-7-67. Filed 7-28-66.
 827,794. TOFRANOATE. Geigy Chemical Corporation (New York corporation), by merger from Geigy Chemical Corporation (Delaware corporation). SN 251,202. Pub. 2-7-67. Filed 7-28-66.
 827,795. TANDEROID. Geigy Chemical Corporation (New York corporation), by merger from Geigy Chemical Corporation (Delaware corporation). SN 251,203. Pub. 2-7-67. Filed 7-28-66.
 827,796. CATAPRES. Boehringer Ingelheim G.m.b.H., assignee of Geigy Chemical Corporation. SN 251,204. Pub. 2-7-67. Filed 7-28-66.
 827,797. TANDEXONE. Geigy Chemical Corporation (New York corporation), by merger from Geigy Chemical Corporation (Delaware corporation). SN 251,206. Pub. 2-7-67. Filed 7-28-66.
 827,798. LAMPREN. Geigy Chemical Corporation (New York corporation), by merger from Geigy Chemical Corporation (Delaware corporation). SN 251,207. Pub. 2-7-67. Filed 7-28-66.
 827,799. PROMAQUID. Ives Laboratories Inc. SN 253,316. Pub. 2-7-67. Filed 8-29-66.
 827,800. TTF. Chas. Pfizer & Co., Inc. SN 257,337. Pub. 2-7-67. Filed 10-27-66.
 827,801. TPF. Chas. Pfizer & Co., Inc. SN 257,440. Pub. 2-7-67. Filed 10-28-66.
 827,802. TSPC. Chas. Pfizer & Co., Inc. SN 257,441. Pub. 2-7-67. Filed 10-28-66.
 827,803. TPF/77. Chas. Pfizer & Co., Inc. SN 258,449. Pub. 2-7-67. Filed 11-14-66.
- 827,812. HM AND DESIGN. Hudson Metal Products, Inc. SN 236,605. Pub. 2-7-67. Filed 1-17-66.
 827,813. TRIGATE. Sprague Electric Company. SN 237,757. Pub. 2-7-67. Filed 2-1-66.
 827,814. HUBBELL AND GLOBE DESIGN. Harvey Hubbell, Incorporated. SN 239,413. Pub. 2-7-67. Filed 2-23-66.
 827,815. VOID-A-MATIC. Security Controls, Incorporated. SN 239,809. Pub. 2-7-67. Filed 2-28-66.
 827,816. GOLDEN HOT-SHOT. Eprad Incorporated. SN 239,984. Pub. 2-7-67. Filed 3-2-66.
 827,817. CALORIC. Caloric Corporation. SN 240,256. Pub. 2-7-67. Filed 3-7-66.
 827,818. SONIC STAR. Edgar E. Dopera, d.b.a. Original Instruments. SN 244,089. Pub. 2-7-67. Filed 4-22-66.
 827,819. SEA-FIX. Decca Limited. SN 246,515. Pub. 2-7-67. Filed 5-11-66.
 827,820. SINKMASTER AND DESIGN. Whirl-A-Way Company. SN 250,435. Pub. 2-7-67. Filed 7-18-66.
 827,821. MISCELLANEOUS DESIGN. Oak Electro/Netics Corp. SN 254,090. Pub. 2-7-67. Filed 9-9-66.
 827,822. ORDER-MATIC. William B. Cunningham, d.b.a. Electronic Ordering Systems. SN 256,431. Pub. 2-7-67. Filed 10-14-66.
- 827,823. FOTO FANTASTIKS. Eberhard Faber Inc., assignee of Mel Appel and Martin Schnur (joint owners). SN 212,278. Pub. 2-7-67. Filed 2-18-65.
 827,824. SLOTMASTER. Edco Products Corporation, d.b.a. Sedco. SN 217,998. Pub. 2-7-67. Filed 5-4-65.
 827,825. SILLY SUN PIX. The Duban Shade Corporation, d.b.a. Estelle Toy Company. SN 218,849. Pub. 2-7-67. Filed 5-14-65.
 827,826. SUN BRAND. Coleman Company, Inc., assignee of Boise Cascade Corporation. SN 229,487. Pub. 2-7-67. Filed 10-7-65.
 827,827. SUN COTTAGE. Coleman Company, Inc., assignee of Boise Cascade Corporation. SN 229,489. Pub. 2-7-67. Filed 10-7-65.
 827,828. BAIT SWINGER AND DESIGN. George R. Wright. SN 231,611. Pub. 2-7-67. Filed 10-24-65.
 827,829. SCORE-T. Onilco Plastics, Inc. SN 231,697. Pub. 2-7-67. Filed 10-27-65.
 827,830. LEAGUE MASTER. Western Import Inc. SN 240,374. Pub. 2-7-67. Filed 3-7-66.
 827,831. PEG-A-LINE. Roy A. Strandberg, d.b.a. RD & SS. SN 241,090. Pub. 2-7-67. Filed 3-15-66.

Class 22—Games, Toys, and Sporting Goods

- 827,823. FOTO FANTASTIKS. Eberhard Faber Inc., assignee of Mel Appel and Martin Schnur (joint owners). SN 212,278. Pub. 2-7-67. Filed 2-18-65.
 827,824. SLOTMASTER. Edco Products Corporation, d.b.a. Sedco. SN 217,998. Pub. 2-7-67. Filed 5-4-65.
 827,825. SILLY SUN PIX. The Duban Shade Corporation, d.b.a. Estelle Toy Company. SN 218,849. Pub. 2-7-67. Filed 5-14-65.
 827,826. SUN BRAND. Coleman Company, Inc., assignee of Boise Cascade Corporation. SN 229,487. Pub. 2-7-67. Filed 10-7-65.
 827,827. SUN COTTAGE. Coleman Company, Inc., assignee of Boise Cascade Corporation. SN 229,489. Pub. 2-7-67. Filed 10-7-65.
 827,828. BAIT SWINGER AND DESIGN. George R. Wright. SN 231,611. Pub. 2-7-67. Filed 10-24-65.
 827,829. SCORE-T. Onilco Plastics, Inc. SN 231,697. Pub. 2-7-67. Filed 10-27-65.
 827,830. LEAGUE MASTER. Western Import Inc. SN 240,374. Pub. 2-7-67. Filed 3-7-66.
 827,831. PEG-A-LINE. Roy A. Strandberg, d.b.a. RD & SS. SN 241,090. Pub. 2-7-67. Filed 3-15-66.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

- 827,763. (See Class 13 for this trademark.)
 827,765. (See Class 14 for this trademark.)
 827,832. GS AND DESIGN. Richard F. Morris, d.b.a. Morris Florists. SN 226,157. Pub. 2-7-67. Filed 8-20-65.
 827,833. STANG AND DESIGN. John W. Stang Corporation. SN 226,682. Pub. 2-7-67. Filed 8-27-65.
 827,834. MOULDMASTER. H. K. Porter Company, Inc. SN 230,283. Pub. 2-7-67. Filed 10-15-65.
 827,835. ROLL-O-WAXER. The Scott & Fetzer Company. SN 236,522. Pub. 2-7-67. Filed 1-14-66.
 827,836. MINO-SAVER AND DESIGN. Commerce Welding & Mfg. Co. Inc. SN 238,167. Pub. 2-7-67. Filed 2-7-66.
 827,837. M-C SAND MILL AND DESIGN. Morehouse-Cowles, Inc. SN 238,882. Pub. 12-6-66. Filed 2-15-66.
 827,838. WINTERSONG. Oneida Ltd. SN 240,773. Pub. 2-7-67. Filed 3-11-66.

Class 19—Vehicles

- 827,804. PALOMAR. Pretty Products, Inc. SN 240,192. Pub. 2-7-67. Filed 3-4-66.
 827,805. LUNAR. Pretty Products, Inc. SN 240,194. Pub. 2-7-67. Filed 3-4-66.
 827,806. ACTION. Pretty Products, Inc. SN 240,197. Pub. 2-7-67. Filed 3-4-66.
 827,807. COMMERCIAL TRAVELER. Travco Corporation. SN 240,366. Pub. 2-7-67. Filed 3-7-66.

Class 21—Electrical Apparatus, Machines, and Supplies

- 827,785. (See Class 14 for this trademark.)
 827,808. ISO-CURVE. Fenwal Electronics, Inc. SN 164,712. Pub. 2-7-67. Filed 3-15-63.
 827,809. WIRE-GRIP AND DESIGN. Mandex Manufacturing Company, Inc. SN 199,843. Pub. 2-7-67. Filed 8-13-64.
 827,810. ADAP-TROL. International Instruments, Incorporated. SN 207,212. Pub. 12-20-66. Filed 12-1-64.
 827,811. LUMIJET. Societe des Accumulateurs Fixes et de Traction. SN 235,131. Pub. 2-7-67. Filed 12-22-65.

827,839. FLOW MOTION. Scovill Manufacturing Company. SN 240,792. Pub. 2-7-67. Filed 3-11-66.
827,840. POWERAKE. F. D. Kees Manufacturing Company. SN 250,710. Pub. 1-17-67. Filed 7-21-66.

Class 26—Measuring and Scientific Appliances

827,841. FRACSILATOR. Parfa Parfumerie & Kosmetik AG. SN 230,189. Pub. 2-7-67. Filed 10-14-65.
827,842. STRATOMAT. Serometrics, Inc. SN 235,602. Pub. 2-7-67. Filed 11-18-65.
827,843. LORCHRON. Aerospace Research, Inc. SN 238,911. Pub. 2-7-67. Filed 2-16-66.
827,844. EXTEL. Vernon Photographic Corporation. SN 239,472. Pub. 2-7-67. Filed 2-23-66.
827,845. PARD. General Precision, Inc. SN 239,615. Pub. 2-7-67. Filed 2-25-66.
827,846. OMNI-DATA. Borg-Warner Corporation. SN 239,714. Pub. 2-7-67. Filed 2-28-66.
827,847. PROBOTROL. Automatic Control Company. SN 239,869. Pub. 2-7-67. Filed 3-1-66.
827,848. GAS GUN. McCollum Laboratories, Inc., assignee, by mesne assignment, of P. R. Rowe and Norman Johnson, executors under the will and of the estate of Burton McCollum, deceased. SN 249,073. Pub. 2-7-67. Filed 6-27-66.
827,849. ORTHOPLAN. Ernst Leitz, G.m.b.H. SN 250,622. Pub. 2-7-67. Filed 7-20-66.
827,850. KAP-UPS. Belco Glass, Inc. SN 251,094. Pub. 2-7-67. Filed 7-27-66.
827,851. K/D AND DESIGN. Kenneth A. Dawson, d.b.a. Kenneth A. Dawson Co. SN 257,556. Pub. 2-7-67. Filed 10-31-66.

Class 28—Jewelry and Precious-Metal Ware

827,852. GRANDE BAROQUE. Hamilton Watch Company. SN 221,924. Pub. 2-7-67. Filed 6-24-65.

Class 30—Crockery, Earthenware, and Porcelain

827,853. NOT. Shenango Ceramics, Inc., assignee of Shenango China, Inc. SN 166,129. Pub. 2-7-67. Filed 4-4-63.
827,854. KONE. Shenango Ceramics, Inc., assignee of Shenango China, Inc. SN 166,130. Pub. 2-7-67. Filed 4-4-63.
827,855. LYF. Shenango Ceramics, Inc., assignee of Shenango China, Inc. SN 166,131. Pub. 2-7-67. Filed 4-4-63.
827,856. TRIA. Shenango Ceramics, Inc., assignee of Shenango China, Inc. SN 166,132. Pub. 2-7-67. Filed 4-4-63.
827,857. TUO. Shenango Ceramics, Inc., assignee of Shenango China, Inc. SN 166,133. Pub. 2-7-67. Filed 4-4-63.
827,858. SOM. Shenango Ceramics, Inc., assignee of Shenango China, Inc. SN 166,135. Pub. 2-7-67. Filed 4-4-63.
827,859. MEDITERRANEAN. Shenango Ceramics, Inc. SN 177,374. Pub. 2-7-67. Filed 9-19-63.
827,860. INTERMEZZO. Castleton China, Inc. SN 217,295. Pub. 2-7-67. Filed 4-26-65.

827,861. CRESCENDO. Castleton China, Inc. SN 217,296. Pub. 2-7-67. Filed 4-26-65.
827,862. GOLDEN SCROLL. Castleton China, Inc. SN 217,297. Pub. 2-7-67. Filed 4-26-65.

Class 31—Filters and Refrigerators

827,863. BORON SUPER FILTER. The Standard Oil Company. SN 202,715. Pub. 2-7-67. Filed 9-25-64.

Class 32—Furniture and Upholstery

827,864. LANCER. Quaker Maid Kitchens, Inc. SN 258,460. Pub. 2-7-67. Filed 11-14-66.

Class 33—Glassware

827,865. ONE-DERFUL. Anchor Hocking Glass Corporation. SN 238,597. Pub. 2-7-67. Filed 2-11-66.

Class 34—Heating, Lighting, and Ventilating Apparatus

827,866. F AND DESIGN. Fostoria Corporation. SN 239,038. Pub. 2-7-67. Filed 2-17-66.

Class 37—Paper and Stationery

827,867. (See Class 7 for this trademark.)
827,867. PROFILE. Paper Mate Manufacturing Company. SN 188,265. Pub. 2-7-67. Filed 3-9-64.
827,868. FACELLE ROYALE AND DESIGN. Facelle Company Limited. SN 228,356. Pub. 2-7-67. Filed 9-22-65.
827,869. PROGRESS. Bradner Central Company. SN 244,295. Pub. 2-7-67. Filed 4-26-66.
827,870. COLOR-CREST. A. T. Cross Company. SN 248,311. Pub. 2-7-67. Filed 6-17-66.
827,871. SPIRIT/TRAN. Instructo Products Company. SN 250,582. Pub. 2-7-67. Filed 7-19-66.
827,872. PRISCILLA. Fort Howard Paper Company. SN 250,755. Pub. 2-7-67. Filed 7-21-66.
827,873. RAIDERS. American Can Company. SN 250,812. Pub. 2-7-67. Filed 7-22-66.

Class 38—Prints and Publications

827,874. (See Class 7 for this trademark.)
827,874. TOWN TATLER AND DESIGN. Tatler Publishing Company. SN 222,433. Pub. 2-7-67. Filed 6-30-65.
827,875. CONDORITO. Empresa Editora Zig-Zag S.A. SN 237,210. Pub. 2-7-67. Filed 1-25-66.
827,876. DCAT AND DESIGN. Drug, Chemical and Allied Trades Association Inc. SN 241,441. Pub. 2-7-67. Filed 3-21-66.
827,877. DCAT AND DESIGN. Drug, Chemical and Allied Trades Association Inc. SN 241,442. Pub. 2-7-67. Filed 3-21-66.
827,878. THE DROVERS JOURNAL. Vance Publishing Corporation. SN 242,297. Pub. 2-7-67. Filed 3-30-66.

827,879. EGYENLOSEG. George Buchsbaum, d.b.a. Equality Publishing Company. SN 243,218. Pub. 2-7-67. Filed 4-12-66.
827,880. FLOOGEL. Gibson Greeting Cards, Inc. SN 243,862. Pub. 2-7-67. Filed 4-20-66.
827,881. THE KIMBALL SCENE. Kimball Systems, Inc. SN 244,416. Pub. 2-7-67. Filed 4-27-66.
827,882. MAGIC LAMP. Spot-O-Gold Corporation. SN 256,181. Pub. 2-7-67. Filed 10-11-66.

Class 39—Clothing

827,883. TRIMS. The H. D. Lee Company, Incorporated. SN 171,672. Pub. 12-7-65. Filed 6-24-63.
827,884. "CUSHION-EZE-FIT" BY FUNKAP. Funk Bros. Hat & Cap Co. SN 225,550. Pub. 2-7-67. Filed 8-12-65.
827,885. GO-MAN. Puritan Fashions Corporation. SN 230,074. Pub. 2-7-67. Filed 10-13-65.
827,886. UNIFORM CENTER OF NEW YORK. The Uniform Center of New York, Inc. SN 236,208. Pub. 2-7-67. Filed 1-11-66.
827,887. ROMAY. Arbitman & Arbitman, Inc. SN 239,107. Pub. 2-7-67. Filed 2-18-66.
827,888. POCKET PETS. Her Majesty Underwear Company. SN 239,414. Pub. 2-7-67. Filed 2-23-66.
827,889. FLEX P.S.C. Flogar Fabrics Inc. SN 243,237. Pub. 2-7-67. Filed 4-12-66.
827,890. REMARKA-PREST. Fit-Rite Pants Company, Inc. SN 243,858. Pub. 2-7-67. Filed 4-20-66.
827,891. MR. HUSH. Wolverine Shoe and Tanning Corporation. SN 244,047. Pub. 2-7-67. Filed 4-21-66.
827,892. BOOT-LETTERS. Leonard L. Charnay, Inc. SN 244,079. Pub. 2-7-67. Filed 4-22-66.
827,893. THE MAMIE. Marlene Industries Corporation. SN 244,996. Pub. 2-7-67. Filed 5-5-66.
827,894. SETURA. Burma-Bibas, Inc. SN 246,037. Pub. 2-7-67. Filed 5-19-66.
827,895. HOT POTATOES. United States Rubber Company. SN 246,116. Pub. 2-7-67. Filed 5-19-66.
827,896. BROOKVILLE. Cuddle Knit Knitting Mills, Inc. SN 246,886. Pub. 2-7-67. Filed 5-31-66.
827,897. SLEEPYFEET. Format Products, Inc. SN 247,214. Pub. 2-7-67. Filed 6-3-66.
827,898. JUGGLERS. Huntingdon Mills Inc. SN 249,611. Pub. 2-7-67. Filed 7-6-66.
827,899. HERO COSTUME. Ben Cooper Inc. SN 250,212. Pub. 2-7-67. Filed 7-14-66.
827,900. DIAL-A-SLACK. Hagggar Company. SN 256,500. Pub. 2-7-67. Filed 10-17-66.

Class 40—Fancy Goods, Furnishings, and Notions

827,901. CALYPSO. Henry Pollak, Inc. SN 247,147. Pub. 2-7-67. Filed 6-2-66.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

827,902. GALA. Graniteville Company. SN 243,441. Pub. 2-7-67. Filed 4-14-66.
827,903. DUNBAR. Dunbar Furniture Corporation. SN 244,800. Pub. 2-7-67. Filed 5-3-66.
827,904. ECHO-PLY. Bates Manufacturing Company, Incorporated. SN 246,031. Pub. 2-7-67. Filed 5-19-66.

827,905. BRAMWELL AND DESIGN. Gimbel Brothers, Inc. SN 246,073. Pub. 2-7-67. Filed 5-19-66.
827,906. EX-CELL PLASTICS. Ex-Cell Homefurnishings, Inc. SN 247,209. Pub. 2-7-67. Filed 6-3-66.
827,907. ASTROTEX. Astrotext Ltd. SN 247,668. Pub. 2-7-67. Filed 6-9-66.
827,908. CROSSWIND. J. P. Stevens & Co., Inc. SN 250,047. Pub. 2-7-67. Filed 7-11-66.
827,909. SASSYGRASS. Thomas Pride Mills Inc. SN 250,053. Pub. 2-7-67. Filed 7-11-66.
827,910. ACRISOFT. Fieldcrest Mills, Inc. SN 250,094. Pub. 2-7-67. Filed 7-12-66.
827,911. NEW SOUTHWIND. Fieldcrest Mills, Inc. SN 250,095. Pub. 2-7-67. Filed 7-12-66.
827,912. GALA FOREST. J. & J. C. Dorward Limited. SN 250,158. Pub. 2-7-67. Filed 7-13-66.
827,913. CATTAIL. Deering Milliken, Inc. SN 250,439. Pub. 2-7-67. Filed 7-18-66.
827,914. SASPARELLA. Deering Milliken, Inc. SN 250,460. Pub. 2-7-67. Filed 7-18-66.

Class 43—Thread and Yarn

827,915. PARADISE. Indian Head Inc. SN 250,326. Pub. 2-7-67. Filed 6-27-66.

Class 44—Dental, Medical, and Surgical Appliances

827,916. P.O.P. Dr. Med. Dent. Werner Noetzli. SN 240,326. Pub. 2-7-67. Filed 3-7-66.
827,917. STRAIT-O-MATIC AND DESIGN. Strait-O-Matic, Inc. SN 245,865. Pub. 2-7-67. Filed 5-17-66.
827,918. MISCELLANEOUS DESIGN. Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. SN 245,879. Pub. 2-7-67. Filed 5-10-66.
827,919. ORNAMENTAL B (DESIGN). Bentley Laboratories. SN 246,230. Pub. 2-7-67. Filed 5-23-66.

Class 45—Soft Drinks and Carbonated Waters

827,920. SLIM-UP. Penn Syrup Corp. SN 175,208. Pub. 12-28-65. Filed 8-16-63.
827,921. DEL MONTE AND DESIGN. California Packing Corporation. MULTIPLE CLASS (Classes 45 and 46). SN 240,048. Pub. 2-7-67. Filed 3-3-66.

Class 46—Foods and Ingredients of Foods

827,921. (See Class 45 for this trademark.)
827,922. MR. COOL. National Dairy Products Corporation. SN 165,808. Pub. 9-22-64. Filed 4-1-63.
827,923. AMERICAN DELUXE. National Tea Co. SN 198,068. Pub. 2-7-67. Filed 7-17-64.
827,924. FABBRI. G. Fabbri S.p.A. SN 198,262. Pub. 2-7-67. Filed 7-21-64.
827,925. WONDER FRESH. Whirlpool Corporation. SN 215,303. Pub. 2-7-67. Filed 3-29-65.
827,926. NOLDE'S. Nolde Brothers, Incorporated. SN 216,720. Pub. 2-7-67. Filed 4-16-65.
827,927. NOLDE'S SUPER SANDWICH AND DESIGN. Nolde Brothers, Incorporated. SN 216,721. Pub. 2-7-67. Filed 4-16-65.

- 827,928. MILK PRODUCTS OF DISTINCTION PENNANT BRAND AND DESIGN. E. A. Ackerman Dairy Products, Inc. SN 217,515. Pub. 2-7-67. Filed 4-28-65.
- 827,929. SO FRESH. National Tea Co. SN 218,209. Pub. 2-7-67. Filed 5-6-65.
- 827,930. MUSHROOMS. Fairmont Foods Company. SN 218,629. Pub. 2-7-67. Filed 5-12-65.
- 827,931. TOP TASTE. National Tea Co. SN 220,399. Pub. 2-7-67. Filed 6-4-65.
- 827,932. MAGIC CIRCLE. A. C. L. Haase Company. SN 220,763. Pub. 2-7-67. Filed 6-9-65.
- 827,933. SNAPPIES. American Home Products Corporation. SN 221,241. Pub. 2-7-67. Filed 6-16-65.
- 827,934. LANCE. Lance, Inc. SN 223,796. Pub. 2-7-67. Filed 7-20-65.
- 827,935. LANCE. Lance, Inc. SN 223,797. Pub. 2-7-67. Filed 7-20-65.
- 827,936. LANCE AND DESIGN. Lance, Inc. SN 223,798. Pub. 2-7-67. Filed 7-20-65.
- 827,937. PAM PAM. CDC-Compagnie Generale des Produits Dubonnet Cinzano Byrrh, assignee of Societe Internationale Pam-Pam. SN 224,686. Pub. 2-7-67. Filed 8-2-65.
- 827,938. ARTISTRY IN FLAVOR ETC. AND DESIGN. L. J. Minor Corp. SN 228,175. Pub. 2-7-67. Filed 9-20-65.
- 827,939. ROBINSON CRUSOE. Empresa Pesquera Robinson Crusoe S.A. SN 233,257. Pub. 11-22-66. Filed 2-17-67.
- 827,940. CRESCENT AND DESIGN. Crescent Manufacturing Company. SN 233,469. Pub. 2-7-67. Filed 11-29-65.
- 827,941. Y YONSON'S AND DESIGN. Yonson Foods, Inc. SN 234,694. Pub. 2-7-67. Filed 12-15-65.
- 827,942. SIP 'N CHIPS. National Biscuit Company. SN 235,326. Pub. 2-7-67. Filed 12-27-65.
- 827,943. BEAUTY BISCUIT. Dixie-Portland Flour Mills, Inc., d.b.a. Majestic Flour Mills. SN 235,396. Pub. 2-7-67. Filed 12-28-65.
- 827,944. ROYAL PURPLE. C. M. Holtzinger Fruit Co., Inc., d.b.a. C. M. Holtzinger Fruit Co. SN 236,052. Pub. 2-7-67. Filed 1-10-66.
- 827,945. CLANKY. Bowey's Inc. SN 236,577. Pub. 2-7-67. Filed 1-20-66.
- 827,946. RANCH KING. Loblaw Inc. SN 237,360. Pub. 2-7-67. Filed 1-26-66.
- 827,947. SPREE. Sunline, Inc. SN 238,126. Pub. 2-7-67. Filed 2-4-66.
- 827,948. CARA MIA. Artichoke Industries, Inc. SN 238,482. Pub. 2-7-67. Filed 2-10-66.
- 827,949. CARA MIA AND DESIGN. Artichoke Industries, Inc. SN 238,483. Pub. 2-7-67. Filed 2-10-66.
- 827,950. ENJOY. Helme Products, Inc. SN 239,046. Pub. 2-7-67. Filed 2-17-66.
- 827,951. JOHN WEST. John West Foods Limited. SN 239,054. Pub. 2-7-67. Filed 2-17-66.
- 827,952. COUNTRY RICH. Anscott Enterprises Inc. SN 239,867. Pub. 2-7-67. Filed 3-1-66.
- 827,953. POP 'N TOP. TV Time Foods, Inc. SN 240,040. Pub. 2-7-67. Filed 3-2-66.
- 827,954. COUGAR GOLD. Washington State University. SN 240,372. Pub. 2-7-67. Filed 3-7-66.
- 827,955. BING-GO. Raymond C. Gibson, d.b.a. Gibson Dog Food Co. SN 240,899. Pub. 2-7-67. Filed 3-14-66.
- 827,956. DICE-ETS. Mayfair Packing Company. SN 241,159. Pub. 2-7-67. Filed 3-16-66.
- 827,957. KOVAN. H. Kohnstamm & Co., Inc. SN 241,259. Pub. 2-7-67. Filed 3-17-66.
- 827,958. SNACK SHOPPE. Sheldon Bass, d.b.a. Porter Food Products, SN 241,304. Pub. 2-7-67. Filed 3-18-66.

- 827,959. SEQUESTRENE. Gelgy Chemical Corporation (New York corporation), by merger from Gelgy Chemical Corporation (Delaware corporation). SN 241,335. Pub. 2-7-67. Filed 3-18-66.
- 827,960. TANGERINE KING AND DESIGN. Albert Valdora, d.b.a. Valdora Produce Co. SN 242,301. Pub. 2-7-67. Filed 3-30-66.
- 827,961. RYKOFF INTERNATIONAL AND DESIGN. S. E. Rykoff & Co. SN 243,715. Pub. 2-7-67. Filed 4-18-66.
- 827,962. BAKE DAY. Nebraska Consolidated Mills Company, d.b.a. Fant Milling Co. SN 252,676. Pub. 2-7-67. Filed 8-18-66.
- 827,963. THE MANLY COFFEE. Caswell Coffee Company. SN 255,167. Pub. 2-7-67. Filed 9-27-66.
- 827,964. PABLO. Robert T. Englund, d.b.a. R. T. Englund Company. SN 258,016. Pub. 2-7-67. Filed 11-7-66.
- 827,965. HARVEST KING. Robert T. Englund, d.b.a. R. T. Englund Company. SN 258,018. Pub. 2-7-67. Filed 11-7-66.

Class 47—Wines

- 827,966. CATHEDRAL. Monsieur Henri Wines, Ltd. SN 171,367. Pub. 2-7-67. Filed 6-19-63.

Class 49—Distilled Alcoholic Liquors

- 827,967. ORANGE UP. Consolidated Distilled Products, Inc. SN 202,768. Pub. 9-7-65. Filed 9-28-64.

Class 50—Merchandise Not Otherwise Classified

- 827,968. COLOROC. Color-Roc Mfg. Co. SN 242,802. Pub. 2-7-67. Filed 4-6-66.

Class 51—Cosmetics and Toilet Preparations

- 827,969. RED MAGIC. Carson Chemical Company, by change of name from Morehouse Manufacturing Corporation. SN 189,238. Pub. 1-24-67. Filed 3-20-64.
- 827,970. EYE-A-PEEL. H & J Distributing Co. SN 215,416. Pub. 5-31-66. Filed 3-31-65.
- 827,971. INFERNO. International Equity Corporation, d.b.a. The Mark II Company. SN 216,509. Pub. 2-7-67. Filed 4-14-65.
- 827,972. NARIS. Kabushiki Kaisha Seijudo, d.b.a. Naris Cosmetic Mfg. Co. Ltd. SN 221,186. Pub. 2-7-67. Filed 6-15-65.
- 827,973. TAURUS. "42" Products, Ltd., Inc., d.b.a. Executive Toiletries Ltd. SN 223,396. Pub. 3-1-66. Filed 7-15-65.
- 827,974. CINEMATIQUE. Merchandising Corporation of America. SN 229,843. Pub. 2-7-67. Filed 10-11-65.
- 827,975. VINA. Gino Paoli, assignee of Sid S. Mack. SN 232,705. Pub. 2-7-67. Filed 11-15-65.
- 827,976. TOP MAN. Pharmaceutical Laboratories, Inc. (Delaware corporation), assignee of Pharmaceutical Laboratories, Inc. (New Jersey corporation). SN 233,818. Pub. 2-7-67. Filed 12-2-65.

- 827,977. OXIPER. American Home Products Corporation. SN 234,166. Pub. 2-7-67. Filed 12-8-65.
- 827,978. BLADE. Associated Products, Inc., assignee of Hope Chemical Corporation. SN 234,423. Pub. 8-9-66. Filed 12-13-65.
- 827,979. DANNY BOY. Daniel Borison, d.b.a. Dan's Snip 'n Curl. SN 234,725. Pub. 2-7-67. Filed 12-16-65.
- 827,980. "DRAGNET." Robert T. Roberts, d.b.a. Trebor Perfumes. SN 235,427. Pub. 2-7-67. Filed 12-28-65.
- 827,981. MASCULOTION. Carley, Inc. SN 242,712. Pub. 2-7-67. Filed 4-5-66.
- 827,982. HAMAVILLA. Humphreys Medicine Company. SN 245,925. Pub. 2-7-67. Filed 5-18-66.
- 827,983. TWO HEADED SERPENT (DESIGN). B. W. Mayer & Cohan, Ltd., Beau Brummell Ties Division. SN 247,041. Pub. 2-7-67. Filed 6-1-66.
- 827,984. HAPPINESS. Clairol Incorporated. SN 247,483. Pub. 2-7-67. Filed 6-7-66.
- 827,985. ESSENCE OF NATURE. Gloria Swanson Ltd. SN 248,176. Pub. 2-7-67. Filed 6-15-66.
- 827,986. UNDERSTANDING. Clairol Incorporated. SN 248,299. Pub. 2-7-67. Filed 6-17-66.
- 827,987. SUN ESSENCE. Clairol Incorporated. SN 248,300. Pub. 2-7-67. Filed 6-17-66.
- 827,988. BETTER NATURE. Clairol Incorporated. SN 248,301. Pub. 2-7-67. Filed 6-17-66.
- 827,989. DEFINE. Clairol Incorporated. SN 248,303. Pub. 2-7-67. Filed 6-17-66.
- 827,990. EXOTHERM. Clairol Incorporated. SN 248,304. Pub. 2-7-67. Filed 6-17-66.
- 827,991. THERMOWAVE. Clairol Incorporated. SN 248,305. Pub. 2-7-67. Filed 6-17-66.
- 827,992. SURF'S UP! Clairol Incorporated. SN 248,308. Pub. 2-7-67. Filed 6-17-66.
- 827,993. BLONDEASE. Clairol Incorporated. SN 248,594. Pub. 2-7-67. Filed 6-21-66.
- 827,994. CLAIRESENCE. Clairol Incorporated. SN 248,677. Pub. 2-7-67. Filed 6-22-66.
- 827,995. CREST (DESIGN). Merle Norman Cosmetics, Inc. SN 248,823. Pub. 2-7-67. Filed 6-23-66.
- 827,996. SAVON CLAIR AND DESIGN. Marly, Inc. SN 250,119. Pub. 2-7-67. Filed 7-13-66.
- 827,997. BEAUTY SPA. Estee Lauder Incorporated. SN 253,093. Pub. 2-7-67. Filed 8-25-66.

Class 52—Detergents and Soaps

- 827,998. VANDA. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics. SN 236,145. Pub. 7-19-66. Filed 1-10-66.
- 827,999. SOMTHIN' ELSE. Chemical Associates, Inc. SN 241,978. Pub. 2-7-67. Filed 3-28-66.
- 828,000. BEAUTY AFTER THE BEACH. Sea & Ski Corporation, d.b.a. Renaud International. SN 245,021. Pub. 2-7-67. Filed 5-5-66.
- 828,001. K.O. DYNE. Babson Bros. Co. SN 250,329. Pub. 2-7-67. Filed 7-15-66.

Service Marks

Class 100—Miscellaneous

- 828,002. PIZZAROMA AND DESIGN. George A. Dannheller, d.b.a. Pizzaroma. SN 185,875. Pub. 2-7-67. Filed 2-3-64.
- 828,003. LEASEWAY AND DESIGN. Leaseway Transportation Corp. MULTIPLE CLASS (Classes 100 and 105). SN 209,279. Pub. 2-7-67. Filed 1-4-65.

- 828,004. INTERCOIFFURE AND DESIGN. International Master Ladies Hairdressers Association, "Intercoiffure," American Section. SN 232,560. COLLECTIVE MARK. Pub. 2-7-67. Filed 11-12-65.
- 828,005. GRAD AND DESIGN. College Placement Council, Inc. SN 240,068. Pub. 2-7-67. Filed 3-3-66.
- 828,006. THE PEOPLE-MATCHING PEOPLE. Com/Pair Systems Inc. SN 244,305. Pub. 2-7-67. Filed 4-26-66.
- 828,007. COM/PAIR. Com/Pair Systems Inc. SN 244,306. Pub. 2-7-67. Filed 4-26-66.
- 828,008. MBA AND DESIGN. Martin Bloom Associates, Inc. MULTIPLE CLASS (Classes 100 and 103). SN 248,962. Pub. 2-7-67. Filed 6-27-66.
- 828,009. THE ROYAL ORLEANS. Hotel Corporation of America. SN 256,258. Pub. 2-7-67. Filed 10-12-66.

Class 101—Advertising and Business

- 828,010. Q/D QUALITY DISCOUNT AND DESIGN. J. M. Fields, Inc., assignee of F. F.-J. M. Fields, Inc., d.b.a. J. M. Fields, Inc. SN 191,684. Pub. 11-15-66. Filed 4-21-64.
- 828,011. DUN'S MARKET IDENTIFIERS. Dun & Bradstreet, Inc. SN 234,119. Pub. 2-7-67. Filed 12-7-65.

Class 102—Insurance and Financial

- 828,012. MISCELLANEOUS DESIGN. Richardson Homes Corporation, d.b.a. Closing Offices of America. SN 234,848. Pub. 2-7-67. Filed 12-17-65.
- 828,013. DINERS CLUB. The Diners' Club, Inc. SN 235,497. Pub. 2-7-67. Filed 12-29-65.

Class 103—Construction and Repair

- 828,008. (See Class 100 for this trademark.)
- 828,014. MISCELLANEOUS DESIGN. Richardson Homes Corporation, d.b.a. Closing Offices of America. SN 234,849. Pub. 2-7-67. Filed 12-17-65.
- 828,015. LIBERTY BELL HOMES. Madway Mainline Homes Inc. SN 244,788. Pub. 2-7-67. Filed 5-3-66.
- 828,016. LIBERTY BELL HOMES AND DESIGN. Madway Mainline Homes Inc. SN 244,789. Pub. 2-7-67. Filed 5-3-66.

Class 105—Transportation and Storage

- 828,003. (See Class 100 for this trademark.)
- 828,017. T.T.X. Trailer Train Company. SN 221,767. Pub. 2-7-67. Filed 6-22-65.
- 828,018. T.T. Trailer Train Company. SN 221,768. Pub. 2-7-67. Filed 6-22-65.

Class 106—Material Treatment

- 828,019. MERCAPFINING. Howe-Baker Engineers, Inc. SN 199,366. Pub. 2-7-67. Filed 8-6-64.
- 828,020. WDP ETC. AND DESIGN. Water Damage Protection Company. SN 229,386. Pub. 2-7-67. Filed 10-5-65.

Class 107 — Education and Entertainment

- 828,021. SAM SNEAD ALL AMERICAN GOLF AND DESIGN. Sam Snead Enterprises, Inc. SN 241,939. Pub. 2-7-67. Filed 3-25-66.
- 828,022. MYSTIC SEAPORT ETC. AND DESIGN. The Marine Historical Association, Incorporated. SN 243,330. Pub. 2-7-67. Filed 4-13-66.

Certification Mark**Class A — Goods**

- 828,023. TEFLON ETC. AND DESIGN. E. I. du Pont de Nemours and Company. SN 257,559. Pub. 2-7-67. Filed 10-31-66.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 4 — Abrasives and Polishing Materials

- 828,024. The Drackett Company, Cincinnati, Ohio, assignee of Bristol-Myers Company, New York, N.Y. SN 238,143. Filed P.R. 2-1-66; Am. S.R. 2-1-67.

THE FLOOR WAX THAT POWER-CLEANS WITH DETERGENT

For Abrasives and Polishing Materials—Namely, a Floor Wax.

First use July 23, 1965.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

- 828,025. A. Ottavino Corp., Ozone Park, N.Y. SN 236,339. Filed P.R. 1-13-66; Am. S.R. 12-14-66.

GRANITIZING

For Kit Comprising Surfacing Gun and Cartridge for Recapping Metal Surface Plates.

First use Dec. 1, 1965.

Class 14 — Metals and Metal Castings and Forgings

- 828,026. Fort Howard Steel & Wire Co., Green Bay, Wis. SN 227,494. Filed P.R. 9-9-65; Am. S.R. 2-23-67.

MICRODRAWN

For Cold Drawn Steel Rods and Bars.

First use May 1, 1965.

Class 15 — Oils and Greases

- 828,027. The Carter-Waters Corporation, Kansas City, Mo. SN 245,161. Filed P.R. 5-9-66; Am. S.R. 2-27-67.

STRIP-EEZ

For Oil Composition To Prevent Concrete From Adhering to Molds.

First use June 6, 1962.

Class 19 — Vehides

- 828,028. The Goodyear Tire & Rubber Company, Akron, Ohio. SN 229,975. Filed P.R. 10-12-65; Am. S.R. 2-20-67.

SUPER-SINGLE

For Vehicle Wheels and Rims.

First use July 26, 1965.

Class 21 — Electrical Apparatus, Machines, and Supplies

- 828,029. National Union Electric Corporation, Bloomington, Ill. SN 225,800. Filed P.R. 8-16-65; Am. S.R. 1-24-67.

TOOL-PAK

For Attachment Holder Used With Electric Vacuum Cleaners.

First use July 29, 1965.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

- 828,030. The Minster Machine Company, Minster, Ohio. SN 222,399. Filed P.R. 6-30-65; Am. S.R. 1-26-67.

HEVISTAMPER

For Sheet Metal Stamping Presses Having Progressive Dies for Blanking and Forming Material.

First use Nov. 7, 1964.

- 828,031. Schwinn Bicycle Company, Chicago, Ill., by change of name from Arnold, Schwinn & Co., Chicago, Ill. SN 235,251. Filed P.R. 12-27-65; Am. S.R. 2-20-67.

STIK-SHIFT

For Bicycle Accessory—Namely, a Speed Control Apparatus.

First use Dec. 10, 1965.

Class 26 — Measuring and Scientific

- 828,032. Plastic Reel and Core Company, Incorporated, Weehawken, N.J. SN 225,809. Filed P.R. 8-16-65; Am. S.R. 2-15-67.

RING-PAK

For Reels and Cans for Motion Picture Films.

First use Aug. 20, 1964.

- 828,033. United Elastic Corporation, Easthampton, Mass. SN 229,312. Filed P.R. 10-4-65; Am. S.R. 2-27-67.
- 828,039. Soft Cover Library, Inc., New York, N.Y. SN 241,193. Filed P.R. 3-16-66; Am. S.R. 2-21-67.

TWISTIT

For Laboratory Stoppers.

First use Sept. 1, 1965.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

- 828,034. The Goodyear Tire & Rubber Company, Akron, Ohio. SN 233,263. Filed P.R. 11-24-65; Am. S.R. 2-24-67.

SUPER-CUSHION

For Tires.

First use Oct. 15, 1965.

Class 37 — Paper and Stationery

- 828,035. Paul S. Heltman, d.b.a. Gem-Mounts and Gem-Masks Co., New York, N.Y. SN 194,729. Filed P.R. 6-2-64; Am. S.R. 2-2-67.

COMPARISON CHART

For Template Having a Plurality of Optional Slide Cropping Shapes To Be Used in the Selection of Slide Cropping Mounts and Masks.

First use June 1, 1957.

- 828,036. Micropoint, Inc., Sunnyvale, Calif. SN 254,304. Filed 9-12-66.

MICROPOINT

THE MOST DEPENDABLE NAME IN WRITING

For Writing Instruments—Namely, Pens, Pen Holders, Desk Sets, and Pen Refills.

First use Oct. 1, 1964.

Class 38 — Prints and Publications

- 828,037. Rural Gravure Service, Inc., Chicago, Ill. SN 224,123. Filed P.R. 7-23-65; Am. S.R. 2-27-67.

CORN·SOYBEAN CLINIC

For Magazine Section of a Newspaper.

First use Mar. 17, 1964.

- 828,038. Albert Todoroff, St. Louis, Mo. SN 239,829. Filed P.R. 2-28-66; Am. S.R. 2-23-67.

FREEZER PROVISIONING AND PORTION CONTROL

For Trade Magazine for the Freezer Industry.

First use Jan. 1, 1965.



For Books Containing Printed Literary and Artistic Works.

First use Mar. 16, 1965.

Class 39 — Clothing

- 828,040. S. Simpson Limited, London, England. SN 226,795. Filed P.R. 8-30-65; Am. S.R. 1-16-67.

DUAL-TOP

For Men's Trousers.

First use in or about March 1965.

- 828,041. Delightform Foundations, Inc., Easton, Pa. SN 237,822. Filed P.R. 2-2-66; Am. S.R. 2-15-67.

"ESPECIALLY FOR TEENS"

For Bras, Girdles, Garter Belts, Half-Slips, and Petticoats.

First use Sept. 1, 1965.

- 828,042. Camp and McInnes, Inc., Reading, Pa. SN 238,926. Filed P.R. 2-16-66; Am. S.R. 2-20-67.

WOOL PLUS

For Men's Hosiery.

First use May 14, 1964.

- 828,043. Healthwear Underwear, Inc., Wernersville, Pa. SN 242,008. Filed 3-28-66.



The representation of the individual is not a representation of any living individual.

For Underwear.

First use June 19, 1964.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

828,044. United Elastic Corporation, Easthampton, Mass. SN 234,855. Filed P.R. 12-17-65; Am. S.R. 2-20-67.



For Elastic Webbing.
First use Nov. 15, 1965.

828,045. United Merchants and Manufacturers, Inc., New York, N.Y. SN 237,889. Filed P.R. 2-2-66; Am. S.R. 1-26-67.

IRON-FREE

For Cotton/Rayon Blended Fabrics.
First use on or about Jan. 21, 1966.

828,046. Howard Curtain Company, Inc., New York, N.Y. SN 241,465. Filed P.R. 3-21-66; Am. S.R. 2-20-67.

"REDI-PREST"

For Curtains.
First use Feb. 10, 1966.

828,047. The Dobbie Industries Limited, Galt, Ontario, Canada. SN 241,993. Filed P.R. 3-28-66; Am. S.R. 2-20-67.

LADY GALT

Applicant disclaims the exclusive right to the use of the word "Galt" apart from the mark as a whole. Owner of Canadian Reg. No. 122,770, dated July 7, 1961.

For Towels, Bedspreads, Window Draperies, Wash Cloths, and High Pile Rugs.

Class 44 — Dental, Medical, and Surgical Appliances

828,048. Associated Mills, Inc., Chicago, Ill. SN 216,244. Filed P.R. 4-12-65; Am. S.R. 3-1-67.

DEEP HEAT

For Combined Heater and Vibrator.
First use Nov. 12, 1963.

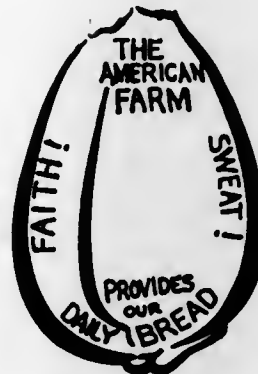
828,049. Roberts Dental Manufacturing Co., Inc., Buffalo, N.Y. SN 246,949. Filed P.R. 5-31-66; Am. S.R. 2-27-67.

SUCTION-FIT

For Protective Mouth Guards for All Contact Sports.
First use on or about May 27, 1965.

Class 46 — Foods and Ingredients of Foods

828,050. Martinus Olson, Amherst, Colo. SN 184,647. Filed P.R. 1-15-64; Am. S.R. 2-24-67.



For Wheat.
First use Dec. 9, 1963.

828,051. Locatelli S.p.A., Milan, Italy. SN 217,195. Filed P.R. 4-23-65; Am. S.R. 1-24-67.



Priority claimed under Sec. 44(d) on Italian application filed Feb. 19, 1965; Reg. No. 170,592, dated July 15, 1965. The word "Gentiana" corresponds to the English word "gentian." Owner of U.S. Reg. Nos. 518,138, 690,618, and 711,945.

For Cheese.

828,052. Land O'Lakes Creameries, Inc., Minneapolis, Minn. SN 235,995. Filed P.R. 1-7-66; Am. S.R. 2-23-67.

BUTTER-MOIST

For Frozen Turkey Roasts.
First use Sept. 27, 1965.

828,053. Robert A. Johnston Company, Milwaukee, Wis. SN 237,976. Filed P.R. 2-3-66; Am. S.R. 2-23-67.

READY-CRUST

For Pre-Formed Pie Crusts Adapted To Be Sold In Refrigerated or Un-Refrigerated Condition.
First use Dec. 13, 1965.

Class 52 — Detergents and Soaps

828,054. Piggly Wiggly Operators' Warehouse, Inc., Shreveport, La. SN 248,842. Filed P.R. 6-23-66; Am. S.R. 3-3-67.



For All Purpose Household Powdered Detergent.
First use Feb. 21, 1966.

Service Marks**Class 105 — Transportation and Storage**

828,055. Iberia Lineas Aereas de Espana S.A., Madrid, Spain. SN 228,912. Filed P.R. 9-29-65; Am. S.R. 2-27-67.

IBERIA AIR LINES OF SPAIN

For Transportation by Air of Passengers and Freight.
First use January 1963.

828,056. Pacific Palisades Educational Tours, Inc., Pacific Palisades, Calif. SN 235,708. Filed P.R. 1-3-66; Am. S.R. 3-1-67.

TEENTOURS

For Travel Services, in the Form of Educational Tours for Teenagers.
First use at least as early as Nov. 1, 1959.

Class 107 — Education and Entertainment

828,057. Rural Gravure Service, Inc., Chicago, Ill. SN 224,124. Filed P.R. 7-23-65; Am. S.R. 2-27-67.



For Presentation of Educational Meetings and Programs in Connection With Farming Information.
First use Mar. 20, 1964.

TRADEMARK REGISTRATIONS RENEWED

- | | |
|---|---|
| 29,986. KEEPCLEAN. Cl. 29. 5-11-1897. | 227,835. AUTO HARP. Cl. 36. 5-17-27. |
| 58,438. COLLEEN. Cl. 52. 12-18-06. | 228,346. WHITE ROSE. Cl. 45. 5-31-27. |
| 59,681. HANCOCK. Cl. 13. 1-15-07. | 228,694. DAYTON. Cl. 26. 6-7-27. |
| 59,971. FRENCH'S. Cl. 44. 1-22-07. | 228,695. MONEYWEIGHT. Cl. 26. 6-7-27. |
| 60,860. ELIZABETH LAZENLY AND DESIGN. Cl. 46. 2-26-07. | 228,720. THE SERENADERY DESIGN. Cl. 36. 6-7-27. |
| 60,873. BIXBY. Cl. 4. 2-26-07. | 229,379. GREENWAY. Cl. 1. 6-28-27. |
| 61,075. COLUMBIAN. Cl. 7. 3-5-07. | 229,995. METROPOLITAN. Cl. 46. 7-12-27. |
| 61,188. PRINCESS CHIC. Cl. 39. 3-5-07. | 230,059. ALURATE. Cl. 18. 7-12-27. |
| 62,758. MORSE. Cl. 26. 5-21-07. | 230,364. UNAX. Cl. 23. 7-19-27. |
| 63,428. PAPINE. Cl. 18. 6-18-07. | 230,373. MISCELLANEOUS DESIGN. Cl. 23. 7-19-27. |
| 63,430. BROMIDIA. Cl. 18. 6-18-07. | 230,603. GRAPHOTYPE. Cl. 23. 8-2-27. |
| 63,492. OLD STYLE LAGER AND DESIGN. Cl. 48. 6-25-07. | 230,702. BILT-RITE AND DESIGN. Cl. 19. 8-2-27. |
| 63,511. SCOTCH MINTS. Cl. 46. 6-25-07. | 230,736. MEDIX. Cl. 44. 8-2-27. |
| 63,538. ROYAL. Cl. 46. 6-25-07. | 424,763. TAY. Cl. 52. 10-22-46. |
| 63,654. YALE. Cl. 25. 7-2-07. | 425,745. WIN-YOU. Cl. 46. 12-3-46. |
| 221,876. PED-WELL AND DESIGN. Cl. 39. 12-14-26. | 425,748. LUCKY "11" AND DESIGN. Cl. 46. 12-3-46. |
| 223,068. WHITE ROSE. Cl. 46. 1-18-27. | 426,336. BOLINE HOUE. Cl. 18. 12-24-46. |
| 223,090. "HERON'S HEAD" (DESIGN). Cl. 19. 1-18-27. | 426,356. TRANS E. Cl. 6. 12-24-46. |
| 223,290. WHITE ROSE. Cl. 46. 2-1-27. | 426,659. CORMAG. Cl. 26. 1-7-47. |
| 223,881. WHITE ROSE. Cl. 46. 2-15-27. | 427,089. NEOROTO. Cl. 11. 1-28-47. |
| 224,200. QUIGLEY AAA ETC. AND DESIGN. Cl. 12. 2-22-27. | 427,101. MIN-RA-LITE. Cl. 16. 1-28-47. |
| 224,227. WHITE ROSE. Cl. 46. 2-22-27. | 427,112. SAPPHIRE PURS-PAK. Cl. 39. 1-28-47. |
| 224,470. K AND DESIGN. Cl. 14. 3-1-27. | 427,121. MASURY. Cl. 16. 1-28-47. |
| 224,602. SULGRAVE. Cl. 39. 3-1-27. | 427,431. FEDERAL AND DESIGN. Cl. 26. 2-11-47. |
| 224,603. FENAMORE. Cl. 39. 3-1-27. | 427,696. MOBIL. Cl. 35. 2-18-47. |
| 224,664. CO-ED. Cl. 46. 3-1-27. | 427,705. VOCATION. Cl. 39. 2-18-47. |
| 224,669. WHEELING CORRUGATING CO. AND DESIGN. Cl. 14. 3-1-27. | 427,802. DUTCH GIRL AND WINDMILL DESIGN. Cl. 46. 2-25-47. |
| 224,874. WESTERN. Cl. 9. 3-8-27. | 427,895. ROLA. Cl. 21. 2-25-47. |
| 224,933. PEPTO-BISMOL. Cl. 18. 3-8-27. | 427,990. DUROLINE DURO TEST AND DESIGN. Cl. 21. 3-4-47. |
| 224,991. VILLA. Cl. 46. 3-8-27. | 428,051. NI AND DESIGN. Cl. 23. 3-11-47. |
| 225,253. HERCO. Cl. 9. 3-15-27. | 428,257. DISH-NU. Cl. 52. 3-18-47. |
| 225,929. MOHAWK. Cl. 35. 3-29-27. | 428,388. NUBBINS. Cl. 46. 3-25-47. |
| 226,121. HONEY SCOTCH AND DESIGN. Cl. 46. 3-29-27. | 428,726. TOXOL. Cl. 6. 4-1-47. |
| 226,251. ADALOX. Cl. 4. 4-5-27. | 428,793. OCEANIA. Cl. 28. 4-1-47. |
| 226,350. KOZY. Cl. 50. 4-5-27. | 428,794. PERSIANA. Cl. 28. 4-1-47. |
| 227,057. SEALTIGHT. Cl. 12. 4-26-27. | 428,835. AUDITONE. Cl. 12. 4-8-47. |
| 227,593. RED STRIPE AND DESIGN. Cl. 37. 5-10-27. | 428,979. FLURO SPRAY DURO TEST AND DESIGN. Cl. 21. 4-15-47. |
| 227,604. MISCELLANEOUS DESIGN. Cl. 37. 5-10-27. | 429,412. LYNX. Cl. 51. 4-29-47. |
| | 429,418. CRICKET. Cl. 27. 4-29-47. |

429,482. NEXT KISS. Cl. 51. 4-29-47.
 429,559. MERCURY HEAD (DESIGN). Cl. 19. 5-6-47.
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 429,973. ARDATH. Cl. 27. 6-3-47.
 430,178. FLEXVAC AND DESIGN. Cl. 2. 6-10-47.
 430,209. SUPRADIN. Cl. 18. 6-10-47.
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 430,328. PAINT WITH LIGHT. Cl. 21. 6-10-47.

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 430,615. FLYING COLORS. Cl. 39. 6-17-47.
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 19,078. FOUR ACES AND DESIGN. Cl. 35. 2-24-1891.
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 383,256. SUPER-SORB. Cl. 6. 11-26-40.
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 711,975. BRINKMAN'S FLOWERS AND DESIGN. Cl. 1.
 711,978. S AND DESIGN. Cl. 2.
 711,979. PELRAP AND DESIGN. Cl. 2.
 711,982. DB AND DESIGN. Cl. 2.
 711,987. MCTMP. Cl. 6.
 711,997. SWOOP. Cl. 6.
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 712,002. COUSTIC-AIRE. Cl. 12.
 712,003. TRIM-STEEL. Cl. 12.
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 712,165. VISION 2. Cl. 38.
 712,166. STEVENGRAPH AND DESIGN. Cl. 38.
 712,167. M MILLER GREETINGS AND DESIGN. Cl. 38.
 712,170. DN DIGEST AND DESIGN. Cl. 38.
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 712,278. CONGRESS INN. Cl. 100.
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 712,280. STORK PLAN. Cl. 101.
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 712,299. SERVICE-QUALITY-ACCURACY AND DESIGN. Cl. 106.
 712,303. U.S. LADY ON THE AIR. Cl. 107.
 712,306. NATIONAL SKI PATROL. Cl. 200.
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 712,324. ABOVE ALL FLY PACIFIC AIR LINES. Cl. 105.

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57,035. COLGATE. Cl. 51. 10-30-06. Colgate & Co. Colgate-Palmolive Company, New York, N.Y. Amended to appear:

COLGATE

62,783. SILICA GRAPHITE. Cl. 16. 5-28-07. The Joseph Dixon Crucible Company, Jersey City, N.J. Corrected: In the certificate, lines 3 and 18, in the drawing, heading, signature and in the statement column 1, line 1, before "Joseph" The should be inserted.

226,182. MISCELLANEOUS DESIGN. Cl. 37. 4-5-27. The Joseph Dixon Crucible Company, Jersey City, N.J. Corrected: In the certificate, lines 3 and 17, in the heading, signature and in the statement, column 1, line 1, before "Joseph" The should be inserted.

423,504. EI AND DESIGN. Cl. 21. 9-3-46. Electrical Industries, Inc. Philips Electronics and Pharmaceutical Industries Corp., Baltimore, Md. Amended: In the statement, column 1, lines 7 through 23, the description of goods is deleted and electric terminals, hermetically sealed and insulated electrically conductive terminals and leads, hermetically sealed electrical conductor headers, glass-sealed electrical terminals and leads, electrically insulated terminals and leads, and electronic vacuum tube parts and components is inserted, in column 2, lines 2 through 4. "No claim is made to the word 'Inc.' apart from the mark shown on the drawing." is deleted, and the drawing is amended to appear:



717,018. JOHNSON. Cl. 1. 6-20-61. S. C. Johnson & Son, Inc., Racine, Wis. Amended to appear:

Johnson

727,590. TRAVERS. Cl. 35. 2-13-62. The Frank G. Schenuit Rubber Company. Schenuit Industries, Inc., Baltimore, Md. Amended: In the statement, column 1, line 1, after "Company", now by change of name Schenuit Industries, Inc. is inserted.

735,666. SCHENUIT S AND DESIGN. Cl. 35. 8-7-62. The Frank G. Schenuit Rubber Company. Schenuit Industries, Inc., Baltimore, Md. In the statement, column 1, line 1, after "Company", now by change of name Schenuit Industries, Inc. is inserted.

781,810. PONDEROSA. Cl. 39. 12-15-64. Endicott Johnson Corporation, New York, N.Y. Corrected: In the statement, column 1, lines 2 and 3 should be deleted and Endicott, N.Y. 13760 should be inserted.

783,691. LOCKRIM. Cl. 39. 1-19-65. Endicott Johnson Corporation, New York, N.Y. Corrected: In the statement, column 1, lines 2 through 5 should be deleted and Endicott, N.Y. 13760 should be inserted.

812,816. MAGIC D AND DESIGN. Cl. 6. 8-16-66. Le Fevre Chemical Company. Big 'D' Chemical Company, Oklahoma City, Okla. Corrected: In the statement, column 1, after line 3, now by change of name Big 'D' Chemical Company (Oklahoma corporation), 1708 W. Main St., Oklahoma City, Okla. should be inserted.

817,128. 003 1/2. Cl. 51. 10-18-66. Colgate-Palmolive Company, New York, N.Y. Corrected: In the statement, column 2, line 1, "dentifrice" should be deleted and dentifrice should be inserted.

817,509. TREE IN A TRIANGLE (DESIGN). Cl. 50. 10-25-66. Weyerhaeuser Company, Tacoma, Wash. Corrected: In the statement, column 2, line 1, after "moldable" fiber mats and should be inserted.

818,560. LINI GEL. Cl. 18. 11-15-66. H. C. Burns Company, Inc., doing business as H. C. Burns Pharmaceuticals. Burns Pharmaceuticals, Inc., Oakland, Calif. Corrected: In the statement, column 1, after line 2, now by change of name Burns Pharmaceuticals, Inc. should be inserted.

823,067. ULTRA BRITE. Cl. 51. 1-24-67. Colgate-Palmolive Company, New York, N.Y. Corrected: In the statement, column 2, line 1, "dentifrice" should be deleted and dentifrice should be inserted.

823,343. HARRIS KEY REGISTER. Cl. 23. 1-31-67. Harris-Intertype Corporation, Cleveland, Ohio. Corrected: In the statement, column 2, after line 6, Owner of Reg. No. 528,029. should be inserted.

824,149. DIET PEPSI-COLA. Cl. 45. 2-14-67. PepsiCo, Inc., New York, N.Y. Corrected: In the statement, column 1, line 1, "PepsiCo," should be deleted and PepsiCo, should be inserted.

824,150. PEPSI. Cl. 45. 2-14-67. PepsiCo, Inc., New York, N.Y. Corrected: In the statement, column 1, line 1, "PepsiCo," should be deleted and PepsiCo, should be inserted.

824,151. PEPSI-COLA. Cl. 45. 2-14-67. PepsiCo, Inc., New York, N.Y. Corrected: In the statement, column 1, line 1, "PepsiCo," should be deleted and PepsiCo, should be inserted.

824,152. DIET PEPSI. Cl. 45. 2-14-67. PepsiCo, Inc., New York, N.Y. Corrected: In the statement, column 1, line 1, "PepsiCo," should be deleted and PepsiCo, should be inserted.

824,153. MISCELLANEOUS DESIGN. Cl. 45. 2-14-67. PepsiCo, Inc., New York, N.Y. Corrected: In the statement, column 1, line 1, "PepsiCo," should be deleted and PepsiCo, should be inserted.

824,523. TOPS-ALL. Cl. 46. 2-21-67. H. C. Brill Company, Inc., Cedar Grove, N.J. Corrected: In the statement, column 2, line 2, "natural" should be deleted and nature should be inserted.

INDEX OF REGISTRANTS

APRIL 25, 1967

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

- Abbott Laboratories, North Chicago, Ill. 430,983, ren. 4-25-67. Cl. 18.
- Ackerman, E. A., Dairy Products, Inc., Eau Claire, Wis. 827,928, pub. 2-7-67. Cl. 46.
- Addressograph Co., Chicago, Ill., to Addressograph-Multigraph Corp., Cleveland, Ohio. 230,603, ren. 4-25-67. Cl. 23.
- Addressograph-Multigraph Corp.: See—
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- Aerosol Corp. of America, Wellesley Hills, Mass. 712,322, can. Cl. 52.
- Aerospace Research, Inc., Boston, Mass. 827,843, pub. 2-7-67. Cl. 26.
- Affiliated Products, Inc., to American Home Products Corp., New York, N.Y. 429,432, ren. 4-25-67. Cl. 51.
- Air Master Corp., Philadelphia, Pa. 712,309, can. Cl. 12.
- Air Seal Co., Inc.: See—
Secon, Inc.
- Aktiebolaget Astra, Apotekarnes Kemiska Fabriker, Soder-talje, Sweden. 712,208, can. Cl. 46.
- Aktiebolaget Bofors, Bofors, Sweden. 712,035, can. Cl. 18.
- Albin Enterprises, Inc., d.b.a. Jack Built Mfg. Co., Burbank, Calif. 712,149, can. Cl. 37.
- Alexander Mfg. Co. of Grapeland, Grapeland, Tex. 712,185, can. Cl. 39.
- Allied Research Products, Inc., from Allied Research Products, Inc., Baltimore, Md. 827,730-1, pub. 2-7-67. Cl. 6.
- Allis-Chalmers Mfg. Co., Milwaukee, Wis. 827,766, pub. 2-7-67. Cl. 14.
- Alsde, Inc., Akron, Ohio. 827,752, pub. 1-31-67. Cl. 12.
- Alton Box Board Co., Alton, Ill. 712,244, can. Cl. 50.
- American Can Co., New York, N.Y. 827,873, pub. 2-7-67. Cl. 37.
- American Committee on Africa, Inc., New York, N.Y. 712,173, can. Cl. 38.
- American Cyanamid Co.: See—
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- American Home Products Corp.: See—
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- American Home Products Corp., New York, N.Y. 827,784, pub. 2-7-67. Cl. 18.
- American Home Products Corp., New York, N.Y. 827,933, pub. 2-7-67. Cl. 46.
- American Home Products Corp., New York, N.Y. 827,977, pub. 2-7-67. Cl. 51.
- American Renolit Corp., New York, N.Y. 827,715, pub. 2-7-67. Cl. 1.
- American Steel, Inc., Portland, Oreg. 827,759, pub. 2-7-67. Cl. 12.
- Amerock Corp.: See—
Stanley Works, The.
- Amplifier Corp. of America, New York, N.Y. 712,145, can. Cl. 36.
- Anchor Hocking Glass Corp., Lancaster, Ohio. 827,865, pub. 2-7-67. Cl. 33.
- Anseott Enterprises Inc., Brooklyn, N.Y. 827,952, pub. 2-7-67. Cl. 46.
- Anson Inc., Providence, R.I. 712,127, can. Cl. 28.
- Appel, Mel, and Martin Schuur: See—
Eberhard Faber Inc.
- Arbitman & Arbitman, Inc., New York, N.Y. 827,887, pub. 2-7-67. Cl. 39.
- Armco Steel Corp., Middletown, Ohio. 827,768, pub. 2-7-67. Cl. 14.
- Armour and Co., Chicago, Ill. 827,712, pub. 2-7-67. Cl. 1.
- Armex Inc., Gastonia, N.C. 811,899, can. Cl. 42.
- Artichoke Industries, Inc., Castroville, Calif. 827,948-9, pub. 2-7-67. Cl. 46.
- Associated Mills, Inc., Chicago, Ill. 828,048, Cl. 44.
- Associated Products, Inc., New York, from Home Chemical Corp., Garden City, N.Y. 827,978, pub. 8-9-66. Cl. 51.
- Astrotex Ltd., New York, N.Y. 827,907, pub. 2-7-67. Cl. 42.
- Atlas Plywood Corp., Boston, Mass. 712,001, can. Cl. 12.
- Automatic Control Co., St. Paul, Minn. 827,847, pub. 2-7-67. Cl. 26.
- Avon Products, Inc., New York, N.Y. 712,263, can. Cl. 51.
- Babson Bros. Co., Oak Brook, Ill. 828,001, pub. 2-7-67. Cl. 52.
- Badger Mfg. Corp., Chicago, Ill. 827,771, pub. 2-7-67. Cl. 16.
- Baskon Corp., Santa Monica, Calif. 712,120, can. Cl. 26.
- Bass, Sheldon, d.b.a. Porter Food Products, Linden, N.J. 827,958, pub. 2-7-67. Cl. 46.
- Bates Mfg. Co., Inc., Lewiston, Maine. 827,904, pub. 2-7-67. Cl. 42.
- Battle & Co., Chemists' Corp., St. Louis, Mo. 63,428, ren. 4-25-67. Cl. 18.
- Battle & Co., Chemists' Corp., St. Louis, Mo. 63,430, ren. 4-25-67. Cl. 18.
- Beacon Chemical Co., Inc., New York, N.Y. 712,307, can. Cl. 6.
- Beacon Mfg. Co., Swannanoa, N.C. 712,190-1, can. Cl. 42.
- Beacon Mfg. Co., Swannanoa, N.C. 712,194-5, can. Cl. 42.
- Behr, Herman, & Co., Inc., Brooklyn, to Norton Co., Watervliet, N.Y. 226,251, ren. 4-25-67. Cl. 4.
- Belleo Glass, Inc., Vineland, N.J. 827,850, pub. 2-7-67. Cl. 26.
- Bentley Laboratories, Santa Ana, Calif. 827,919, pub. 2-7-67. Cl. 44.
- Bentzinger Bros., Inc., St. Louis, Mo. 712,130, can. Cl. 29.
- Best, W. G., Homes Corp., Effingham, Ill. 827,755, pub. 2-7-67. Cl. 12.
- Big 'D' Chemical Co.: See—
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- Bilt-Rite Baby Carriage Co., Inc.: See—
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- Bissell, Inc., Grand Rapids, Mich. 712,129, can. Cl. 29.
- Bixby, S. M., & Co., to Corn Products Co., New York, N.Y. 60,873, ren. 4-25-67. Cl. 4.
- Blancke-Barr Extract & Preserving Co., to Win-You Preserving Co., St. Louis, Mo. 425,745, ren. 4-25-67. Cl. 46.
- Bloom, Martin, Associates, Inc., St. Louis, Mo. 828,008, pub. 2-7-67. Multiple Class (Classes 100 and 103).
- Buehringer Ingelheim G.m.b.H., Ingelheim am Rhein, Germany, from Geigy Chemical Corp., Ardsley, N.Y. 827,796, pub. 2-7-67. Cl. 18.
- Boise Cascade Corp.: See—
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- Borg-Warner Corp., Chicago, Ill. 827,846, pub. 2-7-67. Cl. 26.
- Borison, Daniel, d.b.a. Dan's Sulp 'N Curl, Beverly Hills, Calif. 827,979, pub. 2-7-67. Cl. 51.
- Bowen Processing Co., Inc., Largo, Fla. 712,269, can. Cl. 52.
- Bowey's Inc., Chicago, Ill. 827,945, pub. 2-7-67. Cl. 46.
- Brach, E. J., & Sons, Chicago, Ill., to American Home Products Corp., New York, N.Y. 224,664, ren. 4-25-67. Cl. 46.
- Brach, E. J., & Sons, Chicago, Ill., to American Home Products Corp., New York, N.Y. 224,991, ren. 4-25-67. Cl. 46.
- Brach, E. J., & Sons, Chicago, Ill., to American Home Products Corp., New York, N.Y. 428,388, ren. 4-25-67. Cl. 46.
- Bradner Central Co., Chicago, Ill. 827,869, pub. 2-7-67. Cl. 37.
- Brass, Arturo B., d.b.a. Laboratorios Imperiales, Mexico City, Mexico. 712,047, can. Cl. 18.
- Brewster, Floyd E., Jr., New York, N.Y. 712,238, can. Cl. 50.
- Brill, H. C., Co., Inc., Cedar Grove, N.J. 824,523, cor. Cl. 46.
- Brinkman, Esther, and Doris Castagno, co-executors of the estate of Herman H. Brinkman, deceased, d.b.a. Brinkman's Flowers, Pittsburg, Kans. 711,975, can. Cl. 1.
- Brinkman's Flowers: See—
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- Bristol-Myers Co., New York, N.Y. 827,785-8, pub. 2-7-67. Cl. 18.
- Bristol-Myers Co.: See—
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- Brown & Wilkinson Ltd., London, to Brook Mfg. Co., Northampton, England. 430,597, ren. 4-25-67. Cl. 39.
- Brown, David, & Son Ltd., Donaghmore, to McClintons Ltd., Dublin, Ireland. 58,438, ren. 4-25-67. Cl. 52.
- Buchsbaum, George, d.b.a. Equality Publishing Co., New York, N.Y. 827,879, pub. 2-7-67. Cl. 38.
- Buegeleisen & Jacobson, Inc.: See—
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- Buegeleisen & Jacobson, to Buegeleisen & Jacobson, Inc., New York, N.Y. 228,720, ren. 4-25-67. Cl. 36.
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- Bulova Watch Co., Inc., Flushing, N.Y. 712,143, can. Cl. 36.
- Burke & James, Inc., Chicago, Ill. 712,113, can. Cl. 26.
- Burma-Bibas, Inc., New York, N.Y. 827,894, pub. 2-7-67. Cl. 39.
- Burns, H. C., Pharmaceuticals: See—
Burns, H. C., Co., Inc.
- Burns, H. C., Co., Inc., d.b.a. H. C. Burns Pharmaceuticals, and Burns Pharmaceuticals, Inc., Oakland, Calif. 818,560, cor. Cl. 18.
- Burns Pharmaceuticals, Inc.: See—
Burns, H. C., Co., Inc.
- Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y. 827,783, pub. 2-7-67. Cl. 18.
- Butler Dairypak, Inc., Cleveland, Ohio. 711,982, can. Cl. 2.
- CDC-Compagnie General des Produits Dubonnet, Paris, France, from Societe Internationale Pam-Pam, Monte-Carlo, Monaco. 827,937, pub. 2-7-67. Cl. 46.
- California Packing Corp., San Francisco, Calif. 827,921, pub. 2-7-67. Multiple Class (Classes 45 and 46).
- Caloric Corp., Tipton, Pa. 827,817, pub. 2-7-67. Cl. 21.
- Camp and McInnes, Inc., Reading, Pa. 828,042, Cl. 39.
- Carbon Dispersions Inc., Newark, N.J. 430,975, ren. 4-25-67. Cl. 16.

Carley, Inc., Haddonfield, N.J. 827,981, pub. 2-7-67. Cl. 51.
 Carney, D. D., & Son Candy Co., Inc., Huntington, W. Va. 712,223, can. Cl. 46.
 Carson Chemical Co., from Morehouse Mfg. Corp., Savannah, Ga. 827,969, pub. 1-24-67. Cl. 51.
 Carter, Mary, Paint Co., d.b.a. Victor Paint Co., Tampa, Fla. 827,769-70, pub. 12-21-65. Cl. 16.
 Carter-Wallace, Inc., New York, N.Y. 827,790-2, pub. 2-7-67. Cl. 18.
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 Castleton China, Inc., New Castle, Pa. 827,860-2, pub. 2-7-67. Cl. 30.
 Caswell Coffee Co., San Francisco, Calif. 827,963, pub. 2-7-67. Cl. 46.
 Celanese Corp. of America, New York, N.Y. 711,987, can. Cl. 6.
 Century Lighting, Inc., New York, N.Y., to Century Lighting, Inc., Clifton, N.J. 430,328, ren. 4-25-67. Cl. 21.
 Charnay, Leonard L., Inc., New York, N.Y. 827,892, pub. 2-7-67. Cl. 39.
 Chemical Associates, Inc., Houston, Tex. 827,999, pub. 2-7-67. Cl. 52.
 Chemical Coating Materials Co., Belleville, N.J. 426,356, ren. 4-25-67. Cl. 6.
 Clalrol Inc., New York, N.Y. 827,984, pub. 2-7-67. Cl. 51.
 Clalrol Inc., New York, N.Y. 827,986-94, pub. 2-7-67. Cl. 51.
 Closing Offices of America: See—
 Richardson Homes Corp.
 Coleman Co., Inc., Wichita, Kans. from Boise Cascade Corp., Boise, Idaho. 827,827, pub. 2-7-67. Cl. 22.
 Colgate & Co. Colgate-Palmolive Co., New York, N.Y. 57,035, Am. 7(d). Cl. 51.
 Colgate-Palmolive Co.: See—
 Colgate & Co.
 Colgate-Palmolive Co., New York, N.Y. 817,128, cor. Cl. 51.
 Colgate-Palmolive Co., New York, N.Y. 823,067, cor. Cl. 51.
 College Placement Council, Inc., Bethlehem, Pa. 828,005, pub. 2-7-67. Cl. 100.
 Collins, J. N., Co., Minneapolis, Minn., to Peter Paul, Inc., Naugatuck, Conn. 226,121, ren. 4-25-67. Cl. 46.
 Color-Roc Mfg. Co., Phoenix, Ariz. 827,968, pub. 2-7-67. Cl. 50.
 Columbian Rope Co., Auburn, N.Y. 61,075, ren. 4-25-67. Cl. 7.
 Commerce Welding & Mfg. Co., Inc., Dallas, Tex. 827,836, pub. 2-7-67. Cl. 23.
 Compagnie des Montres Ardath, Dreyfuss & Cie (Ardath Watch Co., Dreyfuss & Co.), Geneva, Switzerland. 429,973, ren. 4-25-67. Cl. 27.
 Compagnie Française Thomson-Houston, Paris, France. 712-107, can. Cl. 26.
 Com-Pair Systems, Inc., Princeton, N.J. 828,006-7, pub. 2-7-67. Cl. 100.
 Compro Corp., Pawtucket, R.I. 827,760, pub. 2-7-67. Cl. 12.
 Compudyne Corp., Hatboro, Pa. 712,123, can. Cl. 26.
 Conchemco, Inc.: See—
 Masury, John W., & Son, Inc.
 Congress of Motor Hotels, Santa Monica, Calif. 712,278, can. Cl. 100.
 Consolidated Distilled Products, Inc., Chicago, Ill. 827,967, pub. 2-7-67. Cl. 49.
 Continental Coatings Corp., New York, N.Y. 827,772, pub. 2-7-67. Cl. 16.
 Cooper, Ben, Inc., Brooklyn, N.Y. 827,899, pub. 2-7-67. Cl. 39.
 Cooperative Marketing, Inc., Beverly Hills, Calif. 712,184, can. Cl. 39.
 Copia Mfg. Corp.: See—
 Federal Mfg. & Engineering Corp.
 Cordage, David, Co., Portland, Ore. 827,743, pub. 2-7-67. Cl. 7.
 Corn Products Co.: See—
 Bixby, S. M., & Co.
 Corroline Corp., Buffalo, N.Y. 827,773, pub. 2-7-67. Cl. 16.
 Crescent Mfg. Co., Seattle, Wash. 827,940, pub. 2-7-67. Cl. 46.
 Cross, A. T., Co., Lincoln, R.I. 827,870, pub. 2-7-67. Cl. 37.
 Crusader Candle Co., Inc., Brooklyn, N.Y. 711,620, ren. 4-25-67. Cl. 15.
 Cummings, Hester F., d.b.a. Pedro Perfume Co., Arlington, Tex. 712,251, can. Cl. 51.
 Cunningham, William B., d.b.a. Electronic Ordering Systems, Oklahoma City, Okla. 827,822, pub. 2-7-67. Cl. 21.
 Cuddle Knit Knitting Mills, Inc., Dee Park, N.Y. 827,896, pub. 2-7-67. Cl. 39.
 Dannheiser, George A., d.b.a. Pizzaroma, Evansville, Ind. 828,002, pub. 2-7-67. Cl. 100.
 Dan's Snip 'N Curl: See—
 Borison, Daniel.
 Dawson, Kenneth A., Co.: See—
 Dawson, Kenneth A.
 Dawson, Kenneth A., d.b.a. Kenneth A. Dawson Co., Belmont, Mass. 827,851, pub. 2-7-67. Cl. 26.
 Dayton Scale Co., New York, N.Y., to The Hobart Mfg. Co., Troy, Ohio. 228,694-5, ren. 4-25-67. Cl. 26.
 Decca Ltd., London, England. 827,819, pub. 2-7-67. Cl. 21.
 Deering Milliken, Inc., New York, N.Y. 827,913-14, pub. 2-7-67. Cl. 42.
 Delightform Foundations, Inc., Easton, Pa. 828,041. Cl. 39.
 Dentists' Supply Co. of New York, The, York, Pa. 827,721, pub. 2-7-67. Cl. 4.
 Denver Chemical Mfg. Co., The, d.b.a. Wampole Laboratories, Stamford, Conn. 827,728, pub. 2-7-67. Cl. 6.
 Denver Chemical Mfg. Co., The, d.b.a. Wampole Laboratories, Stamford, Conn. 827,729, pub. 2-7-67. Cl. 6.

Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt (Am Main), Germany. 827,918, pub. 2-7-67. Cl. 44.
 Diamond Laboratories, from Iowa Cooperative Association, d.b.a. Diamond Laboratories, Des Moines, Iowa. 712,028, can. Cl. 18.
 Diamond National Corp., New York, N.Y. 712,170, can. Cl. 38.
 Diana Mfg. Co.: See—
 Paper Novelty Co., The.
 Diatomic Chemical Co., Los Angeles, Calif. 827,717, pub. 2-7-67. Cl. 1.
 Dillhoff, Inc., New York, N.Y. 712,245, can. Cl. 51.
 Diners' Club, Inc., The, New York, N.Y. 828,013, pub. 2-7-67. Cl. 102.
 Dittshelm & Cie Fabriques Vulcain et Volta, to Fabrique des Montres Vulcain et Studio S.A., La Chaux-de-Fonds, Switzerland. 429,418, ren. 4-25-67. Cl. 27.
 Dixie-Portland Flour Mills, Inc., d.b.a. Majestic Flour Mills, Memphis, Tenn. 827,943, pub. 2-7-67. Cl. 46.
 Dixon, Joseph, Crucible Co., The, Jersey City, N.J. 62,783, cor. Cl. 16.
 Dixon, Joseph, Crucible Co., The, Jersey City, N.J. 226,182, cor. Cl. 37.
 Dobbie Industries Ltd., The, Galt, Ontario, Canada. 828,047. Cl. 42.
 Dopera, Edgar E., d.b.a. Original Instruments, Gardena, Calif. 827,818, pub. 2-7-67. Cl. 21.
 Dorann Foods Inc., from Dorann Foods, Inc., Rye, N.Y. 712-207, can. Cl. 46.
 Dorrard, J. & J. C., Ltd., Galashiels, Scotland. 827,912, pub. 2-7-67. Cl. 42.
 Drackett Co., The, Cincinnati, Ohio, from Bristol-Myers Co., New York, N.Y. 828,024. Cl. 4.
 Dresser Industries, Inc.: See—
 United Injector Co., The.
 Dr. Med. Dent. Werner Noetzi, Zurich, Switzerland. 827-916, pub. 2-7-67. Cl. 44.
 Drug, Chemical and Allied Trades Association Inc., New York, N.Y. 827,876-7, pub. 2-7-67. Cl. 38.
 Duban Shade Corp., The, d.b.a. Estelle Toy Co., Victor, N.Y. 827,825, pub. 2-7-67. Cl. 22.
 Dunbar Furniture Corp., Berne, Ind. 827,903, pub. 2-7-67. Cl. 42.
 Dun & Bradstreet, Inc., New York, N.Y. 828,011, pub. 2-7-67. Cl. 101.
 Du Pont de Nemours, E. I., and Co., Wilmington, Del. 430-778, ren. 4-25-67. Cl. 19.
 Du Pont de Nemours, E. I., and Co., Wilmington, Del. 828-023, pub. 2-7-67. Cl. A.
 Duro-Test Corp., North Bergen, N.J. 429,789, ren. 4-25-67. Cl. 21.
 Duro-Test Corp., North Bergen, N.J. 429,990, ren. 4-25-67. Cl. 21.
 Duro-Test Corp., North Bergen, N.J. 428,970, ren. 4-25-67. Cl. 21.
 Eagle-Picher Industries, Inc., Cincinnati, Ohio. 827,748, pub. 2-7-67. Cl. 10.
 Eaton Yale & Towne Inc.: See—
 Yale & Towne Mfg. Co., The.
 Eberhard Faber Inc., Wilkes Barre, Pa., from Mel Appel- and Martin Schnur, Livingston, N.J. 827,828, pub. 2-7-67. Cl. 22.
 Eby Chemical Corp., Harrisburg, Pa. 827,730, pub. 2-7-67. Cl. 11.
 Edeco Products Corp., d.b.a. Sedco, Santa Monica, Calif. 827-824, pub. 2-7-67. Cl. 22.
 Ekeo Products Co., Chicago, Ill. 660,257, can. Cl. 2.
 Elaboraciones Pesqueras del Cantabrico, S.A., Bilbao, Spain. 712,209, can. Cl. 46.
 El Cuno Cigar Corp. (Proprietary) Ltd., Cape Town, Republic of South Africa. 827,774, pub. 2-7-67. Cl. 17.
 Electrical Industries, Inc., Philips Electronics and Pharmaceutical Industries Corp., Baltimore, Md. 423,504. Am. 7(d). Cl. 21.
 Electronic Ordering Systems: See—
 Cunningham, William B.
 Em El Es Corp.: See—
 Sapphire Hosiery Co.
 Empresa Editora Zig-Zag S.A., Santiago, Chile. 827,875, pub. 2-7-67. Cl. 38.
 Empresa Pesquera Robinson Crusoe S.A., Vina Del Mar, Chile. 827,939, pub. 2-7-67. Cl. 46.
 Englund, R. T., Co.: See—
 Englund, Robert T., d.b.a. R. T. Englund Co., Salinas, Calif. 827,965, pub. 2-7-67. Cl. 46.
 Ensign-Bickford Co., The, Simsbury, Conn. 827,745, pub. 2-7-67. Cl. 9.
 Eprad Inc., Toledo, Ohio. 827,816, pub. 2-7-67. Cl. 21.
 Equality Publishing Co.: See—
 Buchsbaum, George.
 Estelle Toy Co.: See—
 Duban Shade Corp., The.
 Etablissements Clin-Byla, Paris, France. 712,024, can. Cl. 18.
 Executive Toiletries Ltd.: See—
 "42" Products, Ltd., Inc.
 Ex-Cell Homefurnishings, Inc., New York, N.Y. 827,906, pub. 2-7-67. Cl. 42.
 Explosives Engineering Co., Steamboat, Nev. 827,746, pub. 2-7-67. Cl. 9.
 Fabbri, G., S.p.A., Bologna, Italy. 827,924, pub. 2-7-67. Cl. 46.
 Fabrique des Montres Vulcain et Studio S.A.: See—
 Dittshelm & Cie Fabriques Vulcain et Volta.
 Facelle Co. Ltd., Toronto, Ontario, Canada. 827,868, pub. 2-7-67. Cl. 37.

Fairmont Foods Co., Omaha, Nebr. 827,930, pub. 2-7-67. Cl. 46.
 Fant Milling Co.: See—
 Nebraska Consolidated Mills Co.
 Farr Tours: See—
 Merlie Corp.
 Farwest Steel, Inc., Spokane, Wash. 712,003, can. Cl. 12.
 Federal Mfg. & Engineering Corp., Brooklyn, to Copla Mfg. Corp., Garden City, N.Y. 427,431, ren. 4-25-67. Cl. 26.
 Fenwal Electronics, Inc., Framingham, Mass. 827,808, pub. 2-7-67. Cl. 21.
 Fiegenbaum, Dr. Gunther, Hamburg, Germany. 827,781, pub. 2-7-67. Cl. 18.
 Fields, F. F.-J., Inc.: See—
 Fields, J. M., Inc.
 Fields, J. M.: See—
 Fields, J. M., Inc.
 Fields, J. M., Inc., Philadelphia, Pa., from F. F.-J. M. Fields, Inc., d.b.a. J. M. Fields, Boston, Mass. 828,010, pub. 11-15-66. Cl. 101.
 Fiehlcrest Mills, Inc., Spray, N.C. 827,910-11, pub. 2-7-67. Cl. 42.
 Firstamerica Corp., from Transamerica Corp., San Francisco, Calif. 712,154, can. Cl. 38.
 Fit-Rite Pants Co., Inc., New York, N.Y. 827,890, pub. 2-7-67. Cl. 39.
 Flavor-Lok Corp., Claymont, Del. 712,221, can. Cl. 46.
 Florar Fabrics Inc., Miami, Fla. 827,889, pub. 2-7-67. Cl. 39.
 Florence Mfg. Co., Northampton, Mass., New York, N.Y., and Chicago, Ill., to Pro-Phy-Lac-Tic Brush Co., Florence, Mass. 29,986, ren. 4-25-67. Cl. 29.
 Florida Co., Tallahassee, Fla. 383,256, can. Cl. 6.
 Ford Motor Co., Dearborn, Mich. 429,559, ren. 4-25-67. Cl. 19.
 Format Products, Inc., New York, N.Y. 827,897, pub. 2-7-67. Cl. 39.
 Fort Dodge Laboratories, Inc., Fort Dodge, Iowa, to American Home Products Corp., New York, N.Y. 430,216, ren. 4-25-67. Cl. 18.
 Fort Howard Paper Co., Green Bay, Wis. 827,872, pub. 2-7-67. Cl. 37.
 Fort Howard Steel & Wire Co., Green Bay, Wis. 828,026. Cl. 14.
 "42" Products, Ltd., Inc., d.b.a. Executive Toiletries Ltd., Santa Monica, Calif. 827,973, pub. 3-1-66. Cl. 51.
 Foster, John R., Jr., d.b.a. Buffodent Co., Tacoma, Wash. 712,252, can. Cl. 51.
 Fostoria Corp., Fostoria, Ohio. 827,866, pub. 2-7-67. Cl. 34.
 Fox, G., & Co., Inc., Hartford, Conn., to The May Department Stores Co., St. Louis, Mo. 221,876, ren. 4-25-67. Cl. 39.
 French, Samuel H., & Co., to Samuel H. French & Co., Philadelphia, Pa. 59,971, ren. 4-25-67. Cl. 44.
 Funk Bros. Hat & Cap Co., St. Louis, Mo. 827,884, pub. 2-7-67. Cl. 39.
 G.F. Mfg. Co.: See—
 Godwin, Tom.
 Galsworthy, Inc., Newark, N.J. 712,317, can. Cl. 49.
 Gates, Pat, and Rosanne McQuarrie, Falls Church, Va. 712-303, can. Cl. 107.
 Gebhardt, A. L., Co., Milwaukee, Wis. 827,716, pub. 2-7-67. Cl. 1.
 Gelgy Chemical Corp.: See—
 Boehringer Ingelheim G.m.b.H.
 Gelgy Chemical Corp., from Gelgy Chemical Corp., Ardsley, N.Y. 827,735, pub. 1-17-67. Cl. 6.
 Gelgy Chemical Corp., from Gelgy Chemical Corp., Ardsley, N.Y. 827,737-40, pub. 1-24-67. Cl. 6.
 Gelgy Chemical Corp., from Gelgy Chemical Corp., Ardsley, N.Y. 827,793-5, pub. 2-7-67. Cl. 18.
 Gelgy Chemical Corp., from Gelgy Chemical Corp., Ardsley, N.Y. 827,797-8, pub. 2-7-67. Cl. 18.
 Gelgy Chemical Corp., from Gelgy Chemical Corp., Ardsley, N.Y. 827,959, pub. 2-7-67. Cl. 46.
 Gem-Mounts and Gem-Masks Co.: See—
 Heltman, Paul S.
 General Precision, Inc., Tarrytown, N.Y. 827,845, pub. 2-7-67. Cl. 26.
 Gibson Dog Food Co.: See—
 Gibson, Raymond C.
 Gibson Greeting Cards, Inc., Cincinnati, Ohio. 827,880, pub. 2-7-67. Cl. 38.
 Gibson, Raymond C., d.b.a. Gibson Dog Food Co., Ottawa, Kans. 827,955, pub. 2-7-67. Cl. 46.
 Glubel Bros., Inc., New York, N.Y. 827,905, pub. 2-7-67. Cl. 42.
 Glidden Co., The, Cleveland, Ohio. 428,726, ren. 4-25-67. Cl. 6.
 Godwin, Tom, d.b.a. G.F. Mfg. Co., to Kozy Mfg. Co., Exira, Iowa. 226,350, ren. 4-25-67. Cl. 50.
 Goldsmith Metal Lath Co., The, Cincinnati, Ohio. 431,686, ren. 4-25-67. Cl. 12.
 Goodyear Tire & Rubber Co., The, Akron, Ohio. 828,028. Cl. 19.
 Goodyear Tire & Rubber Co., The, Akron, Ohio. 828,034. Cl. 36.
 Gordon Chemicals, Inc.: See—
 Lancaster Chemical Corp.
 Gorrell, Loran E., d.b.a. Mercury Pharmaceutical Co., El Paso, Tex. 712,023, can. Cl. 18.
 Gotham Ink & Color Co., Inc.: See—
 Kantor, Samuel T.
 Graniteville Co., Graniteville, S.C. 827,902, pub. 2-7-67. Cl. 42.
 H & J Distributing Co., North Hollywood, Calif. 827,970, pub. 5-31-66. Cl. 51.
 Hanse, A. C. L., Co., St. Louis, Mo. 827,932, pub. 2-7-67. Cl. 46.
 Haggard Co., Dallas, Tex. 827,900, pub. 2-7-67. Cl. 39.

Hamilton Watch Co., Lancaster, Pa. 827,852, pub. 2-7-67. Cl. 28.
 Harris-Intertype Corp., Cleveland, Ohio. 823,343, cor. Cl. 23.
 Hubbell, Harvey, Inc., Bridgeport, Conn. 827,814, pub. 2-7-67. Cl. 21.
 Healthwear Underwear, Inc., Wernersville, Pa. 828,043. Cl. 39.
 Helleman, G., Brewing Co., to G. Helleman Brewing Co. Inc., La Crosse, Wis. 63,492, ren. 4-25-67. Cl. 48.
 Helleman, G., Brewing Co. Inc.: See—
 Helleman, G., Brewing Co.
 Heltman, Paul S., d.b.a. Gem-Mounts and Gem-Masks Co., New York, N.Y. 828,035. Cl. 37.
 Helme Products, Inc., New York, N.Y. 827,950, pub. 2-7-67. Cl. 46.
 Hepler, Elsie K., Stevensville, Mich. 712,076, can. Cl. 22.
 Hercules Chemical Co., New York, N.Y. 827,761, pub. 2-7-67. Cl. 12.
 Hercules Inc.: See—
 Hercules Powder Co.
 Hercules Powder Co., to Hercules Inc., Wilmington, Del. 225,253, ren. 4-25-67. Cl. 9.
 Her Majesty Underwear Co., Mauldin, S.C. 827,988, pub. 2-7-67. Cl. 39.
 Hill, F. H., Co., Inc., Cleveland, Ohio. 384,921, can. Cl. 2.
 Hill Mfg. Co., Atlanta, Ga. 827,732, pub. 2-7-67. Cl. 6.
 Hirsch, Clement L., d.b.a. Packers Canning Co., to Victory Packing Co., to Kal Kan Foods, Inc., Los Angeles, Calif. 430,306, ren. 4-25-67. Cl. 46.
 Hobart Mfg. Co., The: See—
 Dayton Scale Co.
 Hoffmann-La Roche Chemical Works, The, New York, N.Y., to Hoffmann-La Roche, Inc., Nutley, N.J. 230,059, ren. 4-25-67. Cl. 18.
 Hoffmann-La Roche, Inc.: See—
 Hoffmann-La Roche Chemical Works, The.
 Hoffmann-La Roche, Inc., Nutley, N.J. 430,209, ren. 4-25-67. Cl. 18.
 Hoyer, Inc., Atlantic City, N.J. 712,265, can. Cl. 51.
 Holtzinger, C. M., Fruit Co., Inc., Yakima, Wash. 827,944, pub. 2-7-67. Cl. 46.
 Hope Chemical Corp.: See—
 Associated Products, Inc.
 Hotel Corp. of America, Boston, Mass. 828,009, pub. 2-7-67. Cl. 100.
 Houde Laboratories: See—
 Wallau, George J., Inc.
 Howard Curtail Co., Inc., New York, N.Y. 828,046. Cl. 42.
 Howe-Baker Engineers, Inc., Tyler, Tex. 828,019, pub. 2-7-67. Cl. 106.
 Hudnut, Richard, Morris Plains, N.J. 712,266, can. Cl. 51.
 Hudson Metal Products, Inc., Newark, N.J. 827,812, pub. 2-7-67. Cl. 21.
 Huiskamp Bros. Co., Keokuk, Iowa, to Lanoue Bros. Enterprises, Inc., Brockton, Mass. 427,705, ren. 4-25-67. Cl. 39.
 Humphreys Medicine Co., Rutherford, N.J. 827,982, pub. 2-7-67. Cl. 51.
 Huntington Mills Inc., Philadelphia, Pa. 827,898, pub. 2-7-67. Cl. 39.
 Hunt Oil Co., Dallas, Tex. 712,036, can. Cl. 18.
 Iberia Lineas Aereas De Espana S.A., Madrid, Spain. 828-055, can. Cl. 105.
 Ideal Rubber Products Co., Inc., Brooklyn, N.Y. 712,057, can. Cl. 19.
 Indian Head Inc., New York, N.Y. 827,915, pub. 2-7-67. Cl. 43.
 International Equity Corp., d.b.a. The Mark II Co., Bala-Cynwyd, Pa. 827,971, pub. 2-7-67. Cl. 51.
 International Instruments, Inc., Orange, Conn. 827,810, pub. 12-20-66. Cl. 21.
 International Master Ladies Hairdressers Association, Philadelphia, Pa. 828,004, pub. 2-7-67. Cl. 100.
 International Musical Corp., Jersey City, and Hoboken, N.J., to Oscar Schmidt-International, Inc., Union, N.J. 227-835, ren. 4-25-67. Cl. 36.
 Instructo Products Co., Philadelphia, Pa. 827,871, pub. 2-7-67. Cl. 37.
 Ives Laboratories Inc., New York, N.Y. 827,799, pub. 2-7-67. Cl. 15.
 Iowa Cooperative Association: See—
 Diamond Laboratories.
 Japan Gas Lighter Corp., New York, N.Y. 827,744, pub. 2-7-67. Cl. 8.
 Johns-Manville Fiber Glass Inc., Cleveland, from L.O.F. Glass Fibers Co., Toledo, Ohio. 712,002, can. Cl. 12.
 Johnson, Endicott, Corp., New York, N.Y. 781,810, cor. Cl. 39.
 Johnson, Endicott, Corp., New York, N.Y. 783,691, cor. Cl. 39.
 Johnson, S. C., & Son, Inc., Racine, Wis. 717,018. Am. 7(d). Cl. 1.
 Johnston, Robert A., Co., Milwaukee, Wis. 828,053. Cl. 46.
 Kabushiki Kaisha Seijudo, d.b.a. Naris Cosmetic Mfg. Co., Ltd., Fukushima-ku, Osaka, Japan. 827,972, pub. 2-7-67. Cl. 51.
 Kal Kan Foods, Inc.: See—
 Hirsch, Clement L.
 Kantor, Samuel T., d.b.a. Gotham Ink & Color Co., to Gotham Ink & Color Co., Inc., Long Island City, N.Y. 427,089, ren. 4-25-67. Cl. 11.
 Kees, F. D., Mfg. Co., Beatrice, Nebr. 827,840, pub. 1-17-67. Cl. 23.
 Kendall Co., The, Walpole, Mass. 827,778, pub. 2-7-67. Cl. 18.
 Kern & Co., Ltd., Aarau, Switzerland. 712,121-2, can. Cl. 26.

Kerr-McGee Corp., from Kerr-McGee Oil Industries, Inc., Oklahoma City, Okla. 827,727, pub. 2-7-67. Cl. 15.
 Kerr-McGee Oil Industries, Inc.: See—
 Kerr-McGee Corp.
 Kimball Systems, Inc., Belleville, N.J. 827,881, pub. 2-7-67. Cl. 38.
 Knox Homes Corp., Thomson, Ga. 827,756, pub. 2-7-67. Cl. 12.
 Kohstamm, H., & Co., Inc., New York, N.Y. 827,957, pub. 2-7-67. Cl. 46.
 Kozzy Mfg. Co.: See—
 Godwin, Tom.
 Kropp Forge Co., Chicago, Ill. 224,470, ren. 4-25-67. Cl. 14.
 L & L Industries, Inc., Phoenix, Ariz. 712,077, can. Cl. 22.
 L.O.F. Glass Fibers Co.: See—
 Johns-Manville Fiber Glass Inc.
 Labatt, John, Ltd., London, Ontario, Canada. 827,775, pub. 2-7-67. Cl. 18.
 Label Weave Inc., New York, N.Y. 712,166, can. Cl. 38.
 Laboratoires du Dr. N. G. Payot Etablissement, Vaduz, Liechtenstein, from Societe Anonyme Laboratoires du Dr. N. G. Payot, Bois-Colombes (Seine), France. 712,247-8, can. Cl. 51.
 Laboratorios Imperiales: See—
 Brass, Arturo B.
 Laboratoires du Dr. N. G. Payot Etablissement: See—
 Societe Anonyme Laboratoires du Dr. N. G. Payot.
 Lancaster Chemical Corp., d.b.a. Gordon Chemicals, Inc., Carlstadt, N.J. 827,714, pub. 2-7-67. Cl. 1.
 Lance, Inc., Charlotte, N.C. 827,934-6, pub. 2-7-67. Cl. 46.
 Land O'Lakes Creameries, Inc., Minneapolis, Minn. 828,052, Cl. 48.
 Langnickel, A., Inc., New York, N.Y. 712,147, can. Cl. 37.
 Lanoue Bros. Enterprises, Inc.: See—
 Hulskamp Bros. Co.
 Lauder, Estee, Inc., New York, N.Y. 827,997, pub. 2-7-67. Cl. 51.
 Layne & Bowler Co., The, Houston, Tex. 827,762, pub. 10-25-66. Cl. 13.
 Lazenby, E., & Son, Ltd., London, England, to The Nestle Co., Inc., White Plains, N.Y. 80,980, ren. 4-25-67. Cl. 46.
 Leaseway Transportation Corp., Cleveland, Ohio. 828,003, pub. 2-7-67. Multiple Class (Classes 100 and 105).
 LeBlanc, Edward V., Somerville, Mass. 712,160, can. Cl. 38.
 Lederle Laboratories, Inc., to American Cyanamid Co., New York, N.Y., and Wayne, N.J. 431,929, ren. 4-25-67. Cl. 18.
 Lee, H. D. Co., Inc., The, Kansas City, Mo. 827,883, pub. 12-7-65. Cl. 39.
 Le Fevre Chemical Co., Big 'D' Chemical Co., Oklahoma City, Okla. 812,816, cor. Cl. 6.
 Leitz, Ernst, G.m.b.H., Wetzlar/Lahn, Germany. 827,849, pub. 2-7-67. Cl. 26.
 Leon Chemical Industries, Inc., Grand Rapids, Mich. 712,274, can. Cl. 52.
 Lester Bros., Inc., Martinsville, Va. 827,757, pub. 2-7-67. Cl. 12.
 Lincoln Stores, Inc., Quincy, Mass. 712,199, can. Cl. 42.
 Livingston, Edwin B., d.b.a. Edw. Livingston & Sons, to Edward Livingston & Sons, Inc., Kansas City, Mo. 428,257, ren. 4-25-67. Cl. 52.
 Livingston, Edw., & Sons: See—
 Livingston, Edwin B.
 Livingston, Edwin B., & Sons, Inc.: See—
 Livingston, Edwin B.
 Lo Blaw Inc., Buffalo, N.Y. 827,946, pub. 2-7-67. Cl. 46.
 Locatelli S.p.A., Milan, Italy. 828,051. Cl. 46.
 Long-Lok Corp., Santa Monica, Calif. 712,010, can. Cl. 13.
 Luchsinger's Handelsgesellschaft, Amsterdam, Filiale Zurich, Bederstrasse, Zurich, Switzerland. 712,089, can. Cl. 23.
 Lucky "11" Sandwich System, Denver, Colo. 425,748, ren. 4-25-67. Cl. 46.
 Mack, Sid S.: See—
 Paoli, Gino.
 Madway Mainline Homes Inc., Wayne, Pa. 828,015-16, pub. 2-7-67. Cl. 103.
 Majestic Flour Mills: See—
 Dixie-Portland Flour Mills, Inc.
 Mallory, P. R., & Co., Inc., Indianapolis, Ind. 827,765, pub. 2-7-67. Multiple Class (Classes 14, 21, 23, and 34).
 Mandex Mfg. Co., Inc., Chicago, Ill. 827,809, pub. 2-7-67. Cl. 21.
 Manning, John A., Paper Co., Inc., Troy, N.Y. 387,161, can. Cl. 37.
 Mfg. & Building Insulators of Texas, Inc., Houston, Tex. 827,753, pub. 2-7-67. Cl. 12.
 Marine Historical Association, Inc., The, Mystic, Conn. 828,022, pub. 2-7-67. Cl. 107.
 Mark II Co., The: See—
 International Equity Corp.
 Marlene Industries Corp., New York, N.Y. 827,893, pub. 2-7-67. Cl. 39.
 Marly, Inc., Brooklyn, N.Y. 827,996, pub. 2-7-67. Cl. 51.
 Marusho Jidosha Seizo Kabushiki-Kaisha (Marusho Motorcycle Industrial Co., Ltd.), Tokyo, Japan. 712,056, can. Cl. 19.
 Masterboard Co.: See—
 Metcalfe, J. E.
 Masury, John W., & Son, Inc., Baltimore, Md., to Conchemco, Inc., Kansas City, Mo. 427,121, ren. 4-25-67. Cl. 16.
 May Department Stores Co., The: See—
 Fox, G., & Co., Inc.
 Mayer, B. W., & Cohan, Ltd., Beau Brummell Ties Division, Cincinnati, Ohio. 827,983, pub. 2-7-67. Cl. 51.
 Mayfair Packing Co., San Jose, Calif. 827,956, pub. 2-7-67. Cl. 46.

McClintons Ltd.: See—
 Brown, David, & Son Ltd.
 McCollum Laboratories, Inc., from P. R. Rowe, Houston, Tex. 827,848, pub. 2-7-67. Cl. 26.
 McKesson & Robbins, Inc., New York, N.Y. 429,412, ren. 4-25-67. Cl. 51.
 Meadows, W. R., Inc., to W. R. Meadows, Inc., Elgin, Ill. 227,057, ren. 4-25-67. Cl. 12.
 Medley Distilling Co., Owensboro, Ky. 712,235, can. Cl. 49.
 Merchandising Corp. of America, Universal City, Calif. 827,974, pub. 2-7-67. Cl. 51.
 Merck & Co., Inc., Rahway, N.J. 712,050, can. Cl. 18.
 Merck & Co., Inc., Rahway, N.J. 712,052, can. Cl. 18.
 Mercury Pharmaceutical: See—
 Gorrell, Loran E.
 Merille Corp., Miami Beach, Fla. 712,323, can. Cl. 105.
 Metcalfe, J. E., d.b.a. Masterboard Co., Fayetteville, Ark. 712,082, can. Cl. 22.
 Mettoy Co., Ltd., The, Northampton, England. 712,083, can. Cl. 22.
 Meyer, Joseph H., Bros., Brooklyn, to The Richelleu Corp., Holbrook, N.Y. 431,265, ren. 4-25-67. Cl. 28.
 Micropoint, Inc., Sunnyvale, Calif. 828,036. Cl. 37.
 Midwest Industries, Inc., Willard, Ohio. 712,081, can. Cl. 22.
 Miller Art Co., Inc., Brooklyn, N.Y. 712,107, can. Cl. 38.
 Minor, L. J., Corp., Cleveland, Ohio. 827,938, pub. 2-7-67. Cl. 46.
 Minster Machine Co., The, Minster, Ohio. 828,030. Cl. 23.
 Mobil Oil Corp.: See—
 Socony-Vacuum Oil Co. Inc.
 Mohawk Rubber Co., The, Akron, Ohio. 225,929, ren. 4-25-67. Cl. 35.
 Monsieur Henri Wines, Ltd., Brooklyn, N.Y. 827,966, pub. 2-7-67. Cl. 47.
 Morehouse Mfg. Corp.: See—
 Carson Chemical Co.
 Morehouse-Cowles, Inc., Los Angeles, Calif. 827,837, pub. 12-6-66. Cl. 23.
 Morris Florists: See—
 Morris, Richard F.
 Morris, Richard F., d.b.a. Morris Florists, Hinsdale, Ill. 827,711, pub. 2-7-67. Cl. 1.
 Morris, Richard F., d.b.a. Morris Florists, Hinsdale, Ill. 827,747, pub. 2-7-67. Cl. 10.
 Morris, Richard F., d.b.a. Morris Florists, Hinsdale, Ill. 827,832, pub. 2-7-67. Cl. 23.
 Morse Twist Drill & Machine Co., New Bedford, Mass., to Universal American Corp., New York, N.Y. 62,758, ren. 4-25-67. Cl. 26.
 Mutter Co., The: See—
 Rola Co., Inc., The.
 Naris Cosmetic Mfg. Co., Ltd.: See—
 Kabushiki Kaisha Seijudo.
 National Biscuit Co., New York, N.Y. 827,942, pub. 2-7-67. Cl. 46.
 National Council Books, Inc., Philadelphia, Pa. 712,159, can. Cl. 38.
 National Dairy Products Corp., New York, N.Y. 827,922, pub. 2-7-67. Cl. 46.
 National Data Processing Corp., Dallas, Tex. 712,098, can. Cl. 26.
 National Hosiery Mills, Inc., Indianapolis, Ind., to U.S. Industries, Inc., New York, N.Y. 429,784-5, ren. 4-25-67. Cl. 39.
 National Ski Patrol System, Inc., Denver, Colo. 712,306, can. Cl. 200.
 National Starch and Chemical Corp.: See—
 National Starch Products Inc.
 National Starch Products Inc., to National Starch and Chemical Corp., New York, N.Y. 431,843, ren. 4-25-67. Cl. 5.
 National Steel Corp., Pittsburgh, Pa. 827,767, pub. 2-7-67. Cl. 14.
 National Tea Co., Chicago, Ill. 827,923, pub. 2-7-67. Cl. 46.
 National Tea Co., Chicago, Ill. 827,929, pub. 2-7-67. Cl. 46.
 National Tea Co., Chicago, Ill. 827,931, pub. 2-7-67. Cl. 46.
 National Union Electric Corp., Bloomington, Ill. 828,029. Cl. 21.
 Nebraska Consolidated Mills Co., d.b.a. Fant Milling Co., Omaha, Nebr. 827,962, pub. 2-7-67. Cl. 46.
 Nestle Co., Inc., The: See—
 Lazenby, E., & Son, Ltd.
 New York Belting and Packing Co., from United States Rubber Co., New York, N.Y. 18,673, can. Cl. 35.
 Nichols, W. H., & Sons, to W. H. Nichols Co., Waltham, Mass. 428,051, ren. 4-25-67. Cl. 23.
 Nichols, W. H. Co.: See—
 Nichols, W. H., & Sons.
 Nolde Brothers, Inc., Richmond, Va. 827,926-7, pub. 2-7-67. Cl. 46.
 Norman, Merle, Cosmetics, Inc., Los Angeles, Calif. 827,995, pub. 2-7-67. Cl. 51.
 Norton Co.: See—
 Behr, Herman, & Co., Inc.
 Norwich Pharmacal Co., The, Norwich, N.Y. 224,933, ren. 4-25-67. Cl. 18.
 Oak Electro-netics Corp., Crystal Lake, Ill. 827,821, pub. 2-7-67. Cl. 21.
 Official Films, Inc., New York, N.Y. 712,175, can. Cl. 38.
 Olin Mathieson Chemical Corp.: See—
 Western Cartridge Co.
 Olson, Martinus, Amherst, Colo. 828,050. Cl. 46.
 Omico Plastics, Inc., Owensboro, Ky. 827,829, pub. 2-7-67. Cl. 22.
 Onelda Ltd., Onelda, N.Y. 827,838, pub. 2-7-67. Cl. 23.

Original Instruments: See—
 Dopera, Edgar E.
 OsGood and Sons Inc., Decatur, Ill. 712,183, can. Cl. 39.
 Ottavino, A., Corp., Ozone Park, N.Y. 828,025. Cl. 13.
 Pacific Air Lines, Inc., San Francisco, Calif. 712,324, can. Cl. 105.
 Pacific Palisades Educational Tours, Inc., Pacific Palisades, Calif. 828,056. Cl. 105.
 Packers Canning Co.: See—
 Hirsch, Clement L.
 Paoli, Gino, Clifton, N.J., from Sid S. Mack, Jacksonville, Fla. 827,975, pub. 2-7-67. Cl. 51.
 Paper Mate Mfg. Co., Santa Monica, Calif. 827,867, pub. 2-7-67. Cl. 37.
 Paper Novelty Co., The, to Diana Mfg. Co., Green Bay, Wis. 230,738, ren. 4-25-67. Cl. 44.
 Parfa Parfumerie & Kosmetik AG., Zurich, Switzerland. 827,841, pub. 2-7-67. Cl. 26.
 Parfums Corday Inc., Hollywood, Calif. 430,997, ren. 4-25-67. Cl. 51.
 Paul, Peter, Inc.: See—
 Collins, J. N., Co.
 Pedro Perfume Co.: See—
 Cummings, Hester F.
 Pelican Bag Co., Inc., Crowley, La. 711,979, can. Cl. 2.
 Penn Syrup Corp., Philadelphia, Pa. 827,920, pub. 12-28-65. Cl. 45.
 Pennsylvania Glass Sand Corp., New York, N.Y. 712,165, can. Cl. 38.
 PepsiCo, Inc., New York, N.Y. 824,149-53, cor. Cl. 45.
 Permatex Co., Inc., Brooklyn, N.Y. 827,725, pub. 2-7-67. Cl. 5.
 Permatex Co., Inc., Brooklyn, N.Y. 827,733, pub. 2-7-67. Cl. 6.
 Perry Medical Products, Inc., Portland, Ore. 827,789, pub. 2-7-67. Cl. 18.
 Petalair Products: See—
 Ware Torrey Budlong.
 Pfizer, Chas., & Co., Inc., New York, N.Y. 827,734, pub. 2-7-67. Cl. 8.
 Pfizer, Chas., & Co., Inc., New York, N.Y. 827,800-03, pub. 2-7-67. Cl. 18.
 Pharmaceutical Laboratories, Inc., from Pharmaceutical Laboratories, Inc., Jersey City, N.J. 827,976, pub. 2-7-67. Cl. 51.
 Pharmacy Girl, Inc., Brookfield, Conn. 827,776, pub. 2-7-67. Cl. 18.
 Philips Electronics and Pharmaceutical Industries Corp.: See—
 Electrical Industries, Inc.
 Phoenix Closet Accessories, Inc., Newark, N.J. 712,241, can. Cl. 50.
 Pictorial News Inc., Eastchester, N.Y. 712,157, can. Cl. 38.
 Piggly Wiggly Operators' Warehouse, Inc., Shreveport, La. 828,054. Cl. 52.
 Pinkham Lumber, Inc., Ashland, Maine. 827,758, pub. 2-7-67. Cl. 12.
 Plastic Reel and Core Co., Inc., Weehawken, N.J. 828,032. Cl. 26.
 Pollack, Henry, Inc., New York, N.Y. 827,901, pub. 2-7-67. Cl. 40.
 Popell, Samuel J., Chicago, Ill. 712,090, can. Cl. 23.
 Porter Food Products: See—
 Bass, Sheldon.
 Porter, H. K., Co., Inc., Pittsburgh, Pa. 827,834, pub. 2-7-67. Cl. 23.
 Powers, John Robert, New York, N.Y. 712,283, can. Cl. 101.
 Pretty Products, Inc., Coshocton, Ohio. 827,804-6, pub. 2-7-67. Cl. 19.
 Procter & Gamble Co., The, Cincinnati, Ohio. 712,321, can. Cl. 52.
 Procter & Gamble Co., The, Cincinnati, Ohio. 827,722, pub. 2-7-67. Cl. 4.
 Pro-Phy-Lac-Tic Brush Co.: See—
 Florence Mfg. Co.
 Purex Corp., Ltd.: See—
 Turco Products, Inc.
 Puritan Fashions Corp., New York, N.Y. 827,885, pub. 2-7-67. Cl. 39.
 Quaker Maid Kitchens, Inc., Leesport, Pa. 827,864, pub. 2-7-67. Cl. 32.
 Quigley Co., Inc.: See—
 Quigley Furnace Specialties Co., Inc.
 Quigley Furnace Specialties Co., Inc., to Quigley Co., Inc., New York, N.Y. 224,200, ren. 4-25-67. Cl. 12.
 RD & SS: See—
 Strandberg, Roy A.
 Raburn Products, Inc., Wheeling, Ill. 827,718, pub. 2-7-67. Cl. 2.
 Raleigh Cycle Co. Ltd., The, Nottingham, England. 223,090, ren. 4-25-67. Cl. 19.
 Regie Nationale des Usines Renault, Billancourt (Seine), France. 712,071, can. Cl. 21.
 Regie Nationale des Usines Renault, Billancourt (Seine), France. 712,087, can. Cl. 23.
 Reimer, Julius H., d.b.a. Prescription Optical Supply, St. Cloud, Minn. 712,299, can. Cl. 106.
 Reliance Windows Ltd., Chester, England. 712,005, can. Cl. 12.
 Remco, Inc., Chicago, Ill. 712,243, can. Cl. 50.
 Renaud International: See—
 Sea & Ski Corp.
 Revere Rubber Co., Boston, Mass., from United States Rubber Co., New York, N.Y. 19,078, can. Cl. 35.
 Rexall Drug and Chemical Co., d.b.a. Vanda Cosmetics, Los Angeles, Calif. 827,998, pub. 2-7-67. Cl. 52.
 Richardson Homes Corp., d.b.a. Closing Offices of America, Elkhart, Ind. 828,012, pub. 2-7-67. Cl. 102.
 Richardson Homes Corp., d.b.a. Closing Offices of America, Elkhart, Ind. 828,014, pub. 2-7-67. Cl. 103.

Richardson-Merrell Inc., New York, N.Y. 827,782, pub. 2-7-67. Cl. 18.
 Richelleu Corp., The: See—
 Meyer, Joseph H., Bros.
 Roberts Dental Mfg. Co., Inc., Buffalo, N.Y. 828,049. Cl. 44.
 Roberts, Robert T., d.b.a. Trebor Perfumes, Detroit, Mich. 827,980, pub. 2-7-67. Cl. 51.
 Rola Co., Inc., The, Cleveland, Ohio, to The Muter Co., Chicago, Ill. 427,895, ren. 4-25-67. Cl. 21.
 Rose Patch & Label Co., Grand Rapids, Mich. 827,726, pub. 2-7-67. Cl. 6.
 Rowe, P. R.: See—
 McCollum Laboratories, Inc.
 Royal Baking Powder Co., Jersey City, N.J., and New York, N.Y., to Standard Brands Inc., New York, N.Y. 63,538, ren. 4-25-67. Cl. 46.
 Royal Bead Novelty Co., Inc.: See—
 Royal Craftsmen, Inc.
 Royal Craftsmen, Inc., to Royal Bead Novelty Co., Inc., New York, N.Y. 428,793-4, ren. 4-25-67. Cl. 28.
 Rural Gravure Service, Inc., Chicago, Ill. 828,037. Cl. 38.
 Rural Gravure Service, Inc., Chicago, Ill. 828,057. Cl. 107.
 Rykoff, S. E., & Co., Los Angeles, Calif. 827,961, pub. 2-7-67. Cl. 46.
 St. Regis Paper Co., New York, N.Y. 712,152, can. Cl. 37.
 Samuel Stamping & Enameling Co., Chattanooga, Tenn. 712,139, can. Cl. 34.
 Sapphire Hosiery Co., Philadelphia, Pa., to Elm El Es Corp., New York, N.Y. 427,112, ren. 4-25-67. Cl. 39.
 Saville Perfumery Ltd., from Saville Perfumery Ltd., Watford, England. 382,742, can. Cl. 51.
 Scarlett, William G., d.b.a. Wm. G. Scarlett & Co., to Wm. G. Scarlett & Co., Baltimore, Md. 229,379, ren. 4-25-67. Cl. 1.
 Schenult, Frank G., Rubber Co., The, Schenult Industries, Inc., Baltimore, Md. 727,590. Am. 7(d). Cl. 35.
 Schenult, Frank G., Rubber Co., The, Schenult Industries, Inc., Baltimore, Md. 735,666. Am. 7(d). Cl. 35.
 Schenult Industries, Inc.: See—
 Schenult, Frank G., Rubber Co., The.
 Schering Corp., Bloomfield, N.J. 827,779-80, pub. 2-7-67. Cl. 18.
 Schmidt, Oscar, -International, Inc.: See—
 International Music Corp.
 Schoeneman J., Inc., Baltimore, to J. Schoeneman, Inc., Owings Mills, Md. 224,602-3, ren. 4-25-67. Cl. 39.
 Schwinn, Arnold, & Co.: See—
 Schwinn Bicycle Co.
 Schwinn Bicycle Co., from Arnold Schwinn & Co., Chicago, Ill. 828,031. Cl. 23.
 Scott & Fetzer Co., The, Cleveland, Ohio. 827,835, pub. 2-7-67. Cl. 23.
 Secovill Mfg. Co., Racine, Wis. 827,839, pub. 2-7-67. Cl. 23.
 See & Ski Corp., d.b.a. Renaud International, Reno, Nev. 828,000, pub. 2-7-67. Cl. 12.
 Secon, Inc., from Air Seal Co., Inc., Carrizo Springs, Tex. 827,724, pub. 2-7-67. Cl. 5.
 Security Controls, Inc., Burbank, Calif. 827,815, pub. 2-7-67. Cl. 21.
 Seeman Brothers, Inc., New York, to White Rose Foods Corp., Syosset, N.Y. 223,068, ren. 4-25-67. Cl. 46.
 Seeman Brothers, Inc., New York, to White Rose Foods Corp., Syosset, N.Y. 224,227, ren. 4-25-67. Cl. 46.
 Seeman Brothers, Inc., New York, to White Rose Foods Corp., Syosset, N.Y. 223,290, ren. 4-25-67. Cl. 46.
 Seeman Brothers, Inc., New York, to White Rose Foods Corp., Syosset, N.Y. 223,881, ren. 4-25-67. Cl. 46.
 Seeman Brothers, Inc., New York, to White Rose Foods Corp., Syosset, N.Y. 228,348, ren. 4-25-67. Cl. 45.
 Seinsheimer, H. A., Co., The, Cincinnati, Ohio. 430,615, ren. 4-25-67. Cl. 39.
 Serometrics, Inc., Chicago Heights, Ill. 827,842, pub. 2-7-67. Cl. 26.
 Shell Oil Co., New York, N.Y. 827,749, pub. 2-7-67. Cl. 10.
 Shenango Ceramics, Inc., from Shenango China, Inc., New Castle, Pa. 827,853-9, pub. 2-7-67. Cl. 30.
 Shenango China, Inc.: See—
 Shenango Ceramics, Inc.
 Sherman Paper Products Corp., Newton, Mass. 712,150, can. Cl. 37.
 Sherman Paper Products Corp., Newton, Mass. 711,978, can. Cl. 2.
 Simonds Saw and Steel Co., Fitchburg, Mass., to Wallace-Murray Corp., d.b.a. Simonds Saw and Steel Co., New York, N.Y. 230,373, ren. 4-25-67. Cl. 23.
 Simpson, S., Ltd., London, England. 828,040. Cl. 39.
 Simpson Timber Co., Seattle, Wash. 827,754, pub. 2-7-67. Cl. 12.
 Slauson, A., & Co., to American Home Products Corp., New York, N.Y. 63,511, ren. 4-25-67. Cl. 46.
 Slim-Aroma, Inc., Flushing, N.Y. 712,044, can. Cl. 18.
 Smidth, F. L., & Co., to F. L. Smidth & Co., New York, N.Y. 230,364, ren. 4-25-67. Cl. 23.
 Sneed, Sam, Enterprises, Inc., Louisville, Ky. 828,021, pub. 2-7-67. Cl. 107.
 Societe Civile des Marques Houde: See—
 Wallau, George J., Inc.
 Societe des Accumulateurs Fixes et de Traction, Romainville, France. 827,811, pub. 2-7-67. Cl. 21.
 Societe Internationale Pam-Pam: See—
 CDC-Compagnie Generale des Produits Dubonnet.
 Socony-Vacuum Oil Co., Inc., to Mobil Oil Corp., New York, N.Y. 427,696, ren. 4-25-67. Cl. 35.
 Soft Cover Library, Inc., New York, N.Y. 828,039. Cl. 39.
 Soundscribe Corp., The, North Haven, Conn. 712,067, can. Cl. 21.

- Soundsciber Corp., The, North Haven, Conn. 712,144, canc. Cl. 36.
- Sperry Rand Corp., New Holland, Pa. 827,741-2, pub. 2-7-67. Cl. 7.
- Spotnalls, Inc., Chicago, Ill., to Spotnalls, Inc., Long Island City, N.Y. 431,611, ren. 4-25-67. Cl. 23.
- Spot-O-Gold Corp., Philadelphia, Pa. 827,882, pub. 2-7-67. Cl. 38.
- Sprague Electric Co., North Adams, Mass. 827,813, pub. 2-7-67. Cl. 21.
- Standard Brands Inc.: See—
Royal Baking Powder Co.
- Standard Cap and Seal Corp., Chicago, Ill., to Standard Packaging Corp., New York, N.Y. 430,178, ren. 4-25-67. Cl. 2.
- Standard Oil Co., The, Cleveland, Ohio. 827,863, pub. 2-7-67. Cl. 31.
- Standard Packaging Corp.: See—
Standard Cap and Seal Corp.
- Stang, John W., Corp., Orange, Calif. 827,833, pub. 2-7-67. Cl. 23.
- Stanley Works, The, Britain, Conn., from Amerock Corp., Rockford, Ill. 827,764, pub. 8-2-66. Cl. 13.
- Stein, A., & Co., Chicago, Ill., to A. Stein & Co., Inc., Des Plaines, Ill. 61,188, ren. 4-25-67. Cl. 39.
- Stein, A., & Co., Inc.: See—
Stein, A., & Co.
- Stevens, J. P., & Co., Inc., New York, N.Y. 827,908, pub. 2-7-67. Cl. 42.
- Stork Plan, Inc., South Boston, Mass. 712,280, canc. Cl. 101.
- Strait-O-Matic, Inc., South Orange, N.J. 827,917, pub. 2-7-67. Cl. 44.
- Strandberg, Roy A., d.b.a. RD & SS, Bellevue, Wash. 827,831, pub. 2-7-67. Cl. 22.
- Street & Smith Publications, Inc., New York, N.Y. 712,164, canc. Cl. 38.
- Sunline, Inc., St. Louis, Mo. 827,947, pub. 2-7-67. Cl. 46.
- Superior Pet Products, Inc., Boston, Mass. 827,719, pub. 2-7-67. Cl. 3.
- Swanson, Gloria, Ltd., Syracuse, N.Y. 827,985, pub. 2-7-67. Cl. 51.
- Switzer Brothers, Inc., Cleveland, Ohio. 827,751, pub. 2-7-67. Cl. 11.
- Syndication Digest, Inc., Long Island City, N.Y. 712,171, canc. Cl. 38.
- Talbot, H., Co., The, Cincinnati, Ohio. 711,997, canc. Cl. 6.
- Tatler Publishing Co., Washington, D.C. 827,874, pub. 2-7-67. Cl. 38.
- Thomas Pride Mills Inc., Calhoun, Ga. 827,909, pub. 2-7-67. Cl. 42.
- Todoroff, Albert, St. Louis, Mo. 828,038. Cl. 38.
- Trade Mfg. Co., Chicago, Ill. 712,080, canc. Cl. 22.
- Traller Train Co., Haverford, Pa. 828,018, pub. 2-7-67. Cl. 105.
- Transamerica Corp.: See—
Firstamerica Corp.
- Trans-Atlantic Co., Philadelphia, Pa. 827,763, pub. 8-16-66. Multiple Class (Classes 13 and 23).
- Travco Corp., Brown City, Mich. 827,807, pub. 2-7-67. Cl. 19.
- Trebor Perfumes: See—
Roberts, Robert T.
- Turco Products, Inc., Los Angeles, to Purex Corp., Ltd., Lakewood, Calif. 424,763, ren. 4-25-67. Cl. 52.
- TV Time Foods, Inc., Chicago, Ill. 827,953, pub. 2-7-67. Cl. 46.
- Uniform Center of New York, Inc., The, New York, N.Y. 827,886, pub. 2-7-67. Cl. 39.
- Union Chemical & Oil Co., to Union Chemical & Oil Co., Chicago, Ill. 427,101, ren. 4-25-67. Cl. 16.
- United Case Co., Inc., Kansas City, Mo. 827,720, pub. 2-7-67. Cl. 3.
- United Elastic Corp., Easthampton, Mass. 828,033. Cl. 26.
- United Elastic Corp., Easthampton, Mass. 828,044. Cl. 42.
- United Injector Co., The, New York, N.Y., to Dresser Industries, Inc., Dallas, Tex. 59,681, ren. 4-25-67. Cl. 13.
- United Merchants and Mfg., Inc., New York, N.Y. 828,045. Cl. 42.
- United States Gypsum Co., to United States Gypsum Co., Chicago, Ill. 428,835, ren. 4-25-67. Cl. 12.
- U.S. Industries, Inc.: See—
National Hosiery Mills, Inc.
- United States Rubber Co.: See—
New York Belting and Packing Co.
- United States Rubber Co., New York, N.Y. 712,196, canc. Cl. 42.
- United States Rubber Co., New York, N.Y. 827,895, pub. 2-7-67. Cl. 39.
- Universal American Corp.: See—
Morse Twist Drill & Machine Co.
- Upjohn Co., The, Kalamazoo, Mich. 827,777, pub. 2-7-67. Cl. 18.
- Valdora, Albert, d.b.a. Valdora Produce Co., Riverside, Calif. 827,960, pub. 2-7-67. Cl. 46.
- Valdora Produce Co.: See—
Valdora, Albert.
- Vance Publishing Corp., Chicago, Ill. 827,878, pub. 2-7-67. Cl. 38.
- Vanda Cosmetics: See—
Rexall Drug and Chemical Co.
- Vernon Photographic Corp., Mount Vernon, N.Y. 827,844, pub. 2-7-67. Cl. 26.
- Victor Paint Co.: See—
Carter, Mary, Paint Co.
- Wallace-Murray Corp.: See—
Simonds Saw and Steel Co.
- Wallau, George J., Inc., New York, N.Y., to Societe Civile des Marques Houde, d.b.a. Houde Laboratories, Paris, France. 426,336, ren. 4-25-67. Cl. 18.
- Walker Laboratories, Inc., Mount Vernon, N.Y. 712,033, canc. Cl. 18.
- Wampole Laboratories: See—
Denver Chemical Mfg. Co., The.
- Ware Torrey Budlong, d.b.a. Petalfair, Rye, N.Y. 712,249, canc. Cl. 51.
- Washington State University, Pullman, Wash. 827,954, pub. 2-7-67. Cl. 46.
- Water Damage Protection Co., Detroit, Mich. 828,020, pub. 2-7-67. Cl. 106.
- Waukegan Baby Seat Co., Waukegan, Ill. 712,131, canc. Cl. 32.
- Webb, Del E., Motor Hotel Co., Phoenix, Ariz. 712,279, canc. Cl. 100.
- West, John, Foods Ltd., Liverpool, England. 827,951, pub. 2-7-67. Cl. 46.
- Western Cartridge Co., East Alton, Ill., to Olin Mathieson Chemical Corp., New York, N.Y. 224,874, ren. 4-25-67. Cl. 9.
- Western Import Inc., Portland, Oreg. 827,830, pub. 2-7-67. Cl. 22.
- Weston Electrical Instrument Corp., to Weston Instruments, Inc., Newark, N.J. 426,659, ren. 4-25-67. Cl. 26.
- Weston Instruments, Inc.: See—
Weston Electrical Instrument Corp.
- Weston Paper and Mfg. Co., The, Dayton, Ohio. 227,593, ren. 4-25-67. Cl. 37.
- Weston Paper and Mfg. Co., The, Dayton, Ohio. 227,604, ren. 4-25-67. Cl. 37.
- Weyerhaeuser Co., Tacoma, Wash. 817,500, cor. Cl. 50.
- Wheeling Corrugating Co., to Wheeling Steel Corp., d.b.a. Wheeling Corrugating Co., Wheeling, W. Va. 224,669, ren. 4-25-67. Cl. 14.
- Wheeling Steel Corp.: See—
Wheeling Corrugating Co.
- Whip-Mix Corp., Louisville, Ky. 827,713, pub. 2-7-67. Cl. 1.
- Whirl-A-Way Co., Anaheim, Calif. 827,820, pub. 2-7-67. Cl. 21.
- Whirlpool Corp., St. Joseph, Mich. 827,925, pub. 2-7-67. Cl. 46.
- White Rose Foods Corp.: See—
Seeman Bros., Inc.
- Wiedemann, Geo., Brewing Co., Inc., The, from The Geo. Wiedemann Brewing Co., Newport, Ky. 384,216, canc. Cl. 48.
- Wilbur Chocolate Co.: See—
Wilbur-Suchard Chocolate Co., Inc.
- Wilbur-Suchard Chocolate Co., Inc., Borough of Lititz, to Wilbur Chocolate Co., Lititz, Pa. 427,802, ren. 4-25-67. Cl. 46.
- Win-You Preserving Co.: See—
Blanke-Baer Extract & Preserving Co.
- Wolverine Shoe and Tanning Corp., Rockford, Mich. 827,891, pub. 2-7-67. Cl. 39.
- Wright, George R., Lincoln, Nebr. 827,828, pub. 2-7-67. Cl. 22.
- Yale & Towne Mfg. Co., The, Stamford, Conn., to Eaton Yale & Towne Inc., Cleveland, Ohio. 63,654, ren. 4-25-67. Cl. 25.
- Yonson Foods, Inc., Belmont, Calif. 827,941, pub. 2-7-67. Cl. 46.
- Zaninovich Bros., Inc.: See—
Zaninovich, George.
- Zaninovich, George, d.b.a. Zaninovich Bros. Vineyards, Orosi, to Zaninovich Bros., Inc., Orange Cove, Calif. 229,995, ren. 4-25-67. Cl. 46.

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